Language Diversity, School Learning, and Closing Achievement Gaps: A Workshop Summary

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Melissa Welch-Ross, Rapporteur; Committee on the Role of Language in School Learning: Implications for Closing the Achievement Gap; National Research Council

Language Diversity, School Learning, and Closing Achievement Gaps

A WORKSHOP SUMMARY

Melissa Welch-Ross, *Rapporteur*

Committee on the Role of Language in School Learning:
Implications for Closing the Achievement Gap

Center for Education
Division of Behavioral and Social Sciences and Education

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This report is a summary of the discussion at a workshop convened by the National Research Council on October 15-16, 2009, at the William and Flora Hewlett Foundation headquarters in Menlo Park, California. The workshop was funded by the William and Flora Hewlett Foundation, and the National Research Council is grateful for the interest in and commitment to work on this topic.

The workshop was planned by the Committee on the Role of Language in School Learning: Implications for Closing the Achievement Gap. The committee members identified presenters, organized the agenda, made presentations, and facilitated discussion; they did not participate in the writing of this report. The two-day workshop, summarized here reflects their diligent efforts in planning the workshop, the excellent presentations at the workshop, and the insightful comments of the many workshop participants. We also thank the many experts who participated in the workshop as presenters, panelists, paper authors, and discussants; their names appear in the agenda in an appendix (see Appendix A). Staff members Viola Horek, Mary Ann Kasper, and Dorothy Majewski ably provided administrative support for the committee. We also thank Catherine Freeman who served as staff director in the initial stages of the project.

The summary has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the Report Review Committee of the National Research Council. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its

published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the charge. The review comments and draft manuscript remain confidential to protect the integrity of the process. We thank the following individuals for their review of this report: Alison Bailey, Psychological Studies in Education Division, Department of Education, University of California, Los Angeles; Robert Bayley, Department of Linguistics, University of California, Davis; Joanne Carlisle, School of Education, University of Michigan; Claude Goldenberg, School of Education, Stanford University; Erika Hoff, Department of Psychology, Florida Atlantic University; Susan H. Landry, Children's Learning Institute, Texas Medical Center, Houston, Texas; Lourdes Ortega, Department of Second Language Studies, University of Hawaii at Mānoa; and Robin Scarcella, Program in Academic English and ESL, University of California, Irvine.

Although the reviewers provided many constructive comments and suggestions, they were not asked to endorse the content of the report, nor did they see the final draft of the report before its release. The review of this report was overseen by P. David Pearson, Graduate School of Education, University of California at Berkeley. Appointed by the National Research Council, he was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the author and the institution.

Contents

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Introduction

The Workshop on the Role of Language in School Learning: Implications for Closing the Achievement Gap was held to explore three questions: (1) What is known about the conditions that affect language development? (2) What are the effects of early language development on school achievement? (3) What instructional approaches help students meet school demands for language and reading comprehension? Of particular interest was the degree to which group differences in school achievement might be attributed to language differences, and whether language-related instruction might help to close gaps in achievement by helping students cope with language-intensive subject matter, especially after the 3rd grade.

The workshop was held at the William and Flora Hewlett Foundation, the sponsoring organization, and provided a forum for researchers and practitioners to review and discuss relevant research findings from varied perspectives. The disciplines and professions represented included: language development, child development, cognitive psychology, linguistics, reading, educationally disadvantaged student populations, literacy in content areas (math, science, social studies), and teacher education. Participants in the workshop included members of the National Research Council (NRC) planning committee and other invited content experts and guests. The aim of the meeting was not to reach consensus or provide recommendations, but rather to offer expert insight into the issues that surround the study of language, academic learning, and achievement gaps, and to gather varied viewpoints on what available research findings

might imply for future research and practice. This report summarizes and synthesizes 2 days of workshop presentations and discussion.

CONTEXT: THE ACHIEVEMENT GAPS

A simple observation motivated this workshop: Students vary considerably in educational attainment, and student achievement varies with language background. However, that simple observation leads to many questions about the nature of this relationship and to the interest in reviewing the empirical data on several factors: language differences and how they develop; current understandings about "academic language" (the language of schooling); and ways to enhance linguistic and academic outcomes and reduce achievement gaps[1] for groups of students who have diverse language backgrounds.

According to the National Assessment of Educational Progress (NAEP), significant differences in academic achievement between whites and blacks and between whites and Hispanics have been evident since the NAEP began in the 1970s.[2] The NAEP, known as the "nation's report card," is the only nationally representative and continuing assessment of students' academic progress over time in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history. The assessments to measure long-term trends are given to students at ages 9, 13, and 17; the most recent assessment was in 2008.

The long-term trends for reading and mathematics show that the achievement gaps between whites and blacks have narrowed significantly at all ages—ranging from 9 to 24 points—since the first assessment in 1973. Since 1975, the first time Hispanics were included in the NAEP, the white-Hispanic gaps in reading and mathematics have also narrowed, but not by as much—from 0 to 15 points. Still, as shown in Table 1-1, significant gaps persisted in 2008 for both blacks and Hispanics, in comparison with whites, at all ages in both reading and mathematics. Moreover, from 2004 to 2008, the gaps did not narrow significantly for either Hispanics or blacks for reading or writing at any age.

Findings are similar for children from families with low income. As shown in Table 1-2, the 2009 NAEP assessment of reading and mathematics shows that although scores have increased since 1998, achievement

[1]This summary refers to achievement gaps rather than to a single "achievement gap" since much of the available research points to several gaps for different demographic groups and academic domains; that research also suggests that the gaps may have shared or divergent causes.

[2]Summaries of workshop presentations in this report include alternate terms for Hispanic and black used by the individual presenters.

TABLE 1-1 Achievement by Race and Ethnicity, 2008

Domain and Group		Age 9	13	17
Reading				
	White	228	268	295
	Black	204	247	266
	Hispanic	207	242	269
Mathematics				
	White	250	290	314
	Black	224	262	287
	Hispanic	234	268	293

NOTES: Assessment scale scores range from 0 to 500. Scores were obtained from the NAEP assessment of long-term trends.
SOURCE: Data from National Assessment of Educational Progress (Rampey, Dion, and Donahue, 2009).

TABLE 1-2 Achievement by Family Income Level (based on eligibility for the National School Lunch Program), 2009

		Grade 4		8	
Domain and Group		1998	2009	1998	2009
Reading					
	Eligible	196	206	245	249
	Not eligible	227	232	269	273
Mathematics					
	Eligible	207	227	250	266
	Not eligible	232	250	277	294

NOTE: Assessment scale scores range from 0 to 500.
SOURCE: Data from National Assessment of Educational Progress (2009).

gaps remain between children who are eligible for the National School Lunch Program and those who are not.

Reasons for the achievement gaps, as well as perceptions about why the gaps exist, reflect a complex mix of societal and cultural factors. As acknowledged by workshop planners and participants, closing the achievement gaps will likely require an equally multifaceted response. Issues of race, ethnicity, immigration, poverty, culture, and ideologies about language, though not the main focus, necessarily permeated the

workshop proceedings. These issues underlie many of the controversies surrounding the sources of achievement disparities, language differences, and perceptions about the best approaches to language instruction. The immediate objective of this workshop, however, was to explore how language and linguistic differences might be contributing to documented achievement disparities, and as part of this, how to better support language for academic learning.

A somewhat related controversy in the fields of linguistics and language development stems from cognitive versus sociocultural views of learning and language: the former points to the merits of explicit instruction of grammatical forms; the latter points to implicit approaches that emphasize embedding instruction in meaningful social interaction, with less emphasis on grammatical accuracy or explicit attention to grammatical form. Though some see these differences as a matter of emphasis, others see them as positing fundamentally different notions of what language *is* and how language develops. (For more detail on these and other controversies at the intersection of language research and instruction, see Chapter 5 of this summary, and Valdés et al., 2009.) As one participant cautioned, however, academic arguments about what "language" is and such issues as what constitutes a "language variety" or a "language standard" can interfere with clear information about what researchers have come to understand about language, how to support it for academic learning, and how much about language for schooling remains to be learned. This workshop, while necessarily touching on many areas of controversy and debate, was intended to explore whether evidence has begun to accrue that can contribute to a basis for current practice and continuing research.

WORKSHOP APPROACH

At a meeting in October 2008, the planning committee decided on the topics that would be the basis of the workshop: vocabulary, academic language, preschool language experiences that predict reading and achievement, explicit instruction for speakers of second languages and dialects, cross-linguistic transfer (the effect of a first language on learning a second), and new frameworks for research that move beyond but take into account lessons learned from past debates about language differences between groups, such as those related to socioeconomic or minority status in the United States. Before settling on these topics, the committee considered a range of other possibilities (such as measurement and assessment), but it was decided to focus on the selected topics to assure they would receive sufficient attention at the workshop.

Topic selection was informed partly by the committee's observa-

tion that the concept of "academic language" has penetrated education communities in recent years without careful technical consideration and often gets translated as simply teaching vocabulary words. Contemporary research approaches to studying academic language posit that a broader range of linguistic attributes of spoken and written language are inherent to academic communication and learning of school subjects and mastering these helps children to achieve in school. Thus, despite the importance of vocabulary to schooling, exploring richer ways to define and study language such as that offered by "academic language" and various other psycholinguistic approaches appeared warranted. Moreover, little research has focused on how such aspects of language might affect the "4th grade slump" commonly observed when students begin to encounter challenging academic content and reading material, and the focus of instruction largely shifts from learning to read to reading to learn.

The planning committee generated questions of interest within each of the identified topics and then arranged for experts to write conceptual reviews of relevant theoretical perspectives and research. Despite covering much ground, the papers did not exhaustively review the possible terrain. For the workshop, academic achievement was discussed mainly in terms of academic learning and success in school, as opposed to a broader range of outcomes associated with academic achievement, such as social development or civic participation.

At the workshop, the authors provided brief summaries of their papers and highlighted key points for workshop discussion. (The full papers prepared for the workshop can be found at http://www7.nationalacademies.org/cfe/Role_of_Language_Workshop_Agenda_October_15-16_2009.html [accessed June 2010].) For each workshop session, all participants were asked to consider the guiding questions prepared by the planning committee: see Appendix A. As this summary reveals, the multifaceted conversations at the workshop point to many influences on language development and schooling associated with home, peers, schools, community, and early childhood learning environments, that are mainly classroom based. Though participants agreed with one another on many points, their disparate research perspectives and interpretations of evidence affected almost all the discussions, from the questions that are most important to study, to how to study them, to the meaning of research findings.

This summary describes the content of the workshop proceedings. The report structure follows that of the workshop presentations and discussion. It is the hope of the NRC and the study sponsor that this report will inform the work of researchers, educators, research funders, policy leaders, and others concerned with narrowing achievement gaps and making challenging academic content accessible to a diverse student population in the United States.

2

Vocabulary and Beyond: Developing Language for School Achievement

In the first panel session, participants discussed research on how vocabulary develops; how vocabulary relates to other aspects of language, such as grammar; the effects of vocabulary on achievement and achievement gaps; and ways to develop vocabulary to reduce achievement gaps. The discussion went beyond vocabulary to explore research on academic language, focusing on current definitions of the concept and promising instructional practices for developing both language and knowledge in the disciplines students are expected to master in school.

VOCABULARY AND SOCIOECONOMIC STATUS

Erika Hoff summarized findings from her review of research on vocabulary conducted from a developmental and psychological perspective. She focused on one finding related to achievement gaps that is very well documented, that socioeconomic status (SES) predicts how well children will do in school. In this context, Hoff said, the evidence available is quite convincing that vocabulary helps to explain the observed achievement gap between children from lower and higher SES families, though at this point the evidence is "circumstantial" or indirect (see Hoff, 2009).

First, children with lower SES have lower school achievement. Second, children with smaller vocabularies have lower school achievement. Third, children with lower SES have smaller vocabularies. One interpretation of this evidence is that vocabulary differences help to explain at least some portion of SES-related differences in school achievement. Moreover, Hoff

speculated, since being a minority and English-language learner in the United States is confounded with SES, vocabulary probably also affects achievement gaps for those groups to some degree.

Another well-established finding is that vocabulary predicts how well *all* children will do in school, regardless of SES: after controlling statistically for SES and SES-related factors (such as nutrition), vocabulary still matters for school achievement. According to Hoff, this finding points to the vital importance of vocabulary because, theoretically, if SES and those other SES-related factors measured in those studies were somehow magically fixed, children with larger vocabularies would still perform better in school. Yet, Hoff was not aware of any studies that have included the analyses needed to test more directly whether vocabulary helps to explain the correlation between SES and achievement. Nor is there evidence about how much of the difference in achievement between lower and higher SES students can be attributed to vocabulary.

Experimental research also has not been conducted to test whether the SES-related achievement gap could be narrowed by increasing vocabulary. Nor has there been any research on how much the gap would be narrowed by addressing vocabulary directly—rather than other known SES-related influences on achievement, such as nutrition.

The literature does suggest, however, some sources of SES-related differences in vocabulary that might have implications for intervention, Hoff said. One possible focus for intervention is the amount of language input experienced by children of different socioeconomic backgrounds. This claim has sometimes been subject to controversy but it is derived from several findings.[1]

First, studies show that vocabulary size and growth are associated with the amount and complexity of language children hear in their everyday lives. Children from lower SES homes who, on average, have smaller vocabularies hear less language and less complex language at home than children from more economically advantaged backgrounds (Hart and Risley, 1995; Hoff, 2003, 2006, 2009). If children hear two languages at home, they have larger vocabularies in the language they hear most, suggesting again the importance of amount of language input to language learning.

[1]The controversy arises from claims that research on language differences between language-minority/lower SES groups and language-majority/higher SES groups implicitly or explicitly suggests inherent deficits in the language and language environments of language-minority or lower SES groups.

VOCABULARY AS A PROCESS

Given what is known about how new words are learned, it is impossible, Hoff explained, to consider vocabulary separately from other aspects of language, and this fact has implications for intervention. As described in Hoff (2009), several aspects of linguistic knowledge converge to support learning a word. The ease with which new words are learned depends on being familiar with the phonology (sounds) of the word in the language system that the word belongs to; knowing the grammar of the language, which can be used to help interpret the meaning of new words in a sentence; and knowing the concept to which a new word refers. As a result of this research showing on the connectedness between vocabulary and the rest of a language system, Hoff infers that interventions that teach words in isolation from other aspects of a language are not likely to work very well. However, more research is needed to determine exactly what language interventions are needed, at what ages, and for how long to boost language sufficiently for narrowing achievement gaps.

Advances could be made, Hoff proposed, if researchers conceptualized vocabulary more as a dynamic process than a static skill and studied the cognitive processing aspects of vocabulary development. For instance, Anne Fernald and her colleagues have shown that 20- and 30-month-old children with more speech addressed to them not only had larger vocabularies, but also accessed the meaning of words from memory more quickly (Fernald, Perfors, and Marchman, 2006; Hurtado, Marchman, and Fernald, 2008). Likewise, the research of Cindy Fisher and colleagues with older children has shown that children retrieve a word faster if they hear it more often. Hearing a word has a long-lasting priming effect, such that a word heard within even the last week is more rapidly accessed than a word not heard during that time frame (Fisher, Church, and Chambers, 2004).

Since retrieving words and the meaning of words with little effort are both important for engaging in academic learning in the classroom, Hoff suggested that children who use larger vocabularies in school may not only know more words, but also retrieve those words and their meanings faster for both language comprehension and production. Thus, if teachers were to talk more often with students using new words relating to academic subjects and also encourage students to use those words, the words would be easier for children to remember. This process would be especially important for building vocabulary not typically used in children's homes.

Most research on the development of vocabulary and oral language focuses on whether the vocabulary young children initially bring to school puts them on a trajectory of vocabulary learning and academic achievement. Research shows that intervening at early ages is important for early school achievement, but it is likely not to be sufficient, Hoff said. Vocabu-

lary continues to develop across the life span, and vocabulary learned at ages 10 or 12 may influence school achievement just as much as the vocabulary children bring to school initially. Building new vocabulary and more fluent processing of words and word meanings likely depends on the continuing opportunities children have to hear the specific words they need to be able to retrieve.

FUNCTIONAL USE OF LANGUAGE

Mary Schleppegrell explored other characteristics of "academic language," the language associated with school. How might familiarity and facility with academic uses of language affect school learning? From the point of view of scholars, to what extent do differences in grammatical and lexical development contribute to the achievement gap observed between economically disadvantaged and advantaged students? What is known about the effectiveness of interventions to help teachers support language development in the classroom? (For a perspective on the controversies surrounding academic language, see Chapter 4; also see Valdés, MacSwan, and Alvarez, 2009.)

Schleppegrell addressed these questions in a review of research grounded in Michael Halliday's theory of systemic functional linguistics (Halliday, 1985). A main tenet of the functional linguistics approach is that, from infancy, the desire to make and share meaning drives language development and use. The continual development of language depends on having on-going opportunities for social experience and interaction. Linguistic structures and grammatical forms are derived from the communicative meanings that are routinely created and shared in social interaction. This approach can be contrasted with two others: (1) nativist views in linguistics that propose innate and universal knowledge of linguistic structures, the specific application of which is simply triggered by children's earliest language environment; and (2) cognitive views that propose cognitive constraints that channel attention toward social and other cues that support language learning (see Valdés, MacSwan, and Alvarez, 2009). Another tenet of the functional linguistics approach is that vocabulary and grammar interact to create meaning, hence the field's use of the term lexico-grammar, which denotes the difficulty in establishing where vocabulary ends and grammar begins in language.

THE LANGUAGE OF SCHOOLING

People decide how to use language for meaning depending on the content and purpose of the communication, the relationship between speaker and listener or between speakers, the mode used for communicating (e.g.,

in person, by text, by e-mail), and their familiarity with the resources the language has to offer. The language of schooling, according to this perspective, has its own forms and functions created for academic purposes, or "academic register." Register refers to specific features of language that vary according to the context and purpose of a communication. Speakers of all languages and of all dialects are assumed to engage in register variation. One linguistic feature of an academic register, used in academic writing, is "nominalization," as in the sentence that follows from an 11th-grade history text: The destruction of the buffalo and removal of Native Americans to reservations emptied the land for grazing cattle. This type of structure packs noun phrases into sentences to condense information, and it can present challenges to readers unfamiliar with the writing style.

The academic language used to construe meaning and communicate in school, Schleppegrell argued, is made up of sets of academic linguistic registers that differ from language registers used in everyday conversation. And every academic subject has its own register. Learning academic registers is inseparable from learning school subjects, in her view, as children must master new language forms and functions for academic tasks and purposes. As explained further in Schleppegrell (2009), these tasks include reading and writing reports, articulating arguments, formulating hypotheses, building theories and developing explanations, and using the linguistic and discourse features typical of scientific, technical, and humanities fields.

According to research described by Schleppegrell (2009), teachers can be taught to recognize the linguistic challenges of their academic subjects and to create opportunities for the social interaction that helps to develop the needed language. Fostering teachers' knowledge about language in the context of disciplinary teaching offers a concrete approach teachers can use to help children learn both language and content. In this approach, teachers learn to talk with students about language and apprentice them into academic uses of language while engaging with the school curriculum.

In ethnographic research, for example, Pauline Gibbons has illustrated how language development for learning can be supported in the context of teaching a unit of 5th-grade science instruction on magnetism (described in Schleppegrell, 2009). Starting with language that is more conversational, children eventually appear to learn not only science concepts, but also the language that is typically used and valued by scientists for communicating about magnetism. As students experiment with magnets, listen to the teacher's explanations of magnetism, and then give oral and written reports, they move from using here-and-now language or narrative language for recounting personal experience to more presentational, scientifically exact, and decontextualized language for creating explanations of magnetism that do not rely on shared experi-

ence for understanding (Gibbons, reported in Schleppegrell, 2009). Their knowledge becomes less concrete and more abstract and theoretical for conveying information in an academic context. As students learn to speak and write using the language of the discipline, they also become more easily recognized by teachers and others as making progress in learning about science and about magnetism. Gibbons' work also illustrates that although students bring many different backgrounds and life experiences to the classroom, it is possible to structure opportunities for students and teachers to interact around a shared experience that enables focusing students' attention on new features of language used in the discipline along with conceptual, academic content.

Morphological or grammatical accuracy is not the main emphasis of this approach, Schleppegrell explained. Rather, a premium is placed on learning to use the language of a discipline so that students can develop content knowledge and perform school tasks, despite possible "infelicities" (errors) in the morphological marking or grammatical structure of their language.

ENGLISH-LANGUAGE LEARNERS

Discussant Nonie Lesaux described her work with Spanish second-language learners. She began by emphasizing the particular challenge and opportunity that written text presents for both language learning and academic learning. School texts function as gate-keepers to academic achievement, according to Lesaux, because the language register used in texts is not accessible to all students. Yet, as she seeks to show in her intervention research (see, e.g., Lesaux et al., 2010b), texts have great potential to foster a language-rich environment that supports the development of language and learning in school.

Before describing the intervention research, Lesaux described findings from three studies to illustrate the challenge of closing the persistent achievement gaps of Spanish second-language learners, who have to both learn to decode text and develop vocabulary and reading comprehension skills.

