

Why Children Talk to Themselves

Although children are often rebuked for talking to themselves out loud, doing so helps them control their behavior and master new skills

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1 As any parent, teacher, sitter or casual observer will notice, young children talk to themselves — sometimes as much or even more than they talk to other people. Depending on the situation, this private speech (as modern psychologists call the behavior) can account for 20 to 60 percent of the remarks a child younger than 10 years makes. Many parents and educators misinterpret this chatter as a sign of disobedience, inattentiveness or even mental instability. In fact, private speech is an essential part of cognitive development for all children. Recognition of this fact should strongly influence how both normal children and children who have trouble learning are taught.

2 Although private speech has presumably been around as long as language itself, the political climate in Russia in the 1930s, and the authority of a great Western cognitive theorist, prevented psychologists and educators from understanding its significance until only very recently. In Russia more than six decades ago, Lev S. Vygotsky, a prominent psychologist, first documented the importance of private speech. But at that time, the Stalinist regime systematically persecuted many intellectuals, and purges at universities and research institutes were common.

3. In fear, Soviet psychologists turned on one another. Some declared Vygotsky a renegade, and several of his colleagues and students split from his circle. According to the recollections of one of Vygotsky's students, the Communist party scheduled a critical "discussion" in which Vygotsky's ideas would be the major target. But in 1934, before Vygotsky could replicate and extend his preliminary studies or defend his position to the party, he died of tuberculosis. Two years later the Communist party banned his published work.

4. In addition to not knowing about Vygotsky, Western psychologists and educators were convinced by the eminent Swiss theorist Jean Piaget that private speech plays no positive role in normal cognitive development. In the 1920s, even before Vygotsky began his inquiries, Piaget had completed a series of seminal studies in which he carefully recorded the verbalizations of three-to seven-year-olds at the J. J. Rousseau Institute of the University of Geneva.

Private speech enables all children to direct their own behavior, acquire new skills and otherwise work through situations that are unfamiliar to them. When any child encounters a new task, he or she will state out loud those features of the problem that seem puzzling. As the youngster's competence grows, this private speech turns into inaudible muttering. Finally, when the cognitive operations necessary to succeed at that task are well practiced, the child thinks words silently.

Besides social remarks, Piaget identified three additional types of utterances that were not easily understood or clearly addressed to a listener: the children repeated syllables and sounds playfully, gave soliloquies and delivered what Piaget called collective monologues.

5. Piaget labeled these three types of speech egocentric, expressing his view that they sprang only from immature minds. Young children, he reasoned, engage in egocentric speech because they have difficulty imagining another's perspective. Much of their talk then is talk for themselves and serves little communicative function. Instead it merely accompanies, supplements or reinforces motor activity or takes the form of non sequiturs: one child's verbalization stimulates speech in another, but the partner is expected neither to listen nor understand. Piaget believed private speech gradually disappears as children become capable of real social interaction.

6. Although several preschool teachers and administrators openly questioned Piaget's ideas, he had the last word until Vygotsky's work reached the West in the 1960s. Three years after Joseph Stalin's death in 1953, Nikita S. Khrushchev criticized Stalin's "rule by terror" and announced in its place a policy that encouraged greater intellectual freedom. The 20-year ban on Vygotsky's writings came to an end. In 1962 an English translation of Vygotsky's collection of essays, *Thought and Language*, appeared in the U.S. Within less than a decade, a team led by Lawrence Kohlberg of Harvard University had compiled provocative evidence in support of Vygotsky's ideas.

7. In the late 1970s some American psychologists were becoming disenchanted with Piaget's theory, and at the same time, a broader range of Vygotsky's writings appeared in English. These conditions, coupled with Kohlberg's results, inspired a flurry of new investigations. Indeed, since the mid-1980s the number of studies done on private speech in the West has increased threefold. Most of these studies, including my own, corroborate Vygotsky's views.

8. In his papers Vygotsky described a strong link between social experience, speech and learning. According to the Russian, the aspects of reality a child is ready to master lie within what he called the zone of proximal (or potential) development. It refers to a range of tasks that the child cannot yet accomplish without guidance from an adult or more skilled peer. When a child discusses a challenging task with a mentor, that individual offers spoken directions and strategies. The child incorporates the language of those dialogues into his or her private speech and then uses it to guide independent efforts.

9. "The most significant moment in the course of intellectual development," Vygotsky wrote, "...occurs when speech and practical activity, two previously completely independent lines of development, converge." The direction of development, he argued, is not one in which social communication eventually replaces egocentric utterances, as Piaget had claimed. Instead Vygotsky proposed that early social communication precipitates private speech. He maintained that social communication gives rise to all uniquely human, higher cognitive processes. By communicating with mature members of society, children learn to master activities and think in ways that have meaning in their culture.

