
Can Private Speech and Sociodramatic Play Promote Perspective Taking and Reduce Egocentrism?

A Post-Vygotskian Reply to Piaget

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Jeremy Sawyer recounts that, after Lev S. Vygotsky's death, Jean Piaget conceded the Russian psychologist correctly understood the social origins, functions, and developmental trajectory of children's egocentric speech (now called private speech) but dismissed this work as irrelevant to children's egocentrism or nondifferentiation of perspectives. Sawyer asserts that, although Piaget precluded perspective taking in egocentric speech, a post-Vygotskian framework suggests private speech and sociodramatic play may actually promote perspective taking, thereby reducing egocentrism. In light of these assertions, Sawyer examines private speech transcripts from preschoolers for evidence of perspective taking and concludes that they suggest children internalize perspectival differences through private speech and use more implicit perspective taking than explicit mental-state terms. And preschoolers, the author suggests, employ more sociodramatic speech in a sociodramatic play context to enact imaginary scenarios and pretend roles. He concludes that, rather than a remnant of egocentrism, private speech may be a psychological tool for engaging multiple perspectives. **Key words:** egocentrism; perspective taking; Piaget; private speech; sociodramatic play; Vygotsky

FOR PSYCHOLOGIST LEV S. VYGOTSKY, sociodramatic play and private speech proved pivotal aspects of preschool children's development. He derived his theory about their role partly by confronting the ideas of famed childhood theorist and psychologist Jean Piaget. For Piaget, egocentrism was a central phenomenon that children overcame as they learned about social and cognitive perspectives other than their own. Piaget held that children's self-talk was "egocentric speech" that eventually disappeared as children's thinking and speech became more socialized. Vygotsky proposed that instead egocentric speech (or private speech as we call it today) constitutes a phase in the process of internalizing speech, during which children's initial social speech generates, first,

private speech and eventually inner speech, or verbal thinking. As we shall see, Piaget appreciated Vygotsky's critique but also believed it irrelevant to the crucial phenomenon of egocentrism. While true that Vygotsky never investigated egocentrism, I contend his work on private speech and play offers a strong foundation for understanding children's development of perspective taking, the obverse of egocentrism.

As described in Vygotsky's "Play and Its Role in the Mental Development of the Child" (2016), sociodramatic play embodies pretend role play, in which children create imaginary scenarios and take on pretend roles. Children typically generate or follow their own rules during such play, for instance by staying in character while playing the role of a doctor in an imaginary hospital. Vygotsky's approach influenced later post-Vygotskians like psychologist and play theorist Daniil Elkonin (2005), who identified social role play as the basic unit of children's advanced, mature form of play from which imaginary scenarios and associated play actions follow. Vygotsky also considered sociodramatic play a leading activity that propelled preschoolers' development in numerous ways. Private speech, on the other hand, is speech that children spontaneously speak aloud, seemingly to nobody, during various activities. Preschool-age children are the most prolific users of private speech, and they are especially likely to employ it during challenging activities (Winsler 2009). Vygotsky studied private speech primarily as a cognitive tool that children use to think and solve problems, to purposefully direct their attention, and to regulate their own actions (Vygotsky [1934] 1987).

Although sociodramatic play was often investigated separately by Vygotsky and later researchers, there is good reason to connect it to private speech. Both sociodramatic play and private speech contribute to children's motivation in different activities (Sawyer 2017; Sawyer and Brooks 2021), a finding implied by Vygotsky's writings on children's development of volition (Vygotsky [1934] 1987, 2016). Similarly, Vygotsky's work suggests that sociodramatic play and private speech may contribute to a child's facility for shifting social perspectives and adopting various points of view about reality. I unite Vygotskian theory on play and private speech to guide an empirical investigation of children's emergent perspective taking.

Egocentrism underlies children's difficulty in recognizing, understanding, and coordinating perspectives other than their own. To illuminate how children overcome egocentrism developmentally, I reconsider a dialogue between Vygotsky and Piaget on egocentric speech—now better known as private speech

in deference to Vygotsky's critique of Piaget. In their famous exchange, Piaget had the last word (nearly three decades after Vygotsky's death). To advance the discussion, I make a post-Vygotskian reply to Piaget that integrates socio-dramatic play and private speech.