First, in a longitudinal study, Lesaux followed a cohort of 100 U.S.-born children of immigrant Spanish speakers in grades 4 through 8 who had enrolled in U.S. schools as kindergartners. Significant differences emerged between decoding and comprehension scores obtained with standardized measures of receptive and expressive vocabulary and comprehension. As shown in Figure 2-1, average percentile scores were higher for decoding than for oral and print comprehension measures (Crosson and Lesaux, 2010; Lesaux et al., 2010a). While decoding-based skills matched national norms, vocabulary and comprehension scores

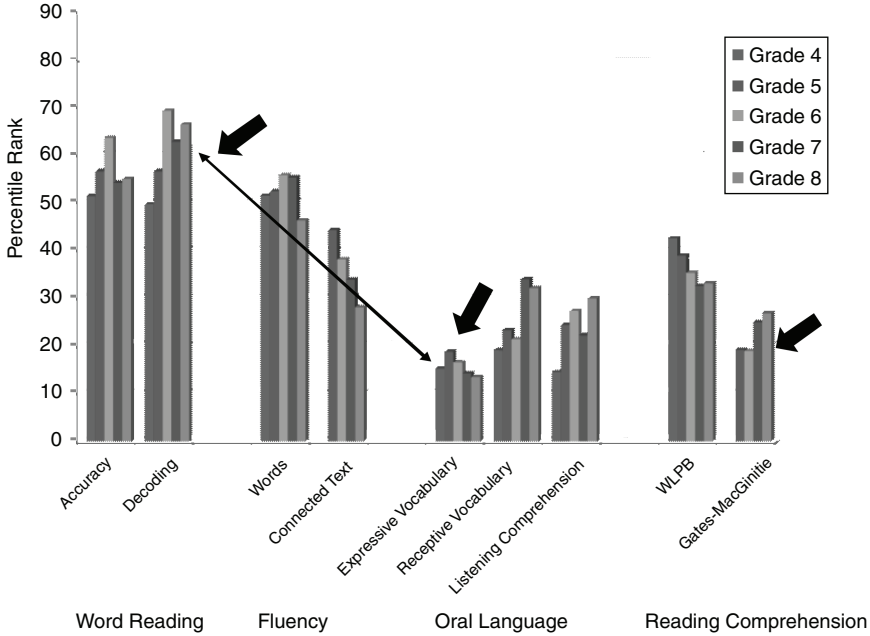


FIGURE 2-1 The gap between reading words and comprehending text.
NOTE: WLPB = Woodcock Language Proficiency Battery.
SOURCE: Lesaux (2009).

were significantly below national norms at both the 4th and 8th grade. Analysis of the growth trajectories for these children from ages 9 to 15 showed growth in all skills at a rate that is in line with the rate of growth that would be expected for English-only speakers (see Figure 2-2). Yet the Spanish-speakers' percentile rank did not change over time since they would have needed to experience even more accelerated growth to make up the difference and match English-only norms.

A second study focused on Spanish-speakers' vocabulary growth in both English and Spanish. Lesaux followed 200 English-only and Spanish-speaking children from the beginning of Head Start until almost the end of 6th grade. As in the longitudinal study, the rate of English vocabulary growth was consistent with what would be expected from English-only norms. The gap had began to close somewhat, but scores continued to trail English-only speakers (see Figure 2-3). In contrast to findings for English vocabulary, Spanish-speaking children lost ground in Spanish vocabulary compared with norms for monolingual Spanish speakers (see Figure 2-3) (Mancilla-Martinez and Lesaux, 2010, in press).

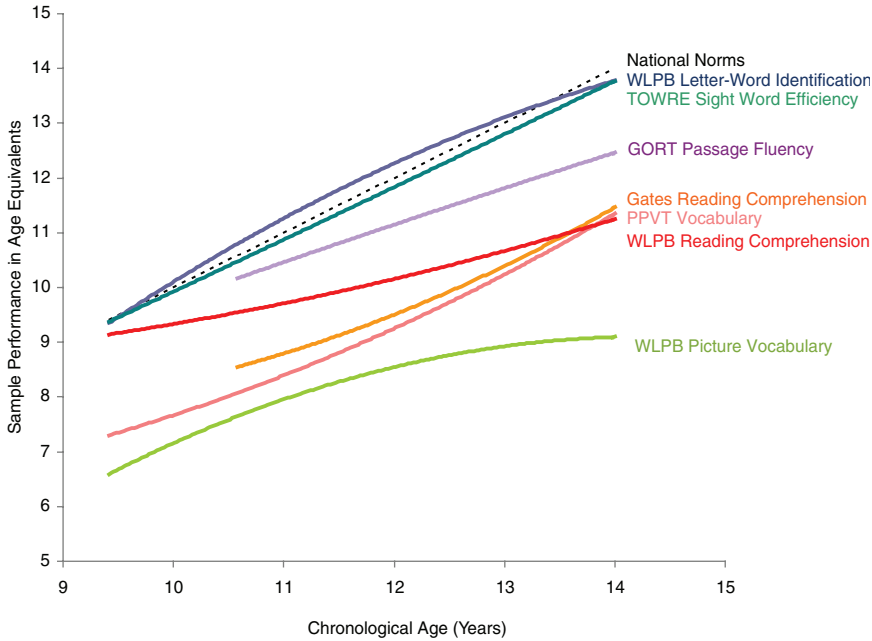


FIGURE 2-2 Growth trajectories for immigrant Spanish speakers: word reading, vocabulary, and reading comprehension compared to national norms.
SOURCE: Lesaux (2009).

Finally, a cross-sectional study of 581 6th graders struggling with reading comprehension showed that average percentile scores for *word reading accuracy* (decoding) were 64 for native speakers of English and 57 for language-minority children, respectively (Lesaux and Kieffer, in press). In contrast, *reading comprehension* scores were much lower for both groups: native speakers of English, 18; language-minority students, 19. Similarly, *vocabulary* scores showed significant differences: native speakers of English, 33; language-minority students, 22.

In discussing these findings, Lesaux noted that results from the second longitudinal study showing loss of Spanish combined with lower comprehension of English is likely to be influenced by policy and instructional climates for these and other English-language learners in the United States that prevent the use of Spanish in school and that discourage the use of Spanish at home. As a result, Spanish proficiencies do not reach expected norms and cannot be used as a resource for thinking through the meaning of words and concepts to be learned in school. Given this

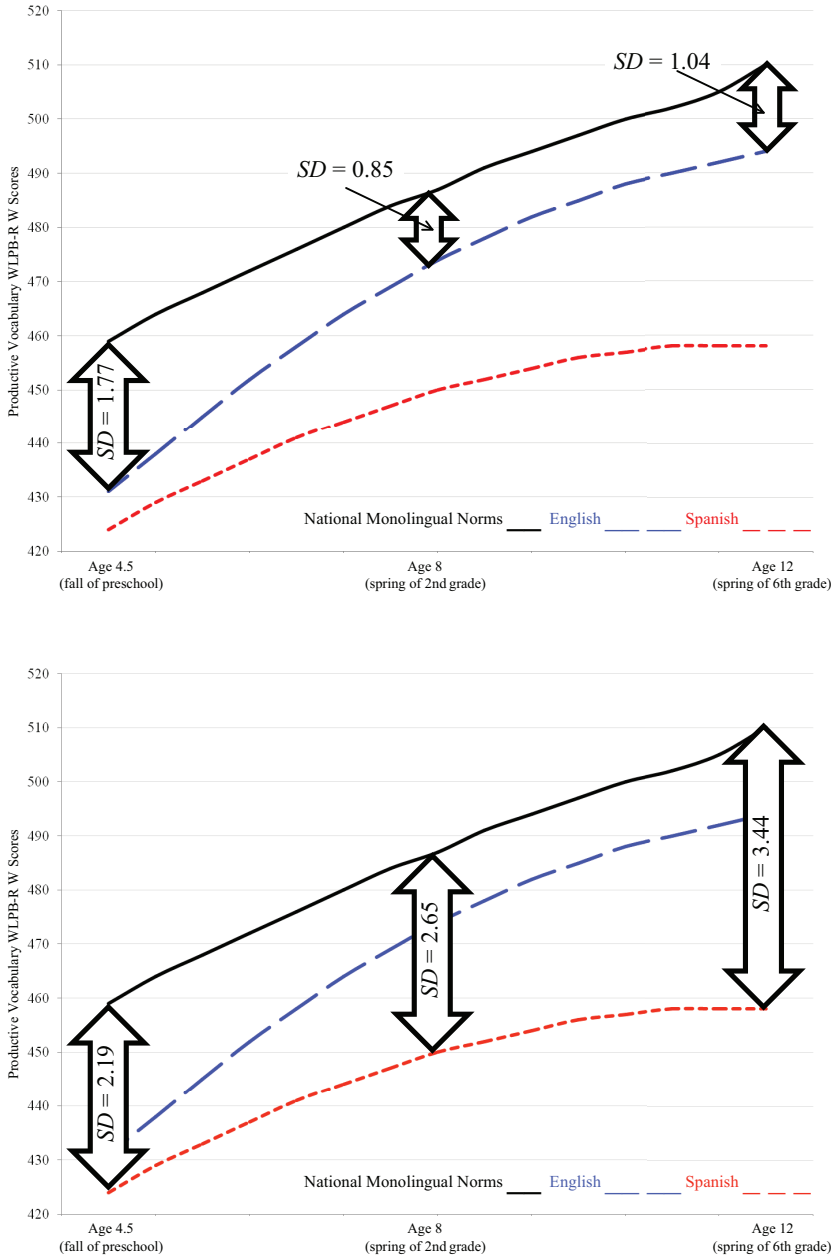


FIGURE 2-3 Productive English and Spanish vocabulary for Spanish-speaking children compared with national monolingual norms.
SOURCE: Lesaux (2009).

reality, what interventions might lead to the greatest gains in English oral language and reading comprehension in the shortest time possible?

Taken together, Lesaux said, the three studies illustrate the "daunting" challenge of reducing language and achievement gaps, and she encouraged thinking beyond specialist models and other sporadic approaches to intervention in use today. A universal design approach to instruction in which all children in the classroom receive the same curriculum and instruction for increasing vocabulary would be more feasible, she argued, in the face of rising immigration rates, increasing diversity in the languages spoken (in both rural and urban areas), and demands on classroom teachers to cope with this growing diversity. Lesaux has been studying the effectiveness of such a universal approach to developing language and reading comprehension in middle school classrooms. Academic Language Instruction for All Students (ALIAS) is a text-based curriculum designed as a 20-week intervention to be delivered for 45 minutes each day in all K-12 classrooms with high numbers of English-language learners.

ALIAS was developed by identifying "strong pieces" of curriculum-relevant text containing academic words and phrases likely to present difficulties to students who are struggling in school. The curriculum targets vocabulary by providing multiple opportunities to use words, posting visual resources for learning words, affirming the correct use of words, giving examples of word usage, and supporting students' writing and facilitating their talk using the words. Morphology activities, such as analyzing parts of words, are a focus for the equivalent of 2 full days. Despite their research showing the importance of morphology awareness to reading comprehension (Kieffer and Lesaux, 2008), morphology instruction typically does not occur in classrooms, and teachers reported that this part of the curriculum was the most challenging for them (see Figure 2-4).

ALIAS has been evaluated using a quasi-experimental design involving 476 students (346 language-minority and 130 native English speakers) in 21 6th grade classrooms assigned to be either a treatment classroom that received the curriculum or a matched control (Lesaux et al., 2010a). Measures of word mastery for the targeted vocabulary showed large and statistically significant effects, though these translated into learning an average of three to five new words. Measures of word analysis using morphological decomposition showed 6 months of extra growth against what would be expected from test norms for the same period. In addition, the Gates-MacGinitie reading comprehension measure revealed 8-9 months of growth beyond expected norms. Lesaux characterized the results as promising, especially in light of more limited gains reported in earlier research. A subsequent randomized trial was conducted in 2008-2009 that

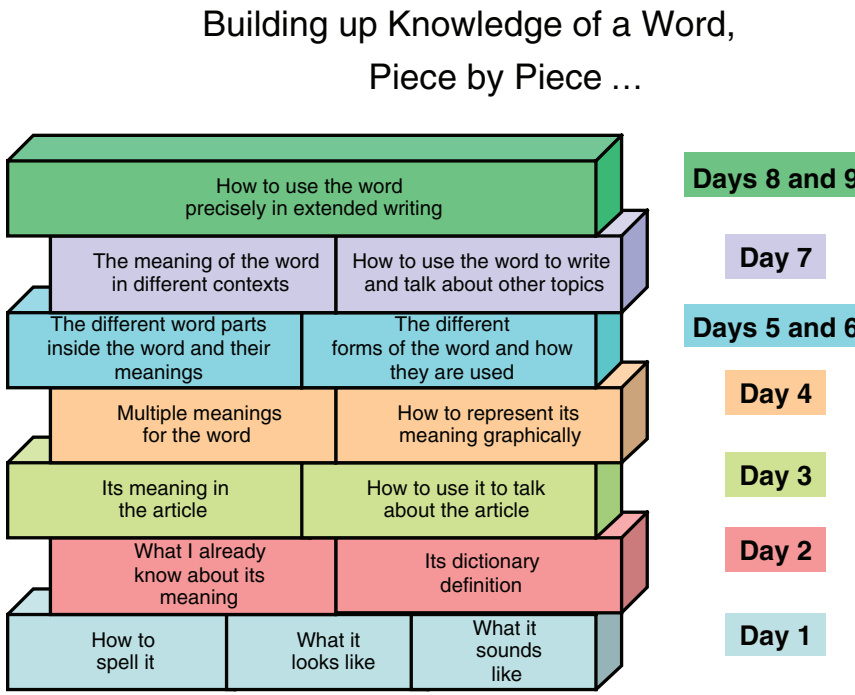


FIGURE 2-4 The ALIAS (Academic Language Instruction for All Students) text-based curriculum.
SOURCE: Lesaux (2009).

involved 14 middle schools (51 teachers and 2,500 language-minority and native English speakers). Preliminary results appear to replicate the findings from the first study.

Several questions remain about the meaning of some of the gains observed. For instance, what are the real implications of gaining three to five new words for school learning? Might individual differences be masked in reports of average group gains?: this possibility needs to be explored in these data and in other intervention research. What "dosage" of the intervention is required to result in a certain amount of gain? And what factors moderate the effectiveness of the intervention for certain students and under which conditions?

Moving forward, Lesaux asked what might be the best ways to systematically develop the type of explicit knowledge of language and language development that teachers likely would need to implement the ALIAS curriculum and other language-intensive approaches. Capacity building and paradigm shifting would both be required, she argued,

since in typical English-language acquisition instruction today very little instructional time is spent on vocabulary, and the techniques used to teach vocabulary, such as providing a single definition or example of a word, are too superficial for learning in light of research findings on how language develops.

Lesaux stressed that her own work, as well as that of Schleppegrell and others, makes clear that vocabulary is not the only essential focus for language instruction. Yet vocabulary might be a useful gateway for introducing knowledge about language to teachers. Teachers are familiar with vocabulary, and in Lesaux's study they reported liking the opportunity to help students learn vocabulary while the program actually included much more about language relating to morphology, the construction of sentences, and other linguistic features.

Several possible constraints on the effectiveness of vocabulary and reading comprehension interventions need to be examined and resolved, Lesaux noted. One difficulty lies in finding the most beneficial words to teach. Often teachers use lists associated with a certain curriculum or standardized test. But what words should teachers really target to produce the greatest gains in language and achievement? Another constraint may be the nature of the measures used in research, which may affect the size of intervention effects. The National Reading Panel (National Institute of Child Health and Human Development, 2000), for instance, found little evidence for the effectiveness of vocabulary interventions in studies with commonly used standardized measures of reading comprehension, though a few effects were found with investigator-developed measures.

Increasing the amount of classroom talk beyond what typically occurs could support language growth, but it is not enough for teachers simply to talk more. The quality of teachers' talk and students' contributions to classroom conversation need to be considered along with the quantity of talk. According to Lesaux, teachers tend to do the vast majority of talking in classrooms today, but preliminary analyses from her research with colleague Perla Gamez points to a lack of strong relationship between the quantity and syntactic complexity of teachers' talk in the classroom. The right balance needs to be found, Lesaux said, between teacher modeling of language and providing opportunities for students to participate in classroom talk in order to practice various uses of language for school. Structuring the linguistic environment to maximize learning would require teachers to have knowledge of language, the conditions that foster language development, and how to create these conditions in the context of school.

THE LINGUISTIC ENVIRONMENT

Respondent Aida Walqui said that the reviews by both Hoff (2009) and Schleppegrell (2009) supported that vocabulary is connected to a larger linguistic system and is only one of several aspects of language that need to be developed for academic purposes. In addition to vocabulary size, length and complexity of utterances also predict school achievement (Hoff, 2009), and composite measures of various aspects of children's oral language skills predict reading achievement better than vocabulary alone (Hoff, 2009). In her view, the findings of both panelists support providing students with rich and legitimate opportunities to hear good academic language models with students participating as valued contributors to discussion. The presentations also support guiding students' use of language while engaged in learning in the classroom to build specific aspects of language facility that are part of the school curricula.

Drawing on her own experience as an educator, Walqui noted several elements of language described in Schleppegrell (2009) that could be valuable to incorporate into academic instruction as the language encountered in school becomes more complex and comprehension demands increase. These include knowledge of genre (tasks and text types of different disciplines) and register variation (patterns of language that characterize various genres). Also needed is analysis of text to identify features that may affect comprehension, such as the authors' interpretive perspective, use of logical connections and cohesive reference chains, and other attributes that—if made explicit—might help students understand and interpret the meaning of a text. Also, teachers might arrange opportunities to speak in everyday conversation about academic themes while progressively inviting students to begin using academic registers for talking and writing about academic material. Walqui urged providing teachers with better analysis and understanding of the density and abstraction that appears in academic texts so that students' facility with comprehending these texts can be better supported.

But systemic changes in schools and teacher preparation would be required, Walqui argued, to make instructional practice consistent with findings in the research literature. In the United States, Walqui reported, 57 percent of English-language learners in middle schools and high schools are second- or third-generation immigrants who entered school as English-language learners in kindergarten but continue to be unable to perform complex academic tasks and to underperform in comparison with the native English-speaking population (Batalova, Fix, and Murray, 2007). As in the United States, first-generation language learners in Australia and Canada perform below the native-speaking population, according to data from the Program for International Student Assessment (Organisation for Economic Co-operation and Development, 2005). However, in

contrast to the United States, second-generation students in those countries begin to outperform native-speaking populations academically. In her view, one possible explanation for what appears to be greater progress for second-generation students in Australia could be that teacher education and professional development is grounded in a widespread approach to teaching language through text developed by Derewianka (1990) that focuses on developing academic language in a manner consistent with Schleppegrell (2009).

From her perspective as someone who offers professional development for teachers, Walqui concluded with several suggestions for translational research—studies to move basic research findings into practical applications, such as approaches to intervention, instruction, and assessment. First, teachers talk for most of the class time, leaving students little time to interact with one another around the academic material. Since this pedagogical approach has been ingrained in teachers' practice, teachers would benefit from education and support for planning activities that are structured to help students learn language as part of learning academic content.

Second, teachers often lack a deep knowledge of subject matter, including awareness of how language is used to construe knowledge and communicate in the disciplines they teach. Those who educate teachers also lack such awareness, as well as how to offer this knowledge about language uses in disciplines and supporting pedagogies to classroom teachers.

Third, research could help to create a coherent system of on-going professional development opportunities to help teachers support language growth across the curriculum. Currently, teachers of different disciplines (e.g., mathematics and science) attend separate workshops such that a "cacophony of practices" emerges with little coordination or collaboration within a school.

Fourth, research could explore ways to augment assessments of "mastery" or accuracy of linguistic structures with measures of other linguistic outcomes that are valued in the context of school, such as fluency and complexity of communication. For instance, assessments currently evaluate mastery of vocabulary isolated from academic content, and emphasize accuracy of grammatical structures. Measures could be developed to also evaluate how students actually use vocabulary and other aspects of language to complete academic tasks: Are students able to use vocabulary appropriately to put forth coherent arguments, order and prioritize ideas, and discuss ideas with one another? In this context, Walqui suggested, students may show more progress if grammatical errors are attended to only after students begin to use, depend on, and recognize the value of certain grammatical structures for communicating academic content in school.

Then, errors can begin to be noted and revised with the goal of achieving more grammatically accurate versions of student communications.

Finally, intervening with parents and families is more likely to complement language development efforts in school if those who work with parents and families understand and appreciate their linguistic resources while helping them talk with children to foster language growth.

DISCUSSION

Vocabulary

William Labov observed that progress with learning vocabulary is too slow, as Lesaux's data show. On what basis, he asked, do teachers, textbook authors, and so on, select vocabulary to teach? Words tend to be chosen, Schleppegrell explained, on the basis of curriculum topics, such as the Declaration of Independence, and so any efforts to teach vocabulary would need to start from the curriculum that is to be taught. Although "controlled vocabulary" is not part of the educational system, said Labov, it would be possible to create texts that introduce vocabulary in more systematic ways that relate to the curriculum and that also support broader language growth for academic learning. Vocabulary would be selected and ordered in a logical learning progression, using knowledge from research about language structures and how these develop.

Kenji Hakuta added that theory would need to guide which words to use and set expectations for learning, such as described in *Words Worth Teaching* (Biemiller and Boote, 2006; see also, Biemiller, 2008) which participant Claude Goldenberg went on to characterize as an actuarial approach. For instance, based on data from thousands of children, at what age does 90 percent of the population know a certain word? At what age does 50 percent of the population know a given word? Goldenberg characterized the three approaches that emerged in discussion as a linguistic approach, a curriculum-based approach, and an actuarial approach. He said that, together, they could be used to design more systematic ways of teaching vocabulary in a logical progression with supportive text materials.

Academic Language

A question was raised about the nature of the evidence for academic language instruction in supporting students' progress. The notion of academic registers, Otto Santa Ana observed, appears to be promising for supporting school learning in part because it focuses less attention on grammatical forms, at least initially, and so could more quickly develop

students' capacities to understand academic concepts and their ability to cope with dense, abstract texts. But what is the evidence, he asked—from studies conducted either in the United States or in other countries—that justifies using the framework as a means to develop and measure academic growth. According to Schleppegrell and Walqui, most of the work to this point has been qualitative (see Schleppegrell, 2009).

