In 1995, Hart and Risley published a book delineating the results of their groundbreaking research which sought to answer the question, why is there a persistent disparity in academic performance between children of low and high socioeconomic status (SES)? Hart and Risley noted a much lower rate of vocabulary growth in the poorer children, beginning as early as kindergarten. This decreased rate of growth translated into an ever-increasing disparity in vocabulary size through high school, which left the poorer students unable to wrestle with the vocabulary used in advanced level textbooks. Rather than looking at the school environment, Hart and Risley turned their attention to the home environment. They enrolled 42 families in their study and for 2.5 years, they recorded 1 hour of conversation every month, between parents and their young children as the children were learning to talk (from roughly 9 months to 3 years old). Of the 42 families, 13 were upper, 10 were middle and 13 were lower SES. After analyzing over 1,300 recordings, Hart and Risley were astounded at the results. A quantitative analysis revealed that children in the lower SES heard far fewer words per hour than their middle and upper SES peers: 616 v. 1,251 v. 2,153 words per hour. A linear extrapolation over the first 3 years of life defines the 30 million word gap: whereas a child in an upper SES family will have an accumulated experience with 45 million words, the child in the lower SES family will only have had experience with 13 million words. Of the original 42 families, 29 participated in a study of academic performance when the children were 9-10 years old. They found that vocabulary use at age 3 was strongly predictive of language and reading skills when the children were in 3rd grade.

The 30 million word gap is receiving significant attention of late, perhaps because it is now 20 years since its “discovery.” Last year, the American Academy of Pediatrics released a policy statement on the promotion of literacy as an essential component of primary care pediatric practice. Their Reach Out and Read program encourages parents to read to their children beginning in infancy and continuing at least until entrance into kindergarten. The Thirty Million Words Initiative develops and disseminates parent-based programs that encourage parents to use language to build their children’s brains. These programs recognize that more words alone will not harness the power of language to close the achievement gap. Over the last 20 years, the evidence has shown that quality is just as important as quantity. Children benefit more when words and language are presented in context with opportunities to use these words themselves and receive feedback; they need conversations; they need connections to experience. In other words, children need visual experiences to build their language skills. The definitive and profound links between vision, audition, language and child development have been explored by many developmental optometrists, beginning with Skeffington.

Skeffington’s model has vision as the emergent of 4 overlapping processes: anti-gravity, identification, centering and speech-audition. The speech-audition process contributes to vision development by providing a mechanism for young children to verify their judgments by communicating with others. However, in Getman’s discussion of Skeffington’s circles, he makes it very clear that vision influences the
awareness of the importance of both vision and audition in helping all children achieve academic readiness and success. They may differ in their understanding of the sensory processing occurring and/or the language they use to describe the problem. A monograph by Press provides an essential overview of these varying perspectives while focusing on the commonalities as well as the interplay between vision and audition. He refers to the 4 basic processing capabilities identified by Brazelton and Greenspan as the “irreducible needs of children:” auditory processing, visual processing, sensory modulation, and motor planning and sequencing. Building these basic processing capacities lies at the heart of any vision therapy program, whether the person designing the program is a disciple of Skeffington, Solan, Getman, none of the above, or all of the above. They all recognize the interweaving, intermingling, interdependence and ever-shifting balance of all the pieces that play a role in child development. However, what is left unsaid and what we can take from the research of Hart and Risley, is that all the pieces need input! Many of the children that are being enrolled in vision therapy programs due to learning-related vision problems have or had the appropriate wiring, but their circuits have withered because of insufficient stimulation. The 30 million word gap is one demonstration of a very serious problem. In all likelihood, the similarities between vision and audition extend to include an impoverished early childhood experience … a 30 million picture gap and a 30 million movement gap. Children of low socioeconomic status are being primed for failure via the “double whammy:” a lack of adequate sensory experiences and an increased prevalence of undetected and untreated vision problems.

Steele asks and answers the question, “do optometrists have a responsibility in overall child development?” Optometrists must educate parents of the need to provide their babies and young children with a variety of...
experiences in order to maximize their visual, social, cognitive and overall development. This must be paired with greater collaboration with other professions. Closing the 30 million word gap and the achievement gap will require nothing less.

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References:

Executive Summary
In 1995, Hart and Risley published the results of their groundbreaking research which sought to answer the question, why is there a persistent disparity in academic performance between children of low and high socioeconomic status (SES)? They recorded 1 hour of conversation every month, between parents and their young children as the children were learning to talk. Over the first 3 years of life, a child in an upper SES family will have an accumulated experience with 45 million words, while the child in the lower SES family will only have had experience with 13 million words. Over the last 20 years, the evidence has shown that quality is just as important as quantity. Children benefit more when words and language are connected to experience. In other words, children need visual experiences to build their language skills. The definitive and profound links between vision, audition, language and child development have been explored by many developmental optometrists, including Skeffington and Solan. What we can take from the research of Hart and Risley, is that all these different models require sensory input! The 30 million word gap is one demonstration of a very serious problem. In all likelihood, these children also suffer from a 30 million picture gap and a 30 million movement gap. Developmental optometrists have a responsibility to educate parents and work collaboratively to close the 30 million word gap and the achievement gap.

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