Although Piaget precluded perspective taking in egocentric speech, I suggest that, conversely, children's private speech—especially within sociodramatic play—may foster perspective taking and thereby mitigate egocentrism. Although Vygotsky never directly addressed perspective taking or the capacities known nowadays as theory of mind, I use his work as a basis for exploring how children overcome egocentrism by developing this capacity. To explore this possibility empirically, I examined preschool children's private speech in sociodramatic play and task-oriented contexts for evidence of nascent perspective taking. I present my findings and their implications for how children learn imaginatively to adopt multiple perspectives through play and private speech.

Vygotsky Critiques Piaget on Egocentric Speech

In his early books *The Language and Thought of the Child* (1923) and *Judgment and Reasoning in the Child* (1924), Piaget proposed that children's egocentric monologues, spoken aloud seemingly to nobody, reflected the asocial origins of children's thinking. Influenced by Freud's notions of primary process (acting for the immediate gratification of needs) and secondary process (regulating one's needs to attend to reality), Piaget conceptualized two modes of thought: first autistic and then logical, scientific thought—with egocentrism as a transitional phase between them. As Kesselring and Müller (2011) detail, Piaget positioned the egocentric stage between about three to seven years of age, from the earlier autistic period to the later period of logical thought. Piaget held that egocentric speech reflected remnants of earlier autistic thinking and that these asocial characteristics faded as children's thinking became increasingly socialized. Thus, socialized speech gradually replaced egocentric speech.

Vygotsky ([1934] 1987) paid an enormous debt of gratitude to Piaget for his pioneering work on egocentric speech, but he also severely criticized Piaget's theory. Vygotsky took issue with the notion that children's speech had autistic origins that then underwent socialization. Vygotsky countered that children's speech is entirely social from the start but that it undergoes a phase of self-directed (private) speech for cognitive purposes before becoming internalized as

inner speech, or verbal thinking (Vygotsky and Luria 1929). Above all, Vygotsky critiqued Piaget's interpretation of egocentric speech as a useless accompaniment to children's activity that merely followed a pleasure principle disconnected from reality. Vygotsky argued (and demonstrated through several empirical studies) that children's self-talk was in fact useful for thinking, problem solving, and self-regulation. Vygotsky wrote that children's thinking and self-directed speech, instead, followed the reality principle, which undermined Piaget's claims that such speech revealed children's underlying egocentrism.

Piaget Strikes Back

Decades after Vygotsky's death in 1934, Piaget ([1962] 2000) responded, lamenting that he had never previously read Vygotsky and could not converse with him during his lifetime: "It is not without sadness that an author discovers, twenty-five years after its publication, the work of a fellow author who has died in the meantime. . . . I regret this profoundly, for we could have come to an understanding on a number of issues" (325). As described in van der Veer (1996), however, Piaget was indeed aware of Vygotsky's criticisms by 1932, and by then he possibly had access to Vygotsky's writings in English as well as in Russian. It appears Piaget chose not to engage with Vygotsky at the time, possibly because his interests had shifted—or perhaps because it was not his style to engage with critics, preferring to forge ahead with his own experiments and theories.

When Piaget did respond some thirty years later, he admitted that Vygotsky was entirely correct about the social origins and functional usefulness of children's egocentric speech. Piaget further conceded that Vygotsky was correct about the developmental trajectory in which children's social speech became progressively internalized, passing through a phase of self-directed speech on its way to become silent, inner speech. Recent empirical studies have supported Vygotsky's notion that private speech arises from social speech, becomes internalized as inner speech, and proves vital to the development of psychological processes like verbal thought, metacognition, and self-regulation (see Winsler 2009 for a review).

At the same time, however, Piaget claimed that Vygotsky had ignored the more general phenomenon of children's egocentrism. For instance, Piaget argued that Vygotsky disregarded children's egocentric "collective monologues." An example might be when two young children appear to be talking with each other,

but each child speaks a monologue unrelated to what the other child is thinking, doing, or saying. Piaget seemed to hold that Vygotsky's silence on this topic suggested he had overlooked the importance of egocentrism to children's thinking.