This discussion led to a topic that recurred throughout the workshop: the need for a clearer definition—an operational definition—of academic language. One participant wondered if it is "just" curriculum-based vocabulary or if there are other aspects of language that are needed to understand the lesson at hand. Labov suggested that the nominal style, discussed and illustrated in Schleppegrell (2009), is a good first approximation because prose with dense propositions is what children encounter in subject-matter text and academic learning. He noted, however, that this style "is being fought by the best teachers of composition" who favor a more verbal or direct style of prose.

Despite agreeing with observations reported in Hoff (2009) for children from lower SES homes, John Rickford voiced concerns about characterizing those children and children from minority groups on the basis of those data as living in "linguistic deserts." He said that his research and the work of Shirley Brice Heath and others have shown that children may be developing language valued in their communities, including rich narratives of personal experience. Lynne Vernon-Feagans said her work with narrative research with lower SES African American samples confirms such findings (e.g., Vernon-Feagans, 1996). Hoff responded that although children from disadvantaged or minority-language backgrounds may bring valuable language skills to school, "they know less of what works in the academic setting" in the United States. Several participants commented on how instruction might leverage some of the linguistic skills and practices that children bring to school to make academic learning easier. It could be useful, Rickford proposed, to study schools and teachers who have had at least some degree of success in building from the linguistic capabilities children already possess to develop the additional ones that would benefit learning in school.

Vernon-Feagans urged caution in interpreting past data on language input and the quality of children's language, given findings in her narrative research with lower SES and African American samples (e.g., Vernon-Feagans, 1996). After accounting for SES, which Hart and Risley (1995) and others did not do, African American and non–African American families did not differ in the amount of language used at home. (Hers was a large representative sample of every child born in three low-income counties in North Carolina and Pennsylvania.) SES differences in input also were not as stark as found in other studies. In addition, African American boys told

more complex stories at school age than middle-class white boys though this did not translate into facility with school tasks. For instance, African American boys in the study did not re-tell a story accurately when asked to listen to a story and paraphrase it, but instead expanded and embellished it. Vernon-Feagans said this story-telling style tends to be valued in many African American homes, but teachers see these expansions as errors or as a failure to follow directions.

Standardized measures also may be "limiting" what is known about students, according to Lesaux. Though used in research and high-stakes testing, current standard measures may not capture the range of children's language facility or identify certain linguistic strengths that could be leveraged for learning language related to school tasks. Similar to the findings of Vernon-Feagans, Lesaux noted that her research also shows that the complexity of ideas and language present in the oral narratives of children was not captured by standard vocabulary and comprehension measures that required forced choice. She suggested that the typical rubrics used to score narratives needed to be further refined and developed to capture variations associated with the influence of Spanish on narratives produced in English. Research on narrative production is underdeveloped; it could be advanced as a method for identifying existing linguistic strengths to inform the design of instruction.

David Dickinson stressed that to be valuable for narrowing achievement gaps, narrative research would need to target the particular speech and discourse skills relevant to school. Aida Walqui agreed and noted that not all aspects of narrative development that academic researchers tend to study are likely to matter for supporting the aspects of language used to engage with the rigorous school curricula that children must master.

Role of Families

A question was raised about how families should be engaged to support language for school learning. Hoff argued that, for families that do not provide rich language input, family intervention to increase language input can be helpful but it would not be enough to produce the magnitude of change in children's language development to make a difference in school achievement. In addition, family interventions might not always be feasible because they could place an unreasonable burden on already busy and stressed families. So, while engaging families might contribute some additional linguistic input, more would be needed from other sources.

Goldenberg agreed with Hoff about the magnitude of change that could be expected from at least certain kinds of family interventions.

For instance, studies of dialogic reading (see, e.g., Valdez-Menchaca and Whitehurst, 1992; Whitehurst et al., 1994) in which parents are taught to engage in elaborated discussions around book-reading tend to show "a bump" in language and literacy outcomes, but the effects were very small relative to the size of observed language and achievement gaps. Schleppegrell agreed with Hoff and noted that schools vary in the opportunities and resources they offer children. Creating the school environments that support language, Dickinson pointed out, will require more than material resources. Teachers must become experts in using those resources to engage children in the kinds of conversations that develop language.

Hirsh-Pasek cautioned against completely disregarding the impact of families. The NICHD Study of Early Child Care and Youth Development (funded by the National Institute of Child Health and Human Development) showed that school quality accounted for, at most, 5 percent of variability in outcomes, which included language and other proficiencies such as math; in contrast, 25 percent of the variance in outcomes was accounted for by variations in parenting (National Institute of Child Health and Human Development Early Child Care Research Network, 2003). Also, with respect to communities, some promising efforts in the United States include revamping libraries to go beyond lending books to include language-enrichment programs that model reading and speaking for children. It could be promising, she argued, to study the effects of such programs, as well as other partnerships that might be created among families, schools, local agencies, and community organizations. In establishing partnerships and collaborations, Robert Bayley cautioned against what he described as false collaborations, such as those he observed while working with Latino and Mexican American families in South Texas and the Bay Area, where schools paid little attention to families' desires to maintain the home language while children learn a new one, especially when working with English-language learners.

Given the wealth of evidence about the importance of early language input, several participants suggested that pediatricians and well-baby clinics are another potential community resource, though pediatricians probably need a better understanding of language development and better materials for helping parents to support language development, including bilingual development.

Peer Influences

More needs to be understood about peer influences on language development, especially for children from lower SES backgrounds. Vernon-Feagans described classroom structures in Raleigh, North Carolina, where

the goal is to have no more than 40 percent of children from low-income and minority communities. Achievement is higher than would be expected according to national data on achievement for these groups. (For background about the Wake County district focus on integration and achievement, see Grant, 2009.) In addition, recent analyses of data on children living in poverty from the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) study showed that, although teacher instruction and initial reading levels were strong predictors of reading during the first 3 years of school, minority segregation was the best predictor (Kainz and Vernon-Feagans, 2007). Research might explore whether peer influences could have contributed to these ECLS-K findings and, more generally, how peers affect language learning for and in the context of school. Schleppegrell agreed, and added that her work in classrooms in Dearborn, Michigan, supports the fruitfulness of studying peer influences on language. Children in her research were English-language learners from the Middle East who spoke Arabic as a first language and had varying levels of proficiency in English. They were not integrated into the community and spoke only Arabic at home, but opportunities for increased peer interaction in the classroom led to improvements in English oral language.

Teachers' Expectations

Schleppegrell emphasized that teachers' expectations are known to influence student performance. In her experience working with teachers, low expectations for children from lower-SES and minority language backgrounds are widespread and are exacerbated by the lack of opportunities to talk with students in the classroom. When conversations do start to occur in classrooms, teachers report being surprised about the strengths of their students and they begin to have higher expectations for performance. As a teacher educator, Susana Dutro agreed and added that in her experience teacher beliefs and misconceptions about language that stem from lack of knowledge about language and how it develops can contribute to low expectations for students. This situation, in turn, is compounded by the few opportunities teachers have to listen to students' thinking expressed in their own language and language varieties.

3

Supporting Preschool Language for School Learning

The second workshop session reviewed research on early language experiences with an emphasis on practices in preschool classrooms and aspects of early childhood interventions that contribute to developing the language proficiencies associated with academic learning and that could be especially important for closing achievement gaps. Of particular interest were the following questions: Which aspects of early preschool language affect later reading and academic achievement? Do language differences associated with socioeconomic status (SES), race, ethnicity, and home language affect reading and academic achievement outcomes for preschoolers, and if so, how can these differences be explained? What interventions show signs of being effective in helping preschoolers develop aspects of language that predict reading comprehension and academic achievement? With respect to young English-language learners, the session focused on the relation between first- and second-language development in the preschool years, and linkages between first- and second-language development and children's early literacy skills. Participants were asked to discuss the implications of this research for designing practices to develop children's second-language and early literacy proficiencies, especially in classroom settings.

A DEVELOPMENTAL AND PSYCHOLOGICAL PERSPECTIVE

Two aspects of preschool language—receptive and expressive vocabulary and comprehension and use of complex sentences and discourse—

predict later reading and other literacy skills, David Dickinson reported. For instance, several studies and a recent meta-analyses conducted by the National Early Literacy Panel (2008) have reported long-term relationships between aspects of vocabulary in early childhood and measures of reading comprehension in middle school and high school (see Dickinson and Freiberg, 2009). Beyond vocabulary, length of utterances and diversity of words at age 3 has predicted language, spelling, and reading skills in kindergarten and 3rd grade after controlling for SES and school attended (Walker et al., 1994). Similarly, a longitudinal study of 626 children from low-income homes showed that oral language at age 4 predicted reading comprehension in 3rd and 4th grade (Storch and Whitehurst, 2002). The National Early Reading Panel (2008) also recently reported from a meta-analysis that although expressive and productive vocabulary predicted reading comprehension, several measures of complex language, such as complexity of grammar, were better predictors.

Dickinson turned next to studies documenting group differences in language and achievement associated with SES, race, ethnicity, and home language. Such group differences emerge early and only increase with age (see Dickinson and Freiberg, 2009). Early language differences have been documented for each of these groups in nationally representative samples including research on Head Start (FACES, 2006), the Early Child Care Study (National Institute of Child Health and Human Development Early Child Care Research Network, 2003), and the Early Childhood Longitudinal Study (Chernoff et al., 2007). In addition, recent data collected by Dickinson and Ann Keiser at Vanderbilt University with 440 African American children in a Head Start program showed that standard measures of expressive and receptive vocabulary and broader language skills were all about one standard deviation below national norms for all children in the United States. Likewise, as mentioned earlier by Hoff, individual differences in language processing speed begin early, affect language learning, and are associated with poverty. More specifically, Anne Fernald and her colleagues (e.g., Fernald, Perfors, and Marchman, 2006) have shown that the speed of children's lexical access at 12-25 months correlates with parents' reports of children's vocabulary size and complexity of language use at 25 months. Children's rate of productive vocabulary growth also correlates with speed of lexical processing. In other research, Maria Vasilyeva and colleagues (2006) examined the use of complex syntax in relation to SES: they found that, at 22 months, all children used complex syntax at least some times, showing the potential to develop language complexity. However, by 42 months, the number of complex sentences used by children with low SES, while increasing, was much lower than the number used by more advantaged children (Vasilyeva, Huttenlocher, and Waterfall, 2006; Vasilyeva, Waterfall, and

Huttenlocher, 2008). Small SES-related differences in the complexity of language grow larger over time.

Findings such as these support the notion that all children come into the world ready to learn language, and, depending on how much language they hear, they become better and better at processing language. These data reflect more than biologically dictated trajectories in processing speed, Dickinson noted, because poverty, an environmental variable, is associated with variations in language input that are in turn associated with early differences in processing speed. Some of the most powerful findings from Hart and Risley (1995), he said, which tend not to be widely cited, also illustrate the power of early environments on the trajectory of children's vocabulary growth. Between 30 and 36 months the most advantaged children in their research gained 350 words, about half again as many as they knew at 30 months. Children from the lowest income backgrounds, despite having fewer words, also learned about half again as many words as they knew at 30 months. But given where the second group started and the nature of the linguistic input they continued to experience, they did not develop vocabulary to their full potential.

These early language differences associated with SES have implications for early reading. Christopher Lonigan and colleagues examined phonological awareness, a linguistic skill which predicts later reading, and found that, in contrast to children from middle-income homes, children entering kindergarten from lower income backgrounds had not progressed beyond the scores obtained as 3-year-olds, and so they were not as ready to engage with the kindergarten curriculum.

What accounts for differences in language learning associated with demographic variables? Dickinson argued the differences result from both the quantity and quality of language that children experience both inside and outside their homes. With respect to home experiences, many studies have found that frequency of book reading affects language learning (National Early Literacy Panel, 2008), as well as access to verbally active adults who engage children in conversation and given them access to the definitions of words (Hart and Risley, 1995; Weizman and Snow, 2001; Hoff, 2009; Zimmerman et al., 2009).

Next, Dickinson turned to research showing that preschool classroom experiences also affect language learning. New longitudinal research by Dickinson and Porche (not yet published) showed that language experiences in preschool classrooms at age 4 predicted receptive vocabulary in kindergarten, which in turn predicted receptive vocabulary at the end of 4th grade, accounting for 60 percent of the variance in 4th grade vocabulary scores. Similarly, language experiences in preschool classrooms accounted for 47 percent of the variance in 4th grade reading comprehension. More specifically, an indirect effect was evident in which preschool

classroom language experiences at age 4 predicted kindergarten vocabulary and print knowledge, which in turn predicted 4th grade reading comprehension.

Despite the importance of a child's early linguistic environment for later reading achievement, the support provided for language learning in preschool classrooms serving children from low-income backgrounds is frequently very weak. In one study of teacher and child talk with a sample of 16 classrooms, Dickinson found that for those classrooms ranking in the top quartile of talk, teachers expressed 1,208 utterances and children expressed 434. For classrooms in the bottom quartile, teachers provided 450 utterances and children provided 70. It is not yet clear how these differences will relate to children's later language, reading, and school achievement, he noted, but dramatic differences such as these are likely to affect such outcomes.

Interventions are needed to make teachers aware of their own language usage and ways to support children's language. To help researchers and teachers understand more about the preschool environments that children experience, better tools would need to be developed, ideally with the involvement of language experts, for assessing uses of language in classroom environments. Current measures of preschool classroom quality are very global and do not attend sufficiently to the linguistic aspects of classrooms.

What approaches to early childhood intervention are likely to support preschoolers' language? Broad interventions, such as public prekindergarten programs, have had some success (see Dickinson and Freiberg, 2009). Public pre-K programs with positive language outcomes tended to have several elements: teachers with relatively high salaries and more education, training and coaching support; better-than-average oversight and resources; and a strong curriculum designed to target language. Quality of delivery also matters. Interventions delivered by researchers may not be able to come to scale without significant support.

Parent-focused interventions also show promising results. The National Early Literacy Panel (2008) reported rather small but significant effects of parent-focused interventions on overall language and vocabulary, with stronger effects from birth to age 3. In addition, community-based programs that focused on book reading and were delivered through pediatricians have shown positive outcomes.

Dickinson concluded with suggestions for early language-learning research in four categories (elaborated further in Dickinson and Freiberg, 2009):

1. descriptions of early childhood classroom language environments, including the factors that constrain and promote certain types and patterns of language use;

2. language learning, including research to identify the range of linguistic supports needed at different points in development and to indicate how much growth is possible at different ages;
3. teaching and learning, which includes research to identify preschool classroom configurations (small groups and large groups), activities, and practices that support language learning and how the outcomes vary according to age and other characteristics of children; and
4. intervening, or research that translates the above knowledge into effective and sustainable instructional approaches.

YOUNG DUAL-LANGUAGE LEARNERS

Carol Scheffner Hammer reviewed research on the language development of dual-language learners during preschool and on linkages to reading development in kindergarten and 1st grade. She defined dual-language learners as preschool-age children who have been learning Spanish and English simultaneously since birth or who began learning the second language with the onset of schooling.

With respect to the early language of bilingual infants and toddlers, it is known that development is similar to that of monolinguals: for instance, bilinguals say their first words, begin producing phrases, and start expressing themselves through sentences at the same time that monolingual children do. Vocabulary size, with both languages combined, is comparable to that of monolingual children. Developmental pathways can diverge, however: one example is differences in the order in which bilingual and monolingual children acquire grammatical morphemes.

Despite their increasing numbers in U.S. schools, little research has documented the language experiences of dual-language preschoolers and how those experiences affect subsequent language growth, literacy development, and school achievement. Instead, the research on preschoolers has focused quite narrowly on children from low-income, Spanish-speaking backgrounds, and it primarily includes children who attended English immersion classes because that type of approach is the most widely available. Studies of preschoolers to date show that scores on measures of English vocabulary and English auditory comprehension for Spanish-speaking children who are dual-language learners from low-income households tend to fall one to two standard deviations below monolingual norms in both languages at the beginning of preschool (see Hammer, 2009). Though gains are usually made during the preschool years, children typically finish preschool with scores that remain below monolingual norms in each language. Likewise, studies that have measured early literacy outcomes for young dual-language learners find that

children both enter and finish preschool with early literacy skills that are within one standard deviation below monolingual norms (see Hammer, 2009, for a review).

Because research has focused on children from families with low incomes, the findings just noted may be due to SES-related factors. More generally, bilingual children tend to be studied as if they are a monolithic group. Many individual differences potentially affect children's outcomes, and so it is difficult to draw strong conclusions about language learning from existing data. Several researchers (including Hammer) have argued, for instance, that two important individual differences that affect learning may be the timing of exposure to the second language and the degree of second-language proficiency at school entry.

For instance, data from the Early Childhood Longitudinal Study-Kindergarten Cohort shows that differences in the early reading development of dual-language learners depend on whether or not children were proficient in English when they entered kindergarten (Kieffer, 2008). Children who were proficient in English at the beginning of kindergarten demonstrated reading trajectories that were similar to monolingual English speakers. Children who were not proficient in English at the beginning of kindergarten had developmental trajectories that were lower than proficient speakers, with the differences increasing over time, though the effect of initial English proficiency on children's reading trajectories was attenuated after controlling for socioeconomic factors.

Only a few studies have explored how exposure to English versus Spanish at home before kindergarten might affect the trajectory of language and literacy learning for Spanish-speaking children in the early grades (see Hammer, 2009). Hammer reported on longitudinal research designed to examine this question for children from Spanish-speaking homes who attended an English immersion Head Start program for 2 years. Some of the preschoolers came from homes that communicated in Spanish and English before the children entered Head Start and other children came from homes that used only Spanish. Children's performance was documented using standardized measures of language and literacy in both English and Spanish that were normed on monolingual speakers. Hammer cautioned, however, that dual-language learners should not be expected to perform like monolingual children because the linguistic experiences of monolingual speakers and dual-language learners differ. Ideally tests standardized on bilingual populations should be used to examine dual-language learners' development. However, tests standardized on dual-language populations did not exist at the time the study was conducted.

At the beginning of the Head Start program, both the English- and Spanish-language scores for all the dual-language learners were signifi-

cantly lower than monolingual norms, as might be expected for a low-income sample. After attending the English immersion Head Start program for 2 years and kindergarten, children's receptive vocabulary increased to within one standard deviation of standardized English monolingual norms for their age group, and their auditory comprehension was at the standardized monolingual mean. Spanish-language scores, however, did not keep up with Spanish monolingual norms, which could be the result of attending an English immersion preschool, Hammer said. English and Spanish vocabulary grew faster, however, for children from homes that did not communicate in English.

With respect to literacy, all children experienced small increases in their English and Spanish letter knowledge, phonological awareness, and other emergent literacy skills after 2 years of attending the Head Start program. Moreover, in kindergarten and 1st grade, all the children continued to make substantial gains in English phonological awareness and letter-word knowledge and either met or exceeded the English monolingual norms. At 1st grade, English reading comprehension was also above the monolingual norm for all children.

Spanish literacy, however, showed some declines after the Head Start English immersion program. Children's Spanish phonological awareness and letter knowledge increased through kindergarten but their Spanish letter-word identification and reading comprehension were not as strong as their English abilities in these areas in the early elementary grades. Decreases in Spanish literacy skills continued as children progressed through 2nd grade, with children from homes in which English was spoken scoring nearly three standard deviations below Spanish monolingual norms.

Next Hammer described relationships that were observed between home language usage and children's language and emergent literacy development. Mothers' use of Spanish at home did not affect growth in English vocabulary or English early literacy skills, but it was associated with Spanish vocabulary growth. Perhaps surprisingly, continued use of English at home was not associated with growth in English vocabulary, though it did appear to slow Spanish vocabulary growth. Hammer speculated that children's exposure to English in their communities and schools reached a threshold beyond which home use of English did not measurably hinder or promote English vocabulary growth, while home use of Spanish gave children critical exposure not received elsewhere.

Additionally, Hammer discussed relationships between language growth during Head Start and children's reading outcomes in early grades. Findings showed that growth in Spanish language (as well as English language) during Head Start predicted both Spanish and English reading outcomes in kindergarten and 1st grade. This finding for children's lan-

guage growth is consistent with the interpretation that growth in Spanish relates positively to learning to read in English, Hammer said. The findings contradict research with older school-age populations, however, for whom the results have been mixed. Demographic and language differences across the populations studied might explain the differences, Hammer said. Alternatively, the results may be explained by differences in methodology: Hammer measured the rate of growth in language over time in her preschool samples whereas the studies of older children measured children's language at one point in time. Thus, Hammer concluded, to fully understand how a first language affects developing a second language over time, more attention needs to be paid to measures of growth using longitudinal research designs.

What strategies might teachers use to promote dual-language learners' language development in preschool? Only a few studies have addressed this question, and so little direct evidence exists, Hammer said. Three new studies funded by NICHD are being conducted at Florida State University, Temple University, and the University of North Carolina to determine the effects of various preschool curricula. Meanwhile, results from only a handful of studies are available on the possible effectiveness of preschool curricula and programs (see Hammer, 2009).

One study examined the impact of attending a bilingual preschool program on children's Spanish- and English-language development. Compared with children at home during the day, children who attended bilingual preschools made greater gains in English skills while maintaining Spanish (Rodriguez et al., 1995). Two other studies examined the impact of curricula on language and other achievement-related outcomes. Barnett and colleagues (Barnett et al., 2008) conducted a randomized trial to evaluate the effect of the curriculum *Tools of the Mind* on preschoolers' language, literacy, and social behavior. In the study sample, 93 percent of the children were Hispanic and for 63 percent of them Spanish was spoken at home. The curriculum had positive effects on such outcomes as English vocabulary and Spanish receptive and expressive language.