10. As the child gains mastery over his or her behavior, private speech need not occur in a fully expanded form; the self, after all, is an extremely understanding listener. Consequently, children omit words and phrases that refer to things they already know about a given situation. They state only those aspects that still seem puzzling. Once their cognitive operations become well practiced, children start to "think words" rather than saying them. Gradually, private speech becomes internalized as silent, inner speech — those conscious dialogues we hold with ourselves, while thinking and acting. Nevertheless, the need to engage in private speech never disappears. Whenever we encounter unfamiliar or demanding activities in our lives, private speech resurfaces. It is a tool that helps us overcome obstacles and acquire new skills.

11. Currently two American research programs, my own and that of Rafael M. Diaz at Stanford University, have sought to confirm and build on Vygotsky's findings. Our respective efforts began with similar questions: Do all children use private speech? Does it help them guide their actions? And does it originate in social communication? To find out, I chose to observe children in natural settings at school; Diaz selected the laboratory.

12. Ruth A. Garvin, one of my graduate students, and I followed 36 low-income Appalachian five- to 10-year-olds, who attended a mission school in the mountains of eastern Kentucky. We recorded speech in the classroom, on the playground, in the halls and in the lunchroom throughout the day — paying special attention to those remarks not specifically addressed to a listener.

13. Our findings revealed that egocentric speech, Piaget's focus, seldom occurred. Most of the comments we heard either described or served to direct a child's actions, consistent with the assumption that self-guidance is the central function of private speech. Moreover, the children talked to themselves more often when working alone on challenging tasks and also when their teachers

were not immediately available to help them. In either case, the children needed to take charge of their own behavior.

14. Furthermore, we found evidence suggesting that private speech develops similarly in all children and that it arises in social experience. The private speech of the Appalachian students changed as they grew older in ways that were much like those patterns Kohlberg had reported a decade and a half earlier.

15. Middle-class children, such as those Kohlberg observed, speak out loud to themselves with increasing frequency between four and six years of age. Then, during elementary school, their private speech takes the form of inaudible muttering. The Appalachian children moved through this same sequence but did so more slowly. At age 10, more than 40 percent of their private speech remained highly audible, whereas Kohlberg's 10-year-olds spoke out loud to themselves less than 7 percent of the time.

16. To explain the difference, we studied Appalachian culture and made a striking discovery. Whereas middle-class parents frequently converse with their children, Appalachian parents do so much less often. Moreover, they usually rely more on gestures than on words. If Vygotsky's theory is correct, that private speech stems from social communication, then this taciturn home environment might explain the slow development of private speech in Appalachian children.

17. While our Appalachian study was under way, Diaz and one of his graduate students, Mamie H. Frauenglass, videotaped 32 three- to six-year-olds in the laboratory as the youngsters matched pictures and solved puzzles. Frauenglass and Diaz also found that private speech becomes less audible with age. Yet their results, along with those of other researchers, posed serious challenges to Vygotsky's theory. First, many children emitted only a few utterances, and some none at all—seeming proof that private speech is not universal.

18. Another difficulty arose. If private speech facilitates self-regulation, as Vygotsky believed, then it should relate to how a child behaves while working and how well the child performs. Yet in Frauenglass and Diaz's study, children who used more private speech did worse on the tasks set before them! Other researchers had reported weak and sometimes negative associations between private speech and performance as well.

19. Diaz crafted some insightful explanations for these outcomes. After a close look at Vygotsky's definition of the zone of proximal development, Diaz concluded that perhaps the tasks typically given in the laboratory were not suitable for evoking private speech in all children. Some children may have been so familiar with solving puzzles and matching pictures that the cognitive operations they needed to succeed were already automatic. Other children may have found these tasks so difficult that they could not master them without help. In either case, self-guiding private speech would not be expected. Furthermore, Diaz reasoned that since private speech increases when children encounter difficulties, it would often coincide with task failure. He suggested that the beneficial impact of private speech might be delayed.

20. **R**eturning to the classroom — this time, to the laboratory school at Illinois State University — I embarked on a series of studies to test these intriguing possibilities. My team of observers carefully recorded the private speech and task-related actions of 75 first to third graders as they worked alone at their desks on math problems. Their teachers considered this work to be appropriately challenging for each child. Graduate student Jennifer A. Bivens and I then followed the first graders and monitored their behavior as second and third graders.

21. Every child we observed talked to himself or herself — on average 60 percent of the time. Also, as in previous studies, many children whose remarks described or otherwise commented on their activity, received lower scores on homework and achievement tests taken that same year. Yet private speech that was typical for a particular age predicted gains in math achievement over time.

Specifically, first graders who made many self-guiding comments out loud or quietly did better at second-grade math. Likewise, second graders who often muttered to themselves grasped third-grade math more easily the following year.

22. Also, the relationship we noted between a child's use of private speech and his or her task-related behavior bolstered Vygotsky's hypothesis that self-guiding comments help children direct their actions. Children whose speech included a great deal of task-irrelevant wordplay or emotional expression often squirmed in their seats or chewed on or tapped their pencils against their desks.