Piaget's Revised Concept of Egocentrism

It is important to note that by the time he responded to Vygotsky in 1962, Piaget had distanced himself from Freudian ideas and had fundamentally revised the theory of egocentrism laid out in his early books. As Kesselring and Müller (2011) describe, Piaget jettisoned autism as the starting point for children's development, instead acknowledging infants' behavior as primarily adaptive to the environment. This allowed him to agree with Vygotsky on the functional origins of children's thinking and self-directed speech. However, the notion of autism lingered in Piaget's later work, including the idea that symbolic representation originated in personal imagery. As we will see, this significantly differs from Vygotsky's view that symbolic capacities arise through play when children make objects stand for other objects, for instance when they use a stick to represent a horse (Vygotsky 2016). Moreover, Piaget saw children's play as dominated by assimilation, which could distort reality to follow the autistic pleasure principle.

By 1962 Piaget no longer considered egocentrism a stage between autism and logical thought but believed it recurred at various stages of development (Kesselring and Müller 2011). Shorn of its Freudian baggage, egocentrism was defined more strictly as difficulty in differentiating and coordinating cognitive and social perspectives. An early formulation of Piaget's still captures this: "The child sees everything from his own point of view. . . . He believes all the world to think like himself. He has not yet discovered the multiplicity of possible perspectives and remains blind to all but his own as if that were the only one possible" (Piaget [1926] 1929, 167). Piaget held that this egocentrism results in difficulty understanding relational concepts like "sister," which require at least two different points of view (e.g., I am a sister to Annika as Annika is a sister to me). It also resulted in speech—like a collective monologue—that betrayed impoverished perspective-taking capacities.

Piaget thus argued that, although Vygotsky was correct to point out that egocentric speech was not an outgrowth of autistic tendencies (Piaget's previous notion of egocentrism), egocentrism in its revised form remained a critical

developmental phenomenon. Piaget argued that his work since Vygotsky's death offered even firmer support for cognitive egocentrism—or “nondifferentiation of points of view”—in young children. In sum, while agreeing with Vygotsky's view on the function and trajectory of egocentric speech, Piaget denied the relevance of Vygotsky's theory to his revised theory of egocentrism as an inability to shift mental perspectives. From a modern vantage point, this charge appears to merit a neo-Vygotskian response.

What Can Vygotsky Tell Us about Egocentrism and Social Understanding?

Piaget was correct that egocentrism and perspective taking were not central preoccupations for Vygotsky. Nevertheless, recent neo-Vygotskian and even neo-Piagetian work suggests that private speech and the internalization of language may play a role in children's development of social understanding. Social understanding (Carpendale and Lewis 2004, 2006) is an umbrella term that encompasses multiple forms of perspective taking and understanding of other minds. It includes infant and toddler “mind reading,” as well as later, more sophisticated theory-like understandings of mental states sometimes referred to as mentalizing or theory of mind.

In a review of the relevance of Vygotskian theory to social understanding, Fernyhough (2008) points out that, although Piaget recognized the importance of social exchanges for cognitive development, Vygotsky went much further. Vygotsky claimed that all higher psychological processes—including logical memory, voluntary attention, and verbal, conceptual thinking—were mediated by psychological tools developed by human culture, with language the most important tool. Empirical support for Vygotsky's prediction of an inverted U-shaped (or negative quadratic) trajectory of children's private speech during the preschool years (Winsler and Naglieri 2003) and semantic and syntactic abbreviations of private speech (Winsler et al. 2003) bolster his account of speech internalization. By comparison, Piaget's account of language was far less developed (Müller and Carpendale 2000), and he seemed to reject Vygotsky's notion of semiotic mediation of higher mental functions.

Fernyhough (2008) outlines the dialogical thinking (DT) framework, highlighting the possibility implicit in Vygotsky that internalizing social dialogues, with their inherent multiplicity of perspectives, may contribute to children's

growth in social understanding. DT proposes that in interpersonal exchanges people express alternate perspectives on reality. Thus, internalizing these dialogues can restructure our cognition to accommodate multiple perspectives. Indeed, verbal thinking often appears to take the form of a dialogue between different perspectives, as in the trope of a devil and an angel arguing on one's shoulders.

DT employs Bakhtin's (1986) concepts of "voice" and "dialogue" to show that each speaker occupies a unique perspective on reality, expressed through speech. Speech embodies the perspectives of others who have used similar words before, and our speech always anticipates a possible response from a real or imagined partner. For Bakhtin, even a single utterance can express multiple perspectives on reality. The logical conclusion is that internalizing dialogic interactions inevitably involves some adoption of the perspectives enacted in the dialogues. Through this process, children gain a basis for operating flexibly with multiple perspectives on the people with whom they interact and eventually for understanding how different beliefs, knowledge, and orientations to the world influence human behavior.