The curriculum *Literacy Express* has been evaluated in an experiment in which children were randomly assigned to a control classroom or to one of two types of instruction: an English-only version of the program or a transitional version in which Spanish instruction gradually transitioned to English (Farver, Lonigan, and Eppe, 2009). The children who received either type of instruction made greater gains in Spanish and English literacy (print knowledge and phonological awareness) than children in the control classrooms. The children in both experimental conditions experienced English vocabulary gains, but children in the transitional program had higher scores on English vocabulary definitions and print knowledge than did those in the English immersion group. In addition,

the transitional approach was the only one that supported language and literacy outcomes in both Spanish and English.

In closing, Hammer summarized several areas of research that would help to better understand dual-language learners and their progress with language, learning, and achievement. First, better descriptions of study populations and samples are needed to understand the heterogeneity of English-language learners. Better documentation of the characteristics of study samples, including information about proficiencies in all languages spoken and other characteristics, would help to interpret study findings.

Second, how early language experiences relate to reading and later achievement is not well understood: much more needs to be known about how uses of first and second languages at home affect first and second language growth. Thus, longitudinal studies of children's language and literacy are needed to assess growth in first- and second-language and literacy proficiencies and to identify influences on their development. Third, most of the research to date has confounded language status with SES and has focused mainly on low-SES bilinguals: more research is needed that disentangles language experiences and SES.

Fourth, more second languages than Spanish need to be included in research studies to help interpret whether findings apply to the general experience of learning two languages or only to a particular language or population. Finally, intervention studies are needed to determine the effectiveness of various instructional models, curricula, and teaching techniques. Such studies should identify which approaches work best in terms of children's language proficiencies and other characteristics. As part of this work, language facilitation strategies with evidence for their role in supporting the language development of monolinguals, such as modeling language, recasting, extending, and elaborating utterances, would be useful to incorporate into instructional approaches and to test.

INTERVENTIONS

Kathy Hirsh-Pasek and Roberta Golinkoff began their comments by noting two "big ideas" in understanding reading. First, reading is parasitic on language, a point first made by Gibson and Levin (1975) and later elaborated by Hollis Scarborough (2001) who compared learning to read to weaving a rope. Learning to read involves weaving together separate strands of skill; vocabulary and decoding, for instance, are but single strands of the rope. A broader view of language and its relation to reading development is essential to, first, understand the nature of each strand and, then, decipher how the strands of the rope become woven together. Second, language learning is malleable, as shown by both home and classroom intervention research.

To develop more effective preschool interventions, Hirsh-Pasek outlined seven empirically based principles for early childhood language learning derived from the research literature and which were recently applied in developing a preschool curriculum for the state of California (California Department of Education, 2008).

1. Children learn the words they hear most often.
2. Children learn words for things that interest them.
3. Children learn best in environments that are interactive and responsive rather than passive or "repeat after me" environments.
4. Children learn words in meaningful contexts rather than in isolation.
5. Children need clear information about the meanings of words and strong conceptual understanding, which can be developed by building on what children already know, including what is known about and through other languages.
6. Vocabulary learning is intrinsically intertwined with other areas of language development, especially grammar.
7. A cornucopia of words must be learned that includes not only object words, but also words for actions, attributes, and spatial concepts.

These principles apply, Hirsh-Pasek argued, regardless of whether a child is learning a first or second language and regardless of the particular language being learned. Instructional approaches with more of these principles should result in progressively better language outcomes, she predicted, but how to apply these principles to early childhood interventions needs to be better understood.

Hirsh-Pasek identified five "burning issues" relating to language in the early childhood education field. First, she argued, different aspects of language (phonological awareness, vocabulary, morphology, and so on) have direct and indirect effects on reading and learning. Phonological awareness is one language skill known to have a direct effect on reading achievement, but the importance of other language skills to reading are sometimes underestimated because their influence is indirect.

Second, the time has come to go beyond the general claim that more language input is always better to define which language experiences matter the most and how they have their effects: for instance, through affecting underlying cognitive processes such as faster vocabulary retrieval. As part of refining future work, the current focus on noun-based vocabulary needs to be expanded to focus attention on other aspects of language that are equally important and that can be learned, such as grammar and uses of

verbs and other words for generating complex sentences and participating in discourse.

Third, as Lesaux mentioned earlier, understanding dosage effects would help determine how much intervention is needed to see desired changes in children's language: Are there tipping points or essential thresholds to identify? It would be helpful to be able to have enough studies on this question to be able to conduct meta-analyses to link intervention duration, type, and timing to units of outcomes.

Fourth, what is the impact of having a second language on children's linguistic, cognitive, and reading development? As Hammer reported, the literature appears to be mixed. Hirsh-Pasek noted that some researchers, among them Laura Ann Petitto (see, e.g., Petitto and Dunbar, 2009) and Ellen Bialystok (see, e.g., Bialystok, Luk, and Kwan, 2005; Bialystok et al., 2005) have reported that a second language benefits cognitive processing (e.g., attention control) and metalinguistic skill, while other data suggest that a second language dampens vocabulary growth at least temporarily and under some conditions. One problem with interpreting the literature for preschoolers on this point is that SES has not been sufficiently controlled.

Fifth, there are remaining challenges that include discovering how to encourage teachers to implement effective interventions with fidelity and refining approaches to measurement. Should researchers develop a set of standard metrics for assessing language, literacy, and other measures? This question is critical given that findings for a particular construct, such as phonological awareness, often appear to vary depending on the measure.

Hirsh-Pasek concluded by proposing the need to reimagine language and reading instruction, especially with the increased emphasis on memorization that has accompanied implementation of the No Child Left Behind Act. In addition, since teaching is influenced by the available assessment tools, teachers could benefit from having a broader conception of language and related assessments to help develop the range of language skills needed for reading and communicating, which in turn support learning in mathematics, science, and all other subjects.

POPULATION CHARACTERISTICS

Mariela Paez's response also emphasized that a focus on early language is warranted because it is vital to reading achievement, which is foundational for school success. But she cautioned that the studies reviewed for the workshop largely miss the children who do not attend preschool for a variety of reasons, and, according to data collected by

Barnett and Yarosz (2007) those are often the children who have the most to gain.

Paez agreed with Dickinson and Frieberg (2009) and Hammer (2009) that it is critical to measure natural variation in children's learning experiences, and she also agreed that convincing evidence is accumulating to show that such factors as SES, race, ethnicity, home language and literacy environments, as well as participation in preschool, are all associated with differences in children's language skills. It is now important to conduct research to better understand the processes by which these factors affect language and literacy and to develop interventions that can support language and literacy in schools and classrooms. Paez outlined considerations when designing such research.

First, consistent with Hammer, Paez noted the need to further specify and diversify the sample populations to better understand individual differences. Most research with dual-language learners has been with Spanish-speaking children from low-income backgrounds (Hammer, 2009). Differences within Spanish-speaking groups also remain to be explored. For instance, does a 4-year-old who attends a preschool program in California with predominantly Spanish speakers have the same kind of language experience as a child in the Northeast who attends a Head Start program with children who represent 8 or 10 languages? Research does not currently capture such nuances so their implications for language learning and achievement are not known. Large-scale studies, which are most likely to inform instructional and policy decisions, especially need to do a better job of capturing complex contextual influences on language and learning.

More work is needed to compare different groups of dual-language learners, especially in the preschool period and to replicate studies of older children with preschool students. Recent research by Bialystok and colleagues (see, e.g., Bialystok, Luk, and Kwan, 2005) compared three different groups of bilingual students—Chinese and English, Hebrew and English, and Spanish and English—to examine how aspects of language development transfer across languages; and the work took into account the unique social and cultural contexts of each group. Such work, if replicated and pursued further with preschoolers, would lead to better understandings about how different dual-language learners develop that could be used to inform interventions and instructional approaches.

With respect to measurement and assessment, there is no consensus in the field about the best way to assess bilingual dual-language learners, and few sound measures are available for bilingual children. Various approaches could be systematically evaluated to determine which ones are most useful to pursue for research, practice, and policy, taking into consideration several factors. Because young children are experiencing

rapid growth, measures are needed to measure change, which cannot be done well with existing standard measures. In addition, the standardized measures available capture only a small part of children's knowledge, consisting of only a few items within each skill domain. Echoing Hirsh-Pasek, Paez said that multidimensional measures of language are needed to assess not only vocabulary, but also syntactic knowledge and extended discourse skills. Research on narrative skill holds great promise, she said, and so it is important to carry out, despite the expense and time-consuming nature of collecting and analyzing narrative data. Finally, new language measures are needed not only for research purposes, but also to help teachers plan instruction.

Longitudinal research will be especially important for studying dual-language learners, according to Paez, because these children might take more time than monolingual children to develop English-language and literacy skills. Research is also needed on effective curricula and approaches to language instruction and intervention. At this time, language of instruction is a priority issue, Paez argued, and research supports using and developing children's home languages. As discussed earlier, the research shows that Spanish instruction does not harm English-language learning and appears to benefit a range of linguistic and cognitive outcomes. An important step forward for policy could be to replicate recent work (see, e.g., Barnett et al., 2007) showing the effects of preschool two-way language programs on both English and Spanish development.

A BASE FOR FUTURE RESEARCH

In her response, Jill de Villiers noted that several presenters had called attention to the need to study more diverse populations, more languages, and more aspects of language than vocabulary. These calls point to the need to be cautious about prematurely generalizing the findings available, taking care, for example, not to interpret studies focused on vocabulary as speaking to language abilities more generally, or inferring that results for decoding skills all refer to reading. Likewise it is important not to generalize results from studies of children in poverty to all language-minority children or all dialect speakers, or to generalize results for sequential bilingual children to all bilingual children, or from Spanish dual-language learners to dual-language learners in all languages.

De Villiers noted that the research reviewed had different purposes and focused at different levels of analysis, including naturalistic studies of variations in children's early childhood environments and relations to children's language and learning; intervention studies to evaluate instructional interactions in the classroom; intervention studies to modify parental language; intervention efficacy studies to identify the condi-

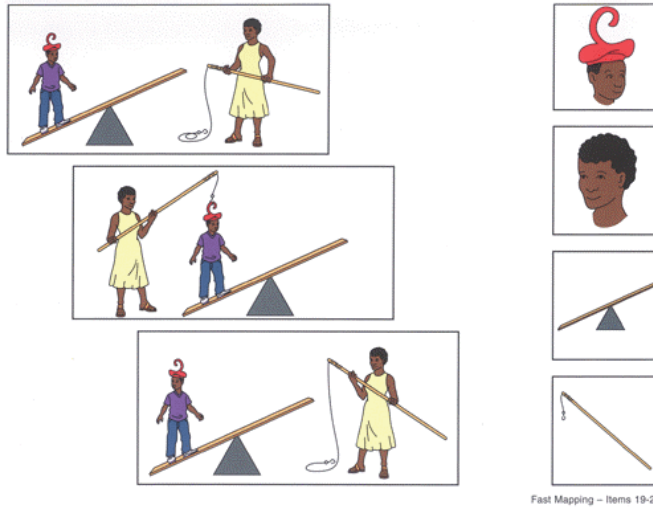
tions that influence effectiveness, and so on. All types of research efforts could be better integrated in the future to create a more coherent base of knowledge.

It will also be critical to discover how multiple levels of language are interconnected. For instance, phonological awareness contributes to vocabulary learning, but does vocabulary learning undergird phonological decoding? Vocabulary is needed to crack the code of syntax and morphology, but once syntax and morphology are mastered, they can be used to learn new words. Narrative and discourse motivate the use of syntax and morphology, but one needs good syntax and morphology to build complicated discourse. Though the precise definition of "academic language" may be debated, language used in school is densely packed text with noun-based propositions and words that present challenges because they are derivationally complex or abstract. As noted by Schleppegrell (2009), analyzing linguistic devices used to connect text could help students to unpack complex dense narrative and discourse. Yet, having some degree of skill in narrative and discourse in the first place aids in figuring out connected text.

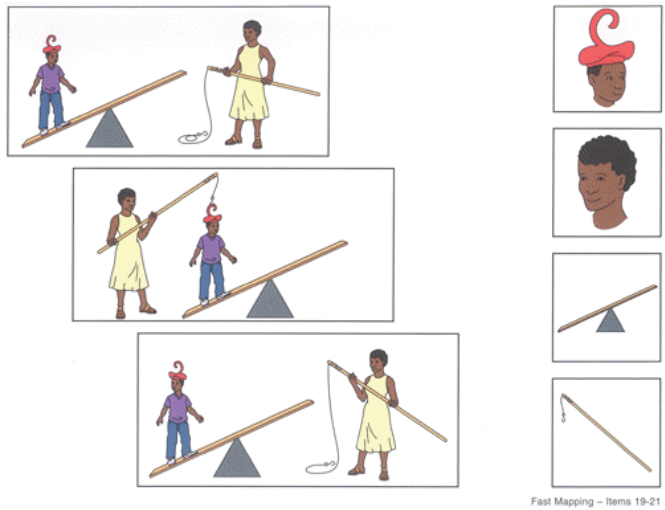
Children encounter all of this complex interconnectedness when learning oral language and then again when learning to read, which occurs well before many of the complexities with oral language have been mastered. As a result, oral language and written language must develop in tandem. The complexity gets compounded further when young children are learning to speak, read, and write in a second language and are influenced by their level of knowledge and skill in their first-language oral, reading, and writing proficiencies.

To better understand this complexity going forward, de Villiers argued for a more refined analysis of children's grammatical development that could be used to support language and reading in school. Research on syntactic bootstrapping, for instance, has revealed how children use grammatical structure and vocabulary to comprehend oral language. De Villiers presented an example from research in which children were to figure out the meaning of two unknown words—both action verbs—read to them as they viewed pictures involving a boy and a woman depicting the actions (see Figure 3-1).

For the first picture, children are told "Look at this. The boy is temming. Which one is the temmer?" In the second picture, children are told "The woman is meeping the boy. Which one is the meeper?" If read with the vocabulary items "boy" and "woman" removed (e.g., Someone is temming. Which one is the temmer?), the meaning becomes ambiguous. Either the boy or the woman could be doing the action: thus, knowing the vocabulary items "boy" and "woman" was needed to figure out the meaning of the intransitive form of the verb. In contrast, answering ques-



The boy is temming. Which one is the temmer?
The woman is meeping the boy. Which one is the meeper?



Someone is temming. Which one is the temmer?
Someone is meeping someone. Which one is the meeper?

FIGURE 3-1 Determining the meaning of unknown vocabulary words using grammatical clues (Syntactic Bootstrapping).
SOURCE: Items from the Tryout Edition of the Dialect Sensitive Language Test (DSLT). Copyright © 2000 NCS Pearson, Inc. Reproduced with permission. All rights reserved.

tions about the transitive form—"Someone is meeping someone. Which one is the meeper?"—can be done using information available in the syntactical structure and the pictures provided.

Models of learning that emphasize frequent exposure to language, active participatory rehearsal, and elaborative rehearsal to connect what is to be learned with what a child already knows have been around for a century and are rather primitive for the task at hand, in de Villiers' view. More than 40 years of research has accumulated about children's grammar development that could be used to build a more precise science on the linguistic supports that help students learn aspects of language used in academic settings. More exact models of the way children parse new linguistic input could be articulated according to their stage of linguistic development to identify the critical ingredients to include in children's exposure to language. The next challenge would be to convert this knowledge into deliverable educational experiences, such as creating instructional interactions and texts that can support learning.

Consider, for instance, that if 5- to 7-year-old children are asked, "How did she know where he went?" they will typically answer the "where he went" part of the question instead of the actual "how did she know" question that was asked. Young children are attracted to closing off that second clause and do not incorporate it into the entire sentence. (Interestingly, young speakers of what is commonly known as African American English do not make this error due to differences in grammatical patterns.) It is not known whether children make this error with reading. This example shows, de Villiers argued, that to better understand the relationship between oral parsing strategies and parsing strategies used in reading print, research is needed to determine how what is known about the development of children's grammatical competencies might be used to help guide reading instruction and other academic uses of language.

De Villiers cautioned, however, that several questions remain about the learning conditions for complex language:

- How much does sheer frequency of exposure help language learning? Does the importance of frequent exposure fade over time? For instance, second-language learners have particular difficulty with such structures as gendered articles, noun-verb agreement, and other "empty forms" that native-language learners develop quickly and easily. De Villiers speculated that frequency of exposure as a mechanism for learning may become less important if these forms are not essential for communicating meanings needed for learning academic content, or because there is a critical period for learning these forms so that no amount of exposure will help.

- Could the effects of exposure differ for vocabulary and grammatical structure? Perhaps repetition helps to learn words but not grammatical structure.
- When does variegated experience matter most? For instance, multiple frames are known to help with learning verbs, and the importance of variegated experience has been corroborated in Schleppegrell's work (see Schleppegrell, 2009) on academic text showing that rephrasings that offer multiple exposures to words in multiple contexts aids learning.
- When is it helpful or even necessary to experience linguistic contrasts: two sentences next to one another with a tiny structural difference that makes a significant difference in meaning?
- When is it necessary for the content to be interesting? Might cultural background affect what is found to be interesting?

To broaden the options young children have to hear and respond to more "interesting" and important language, de Villiers argued for designing children's books with the dual purpose of providing content and featuring linguistic contrasts. Is it possible to create academic texts that present curriculum-based content with this kind of embedded linguistic quality, and if created, would they facilitate second-language learning? Software, de Villiers suggested, is another unexploited resource for linguistic interventions. Instead of the usual trial-and-error problem solving in adventure games, players might be asked to solve linguistic puzzles en route.

Moving forward, de Villiers offered several items to consider with respect to the broader context of language learning. First, what might the ideal balance be between implementing universal approaches for developing language and strategies that consider individual language uses in particular communities? Second, if school doesn't "feel or sound like home" to students, is it important to focus on changing the schools that children enter as much as the homes they come from? One might even ask, despite the clear importance of language to schooling, whether language is the most urgent problem to address in schools for narrowing achievement gaps. Certain practices in classrooms and schools, some of which occur disproportionately in low-income preschools, may affect learning more than finding better ways to teach vocabulary, for instance. Finally, certain dialects or languages often are not seen as bringing "cultural capital" to school learning, and de Villiers expressed her agreement with other participants that there could be benefits to raising the perceived value of the languages and language variations that children bring to school as part of creating environments that are supportive of learning.

DISCUSSION

Environmental Factors

Under the right circumstances, Fred Genesee stressed, learning a second language is not particularly challenging for most young children. The differences and lags reported by Hammer (2009) for early dual-language learners, he noted, are not "natural"—they are not inherent in the child or an inevitable trajectory in the process of learning two languages. Rather, evidence has accumulated to suggest that these variations are due mainly to environmental factors, such as the age of onset in learning a new language, the amount of exposure, and type of exposure to language. One such environmental factor is whether two languages are learned simultaneously from birth or are learned sequentially. With the possible exception of vocabulary, monolingual children and children who learn two languages simultaneously, given sufficient input in both languages, develop similarly. And it is known that vocabulary can continue to grow, unlike grammar, which may be constrained by a critical period. Moving forward, a more fine-grained understanding is needed, he proposed, regarding exactly what learning outcomes can be expected under more precisely defined learning conditions.

Lesaux agreed, saying that her data support this argument since Spanish-speaking English-language learners showed the same rates of vocabulary growth as English-only speakers. Moreover, the quality of instruction was an environmental factor that made it difficult for all bilinguals to catch up to monolingual norms. Hammer concurred, and reiterated that the growth rates for English vocabulary among bilingual children were not flat in her research: rather, bilingual children gained on monolingual peers, with children who were exposed to English before Head Start gaining the most (Hammer, 2009).

Test Uses and Limitations

William Labov noted contradictions in the previous panel discussion regarding the relationship of SES to language growth. Several participants, he noted, have emphasized the importance of valuing the languages and variations that low-income African American or Latino children bring from their home communities. Yet, data presented in the first panel, derived mainly from standardized tests, clearly show impoverished language that could be considered a deficit. Labov asked David Dickinson to address how these two views might be reconciled.

Dickinson responded that, in his view, the contradiction lies in what the language is needed for: the purpose or task that drives expectations for language outcomes. Some children from low-income backgrounds have

weaknesses in some aspects of language (particularly receptive vocabulary as measured by the Picture Peabody Vocabulary Test [PPVT]) that predict reading and achievement in other academic areas. Another related question is how curricula might be designed to build on the language strengths that researchers are documenting. A good example is the expressive discourse of children from families such as those in Vernon-Feagan's research (e.g., Vernon-Feagans, 1996; see also Chapter 2) that are both low income and African American.

Otto Santa Ana asked why the PPVT is used in much of the language-development research presented by Dickinson and Freiberg (2009), Hammer (2009), and Lesaux (2009), and about the evidence for its validity: Should findings for the PPVT be "taken with a grain of salt?" De Villiers said that it is not adequate to assume that the PPVT is a valid measure just because it results in normal statistical curves for subgroups given that African American children score consistently below the mean of other English speakers.

De Villiers described a new measure she has developed, the Diagnostic Evaluation of Language Variance (DELV) Screening Test, which includes three indices of semantic development intended to substitute for an acquired vocabulary. It was designed to create contexts in which African American dialect users and English learners in the 4- to 10-year-old range perform identically to English-only speakers of standard English, while correctly identifying children in all of these groups with diagnosable language disorders. The first measure assesses whether children learned a new verb from a sentence context, as illustrated in de Villiers' presentation. A second measure assesses contrasted vocabulary. For instance, children are shown a picture of a man coming down stairs on his hands and knees and are told, "This man is not walking down the stairs. He is. . . ." Children must come up with a contrasting word or phrase. The third measure assesses understanding of quantifiers.