23. In contrast, children who frequently made audible comments about their work used more nonverbal techniques to help them overcome difficulties, such as counting on fingers or tracking a line of text using a pencil. Finally, children who most often used quiet private speech rarely fidgeted and were highly attentive. Overall, children who progressed most rapidly from audible remarks to inner speech were more advanced

EXPERT ADVICE gives children the framework they need to use private speech effectively. When an adult assists a child with a challenging task, he or she can offer spoken directions or strategies to help that child succeed. The child can then incorporate the language from these conversations into private speech. Later, the child can use this language to guide his or her own efforts.

in their ability to control motor activity and focus attention. The development of private speech and task-related behavior thus went hand in hand.

24. In a later investigation, Sarah T. Spuhl, another of my graduate students, and I attempted to witness in the laboratory the dynamic relationship Vygotsky highlighted between private speech and learning — namely, private speech diminishes as performance improves. We added a new dimension to our research as well: an exploration of how the interaction between a child and an adult can foster self-regulation through private speech.

25. We asked 30 four- and five-year-olds to assemble Lego pieces into a reproduction of a model. Each subject attempted the exercise in three 15-minute sessions, scheduled no more than two to four days apart. This timing permitted us to track their increasing competence. We pretested each child to ensure that the Lego tasks would be sufficiently challenging — something that had not been done before. Only novice Lego builders participated. Two weeks before the sessions began, we videotaped each mother helping her child with activities that required skills similar to those involved in Lego building, such as fitting blocks together and matching their colors and shapes.

26. Next we evaluated the communication between the mothers and their children as they solved problems together. According to previous research, parenting that is warm and responsive but exerts sufficient control to guide and encourage children to acquire new skills promotes competence. (Psychologists term such parenting authoritative.) In contrast, both authoritarian parenting (little warmth and high control) and permissive parenting (high warmth and little control) predict learning and adjustment problems. Based on this evidence, we thought that the authoritative style might best capture those features of adult teaching we wished to identify.

27. Our results revealed that children who have authoritative mothers more often used self-guiding private speech. Among the four-year-olds, those experiencing authoritative teaching showed greater improvement in skill over the course of the three Lego-building sessions. Furthermore, we did a special statistical analysis, the outcome of which suggested that private speech mediates the relationship between authoritative parenting and task success — a finding consistent with Vygotsky's assumptions.

28. Unlike previous laboratory research, every child in our sample used private speech. As expected, the children's comments became more internalized over the course of the three sessions as their skill with the Lego blocks increased. And once again, private speech predicted future gains better than it did concurrent task success. In particular, children who used private speech that was appropriate for their age — audible, self-guiding utterances at age four and inaudible muttering at age five — achieved the greatest gains.

29. Research on children suffering from persistent learning difficulties vigorously supports Vygotsky's view of private speech. These children follow the same course of development as do their unaffected age mates, but impairment in their cognitive processing and ability to pay attention make academic tasks more difficult for them. This difficulty in turn complicates verbal self-regulation. Our findings suggest that training children who have learning and behavior problems to talk to themselves when performing cognitive tasks amounts to no more than invoking a skill they already possess. Furthermore, interventions that push children to move quickly towards silent self-communication may be counter-productive. While concentrating, ADHD and learning-disabled pupils show heightened dependence on audible private speech in an effort to compensate for their cognitive impairments.

30. How can our current knowledge of private speech guide us in teaching children who learn normally and those who have learning and behavior problems? The evidence as a whole indicates that private speech is a problem-solving tool universally available to children who grow up in rich, socially interactive environments. Several interdependent factors — the demands of a task, its social context and individual characteristics of a child — govern the extent and ease with which any one child uses self-directed speech to guide behavior. The most profitable intervention lies not in viewing private speech as a skill to be trained but rather in creating conditions that help children use private speech effectively.

31. When a child tries new tasks, he or she needs communicative support from an adult who is patient and encouraging and who offers the correct amount of assistance given the child's current skills. For example, when a child does not understand what an activity entails, an adult might first give the child explicit directions. Once the child realizes how these actions relate to the task's goal, the adult might offer strategies instead. Gradually, adults can withdraw this support as children begin to guide their own initiatives.

32. Too often, inattentive and impulsive children are denied this scaffold for learning. Because of the stressful behaviors they bring to the adult-child relationship, they are frequently targets of commands, reprimands and criticism, all of which keep them from learning how to control their own actions.

33. Finally, parents and teachers need to be aware of the functional value of private speech. We now know that private speech is healthy, adaptive and essential behavior and that some children need to use it more often and for a longer period than others. Still, many adults continue to regard private speech as meaningless, socially unacceptable conduct — even as a sign of mental illness. As a result, they often discourage children from talking to themselves. At home, parents can listen to their child's private speech and thus gain insight into his or her plans, goals and difficulties. Likewise, teachers can be mindful of the fact that when pupils use more private speech than is typical for their age, they may need extra support and guidance. Certainly, we have much more to discover about how children solve problems using spontaneous private speech. Nevertheless, Vygotsky's theory has greatly deepened our understanding of this phenomenon. Today it is helping us design more effective teaching methods for all children and treatments for children suffering from learning and behavior problems. One can only regret that earlier generations of psychologists and educators — and those they might have helped — did not have the advantage of Vygotsky's insights.