Private Speech and Perspective Taking

Additional work since Fernyhough's (2008) review supports a hypothesized relation between private speech and social understanding. First, a neo-Piagetian account argues that private speech aids the enactment of various forms of social cognition (Carpendale et al. 2009). Fernyhough and Meins (2009) discuss longitudinal evidence for developing interfunctional relations between private speech and children's theory of mind. Importantly, an empirical study (Ioa et al. 2015) found a concurrent link between children's use of partially internalized private speech (muttered, fragmented self-talk) and their performance during a theory of mind task. Finally, Manfra and Winsler (2006) found that three- to five-year-old children are largely aware of their own private speech, and the children usually say their private speech is self-directed. This means that children view their private speech as spoken to themselves—not to real or imagined others, as Piaget claimed. Moreover, this study found a link between children's awareness of their own private speech and their theory of mind development, further highlighting the connection.

Synthesizing this work suggests that, far from reflecting egocentrism, chil-

dren's use of private speech likely contributes to overcoming egocentrism. As Vygotsky ([1934] 1987) wrote, a child "begins to converse with himself as he previously conversed with others" (75). This image of self-communication suggests that the dialogical qualities of social speech are retained in private and inner speech. These self-dialogues are enacted as children turn toward themselves as collaborative partners in carrying out their practical activity (Sawyer and Stetsenko 2018). If this account is accurate, children can flexibly adopt a panoply of viewpoints as they appropriate dialogic social speech. Children's private speech should provide a window onto this process of internalizing and enacting various perspectives.

Implicit Perspective Taking or Explicit Mental State Terms?

Children's use of terms relating to mental states like thinking, pretending, and knowing generally begin before a child turns two years old, and such use has been interpreted as indicating a basic understanding of psychological states, or nascent theory of mind (Bang, Burns, and Nadig 2013). One of the issues raised by Fernyhough (2008) concerns whether perspective taking in private speech is more likely to take implicit or explicit forms. For instance, are children likely to mention mental states (e.g., thinking, feeling, believing, seeing) explicitly when adopting various perspectives? An example would be the contrastive phrase, "I thought it went there, but it doesn't."

In contrast, one way that implicit perspective shifts may manifest without reference to obvious mental state terms might be when children ask themselves questions (e.g., "should this piece go here?") when working on a puzzle. By asking themselves a question, children adopt an alternative perspective on the task (perhaps that of a teacher or parent who is prompting them to think about the activity). It could be said that a child switches from an "I" to a "me" perspective, or from a subject to an object (of another's perspective) position. A child represents the other's perspective through a self-questioning form of private speech, which in time will become fully internalized, along with the adult perspective. In the case of children asking themselves questions—and even more so when they answer themselves (e.g., "yes, it should go there!")—the dialogical form and perspective-shifting nature of private speech becomes crystal clear, even in the absence of mental state terms. As we will see, private speech that embodies

elements of sociodramatic play fits criteria for another form of implicit perspective taking.

The DT model predicts that children's utterances containing explicit mental state terms should be rarer than utterances reflecting perspectival differences without overt reference to mental states. This aligns with the DT model's view of mental state discourse as less important to the development of social understanding than dialogues presenting alternative perspectives on reality without necessarily mentioning mental states (Fernyhough 2008). It appears that researchers have not yet examined the frequency with which children use mental state terms versus more implicit forms of perspective taking in private speech. My study examined and compared implicit and explicit perspective-taking private speech.

Sociodramatic Play and Perspective Taking

Another area in which Vygotsky's work gives us insight into children's perspective taking is play. Piaget regarded play as a predominance of "assimilation over accommodation," meaning children distorted reality to fit with their preexisting mental schemes, which echoed Piaget's autism-related definition of egocentrism. Although Vygotsky's (2016) writing on play, like his writing on private speech, does not explicitly address perspective taking, clear implications can be drawn for children's growing capacities to shift and simultaneously enact multiple points of view. Vygotsky opens the discussion by describing the primary motivation behind children's play: desires that cannot be satisfied in real life, given a child's stage of development. He writes, "For example the child wants to be in his mother's place, or wants to be a rider on a horse. This desire cannot be fulfilled right now" (7). In play, however, a child can indeed take on the pretend role of a mother or transform into a "cowboy" who rides a horse. Children create imaginary situations in which they can experiment with a variety of adult roles (e.g., teacher, astronaut, or fictional creatures) that exist within their cultural and historical milieu.