It is difficult to check the educational validity of these new measures, de Villiers explained, because with constraints on the number of measures that can be included in a single study, most researchers choose to be able to compare their results to previous work and especially with large-scale studies that have used the PPVT. Kathy Hirsh-Pasek agreed this was her experience with selecting measures for the Early Child Care Study for NICHD.

Dickinson noted that the PPVT-4, the most recent version, is reported to have fewer cultural bias problems than the PPVT-3. But de Villiers responded, the approach remains noun based, and noun use probably differentiates children the most, she speculated, because it reflects one's experiences, such as visits to zoos and museums; in contrast, verbs are everywhere and everyone uses them. Santa Ana suggested breaking the

current approach by not using measures that have been shown to be biased and invalid and moving forward with alternative approaches.

Erica Hoff cautioned, however, about discarding tests such as the PPVT that predict academic achievement. There are many reasons that children from different backgrounds perform differently: they may hear a different language at home or a different language variety. The assessment is not intended to measure a person's capacity to learn. A better approach would be to dispel the misinformed notion that PPVT scores measure an ability level that is inherent in the person and cannot be changed. Biased tests can measure important aspects of oral-language facility, such as the receptive vocabulary that predicts academic achievement, but they may have features that cause children to answer questions in ways that have nothing to do with the aspect of oral language that the measure was intended to assess. So, norms must be established for different groups and used for comparisons so that instruction can meet the actual needs of different children. Otherwise, teachers and policy makers expect all children to reach test norms established with children from very different backgrounds.

As a practitioner, Susana Dutro suggested augmenting the PPVT because it is very noun based and does not assess the range of linguistic skills children need to master. Practitioners would find it helpful to be able to assess, for instance, sentence generation that obligates uses of specific verb phrases and to analyze samples of writing. Also, using multiple measures can help to reduce biases introduced by overreliance on one measure.

Dickinson pointed to the need to document how much and in what ways teachers use English, Spanish, or other languages or varieties of English such as the African American dialect, and the implications of that use for children's language learning and achievement. In-depth studies of speech samples from classrooms would help to understand natural variations in children's experiences in relation to language outcomes in a way that is more nuanced than the PPVT and that involves actual speech production.

Genesee followed up on Dickinson's point to suggest that given the amount of work needed to develop valid and reliable assessments of dual-language learners' competencies, it could be useful in the short term to create guidelines on how to assess children's language learning when good standardized measures are not available and to point to some possible alternatives to standard assessments. Analysis of children's speech samples may provide better estimates of language facility along a broader range of dimensions than could be assessed by simply augmenting the PPVT with another standard measure. It would also be helpful to discover at what point particular standardized tests can be used with language

learners with varying degrees of language proficiency and be confident of their validity.

Genesee and Claude Goldenberg went on to discuss the value of assessing multiple aspects of language and expanding the types of approaches used to augment widely used standard assessments, especially to obtain information about a child's native language and to supplement the information that speech and language pathologists collect using standard assessments. Goldenberg noted, however, that the possibilities for using complementary measures in research and practice will need to be considered in relation to what is feasible given practical constraints on time and other resources.

Several participants questioned whether focusing on assessment is fruitful for addressing the issue of achievement gaps. Robert Bayley responded that it is important in at least one area: English-language learners are often misdiagnosed as having language disabilities, and states show wide disparities in the incidence of disability depending on how it is measured. In Colorado, for instance, less than 2 percent of English-language learners are identified as having language disabilities, while in New Mexico 20 percent are so identified, yet it is unlikely that this difference in the incidence of disability is real. Misdiagnosis can lead to delivering the wrong kind of instruction, which can contribute to the observed achievement gaps.

Hirsh-Pasek agreed and added that teachers use assessments to know what to target with instruction, and as a result, whatever is measured as an outcome shapes what gets taught. Broadening the assessment of language facility would focus attention on important areas, such as those needed to move good decoders to understanding the meaning of text. Dutro concurred from a practitioner perspective and noted that assessments that shed light on students' current facility with grammar and other aspects of language can lead teachers to recognize what they need to make more explicit in their teaching or modeling of language. Different assessments can reveal that children have not mastered aspects of language that a teacher was not otherwise detecting. Assessment can also reveal strengths teachers did not know children had which, as discussed in the earlier panel, can positively influence teachers' beliefs and expectations.

4

Learning Across Languages: Second-Language Learners and Dialect Speakers

In the third panel of the workshop, participants discussed research on language acquisition and instruction for second-language learners and dialect speakers. Topics included: the effectiveness of explicit language instruction, including traditional approaches that focus on systematic teaching of grammatical features; types of implicit instruction in use and their outcomes; the conditions that appear to influence effectiveness of instruction with particular types of learners at different grade levels; and the possibilities and limits of developing approaches to transfer language skills between first and second languages. Participants also considered research with implications on how to develop new curricula that would support language and reading in a second language or dialect, as well as how to organize instructional time and structure classroom interactions to maximize learning. A key question participants were asked to address was what teachers need to know about language to deliver instruction that develops both language and academic knowledge for language-minority students.

EXPLICIT GRAMMAR INSTRUCTION

Robert Bayley reviewed the research on whether explicit formal instruction in grammar helps to develop oral language among English-language learners in K-12 classrooms and the efficacy of instructional strategies for different ages and proficiency levels. In this research, he noted, there are three approaches, two of which use closely related terms that can lead to

confusion The two that may be confused are "focus on form" and "focus on forms." The first (in the singular) refers to integrating form and meaning and drawing learners' attention to specific linguistic forms in meaningful interaction. Typically, the form in question is causing some kind of communicative difficulty and the response involves requesting clarification or recasting (reformulating the learner's utterance using the target form or grammatical structure to be learned). The second (in the plural) refers to teaching grammatical forms in isolation, outside of communication, and sequencing the order of instruction according to degree of linguistic complexity. A third approach, "focus on meaning," refers to instruction that assumes exposure to substantial input in meaningful contexts will lead to acquiring the grammatical structure of the second language.

Bayley noted several limitations of the literature. Although many studies have examined different types of form-focused instruction, most of these studies have included international college students: few of them have included K-12 learners and fewer still have focused on K-12 learners in U.S. schools. There are also limitations in scope. For instance, Saunders and O'Brien (2006) report that the corpus of articles they examined yielded studies of only two areas of oral-language development that had been studied: (1) vocabulary and (2) question formation. Norris and Ortega (2000) performed a meta-analysis of experimental and quasi-experimental studies of the effectiveness of focus on form and focus on forms interventions. That meta-analysis included 77 studies published between 1980 and 1998; however, only 16 of them involved K-12 learners, and only one was specific to elementary-age children. Many of the best-designed studies of school-age learners have been conducted in Canada and included intensive English-language programs in Quebec or French immersion programs. There is no comparable research base for school-age English-language learners in the United States.

Although a small number of forms approaches have been studied, Bayley suggested some conclusions that can be drawn from the studies he reviewed:

- Properly designed focus on form instruction can be beneficial, even for students in the very early years of primary school.
- Focus on form instruction does not compromise gains in fluency.
- Prompts appear to be more effective in promoting learning than recasts because the latter do not require a student to reformulate the utterance.
- The effectiveness of different types of interventions is related to the complexity of the target structure. Forms that require only a lexical substitution (e.g., French possessive determiners) appear

more amenable to form-focused instruction than structures that require more reanalysis (e.g., relative clauses).

- The effectiveness of different types of interventions is related to the communicative function of the target forms. In focus on form instruction, forms that result in communicative breakdown are more likely to lead to explicit corrective feedback than second-language errors that do not result in communicative difficulties.

Bayley drew three conclusions in particular from Norris and Ortega's review.

First, instruction that incorporates explicit (including deductive and inductive) techniques leads to more substantial effects than implicit instruction. Second, both focus on form and focus on forms approaches result in large and "probabilistically trustworthy gains over the course of an investigation. . . ." Third, instructional types show the following order of effectiveness: explicit focus on form > explicit focus on forms > implicit focus on form > implicit focus on forms. The findings suggest, he said, that form-focused instruction benefits a range of different ages and proficiency levels, with the following caveats.

The fist caveat is that few of the studies focused on immigrant learners in K-12 settings and they concentrated on a limited range of forms. Another caveat is that sociolinguistic issues are not usually addressed, though two such issues are especially important, in Bayley's view. The first issue is the need to define the target language. The standard English spoken by a teacher is not necessarily the target variety for the learner. Bayley pointed out that numerous studies have shown that language learners use a range of features for a variety of expressive purposes, including self-presentation and identity. Thus, the notion of "resistance to language" is important to consider in supporting students' language and academic achievement.

A second sociolinguistic issue pertains to the need to study immigrant learners of English who have very low levels of literacy. Since most studies of explicit instruction and oral-language development have focused on international students in North American universities or middle-class students in immersion programs, there has been relatively little examination of second-language acquisition by those immigrant learners. Yet those learners begin attending English-language schools at all ages, and they are the ones who are most at risk for academic failure.

Bayley concluded by calling for research in several areas. First, longitudinal studies of immigrant children's language development would help to pinpoint those aspects of oral language that require intervention and those that do not. Also, past studies tended to focus on a limited number of forms, and so more work is needed to discover the types of inter-

ventions that are most effective for particular forms. Another pressing question is what works for whom; thus, future second-language research needs to go beyond studying language learning by well-educated international students at researchers' universities to study, for instance, learning with the more typical young immigrant children in U.S. schools. Finally, consistent with Norris and Oretega's (2000) observation, better standards are needed for reporting study results; currently, most publications in this field report only significance levels without effect sizes.

Familiarity with standard English has been linked to academic achievement in at least two studies: Charity, Scarborough, and Griffin (2004) documented that African Americans with greater familiarity with standard English had higher reading achievement (controlling for city, school, socioeconomic status [SES], and other variables). Similar findings were published by Craig and colleagues for reading achievement (discussed in Rickford and Wolfram, 2009).

EXPLICIT INSTRUCTION FOR DIALECT SPEAKERS

John Rickford explored the state of research on explicit English instruction for students who speak vernacular varieties of English or nonstandard dialects and speculated about instructional changes that could benefit students' language and academic learning.

African American vernacular, Rickford reported, is by far the most studied English variety, in terms of both grammar and relationship between its speakers and their school achievement. Fewer studies focus on Latino English, Native American languages and dialects, and nonstandard varieties of English among whites. Responding to the guiding questions that had been posed by the workshop planning committee, Rickford and Wolfram (2009) first considered the most common approaches used to develop the language of vernacular dialect speakers and whether any of them accelerate language development. The authors drew from previous surveys of instructional approaches, especially Siegel (1999, 2005), and their own work to identify five major approaches to language arts and literacy instruction for speakers of vernacular varieties of English.

1. The deprecation or denial approach involves ignoring or deprecating the vernacular and extensive correction and interruption, and is often referred to as conventional (Rickford and Wolfram, 2009). Though not included or labeled in past work, the approach was included by the authors because they perceive it to be the most widespread response in U.S. schools where vernacular or nonstandard varieties of language coexist with mainstream or

standard varieties. Yet, Rickford emphasized, little is actually known about the everyday instructional and other interactions teachers use with students who speak various dialects, which is a limitation of existing research.

2. Accommodation approaches involve accepting some dialect differences while not discussing or using them overtly in the classroom.
3. Dialect awareness approaches incorporate both sociolinguistic lessons about language diversity and contrastive analysis of standard and vernacular components to encourage student awareness of linguistic differences and movement toward using the standard form.
4. Instrumental approaches, which are rare, incorporate vernacular into some reading materials and classroom exercises.
5. Individualized, linguistically informed error analysis, described by Labov and Baker (in press) is the least common approach.

Research on each approach is quite limited and more is needed, Rickford noted.

Rickford next turned to the question of how English-language learners and vernacular-dialect speakers compare in the context of explicit language instruction, and, related to that question, how explicit instruction compares with implicit instruction. He reported that the little available research points to explicit methods as being more effective than implicit instruction for both groups in reading, writing, and standard language mastery (Bayley, 2009; Rickford and Wolfram, 2009). For instance, second-dialect speakers experienced gains in standard English oral language and writing when taught with the dialect awareness and contrastive analysis approaches described above (reported in Maddahian and Sandamela, 2000; Sweetland, 2006). In addition, Labov and Baker (in press) reported moving African Americans toward standard English in oral reading after 40 hours of instruction with their individualized reading program. A limitation of the few available studies that exist, in their view, is that the comparison groups consisted only of simple exposure to standard English and the students' vernacular was ignored. Thus, some of the approaches listed above have not been adequately represented in the comparisons for testing.

Studies in the peer-reviewed literature have not compared focus on form versus focus on meaning for speakers of varied dialects (but see Reaser, 2006, and Sweetland, 2006, for unpublished dissertations). Sweetland reported suggestive findings that contrastive analysis focus on forms combined with "sociolinguistic awareness raising" was more effective than either one alone and found positive effects of explicit instruction

for inflectional morphemes and spelling. Rickford speculated that second-dialect speakers often are not aware of how their language differs from standard English and so may benefit from explicit instruction more than English-language learners.

Though contrastive analysis is likely to have positive effects, focusing on it exclusively might undermine students' progress, Rickford and Wolfram (2009) cautioned. Adding instrumental dialect methods, they speculate, may have positive effects on literacy and language if those approaches help students recognize the linguistic complexities and intricacies of vernacular and standard English, as suggested in research by Simpkins and Simpkins (1981).

As requested by the workshop planning committee, Rickford and Wolfram (2009) applied their expertise to speculate about ways to configure instruction throughout the school day, beneficial curriculum components and approaches to code switching (the practice of switching between a primary and secondary language), useful classroom interaction, and essential teacher education. Given that all dialect differences probably are not relevant for school achievement and cannot be covered in any curriculum, Rickford and Wolfram suggest that curricula should focus on areas likely to have the greatest effects on students' achievement, with general forms used across the United States taking precedence over local forms, grammatical forms taking precedence over phonological forms, and sharply stratified forms over gradient forms. In addition, Van Hofwegen and Wolfram (in press) show curvilinear trajectories such that children lose their vernacular from 1st through 4th grade as they learn standard English, but by middle school they begin to choose whether to keep their vernacular, suggesting that early instruction in the standard English needs to continue through later grades.

With respect to code switching, said Rickford, research suggests that the ability to switch grammatical codes across languages correlates with academic achievement and the acquisition of literacy skills, and so teachers might encourage code shifting for those children who have yet to develop that ability. In addition, classroom interactions could be structured to help with developing the standard variety of English, taking care to prevent stigmatization. Realistically, however, tracking and self-selected peer interactions limit such opportunities.

Rickford and Wolfram speculate that teachers' abilities, training, attitudes, and social and psychological backgrounds are also likely to affect implementation and quality of dialect-related instruction. Knowledge about progressions of standard English-language development would be likely to help teachers plan and deliver age-appropriate instruction, but teachers would also benefit, in the authors' view, from knowing the different stages and trajectories of vernacular forms so that a logically pro-

gressive, iterative instruction could be designed for learning the standard dialect. This linguistic education for teachers would impart understanding of how dialects develop, the historical and cultural context for language diversity, the systematic patterning of language differences, systemic contrasts among varieties of English, and the social utility of students' being comfortable in both standard and vernacular varieties of English.

A COGNITIVE PSYCHOLOGY PERSPECTIVE

Aydin Durgunoğlu offered a cognitive psychology perspective on second-language learning and instruction, summarizing findings on the transfer of skills across languages and implications of those findings for how to support development of skills in both the spoken and written language. She said her framework for the review was grounded in "the simple view of reading" (Gough and Tunner, 1986), a cognitive model that is anything but simple, she said.

The model has often been mischaracterized as a "bottom-up" approach driven by the basic skill of decoding. Actually, the model consists of two independent factors, decoding and language comprehension. In studies of school children, these two factors together have been shown to account for up to 75 percent of reading comprehension performance (see, e.g., Catts, Adlof, and Weismer, 2006). The model predicts that language comprehension becomes relatively more important for reading comprehension as decoding is mastered, and this result has been shown with children and older adolescents in adult education (for details, see Durgunoğlu, 2009).

Expanding on the simple view of reading, recent cognitive modeling research by Kendeou, Savage, and van den Broek (2009) suggests that the same higher-order cognitive processes are used in reading comprehension and listening comprehension. That is, whether language is received visually through reading or aurally through listening, the same cognitive processes are engaged to make sense of the input. First, the words and the grammatical parts of a sentence are recognized. Next, comprehension at the paragraph level is achieved through attention to the connectives that link sentences (e.g., "because," which describes a cause-effect relationship). Finally, a global representation of meaning is created, using background knowledge and inferential thinking to fill any gaps in the input that are needed for understanding. Good comprehenders—whether of speech or print—continuously monitor their degree of understanding to detect and correct inconsistencies and anomalies.

Studies of the model that have been conducted with second-language learners are consistent with the cognitive model, Durgunoğlu reported. She emphasized that, as the model predicts, second-language learners experience little difficulty with decoding as long as they had received

good decoding instruction and that they caught up with first-language monolingual peers. Also, consistent with the model, the findings for reading comprehension (discussed in Durgunoğlu, 2009) show that at higher levels of oral-language proficiency, decoding and reading comprehension are not correlated, suggesting that as decoding is mastered, oral-language proficiency may play a greater role in comprehension. As shown by Lesaux (see Chapter 2), research is needed to determine how to increase second-language vocabulary and reading comprehension since these skills consistently trail decoding among middle school students.

Durgunoğlu then turned to the question of whether second-language and literacy learning might proceed faster if the first language was developed and used as a resource to enable transferring skills from the first language to the second (cross-linguistic transfer). To answer this question, Durgunoğlu drew from and updated findings of a review by the National Panel on Language and Literacy for Minority Youth (August and Shanahan, 2006). First, oral-language proficiency appears to help with some decoding-related skills, but not others. For instance, phonological awareness skills are correlated across languages, as are word recognition skills. But correlations for spelling are nonsignificant and sometimes negative, perhaps because, as Fred Genesee argued, spelling requires precise orthographic patterns; using approximations is not sufficient as it can be with spoken language. Likewise, first-language listening comprehension and vocabulary knowledge are not related to second-language word recognition or spelling.

Durgunoğlu next discussed the evidence about the various conditions that influence transfer. First, formal instruction in a first language is important. Correlational data suggest that students who have weak or no literacy in their first language will find it harder or impossible to transfer phonological awareness, word recognition, or comprehension processes to a second language. Second, although skills within each language are correlated more than skills between languages, the full picture is more complex (e.g., see Manis, Lindsey, and Bailey, 2004; Gottardo and Mueller, 2009). For instance, although Spanish phonological awareness does not predict English word recognition, it does predict English phonological awareness, which in turn predicts English word recognition. Thus, having Spanish phonological awareness may help to recognize English words through supporting the development of English phonological awareness. A similar pattern has been observed for reading comprehension. First-language decoding, syntactic knowledge, vocabulary, and listening comprehension do not strongly relate to second-language reading comprehension, but they do correlate with reading comprehension in the first language, which in turn is correlated with second-language reading comprehension.

Third, whether first-language decoding-related skills help with

decoding in the second language appears to depend on the particular skill examined. For instance, letter knowledge (a decoding-related skill) in English and Spanish is not correlated for English-language learners, but word recognition is correlated, especially if children already have acquired a degree of word recognition in English.

Vocabulary knowledge has shown less evidence of skill transfer since correlations between vocabulary knowledge in a first and second language are nonsignificant and sometimes negative. Likewise, instruction effects in some studies appear to be language specific. For instance, Sharon Vaughn and her colleagues (Vaughn et al., 2006) conducted a controlled study that showed English instruction improved measures of English oral language and Spanish instruction improved Spanish, with no cross-language effects (English instruction did not improve Spanish and vice versa).

Some of the most intriguing findings for her, Durgunoğlu said, point to the metacognitive aspects of language processing as potential areas to leverage for transfer. For example, the ability to give high-quality formal definitions of words in Spanish relates to having this ability in English: this ability shows a generalized understanding of what constitutes a word and a formal definition across languages. Also, awareness of cognates (words that share the same root and meaning) in a first language predicts understanding word meanings in a second language. And the ability to formally analyze language (to explicitly analyze morphological structure, for instance) in a first language predicts the ability to do so in a second language. Finally, findings for reading comprehension show correlations between first- and second-language reading comprehension not only for phonological awareness, vocabulary, listening comprehension, and linguistic knowledge beyond individual words but also for the cognitive and metacognitive aspects of language processing, such as using strategies to aid comprehension and making inferences for text meaning by using background knowledge (for details, see Durgunoğlu, 2009).

Durgunoğlu summarized the findings that she believes may have implications for practice:

- After decoding has been developed, linguistic comprehension can be improved independent of decoding instruction given that as decoding is mastered, oral language proficiency continues to predict reading comprehension.
- The same higher-order comprehension processes are involved in comprehending language across modalities—visual in reading and aural in listening.
- Correlational data support the notion that cross-linguistic transfer is possible.

- Comprehension skills beyond the level of individual words and metacognitive aspects of language processing appear promising for encouraging transfer of skill across languages.
- With reference to Bayley's presentation on explicit instruction, some aspects of second-language literacy development benefit from explicit instruction in English.

Research is needed to design instructional interventions that target comprehension skills beyond the word level that overlap between listening and reading comprehension. Whether facility in a first language with what Schleppegrell (2009) defined as "academic language" would help with developing second-language comprehension has not been studied, but it is likely to be the case, Durgunoğlu speculated, given that instruction to develop academic language targets metacognitive skills similar to those observed across languages. In closing, Durgunoğlu considered feasible ways to accelerate second-language development in light of findings on cross-linguistic transfer. She observed that current education policies in the United States tend to limit opportunities to develop students' first language, so families might be encouraged to develop the first language and to emphasize areas for which research suggests transfer is possible.

CONTEXT FOR LANGUAGE ACQUISITION

Guadelupe Valdés began her response by stressing that Bayley's presentation offered just one perspective on a much larger and enormously controversial and complex field that was originally described in *Twenty-Five Centuries of Language Teaching* (Kelly, 1969). She agreed that defining the desired target for language instruction is an important issue from a sociolinguistic perspective, but questioned Bayley's conclusion that explicit instruction is superior to other teaching methods. One factor that affects interpretation of the findings is how to recognize and measure success and whether studies of explicit instruction have included meaningful measures in this regard. More specifically, Norris and Ortega (2000) and others in the field have noted that many studies of instruction measure only immediate acquisition of grammatical structure, but that differs from learning that persists, that generalizes, and that can be used flexibly for various tasks and purposes. For instance, can it be assumed from the measures used in research studies that the knowledge that is purported to be assessed can be used spontaneously much later when speaking, writing, or editing? Follow-up is needed, whether in studies on the effectiveness of recasting, error correction, or other approaches, to determine whether the learning "stuck" and has resulted in real learning rather than just immediate acquisition. In response, Bayley noted that

most of the studies he reviewed included at least a delayed post-test after 2 or 3 months, and most of the time the effects were lasting. But he agreed that more needs to be known about how the acquired skills are used in natural communication.

Valdés noted that the research reviewed by Bayley (2009) includes studies of explicit instruction in French immersion programs that were motivated by concerns that children were not acquiring language that was native-like, but after the programs were implemented, the concern was that children were not learning certain language structures. It was assumed that explicit grammatical instruction was needed but, Valdés argued, other possible explanations were not tested. For instance, since native speakers of French did not attend the programs, perhaps children were not exposed to a sufficient number of native speakers, which would be consistent with Lily Wong Filmore's (see, e.g., Wong Filmore, 1991) hypothesis that when learners outnumber native speakers, the environment is not conducive to acquiring a second language.

Valdés' observations about the configuration of French immersion programs and the effects of such programs on developing language raises a larger question about the limits of language learning within the confines of the classroom, Genesee noted. French immersion, with its focus on meaning, was adopted because children often did not have contact with native French speakers. But, as Valdés noted, after many years, they did not show mastery of grammar that met the expectations some had for high school students: their speech was not indistinguishable from monolingual native French-speaking children.

A lesson from this experience, Genesee suggested, is the value of testing the limits of what can be learned in classrooms with approaches that have a heavy focus on meaning augmented with some kind of explicit language instruction. He agreed that aspects of the larger linguistic context would be important to take into account in such research, such as the balance of students in the classroom who speak the language to be learned and those who are language learners. He also questioned whether being indistinguishable from native speakers is a realistic goal and whether the kind of grammatical errors that tend to be made, such as gender marking, matter for academic achievement—which was the main focus of the workshop, a point echoed by Erika Hoff.

Valdés responded to Rickford and Wolfram (2009) by noting that she found three descriptions of approaches used by teachers to respond to students with varying dialects to be especially valuable to highlight: (1) deprecation or denial (conventional); (2) dialect awareness (with sociolinguistic and contrastive analysis); and (3) instrumental. More information is needed, she agreed, about how teachers interact in classrooms with second-language or second-dialect students. Because there are so few

data on this issue, controversies arise over perceived shifts in instruction (from communicative approaches to grammar-based instruction or vice versa), so this is an area for research. Another interesting question is what might be learned from research on second-dialect learners, which was not reviewed for the workshop, on efforts such as those to teach Spanish to Spanish-speakers as a heritage language.

The findings presented by Durgunoğlu (2009) suggest that developing the first language could help to develop a second language, but they also indicate the process is likely to be more complicated than many thought, said Valdés. A key practical challenge in the United States will be figuring out what exposure to the first language may be required for language to be developed to a point that results in benefits for second-language learning. A serious problem to address with respect to transfer lies with children who have neither sufficient oral language nor reading skills in English. Since reading depends on oral language, one might question whether phonics instruction is the only important starting point for reading. In her experience and echoing that of other workshop participants, Valdés said, Spanish-speaking children are often taught to decode words in English and can do so proficiently, but they do not understand what the words mean.

It would be valuable, Valdés proposed, to "curricularize" knowledge from research about how to develop language for comprehension, but challenges in developing the curriculum would lie in what to teach and how to sequence it. The research base may present challenges in this respect because what researchers have chosen to study about language and how they have studied it has not been driven by the practical goal of articulating learning progressions for education purposes, and so gaps in knowledge would need to be filled.

AN EDUCATOR'S PERSPECTIVE

Following on Valdés' last point, Susana Dutro discussed the papers from the perspective of a teacher educator: What does the research presented imply for what teachers need to know and be able to do to develop the language of students learning second languages and dialects and how can teachers best acquire this knowledge? Despite the breadth of the papers, Dutro said, for her they converged on some common themes: the importance of knowing what each student brings to the classroom; the importance of understanding that children live in multiple worlds and need the languages of all those worlds to function effectively in them; and the importance of explicitly teaching the conventions of grammar in the standard variety of English. Just as making

decoding visible helps with reading, so will awareness of the rules of language and how to use them.

Durgunoğlu, Dutro said, confirmed that the challenge for achievement lies in finding ways to support comprehension of content and that focusing on oral language helps to develop reading comprehension and learning. In Dutro's experience, teachers often lack a sophisticated sense of how to develop language and the instruction delivered is very text based. Teachers need to know more about how to provide the instruction that develops listening and reading comprehension:

- What conversations need to be had in the classroom, and how should these be structured to involve students in both listening and speaking as they learn about content areas?
- How can teachers engage students so that students feel accountable and compelled to use language in the context of learning meaningful curriculum content?
- How do teachers ascertain the knowledge of syntactical structure that individual students in the classroom need for learning?
- What are effective ways to develop background knowledge and higher-order processes, such as the metacognitive knowledge as described by Durgunoğlu (2009)?
- How can students be guided to monitor their own comprehension and construct rich mental representations of the text?

Dutro said her experience is consistent with Durgunoğlu's suggestions that formal instruction in a first language may be needed for the first language to have an impact on learning in a second language and that lack of first-language oral proficiency transfer suggests that syntax and vocabulary need to be explicitly taught to English-language learners. These suggestions imply, she noted, a need for teachers to be educated about the appropriateness of building on first-language skills, which skills to build on, the pedagogies that benefit second-language reading, and strategies for supporting parents in reading and talking about their ideas with children.

Responding to Rickford and Wolfram (2009), Dutro agreed that when teaching language for academic purposes it is not helpful to aspire to idealized patterns that are stilted, overly formal, or archaic. In addition, students are likely to be supported by accommodating regional pronunciation, lexical items, and grammatical patterns, but that language items with general social significance across the United States should take precedence over regional items, and emphasis on grammatical forms should take precedence over phonological ones.

Little is known about how language is used differently across

children's multiple worlds—home, sports, peer networks, classrooms. Research to discover the registers embedded in these language uses might help to support students in moving across the worlds in which they need to function. Another area to explore is the effect of teachers' beliefs about language, particularly on teaching and learning language linked to learning in subject areas and how these beliefs can be influenced to enable teaching standard English using the most effective approaches.

It would be valuable, according to Dutro, to identify pedagogical approaches that balance focus on form and focus on meaning, and as Valdés stressed, to support learning that generalizes and becomes "portable." Does teaching grammatical features as tools to be applied to varied communicative purposes have an impact? Translational research is needed to articulate instructional strategies for teachers to use in their classrooms to issue prompts or recasts, both of which appear to have some degree of effectiveness according to the research literature. Consistent with earlier discussion, Dutro agreed that the source and composition of language output needs to be examined in more detail: Who is doing the talking in classrooms and what is the quality? How does it compare to the kind of language output research suggest would be needed and by whom to see progress? How can students be encouraged through instruction to become accountable and invested participants in these exchanges?

In closing, Dutro suggested studying a model she has used for professional development in explicit language instruction. The process starts with identifying specific communicative purposes and tasks linked to local content standards. Language tools would be identified for performing those tasks: for instance, topic-specific words and key phrases used in sentence structures for discussion and writing in the context of those tasks. Explicit instruction would introduce, model, and encourage practicing these language tools, with opportunities for structured interaction and support as students work toward the goals of accurate and fluent language use.

PRACTICAL ISSUES IN APPLYING THE RESEARCH ON LEARNING AND INSTRUCTION

Fred Genesee began his discussion by focusing participants' attention on the question of the relevance of the research presented to academic achievement and reducing the achievement gap. He offered three understandings that seemed to emerge from the reported findings that appear to be important avenues for supporting school learning and achievement: (1) developing a student's first language, (2) attending to the dialect or language variety that students speak, and (3) engaging students in explicit instruction. The wide-ranging discussion that followed focused on several

limitations in the research literature that would need to be addressed before making these points for practice.

David Dickinson emphasized that research is needed to identify the best time in children's development to begin explicit instruction and the ages at which particular types of explicit instruction would be useful. There is likely to be an age below which explicit instruction about language would not be effective. Dickinson expressed concern that a focus on explicit instruction might lead to language drills to correct grammatical features to the exclusion of engaging in rich conversations for preschoolers and for students of all ages around curriculum content. Robert Bayley added that work by Birgit Harley (1998) examined explicit teaching of grammar with 2nd graders in a communicative context using games and showed positive results. It would be useful to further explore such an approach, though probably not for children as young as kindergarten age.

Jeff MacSwan stressed the importance of not falsely dichotomizing focus on form and focus on function and meaning when debating the literature because most researchers recognize that these fall on a continuum, and there are many intermediate positions. If researcher debates come across as polarized, even if not intended, it risks lending support to ideologies that drive policies inconsistent with research and with the perspectives of most researchers on the issues. Language policies in some states, which MacSwan described as regressive, mandate practices that are at odds with research findings and that are likely to negatively affect English-language learners. One state, for instance, mandates a focus on form approach for kindergartners, who must be explicitly taught about past-tense verb morphology, for instance, in exercises that most researchers would agree are not age appropriate. Rather, instruction is best situated somewhere in the middle, and the most useful way to frame an agenda for future research is to ask how much focus on form and how much focus on meaning is appropriate under various conditions.

Kenji Hakuta agreed and added the need to discover the right dosage and intensity. For Aída Walqui, the most important question is whether explicit teaching works, and, if it does, to pick up on Dickinson's concern, when in children's development is it the time for learning? Her experience as a practitioner leads to concern about young children being "completely turned off" if attempts to support language in the classroom start with decontextualized grammar lessons. She noted that as students move toward adolescence, there appears to be more interest in more formal analysis of their language and language differences as part of a search for identity. Like Valdés, she noted that a major challenge is determining what to select for a curriculum and how to sequence the curriculum over the K-12 years to support both academic and language learning. When

teaching with text, for instance, it may be ideal to begin with the "larger" aspects of language related to academic learning, such as: What does the text attempt to do? What is the message? What is the structure of the text? How are the ideas put together to engage the reader? Then the instruction could turn to grammar. Although grammatical errors may be made in discussing the text, they would be ignored as much as possible until grammar became the purpose of the instruction.

The approach of incorporating the first dialect into instruction is intriguing in light of past research showing a positive effect on reading, Genesee noted. Might programs such as dialect awareness boost all students' reading skills by tapping the metalinguistic aspects known to be involved in and benefit reading proficiency? All children could benefit from language awareness, regardless of the dialect spoken, Hoff agreed. For the purpose of boosting school achievement, the classroom goal is probably not to try to get speakers of vernacular language to sound like native speakers of standard English. Rather, it is to help students master the broader aspects of language contained in academic learning, such as those outlined by Schleppegrell (2009), and which many speakers of standard English themselves lack.

In practice, however, ideological concerns can prevent parents and teachers from accepting dialect awareness instruction and dialect readers, Walter Wolfram pointed out. In his experience, however, students tend to be very conscious of linguistic differences and can be interested in and willing to talk about them. In his research, students report that the fact that all language varieties, including dialects spoken in the classroom, have rules is the most important thing they learned through dialect awareness education. And as Sweetland's (2006) work indicates, students who have this knowledge report greater self-efficacy and score higher on writing exams. In contrast, Wolfram said, the assumption in U.S. society is that qualities of certain dialects are not desirable, especially if associated with certain minority groups or geographical regions (see Rickford and Wolfram, 2009). Avoiding dialect awareness only perpetuates such negative attitudes about dialect, in his view, while limiting access to an approach that could not only benefit student achievement but also serve a valuable purpose in its own right of educating children about the structure of language, views on how it emerges, and how their own variety fits.

William Labov emphasized that given the crisis with reading among African Americans in inner-city schools, if correcting oral English or teaching a new form of oral English will help with effective teaching of reading and writing, which includes decoding and spelling, then it would be valuable to do so. If not, it deserves a secondary place in the curriculum. Bayley agreed but echoed the views of other participants that since many students decode perfectly without understanding what is read, it is

important not to lose sight of comprehension as a significant issue to be addressed, as well as broader aspects of writing.

Rickford pointed to the lack of quantitative data on academic language in the sense that Schleppegrell (2009), Robin Scarcella (2003), and others have described it. Studies typically have measured mastery of grammatical forms of standard English. More work on academic language would be helpful for continuing to define its features, to examine relations between reading and achievement, and to determine why certain instructional approaches might have an effect.

Hakuta agreed that researchers have tended to look at a limited set of grammatical structures, for instance, certain grammatical morphemes, perhaps for theoretically interesting reasons, and ignored the rest. If researchers start emphasizing to practitioners the need to focus on teaching grammatical contrasts of a second language or dialect without any constraints on this guidance, the task can become overwhelming, and the forms most studied in the literature will become the ones emphasized in practice even if they are not the most important ones for explicit instruction. The lack of systematic study to date of the full range of linguistic structures and the lack of evidence about which are most important to focus on and at what point poses a problem for applying existing research to instructional design. Another limitation of existing research, Genesee noted, is that studies tend to focus on learning forms within a specific kind of communicative context, such as learning conditional verb forms in the context of planning for a future lunar trip, an activity that calls for heavy use of conditional verbs.

The discussion turned to the evidence for cross-linguistic transfer. Claude Goldenberg cautioned that, in his view, the research base is not yet clear with respect to exactly how a first language affects developing a second language. Most of the research is correlational, including the data presented by Durgunoğlu. The data could be contaminated by spurious correlations or caused by a shared underlying factor that affects the development of skill in both languages. A common proficiency, such as phonological processing, might underlie the development of proficiency in each language. Even prospective correlations between phonological awareness in kindergarten and reading in 2nd and 3rd grade are open to interpretation. In contrast, a randomized experiment by Vaughn and her colleagues (Vaughn et al., 2006) revealed only a language-specific effect of instruction, with no evidence for transfer of specific skills. "Two or three dozen" bilingual education experiments support transfer, he said, but literacy was defined very generally in those studies, and the evidence was not very skill specific.

Yet, Goldenberg said, in his view the predictive validity demonstrated in the correlational studies is beyond dispute: skills in a first language

are a very important window into what can be expected in a second language absent some kind of intervention. And as shown in Genesee's work, information about the first language yields insights that cannot be gleaned only from collecting assessments in the second language. But, in the case of transfer, the best evidence would be to conduct experiments that test the effects of instruction in a first language on immediate changes in second-language literacy.

Hoff noted that the available evidence does support the existence of a general phonological capacity, such as Goldenberg proposed, as a shared underlying factor that affects learning across languages. For instance, the accuracy with which 22-month-old children repeat Spanish and English nonwords, a measure of phonological proficiency, is highly correlated between the two languages; this kind of correlation is not true for other aspects of language, such as vocabulary and grammar. Other data suggest, Hoff said, that aspects of phonological capacity may be less affected by the particular language they hear: the amount of language input children experience in Spanish versus English relates less strongly to differences in children's nonword repetition in the two languages and more strongly to differences in vocabulary and grammar.

Durgunoğlu agreed that correlational data should be interpreted cautiously. Studies of formal instructional interventions would be the strongest evidence, and more research is needed. Yet the correlational and experimental data that do exist when taken altogether suggest that, regardless of the mechanism behind the observed correlations (including the possibility of a shared factor that affects both languages), certain aspects of language may turn out to be better candidates for transfer than others, especially higher-order processing skills because they are shared across modalities. Once made available in the first language, these higher-order processing skills may turn out to support acquiring language, concepts, and literacy in the second language. If this is the case, current political and practical constraints on exposure to a first language in U.S. classrooms point to families as an important resource to explore in supporting transfer.

The discussion then turned to the type of input, rather than the amount, that affects language development. Rickford asked whether there is evidence for effects of directive language often used in lower SES homes, which has deep cultural roots for socialization and parenting, but is also changeable. Hoff responded that high frequencies of directives have a negative effect on language. It is not a spurious correlation: directives are grammatically impoverished, and do not reveal the complex syntactic structure of language as questions do. Directives also do not elicit participation in conversation. They tend to be "conversation stoppers." Still, some directives have positive effects, such as those that follow the object of a child's attention and elaborate, rather than those

that try to redirect or refer to something else. So, for instance, saying, "Look at your cup and try stirring it; it will dissolve" is different from saying, "Don't sit there. Look over there." And it is possible that in some household situations, directives could be used in a way that mitigates their average negative effect, Hoff said. Schleppegrell added that direct contingent responses—following up immediately on what a child has said, for instance, by asking the child to elaborate—has been shown to be important for developing children's language.

5

Language Differences

The final panel session explored how language differences have been construed from psycholinguistic and sociolinguistic perspectives and the implications for understanding achievement gaps and designing instruction. Presenters pointed to a range of cognitive and social mechanisms through which speaking nonstandard varieties of English might affect achievement gaps, and considered the study of language differences, schooling, and achievement gaps from a historical perspective: What historical lessons might be applied to framing more useful discussions about research and practice for the future?

DIALECTS AND NONSTANDARD ENGLISH

William Labov and Anne Charity Hudley explored differences in language and achievement associated with language dialect (or vernacular). Labov began by summarizing the first part of the paper (Labov and Hudley, 2009), which focused on two main mechanisms by which linguistic factors associated with dialect may affect students' academic achievement: (1) *structural differences,* phonemic inventory and grammatical rules that may interfere with reading and learning in standard English; and (2) *symbolic influences*, the social and psychological effects that result from the perceptions of teachers and others about the abilities and conduct of students who speak certain dialects. Labov and Hudley (2009) elaborate that, according to the 2009 National Assessment of Educational Progress (NAEP) report, both of these mechanisms may contribute to stable and

persistent minority gaps in literacy achievement and efforts to close these gaps may take different forms depending on which type of effect is most active.

Structural Differences

According to Labov and Hudley (2009), the position held by most linguists and anthropologists is that all dialects learned by children as their first language have equal capacity for logical expression; the errors in reading and writing that those children make occur because of lack of alignment between a perfectly acquired vernacular and imperfectly acquired knowledge of the standard language of the classroom. A review of studies on African American vernacular English conducted from 1966 to 2002 showed considerable variation in pronunciation, while also showing what Labov described as "astonishing uniformity" in the grammatical structures of the dialect across the country.

The California Board of Education recently sponsored a consensus panel to determine the structural domains that differ most between standard English and the African American dialect with the goal of informing publishers about how aspects of African American vernacular English affect reading achievement (summarized in Labov and Hudley, 2009). Labov focused on two of the structural features that differentiate nonstandard dialects from standard English to show how they appear to affect learning. These features are both grammatical suffixes among those present in standard English but absent in the African American vernacular: possessive –s added to the first of two nouns or noun phrases (as in "John's house") and the verbal –s attached to the third singular form of the verb in present tense (as in "He walks"). Other forms are more variably absent, such as usage of –ed to mark past tense (as in "He walked") and copula apostrophes (as in the contraction, "He's here."). Possessive –s and other forms are not necessarily completely absent from the vernacular grammar, but they are used rarely or differently: for instance, possessive –s is found regularly when no other noun phrase follows: This is John's; this is hers; this is mines. (Much more variability is found in the grammatical structures of Hispanic speakers across the country, Labov noted.)

How might the absence of these two features as used in standard English affect reading achievement? Would readers decode the form correctly when reading or would they not process the features as intended thereby affecting comprehension of the text?

Part of a longitudinal study at the Frank Porter Graham Child Development Center at the University of North Carolina used the Woodcock-Johnson Applied Problems Test to examine the relation between the linguistic complexity of word problems in math and correct computation

(see Terry et al., in press). Although many linguistic features—such as past –ed, auxiliary "have," and possessive pronouns—did not relate to math computation, the possessive –s and the verbal –s correlated significantly math scores (r = .35 and .56, respectively). The mechanism behind the effect is not clear and it was concentrated in a small number of students for whom the forms were most often absent. In Labov's view, these results show the importance of discovering which grammatical differences have cognitive effects and which do not so that effective teaching strategies can be developed, preferably when children are first learning to read.

From the earliest stages of inquiry into the effect of dialect differences, Labov said, there has been general agreement that in reading instruction, it is essential to distinguish mistakes in reading that affect comprehension, true reading errors, from differences in pronunciation that do not affect comprehension, such as reading "pen" as "pin." The latter mistakes tend to be common in African American vernacular and other Southern dialects. An instructor who is aware of dialect differences would recognize this type of oral mistake as only a potential reading error. In another example, in diagnostic reading, the word "sneaked" is frequently read as "snuck" by speakers of many backgrounds. It is clear these readers have correctly decoded "sneaked" in order to produce "snuck." Some errors are more difficult to distinguish, especially from pronunciation errors. If a student reads *He was cold* without the final /d/, *He was [kol],* there is no immediate way of knowing that the student did not mistake cold for coal, affecting the student's ability to comprehend the text that follows.