Vygotsky's next major point is that, although the imaginary situations children create in sociodramatic play do not have explicit rules formulated in advance, children are nevertheless always following hidden rules of behavior. As Vygotsky writes, "The child imagines herself to be the mother and the doll a child, so she must obey the rules of maternal behavior" (9). In other words, to play this role children must take the perspective of a mother, as far as they

understand it. As Vygotsky noted, “The imaginary situation will always contain rules. In play the child is free. But this is an illusory freedom” (10). With approval, Vygotsky cites Piaget’s depiction of a child following an inner rule of self-restraint and self-determination rather than a physical or external law. Ironically, by creating an imaginary situation and following the rules or perspectives of the roles they are playing, children begin to emancipate themselves from situational constraints and achieve maximum joy in play.

Vygotsky gives an example from research of two sisters (age five and seven) who one day said, “Let’s play sisters.” Although the sisters interacted every day, neither ever did so on the basis that the other girl was her sister. In other words, they did not think about this relationship. When they had to take on the imaginary role of sisters, however, suddenly they dressed alike, walked around holding hands, and were fully dedicated to displaying their sisterhood. As Vygotsky wrote, “They enact whatever emphasizes their relationship as sisters vis-a-vis adults and strangers” (10). This is a clear example of children taking a new perspective on their own behavior—the vantage of adults, strangers, or the outside world in general. This switch in perspective allowed the girls to play their pretend roles as “sisters” for maximum effect.

Internalizing Multiple Perspectives through Play

In addition to allowing the assumption of pretend roles of actual others or of social types, with their accompanying perspectives and behavior, play entails other means of enacting multiple perspectives. Vygotsky writes that when children create an imaginary situation, it is based on “the separation that occurs, in the preschool period, of the visual and meaning fields” (8). Children see a stick but act as if it were a horse, which allows them to ride into the sunset. In play, they are guided not by their immediate perception of objects, but rather by the meanings these objects have within the imaginary situation and in the context of the pretend roles. In Vygotsky’s words, “The basic structure determining the child’s relationship to reality is radically changed at this crucial point, for his perceptual structure changes” (13). It appears children hold dual or multiple perspectives in mind at once—the actual object with which they act (e.g., holding a banana to an ear) and the imaginary object which it represents (e.g., a telephone on which they call a friend).

Such dual perspectives can also apply to children’s emotions during play.

Vygotsky writes, “In play a situation is created in which, as Nohl puts it, a dual affective plane occurs. For example, the child weeps in play as a patient, but revels as a player” (15). Play enables this dual perspective, the sorrow of a patient in a doctor’s office and a simultaneous enjoyment of the play scenario as oneself. This idea resonates with modern work that positions the child as both the creator of play and as a subject acting within the play scenario (Kravtsov and Kravtsova 2010). This suggests that play demands the creative coordination and integration of at least two perspectives on reality. Moreover, Vygotsky writes that children’s desires and emotions take the perspectives of others who are distant in age or in other qualities, and they grow in the process. Because a child “is faced with a conflict between the rule of the game and what he would do if he could suddenly act spontaneously” (15), children must constantly manage conflicting emotional and volitional perspectives as they play.

Vygotsky acknowledged that children do not acquire full-fledged abilities for symbolic representation all at once, but that play is a transitional activity in promoting this capacity. Therefore, the object must still have some relation to what it represents in play: “Any stick can be a horse, but, for example, a postcard can never be a horse for a child . . . for adults who can make conscious use of symbols, a postcard can be a horse. . . . I can put down a match and say, “This is a horse.” And that would be enough. For a child a match cannot stand for a horse: there has to be a stick. Therefore, play is not symbolism. . . . Properties of things are retained, but . . . the thought becomes the central point” (14).

This shift from prioritizing the properties of things to prioritizing their imaginary meaning (while retaining awareness of both) implies children are operating with multiple perspectives within play. For Vygotsky, children’s activity within play (physical, verbal, and cognitive) undergoes a similar internalization process to that of social speech: “At school age, play is converted to internal processes, becoming part of inner speech, logical memory, and abstract thought” (14).