As explained in Labov and Hudley (2009), a large part of instruction in the early acquisition of literacy comes through monitoring of oral reading. One task of a teacher is to recognize when the reader needs help decoding a word. When the teacher recognizes an error, the teacher may choose to intervene, supply the correct form, prompt for another reading, and perhaps follow with an explanation of the general principle involved. However, the problem of how to recognize a true reading error has been debated for some time. It is often assumed that a true reading error will lead to additional errors in the text that follows. If pen is pronounced as "pin" or sneak is read as snuck, it is unlikely to affect reading errors in the text that follows; in contrast, a truly misread word will affect the frequency of "following errors," providing a way to estimate the number of true reading mistakes. If the absence of certain grammatical forms in a dialect leads children to decode words inaccurately, they may not ascertain the meaning conveyed in those forms and so the text will be difficult to comprehend.

Labov and Baker (in press) examine the probability of following errors for 155 African American and 186 Latino struggling student readers for omission of three kinds of grammatical suffixes: past –ed,

possessive –s, verbal –s and copula –s. When African American vernacular speakers made a clear error involving the absence of elements, such as verbal –s and possessive –s, for instance, rather than only potential errors (for instance, sneak versus snuck), the rate of errors when reading the text that follows just about doubles. The frequency of following errors for past –ed was not significantly different from correct readings, but for the other three error types there was a significant probability that the relation of that word to the rest of the sentence had not been ascertained. (Labov noted that Hispanic readers show a somewhat different pattern of errors.) Labov argued that these examples illustrate the importance of intervening "vigorously" to help students understand and correct grammatical inflections that affect comprehending text. Two research goals, he said, would be to learn more about how decoding grammatical signals affect sentence comprehension and to find new and better ways of teaching abstract features of standard English.

Symbolic (Social and Psychological) Influences

With regard to symbolic influences, Anne Charity Hudley listed several areas of linguistic variation observed in African American vernacular—differences in phonology and grammar, differences in vocabulary, differences in discourse and cultural patterns, and differences in self-presentation through language. As elaborated in Labov and Hudley (2009), these sources of significant structural and symbolic mismatches between classroom English and students' language may influence: student confidence with reading and other attitudes toward reading and schooling; performance on standard assessments; teacher perceptions of student abilities, behavior, or both; and miscommunications between teachers and students. In turn, these effects can lead to expulsion, lower rates of achievement, and, ultimately, lower occupational attainment.

To remedy the effects of dialect on achievement, Hudley proposed greater sharing of information between academic researchers and K-12 educators so that educators can learn to correctly identify systemic patterns of home languages and dialects in their students, distinguish between speech disorders and nonstandard dialects, and make the educational system more accessible by teaching conventions while acknowledging the legitimacy of home languages and dialects. In this effort, a broad network of educators would need to be reached, especially in community colleges, historically black colleges and universities, and institutions that serve primarily Spanish-speaking students to communicate what is known about linguistics in an accessible manner to educators, including administrators, reading specialists, curriculum and instruction developers and supervisors, and speech pathologists.

HISTORICAL PERSPECTIVE

Valdés and colleagues offered a historical perspective on how language has been studied in different disciplines, and emphasized three main points elaborated in Valdés, MacSwan, and Alvarez (2009). First, differences between cognitive and social interactionist views of language have implications for designing second-language instruction. Cognitively oriented theorists see language development as a change in mental state in which the knowledge of grammatical rules develops in a mostly linear fashion, and children come to use that knowledge with increasing complexity and control. Cognitively oriented researchers study differences in children's usage and understanding of linguistic structure at different stages of language development, and how children cognitively process language, with a focus on the kinds of grammatical errors made at particular points in language acquisition.

In contrast, socially oriented researchers do not focus exclusively on the linguistic aspects of learning a second language, but strive for a broader understanding of how speakers of one language become users (speakers, writers, readers) of the second language. Of primary interest is how interactions between second-language learners and speakers of the second language can gradually support second-language learners in using an oral- and written-language system to communicate. Socially oriented researchers have contended, moreover, that much research from a cognitive perspective assumes a deficit perspective that emphasizes "learners' limitations and their failure to become identical to native speakers (Valdés, MacSwan, and Alvarez, 2009). A deficit theory posits that a student who fails in school does so because of assumed internal deficits or deficiencies associated with limited intellectual abilities, linguistic shortcomings, lack of motivation to learn, and "immoral" behavior (Valencia, 1997).

Researchers from both perspectives agree, however, that when a particular language has been acquired the speakers will possess both *linguistic* knowledge (knowledge of the sound system, meanings of words, and syntactic rules) and *pragmatic* knowledge (how to participate in conversations and what to say to whom and when). They also agree that, whatever the mechanisms of learning are, they are shared across all humans, and how any particular language develops depends on the person's specific language environment. The main disagreement lies in whether learning grammatical rules is the most essential aspect of learning language, and about whether those rules should be taught explicitly or set as a priority for assessment and instruction (for more background, see Valdés, MacSwan, and Alvarez, 2009).

A second major point was that several dichotomies have dominated and polarized the field of second-language acquisition and have led to labeling certain types of language as "good" or "bad" (see Valdés, MacSwan, and

Alvarez, 2009, for this analysis). Dichotomies pertaining to monolingual speakers include standard versus nonstandard English; standard English versus dialects; and elaborated code (complex, formal language used in academic conversation) versus restricted code (simple, fragmented language used in everyday conversation). Dichotomous perspectives on the language of bilingual speakers include additive bilingualism (proficiency in two languages, with positive cognitive benefits of knowing two languages) versus semi-lingualism (lack of competence in all languages an individual knows); context-reduced communication (does not assume shared experience, thus requiring precise elaboration) versus context-embedded communication (assumes shared experience, reducing the need for linguistic elaboration of the message); basic interpersonal communication skills versus cognitive academic language proficiency; and native speakers versus nonnative speakers (the native-nonnative distinction is imprecise and difficult to define in practice) (see Valdés, MacSwan, and Alvarez, 2009, for further analysis).

The most recent dichotomy, Valdés argued, contrasts academic language for school with ordinary, everyday language. To benefit students' learning and to avoid past controversies associated with labeling particular kinds of language as either good or bad, the study of academic language needs to focus on documenting which aspects of language are truly important for learning academic content. The approach to studying academic language described by Schleppegrell (2009) is a promising way forward, Valdés said, though the definition of academic language remains much too broad and needs to be specified further through research. Until then, the term could be misused to refer simply to features of language that children with achievement gaps do not use, or, conversely, to features they possess but that "language-majority" children do not.

In future work on academic language, both researchers and educators need to recognize that academic language is contextualized: its development depends on understanding the context of language use and on the match between that context and the language students bring to school. In addition, most current work on academic language focuses on oral language rather than written language; a more balanced emphasis seems warranted.

Valdés concluded with a framework for having more productive discussions within and across the fields that study language in the context of schooling. First, researchers need to figure out how to "curricularize language," which will be critically important for advancing instruction (see the discussion in Chapter 4). A barrier to developing and studying curriculum approaches, however, is that researchers of first and second-language acquisition and researchers of language pedagogy tend not to converse. These fields will need to work together more closely to identify

which language differences are important for school learning and also sensitive to instructional intervention, and to determine what the interventions should be.

Language research suggests that not all differences will be easy or possible to change or to teach regardless of how "teach" gets defined (whether more implicit or more explicit). It is also not yet clear whether the features of language that warrant targeting can be learned in classroom settings. To some extent the instructional approach desired may depend on what one counts as success. Explicit grammar instruction might help performance on standard grammatical tests, but a broader orientation to instruction would be needed to develop learners' ability to use grammatical features in communication. Valdés also suggested rethinking whether monolingualism for students is a useful ideal to aspire to for the future. Finally, though language is vital to schooling, language is just one variable to consider in accounting for the academic disengagement and academic failure of many language-minority and disadvantaged students in the United States.

DISCUSSION

African American English

Lisa Green stressed the need in future research to become much more concrete in discussing notions of dialect and to move beyond the tendency of researchers to study only a sliver of language at one point in time. As Erika Hoff had mentioned earlier, ascertaining what speakers of various dialects know about language is currently more difficult than determining what speakers of only standard English know. Yet this information is needed to guide instruction, she said—and it is especially urgent to have for children starting at ages 4 or 5, when they first begin school—and to support early intervention.

Focusing on her own research relating to the African American dialect as an example, Green said a more thorough modeling of the structural features of African American English is needed to articulate how the features develop over time and how these developmental progressions relate to those found in "mainstream" English. This type of comprehensive, fine-grained, and developmental analysis of children's speech can produce more accurate conceptualizations of African American English for targeting instructional practices that support language for achievement. At present, there have been few studies on the development of African American English (see Figure 5-1).

Green has examined children's story narratives to document grammatical markers used by African American English speakers, including

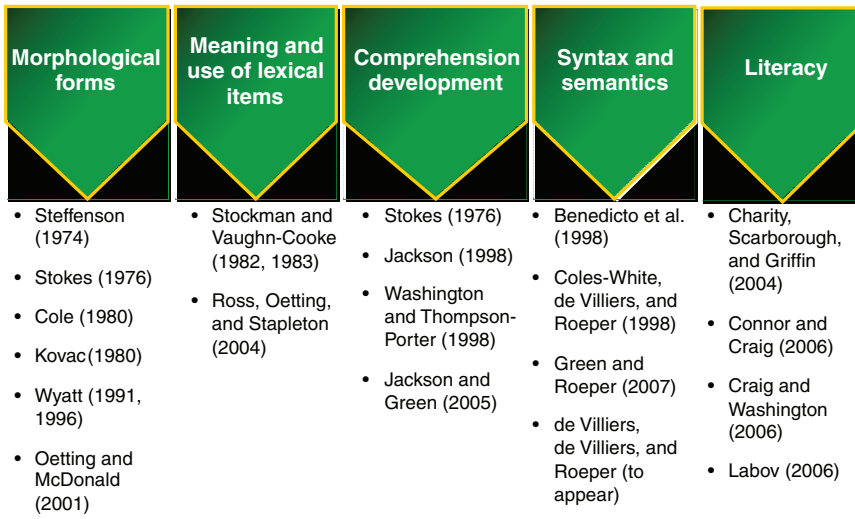


FIGURE 5-1 Development of African American English.
SOURCE: Green (in press).

the grammatical patterns unique to the dialect (e.g., habitual be as in "He be wearing a boot," which means "He generally wears a boot") and markers that are shared with the standard variety of English. This research is showing that forms of the dialect emerge in predictable developmental patterns, as is true of children who use only mainstream English. Exactly how these emerging African American dialect patterns relate to performance on mainstream language assessments is not yet clear, but the narratives are one way, Green suggested, to gain insight into what African American dialect speakers know about how to represent meanings and which meanings are represented at different points in their language development.

Results from Green's research indicate that children acquire the language variations exhibited in their communities: both the dialect and mainstream English forms are acquired to different degrees depending upon their exposure to the language patterns of different communities, and the features of the dialect overlap with mainstream English. In addition, though it can appear that children do not know certain grammatical forms, such as those for representing past tense (–ed), a closer look reveals that the forms can appear in the African American dialect speech

but that they are used differently, with some of the forms even appearing much earlier in development than observed in children who speak only standard English. Children also may use both standard English and the dialect to mark meaning, such as past tense, in the same narrative. This knowledge is evident, she said, when children engage in variable shifting (using the same grammatical form available in one language for a different purpose in the second language) and code shifting (using a grammatical form not shared between two languages) to describe this movement between standard and dialect English.

Green argued that the appearance of variable shifting and code shifting in children's language supports the notion that regularized African American English-language patterns are part of a linguistic system that is on a continuum with standard English patterns: they are not two dichotomous language varieties. Learning more about this continuum and the grammatical patterns and usage in the dialect in future research would help to determine whether variable shifting or code shifting is needed to increase usage of forms used most often in academic settings. Instruction may need to focus more on variable shifting than code shifting to encourage student awareness of when and where to use the forms they already possess. Some of the standard English forms that dialect speakers may need to learn for school might lie at the periphery on the continuum of grammar usages; if so, studies may show that it is beneficial for teachers to focus on developing those forms first since they may be more difficult to acquire.

In closing, Green suggested a model, referred to as the D.I.R.E.C.T. model (Green, in press) to guide interventions with teachers that would heighten their awareness about the development of language varieties, including African American English. The model specifies that teachers would benefit from knowing that the African American dialect is an inherently variable variety that has set patterns of use of grammatical markers. It is a native variety for many children, with regularized patterns of language use experienced in their environments. It is not haphazard language use or misuse of mainstream American English, Green stressed. African American and mainstream English express the same concepts by using different strategies of marking information about events. Educators can help students develop the standard variety of English for school by being aware of specific dialect markers and their meanings.

Latino Populations and Other Groups

Robert Bayley agreed that Labov's more than 40 years of research on African American English and the research reviewed in Labov and Hudley (2009) effectively make the case for developing reading interven-

tions to assist struggling African American readers, and Hudley's recent contributions on symbolic, social, and psychological influences extend that work in valuable ways for theory and practice. The relationship between dialect and decoding is important, and Labov's work has shown that intervention can improve reading scores for African American dialect speakers.

Variations in Latino languages have not received much attention, however, in the work of Labov and others, Bayley observed. He suggested that more needs to be known about how the different backgrounds of Latino children have affected the reading error patterns that Labov reported for Latino students in comparison with African American students, the range of Latino grammatical structures, and the types of instruction that would be most effective and appropriate to support reading. For instance, were the Latino students bilingual to some degree? Spanish dominant? Literate in Spanish? Were they English-language learners? What language in particular did they speak? As Otto Santa Ana also stressed in his discussion, the label Latino has political origins that are not grounded in the sociological reality of varied historical origins and cultural and linguistic diversity. More thorough and accurate descriptions of the sample populations could help to interpret the data being collected on samples referred to as Latino and would lead to better understanding of language differences and how to intervene with students.

Bayley agreed with Valdés and colleagues (2009) that longitudinal studies of second-language use by children are needed. Such data might reveal that certain aspects of language may "take care of themselves" with more exposure to language in the school environment, while more explicit and targeted instructional interventions may be needed to see progress in other areas of language. However, a message needs to be sent that language proficiency differs from literacy proficiency. Currently, literacy measures are used for identifying English-language learners for language and learning services, including special education, thereby underestimating the oral-language abilities students possess for learning, further perpetuating achievement gaps.

Bayley also agreed with Valdés and colleagues that defining academic language as distinct from ordinary, everyday language does not seem fully warranted given the linguistic evidence at this point. He likewise agreed that native versus nonnative is not a meaningful way of distinguishing research samples.

Labov's report linking the absence of certain grammatical forms in African American vernacular to performance on applied mathematics problems suggests the need to create more valid assessments of mathematics and other content areas that are not contaminated with unnecessary linguistic demands. Likewise, assessments are needed to more

accurately distinguish English-language learners and second-dialect speakers from students with learning disabilities, given data reported by Artilles and Ortiz (2002), as well as Rueda and colleagues (Rueda et al., 2002) and others showing that many states use systems that appear to dramatically overrepresent English-language learners in special education programs.

In the future, research is needed to document the language learning trajectories of low-literacy learners as well as English-language learners' full range of proficiencies, including both first and second language, first and second dialects, and literacy practices used in communities and in school. Some, such as Heath and Kramsch (2004), argue that peer influences are likely to influence how students engage in literacy practices and construe literacy tasks. Thus, understanding the nature of these peer influences has implications for understanding how to support engagement with literacy in the classroom. Bayley concurred with Labov and Hudley (2009) that serious efforts are needed to communicate research-based knowledge about language to the public, educators, and policy makers since little headway seems to have been made despite having accumulated knowledge across decades.

Deeper Understanding of Dialects

Discussant Otto Santa Ana said that teachers would benefit from understanding how home dialects develop; how dialects affect developing other languages, dialects and registers; pedagogical skills for developing literacy from these starting points; and ways that teachers' linguistic ideologies may be affecting their practices. Santa Ana urged studying verbal expression in institutionalized social practices to inform instruction. That is, although it is important to measure phonology, grammar, and so on, it could be more helpful to address these issues in the context of practices and to encourage teachers' understanding of how to develop these elements of language in the context of their use. The notion of academic registers could be a meaningful framework for expanding students' use of language in ways that go beyond concern with teaching and assessing lists of isolated grammatical forms that do not indicate knowledge of actual uses and control of the register in the context of academic learning. Knowing about and using children's first languages could be helpful to teachers in this regard. From a broader standpoint, Santa Ana argued that attending to the structural aspects of language may be less important than the opportunities children have to learn, which are affected by many factors, including negative perceptions of the learning abilities of children who speak nonstandard English.

Understanding Achievement Gaps

Discussion ensued as to whether achievement gaps are real given that some in the academic community question their existence, saying the notion derives from a deficit perspective. Although most participants acknowledged the empirical reality of achievement gaps, there was some disagreement about the various sources of the gaps and their relative effects on achievement. Consistent with Valdés' comments, several participants suggested the need to frame questions about the role of language in academic achievement and achievement gaps in a larger framework and to examine the interaction of language in relation to other factors that also affect achievement: poverty, ideology, discrimination, assessment problems, and so on. Remedies for achievement gaps may differ depending on how language relates to these other factors.

Labov agreed that from the point of view of psychology, investigating this complexity is an important question, but that his data from a psycholinguistic perspective show that at the level of grammar, certain features that can be difficult to teach do have cognitive consequences. Yet it is difficult to say right now, he acknowledged, how important intervening with these features of grammar would be to reducing achievement gaps in light of other factors in a learner's environment. Still, he argued, as anyone who has worked with children in inner-city schools knows, 3rd and 4th graders cannot access education because they do not know the alphabet and how to decode and comprehend what they read: thus, one "path to reducing poverty and inequality is blocked by the fact of reading failure."

Though acknowledging Labov's findings, several participants pointed to concerns about children being given extraordinary amounts of language and literacy education unaccompanied by the academic content that could be the vehicle for helping children develop grammar and other language skills. Schleppegrell reiterated that a goal is to prepare teachers to enable every child in the classroom, whatever their language resources, to begin to engage with grade-level content using the approaches illustrated in Schleppegrell (2009) and that have been implanted widely in some countries, including Australia, as noted earlier by Walqui. Bayley noted that debates about the precise role of language is irrelevant as long as children are not getting services that they need because proficiency measures do not go beyond Roger Brown's morphemes in classifying students as proficient. The result of this misguided approach to measuring student proficiency is that many students do not receive the appropriate language intervention or academic curricula.

Hoff said that a critical question for her is how to engineer environments that provide young children and students with rich language input. Except for the 5 percent or so of children who have a language-learning

impairment, the evidence is very clear that children learn language from input. Before children learn to read, the relevant input is conversation. After they learn to read, the degree to which they read becomes a very important input variable for learning new and rare vocabulary and grammatical forms. This is true for children learning a first or second language, for children learning two languages simultaneously, and for vernacular: African American children learn the African American dialect or standard English depending on what they're exposed to. So the question for school achievement, Hoff said, is how to ensure children gain access to continual and rich input.

Walter Wolfram questioned the meaning of rich input and the empirical basis for indicating that children are not getting adequate or rich input to learn language since children around the world learn language from varied language models. Hoff responded that if one defines language acquisition as simply knowing a language, then it is indeed the case that all children get sufficient input to know a language. But, realistically, children vary in the levels at which they know their language so that children enter school with different vocabularies, complexities of grammar, and so on, and if one assumes that these variations matter for academic success, then data are accumulating that point to an operational definition of rich linguistic input. For instance, data show that:

- The *number of different words* that mothers use in talking to their children predicts the children's vocabulary size in spontaneous speech.
- The *number of words* mothers present in talking with their children predicts children's vocabulary use in spontaneous speech.
- The *complexity of maternal utterances* predicts children's vocabulary. This effect cannot be due to genetic influences because teachers' use of complex sentences in the kindergarten classroom also predicts growth in children's use of complex sentences and comprehension of complex sentences over the kindergarten year.
- The *frequency with which mothers expand their children's utterances* and the *frequency with which mothers ask their children questions* predicts the complexity of children's noun phrases and the acquisition of auxillary verbs.

These are some of the qualities of language input that predict aspects of language development on which children vary, and this variability has been shown to predict success in school in many areas, such as reading achievement.

Valdés stressed that, for her, the question for learning and achievement is whether it is possible to learn subject matter through flawed lan-

guage? She argued that the answer is yes, according to evidence obtained with international university students learning content in a second language. Yet schools in the United States categorize students using literacy assessments, failing to distinguish between oral-language and literacy skills. Although literacy depends on language, the two are known to be different skills learned under different conditions, with literacy learning being more similar to other forms of academic learning. As long as students with a wide range of oral-language skills are all deemed to be perpetual language learners, "closeted away" with other English-language learners even though conversationally and in many other ways they can use English, an achievement gap will persist caused at least in part by children's lack of opportunity to learn academic content.

Jeff MacSwan noted that two ideas discussed during the workshop permeate language-minority education and special education. First is the notion that students undergo language subtraction and lose proficiency in the first language as a result of learning a second. The latter is a misconception that emanates from standardized testing, which inappropriately labels children as a-lingual or semi-lingual, in his view. For instance, children in his research whose scores on standardized tests ranged from nonproficient through proficient and who could be labeled as a-lingual or semi-lingual on the basis of their test scores were nonetheless empirically indistinguishable in their actual Spanish narration, as indicated in the morphological and other syntactic characteristics of their narratives.

Second, MacSwan said, is that academic language is often discussed as if it is fundamentally different from language used in other contexts. It would not be productive, he said, for researchers to begin relating features of academic language to cognitive ability as if to imply that certain features of academic language are more syntactically complex. A more fruitful way to proceed would be to conceptualize school language as language used in a particular place for a set of purposes and not as having a higher developmental status. Several participants noted that Schleppegrell (2009) has offered one way to start thinking about how this might be done. The researcher's task then becomes, MacSwan said, to figure out how to apprentice students into using the language of school while engaging them in rich and appropriately complex academic content.

6

Reflections on Research and Practice

This chapter synthesizes discussion from the two final sessions of the workshop: members of the planning committee identified workshop themes relating to conducting and applying research on language and on reducing achievement disparities. Several key questions stood out: Are certain aspects of language critical to develop, especially for populations that have low achievement levels or are disengaged with school? What additional work may be needed to explore the influence of language on achievement gaps? What are some of the issues to consider when developing, evaluating, and implementing effective practices to develop both language and academic content knowledge?

ASPECTS OF LANGUAGE TO STUDY

Jill de Villiers began the discussion by noting the apparent agreement at the workshop about the need to tackle comprehension. Decoding continues to deserve attention, however, especially in light of William Labov's data showing that certain decoding errors associated with dialects lead to subsequent reading errors. Labov agreed and emphasized that both *Preventing Reading Difficulties* (National Research Council, 1998) and the report of the National Reading Panel (National Institute on Child Health and Human Development, 2000) concluded that direct instruction in decoding was effective in teaching children to read. The search for approaches to comprehension instruction should not be misinterpreted as saying that decoding instruction is unimportant for solving achievement gaps.

With respect to vocabulary, the research suggests very strongly, de Villiers said, that for the direct teaching of vocabulary to be fruitful, the vocabulary would need to be introduced in the context of varied content, ideally content made interesting to the student, content that is linked to what the student already knows, and so forth. The challenge lies in figuring out how to arrange these learning conditions. Lynne Vernon-Feagans added that a theme of the workshop was that vocabulary instruction is likely to be more effective if, in developing instructional approaches, it is conceptualized as part of a larger system of oral and written language.

Regarding syntax and morphology, several questions had been raised, de Villiers said, among them just how automatic learning empty morphology—such as third persons or gendered articles—really is. There may be a critical period for learning some aspects of grammar or a sensitive period after which more repetition or explicit instruction is required. It is not yet clear which grammatical features help or hinder learning in school, but with such knowledge it might be possible to design children's books and software to present essential linguistic contrasts for learning language in the context of content learning. Linguist specialists might help with developing these materials after they are confident about how to sequence contrasts appropriately, given the language level of children at different points in development and for different dialect and language speakers. Several participants, Labov concurred, seemed to suggest that linguistic contrastive analysis may be an acceptable and feasible instructional approach to study in the future.

Much more needs to be known, according to de Villiers, about whether "academic language" is necessary for schooling. Should language used for academic learning become simplified, more like verbal discourse, with dense nominalizations unpacked? It is worth considering that there may be limits to the feasibility of eliminating certain linguistic structures typical of academic language because the structures may be needed to express and even formulate certain concepts that are part of learning and thinking about academic subjects. It is not known whether academic content can be effectively taught and expressed in a vernacular that is familiar to children from their nonacademic experiences. Research may show that some linguistic structures associated with academic learning actually help children think in new ways. Yet developing children's language generally is known to be important for school, she said, and in this respect parents' competence in the home language is one strength to build on to maximize children's opportunities to develop language. Thus, children would likely benefit if parents were encouraged to "reveal their maximum linguistic competence" to children. Intervening as early as possible with parents and high-quality early education programs was a related theme of the

workshop, Vernon-Feagans added, since language develops very quickly over the first few years of life.

RESEARCH ISSUES

From Claude Goldenberg's perspective, achievement gaps are real and large, and the question is what to do about them. Goldenberg agreed with many others that interventions are needed both outside and inside the classroom. Alexander and Entwhistle (1996), among others, have shown that children from lower socioeconomic (SES) backgrounds make gains during the academic year that parallel those of middle- and upper-income children, but lose ground during the summer. Such data indicate that the responsibility for closing achievement gaps cannot be placed only at the "school house door."

Generally speaking, however, the effect sizes obtained in most education intervention research pale in comparison with the size of the achievement gaps. The technical knowledge does not currently exist, in his view, to close achievement gaps, nor are education interventions alone likely to close gaps that result from various economic, cultural, and other factors. In future research, it will be important to use methods for studying instructional practices to evaluate and quantify the results of interventions, rather than just describing the approaches that were implemented. It will also be important to interpret the magnitude of their effects in the context of the overall challenge of "attacking" the achievement gaps.

Kenji Hakuta suggested that the first of Goldenberg's proposals was most important: discovering the ways in which language affects learning and how to intervene. With respect to the second, the liver, he noted, is important to overall health, but no one asks how important the liver is to life compared with other organs: language is important to education in the same way. As long as it is agreed that language is an essential part of schooling, then it is important to assess students' progress with language, and, thus, every teacher needs knowledge of language. Labov agreed and said that, for linguists, the question is what can be done to improve language: deciding what portion of the problem of achievement is attributable to language is not the linguist's concern.

Goldenberg rejoined that it is important for decision making to test assumptions about the relative importance of various aspects of language to school achievement. Studies will be needed both to determine which kinds of teacher training are effective for enhancing language and to evaluate the degree to which those interventions are likely "to pay off" to affect student achievement.

Understanding the role of language in achievement calls for the multi-

disciplinary expertise of sociologists, linguists, psychologists, educators, and economists, Donna Christian said. Another priority is to study interventions longitudinally to determine if and how they made a difference over time. Fred Genesee agreed, and noted that more complex research designs would help examine how multiple influences—linguistic, sociological, psychological, and cultural—interact to influence the achievement gaps over time. For instance, not much bilingual research speaks to issues of SES and poverty and how these interact with the linguistic aspects of children's environments to influence language development and, ultimately, school achievement. More complex models and designs would help to reveal how various characteristics of schools, learners, homes, and so on interact to influence the relation between language development and achievement.

Vernon-Feagans agreed and went on to suggest studying "correlated constraints" on students' language learning. Low SES is associated with many factors that "hang together" and affect language, including family environment, teacher quality, school resources. As a result, efforts to modify language and the achievement gap would need to take into account how low SES affects multiple aspects of children's environment that in turn affect their language experiences.

Christian questioned whether using measures that yield percentile scores leads to the best information about students' language development and gains in achievement. The measures were designed to rank people relative to each another (meaning that someone will always be at the bottom), rather than to assess progress. More generally, how to evaluate the validity of new language assessments also needs serious consideration, de Villiers said: What is the criterion against which to validate new measures? The answer depends, she said, on what the goals are for children's language and school learning: which existing measures map onto these goals and so should be used and which have significant limitations in this regard and so should not be used as a validating measure.

Taking a developmental perspective in future research, Genesee said, would help to understand more about second-language learners and second-dialect speakers. Debates about students' development are occurring in the absence of developmental data: only 25 studies, reviewed in *Educating English Language Learners* (Saunders and O'Brien, 2006) have systematically and empirically looked at oral-language development in the context of schooling. And even less evidence exists on how to promote oral-language development in second-language and second-dialect speakers. Rather than focusing only on students who are not doing well with language and school, developmental research might look more closely at successful minority-language learners who might have been

expected to do poorly to identify the conditions that supported their growth and success.

RESEARCH TO PRACTICE

Participants were invited to discuss professional development and issues that arise when engaging in research with teachers and classrooms. Most programs implemented in preschools and K-12 classrooms are not evidence based, Vernon-Feagans stressed, and curricula tend to be developed by companies without understanding of the research literature or how to apply it. Infusing what is understood about language research into schools of education is vital so that teachers will have cutting-edge knowledge.

It would be helpful to encourage language researchers to collaborate with educators and curriculum developers to work toward state-of-the-art instruction for preschool through 2nd grade. Though some teams are doing this, the activity has not reached a critical mass that could result in nationwide effects on school achievement. Unfortunately, she said, little data exist showing how to intervene effectively with teachers, especially that includes measures of children's outcomes. Promising multidimensional models of professional development could be tested that simultaneously address teacher beliefs, knowledge, and instructional practices, and that measure student progress.

Teachers need a great deal of support, Schleppegrell said, especially those who use a lecture style, and in this regard, coach-teacher models have been especially useful, a point echoed by Susanna Dutro. Dutro went on to suggest that the "accountable talk" method developed by Lauren Resnick and colleagues (e.g., see Wolf, Crosson, and Resnick, 2004) is one promising approach to study in professional development settings to help teachers develop language in the context of academic learning. This approach emphasizes forms and norms of discourse carefully designed to support and promote equity and access to rigorous academic learning.

Accountable talk encompasses three broad dimensions: (1) accountability to the learning community, in which participants listen to and build their contributions in response to those of others; (2) accountability to accepted standards of reasoning, including drawing logical connections and reasonable conclusions; and (3) accountability to knowledge, which is talk that draws explicitly on facts, written texts, or other public information (rather than personal opinion, for instance). Data suggest that it can enhance academic achievement for diverse populations of students.

Participants identified several challenges to conducting intervention and translational research with teachers and schools: the difficulty of conducting randomized trials with policy changes, teacher changes, prin-

cipal changes, and so on; the difficulties of studying linguistic natural interaction in classrooms that have little interaction in them to observe; and the reluctance of teachers to move away from the pacing required to cover material for standards of learning tests and, more generally, to engage students in discourse. David Dickinson stressed that for these and other reasons, almost nothing is known about details of linguistic interactions in classrooms, including how teachers implement what is learned about language development in schools of education. Several participants agreed on the need to also take stock of teacher education to determine what actually gets taught.

Hakuta commented that the lack of classroom research is a missed opportunity. Technological advances have made collecting data and developing and coding protocols much easier, and researchers have more access to district achievement and background data for students. Erika Hoff pointed to the difficulties, however, of recruiting schools to participate in research and suggested a need to develop better relationships between researchers and schools so that schools would welcome participating in research.

Schleppegrell said that one lesson she has learned in her work with teachers is that researchers must proceed in true partnership with teachers and help teachers to meet their practical goals for the classroom. To succeed, researchers will need to enter into this work with humility and offer knowledge in the service of education. Language has been referred to as the hidden curriculum of school (Schleppegrell, 2009), and it is not practical for language to be taught and studied for its own sake in schools, apart from helping teachers to develop students' content knowledge.

A linguist seeking to contribute to reading and education instruction, Labov said, needs to do the following: apply knowledge of linguistics in general and of the alphabet and properties of the alphabet in particular, including how it represents speech; apply knowledge of dialect differences to instruction; and understand what children are like, what they're interested in, how to engage them, and the complex and often difficult realities of children's home lives that might affect learning. The latter can be especially important since children who are experiencing achievement problems can feel alienated and discouraged, perceiving that the education route is closed to them.

Attention also needs to be paid to teachers, Christian said. School learning encompasses both subject matter and the tools needed to learn, one of which is language. Teachers play a vital role as gatekeepers in allowing children access to the tools for learning. It would be valuable to conduct research on teacher beliefs about language, the effects of these beliefs on how teachers evaluate language in school, how teacher expectations affect their interactions with students, and the degree to which

teachers provide students access to appropriately challenging academic content. This proposal is consistent, she said, with Labov and Hudley (2009) which stressed that the structural aspects of language need to be studied in the context of the multiple social and psychological influences that language has on learning. Research on attitude change also could be drawn upon, Genesee said, to learn more about how to develop teachers' attitudes about language and language instruction. Even if the best research findings on language development and instruction were assembled, widespread implementation of the practices may depend on teachers' beliefs about language and linguistic differences.

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Appendix A

Workshop Agenda

Workshop on the Role of Language in School Learning: Implications for Closing the Achievement Gap

October 15-16, 2009

AGENDA

Location: **The William and Flora Hewlett Foundation**
Mariposa Lily Room
2121 Sand Hill Road
Menlo Park, CA

Goals: To explore the state of knowledge about aspects of language development that are critical to learning in K-12 classrooms and that may contribute to observed achievement disparities; to explore the state of knowledge on approaches to instruction that help students develop language for academic achievement; and to identify priorities for research and dissemination given the current state of knowledge.

Guiding Questions

- What aspects of language development are critical for academic learning in K-12 classrooms? Why do these developments matter both in the early years of formal schooling (K-3) and for master-

ing specialized language- and literacy-intensive subject matter in the later elementary grades and beyond?

- What individual differences in language experiences and abilities do students bring to K-12 education? Do these differences help to explain observed disparities in school achievement?
- What do research findings suggest about how to intervene in pre-K and K-12 classrooms to develop aspects of language needed for school achievement? What is known about how to measure progress?
- What are the most urgent priorities for research, from basic and translational science to dissemination research? In particular, what still needs to be understood about: (1) aspects of language needed for learning academic subjects, (2) effects of language differences on achievement gaps, and (3) instructional approaches or other interventions that develop essential language capacities for academic learning K-12 classrooms?

THURSDAY, OCTOBER 15, 2009

8:00–8:30 **Welcoming Remarks**

Kenji Hakuta (*Committee Chair*), Stanford University
Barbara Chow, Education Program Director, William and Flora Hewlett Foundation

8:30–10:30 **Panel 1: Vocabulary and Academic Language**

Moderator: Claude Goldenberg (*Committee Member*), Stanford University

Presenters:
Erika Hoff, Florida Atlantic University
Mary Schleppegrell, University of Michigan

Commissioned Papers:

Erika Hoff, *Do Vocabulary Differences Explain Achievement Gaps and Can Vocabulary-Targeted Interventions Close Them?*

Mary Schleppegrell, *Language in Academic Subject Areas and Classroom Instruction: What Is Academic Language and How Can We Teach It?*

Respondents:
Nonie Lesaux, Harvard University
Aída Walqui, WestEd

Open Discussion

10:30–10:45 ***Break***

10:45–12:45 **Panel 2: Preschool Language Experiences and Interventions: Linkages to K-3 Learning and Achievement**

Moderator: Lynne Vernon-Feagans (*Committee Member*), University of North Carolina, Chapel Hill
Presenters:
David Dickinson, Vanderbilt University
Carol Scheffner Hammer, Temple University

Commissioned Papers:

David Dickinson and Jill Freiberg, *Environmental Factors Affecting Language Acquisition from Birth to Five: Implications for Literacy Development and Intervention*

Carol Hammer, *Dual-Language Learners' Early Language Development and Academic Outcomes*

Respondents:
Jill de Villiers, Smith College
Roberta Golinkoff, University of Delaware
Kathy Hirsh-Pasek, Temple University
Mariela Páez, Boston College

Open Discussion

12:45–1:30 ***Lunch and discussion on Panel 1 and 2 presentations***

1:30–3:50 **Panel 3: Explicit Instruction, Language Transfer, and Relations Between Oral Language and Literacy**

Moderator: Fred Genesee (*Committee Member*), McGill University

***Presenters*:**
Robert Bayley, University of California, Davis
Aydin Durgunoğlu, University of Minnesota, Duluth
John Rickford, Stanford University

Commissioned Papers:

Robert Bayley, *Explicit Formal Instruction in Oral Language: English-Language Learners*

John Rickford and Walter Wolfram, *Explicit Formal Instruction in Oral Language as a Second Dialect*

Aydin Durgunoğlu, *Effects of First Language Oral Proficiency on Second-Language (reading) Comprehension*

Respondents:
Susanna Dutro, E.L. Achieve
Guadalupe Valdés, Stanford University

Open Discussion

3:50–4:00 ***Break***

4:00–5:00 **Discussion of Themes from the Day's Presentations**

Moderator: Kenji Hakuta (*Committee Chair*), Stanford University

Open Discussion

5:00 ***Adjourn***

FRIDAY, OCTOBER 16, 2009

9:00–11:00 **Panel 4: Language Deficits and Differences: Past and Future**

Moderator: Jill de Villiers (*Committee Member*), Smith College

Presenters:
William Labov (*Committee Member*), University of Pennsylvania
Guadelupe Valdés, Stanford University

Commissioned Papers:

William Labov and Anne Charity Hudley, *Symbolic and Structural Effects of Dialects and Immigrant Minority Languages in Explaining Achievement Gaps*

Guadelupe Valdés, Jeff MacSwan, and Laura Alvarez, *Deficits and Differences: Perspectives on Language and Education*

Respondents:
Robert Bayley, University of California, Davis
Lisa Green, University of Massachusetts, Amherst
Otto Santa Ana, University of California, Los Angeles

Open Discussion

11:00–11:15 ***Break***

11:15–12:15 **Discussion of Papers in Light of Emergent Themes and Guiding Questions**

Moderator: Kenji Hakuta (*Committee Chair*), Stanford University

Committee Member Respondents:
Jill de Villiers, Smith College
Claude Goldenberg, Stanford University
William Labov, University of Pennsylvania

Open Discussion

12:15–1:15 ***Lunch and continued discussion of the papers***

1:15–2:45 **Practical Steps to Advance Research and Dissemination**

Guiding Questions

- What research is needed to determine the role that particular language capacities play in academic learning, especially for certain subgroups that experience lower academic achievement?
- What instructional approaches or principles emerge from the research for supporting the development of language needed for academic achievement; which of these are ready to move into practice? What translational research is still needed to meet the needs of today's students and classrooms?
- What syntheses could be undertaken to inform practice or a research agenda, including topics not covered in this workshop?
- What entities might play a role in these research funding, synthesis, and dissemination efforts?

Moderator: Kenji Hakuta (*Committee Chair*), Stanford University

Committee Member Respondents:
Donna Christian, Center for Applied Linguistics
Fred Genesee, McGill University
Lynne Vernon-Feagans, University of North Carolina, Chapel Hill

Open Discussion

2:45–3:00 **Summation and Closing Remarks**
Kenji Hakuta (*Committee Chair*), Stanford University

3:00 ***Adjourn***

Appendix B

Biographical Sketches of Planning Committee Members and Staff

Kenji Hakuta (*Chair*) is Lee J. Jacks professor of education at Stanford University. An experimental psycholinguist by training, he is best known for his work in the areas of bilingualism and the acquisition of English in immigrant students, and he is also active in education policy. Previously, he held appointments at Yale University and the University of California at Santa Cruz, and he helped start the University of California at Merced as its founding dean of social sciences, humanities and arts, on leave from Stanford. He currently serves on the board of the Educational Testing Service, and is vice chair of the board of the Spencer Foundation.

Donna Christian is president of the Center for Applied Linguistics in Washington, DC, where her work has focused on the role of language in education, including issues of second-language learning and dialect diversity. She serves as a board member for the International Research Foundation for English Language Education and for Senior Service America, and is a member of the advisory committee of the Hispanic Family Literacy Institute. She has taught linguistics and education courses for George Mason University, Georgetown University, the George Washington University, the University of California at Santa Cruz, and the University of Virginia.

Jill de Villiers is Sophia and Austin Smith professor in the Psychology Department and the Philosophy Department at Smith College and an adjunct professor at the University of Massachusetts at Amherst. Her

current research centers on how children learn about the language of mental events—verbs such as think, know, believe, want, intend—on how deaf children develop a representation of other minds, and how children acquire African American English. She serves as a consultant for Laureate Learning Systems, COST (a European Foundation project), and has authored a test (DELV) for Pearson, Inc.

Fred Genesee is a professor in the Psychology Department at McGill University. He has served as a board member and president of Teachers of English to Speakers of Other Languages, Inc., and as a consultant on second and foreign languages and bilingual education around the world, including in Estonia, Germany, Hong Kong, Italy, Japan, Latvia, Russia, and Spain. His current research interests include language acquisition in preschool bilingual children and cross-language adopted children and in the language and academic development of at-risk students in bilingual programs.

Claude Goldenberg is a professor of education at Stanford University. Previously, he was executive director of the Center for Language Minority Education and Research in the College of Education at California State University at Long Beach. He has taught junior high school in San Antonio, Texas, and first grade in a bilingual elementary school in Los Angeles. His research focuses on literacy development and academic achievement among Latino children, home-school connections, and processes and dynamics of school change. He is coauthor, with Rhoda Coleman, of *Promoting Academic Achievement Among English Learners: A Guide to the Research* (2010, Corwin).

William Labov is a professor of linguistics and psychology and the director of the linguistics laboratory at the University of Pennsylvania. His research interests within sociolinguistics include the development of African American vernacular English, the effects of dialect differences on reading success, and the causes of increasing diversity among American dialects. He is a senior author of the remedial language arts program PORTALS, which is designed for struggling readers who are speakers of African American vernacular English. He is a member of the National Academy of Sciences and a fellow of the American Association for the Advancement of Science.

Lynne Vernon-Feagans is William C. Friday distinguished professor of early childhood intervention and literacy and professor of psychology at the University of North Carolina, Chapel Hill. She has a long-standing interest in young children at risk for school failure, particular interest in

children who live in poverty, children with learning or language disabilities and children with hearing loss due to otitis media (ear infections). Her teaching focuses on an ecological and contextual framework of learning that affect children at home, in childcare settings, at schools, and in the community.

Melissa Welch-Ross is a senior program officer at the National Research Council's Center for Education in the Division of Behavioral and Social Sciences and Education. Previously, she served as a special expert in research and policy analysis at the U.S. Department of Health and Human Services and as the developer and director of the Early Learning and School Readiness Research Program for the National Institute of Child Health and Human Development at the National Institutes of Health. She has held faculty appointments at George Mason University and Georgia State University in Atlanta.