In sum, we can make the case that just as children may internalize multiple perspectives through language, with private speech as an intermediate link, children may also internalize distinct perspectives through the pretend roles and imaginary situations they enact during play. This notion receives support from a meta-analysis finding that play can enhance awareness of social roles and empathy via pretend scenarios and perspective taking (Fisher 1992). Other research suggests play encourages perspective taking because it requires negotiation between children with divergent views about the play scenario, the

concurrent representation of objects in multiple ways (e.g., real and pretend), and the pretend role play in which children act out others' thoughts, feelings, and actions (Lillard 1998). As we will see, the private speech that children use within sociodramatic play may be significant to this process.

The Present Study

This study explored how Vygotsky's cornerstones of development may reflect and contribute to children's emergent perspective taking. Piaget precluded the possibility that children adopt various perspectives during egocentric speech, and he saw play as largely egocentric. As we have seen, a Vygotskian perspective suggests the opposite. This raises the question of whether empirical evidence for nascent perspective taking is present in children's private speech—and especially in their private speech during sociodramatic play.

In one sense it could be argued that all private speech is dialogical if addressed to the self, even if its dialogical nature is not obvious from the words used. Many children state that they speak to themselves, suggesting a dawning awareness of their own self-dialogue. Nevertheless, for the present study, we set aside the assumption that all private speech involves perspective taking. I did so to focus on obtaining clear evidence for the dialogical, perspective-shifting nature of private speech.

Synthesizing the literature reviewed in this article led to several research questions: What is the developmental trajectory of children's perspective-taking private speech? Does it match Vygotsky's inverse U-shaped curve for private speech in general? What are children's frequencies and proportions of overall perspective-taking private speech, including subtypes of self-questioning, sociodramatic, and mental-state-term private speech? Do children use more implicit forms of perspective-taking (i.e., self-questioning and sociodramatic private speech) or explicit use of mental state terms in private speech? How does children's perspective-taking private speech differ by activity? Does a sociodramatic play condition enhance children's perspective-taking private speech?

Method

I examined written private speech transcripts of preschool children from a previous study (Sawyer and Brooks 2021) to identify instances of perspective taking in private speech. The children had participated in two activities (fishing and

puzzles) designed to elicit private speech and compare their motivation in play and nonplay conditions, as I describe in subsequent sections.

Participants

Private speech transcripts came from forty-seven preschool children (thirty-one boys, sixteen girls), ages 3.7 to 5.5 ($M = 55.2$ months, $SD = 5.9$) recruited at child care and preschool centers in a large city in the northeastern United States. The sample was ethnically diverse: 38 percent White; 32 percent Asian; 19 percent Latinx, and 9 percent Black.

Materials

The fishing activity included a magnetized toy fishing rod used to catch magnetized plastic fish from a “pond” designated by a hula-hoop on a rug. Based on shape and weight, some fish proved easy to catch, others were somewhat challenging, and one fish was impossible to catch because of its weight distribution (though it appeared catchable). The puzzle activity featured three, twelve-piece, barnyard jigsaw puzzles and a twenty-four-piece, zoo-animal jigsaw puzzle. The barnyard puzzles were moderately challenging, and the zoo animal puzzle was more challenging for preschoolers. Two sets of family figures were employed in the sociodramatic play condition.

Procedure

In the original study from which the transcripts came, children engaged in the activities over two video-taped sessions in a separate, familiar room of their preschool. Children were randomly assigned to complete both activities (fishing and puzzles) in the same pedagogical condition, either sociodramatic play or task oriented. The framing for each condition was kept consistent across activities, as explained in the following paragraphs.

Fishing Activity

In the sociodramatic play condition, I framed the fishing activity as pretend role play within an imaginary scenario. I introduced the children to a “family” of three toy figures, and I said, “Let’s pretend you are a fisherman or fisherwoman. This family is hungry, and they love to eat fish. You can feed them by catching fish from the pond. The more you catch, the more you can all eat together.” In the task-oriented condition, I framed the fishing activity as a task to complete, with emphasis on extrinsic motivation and individual performance evaluation. I

showed the children colorful stickers and said, “You can earn a sticker by doing the fishing task. I will be counting how many fish you catch, so you should try as hard as you can. The more fish you catch, the better.” After introducing the activity, I moved across the room and worked on paperwork, thereby minimizing social interaction while the children engaged in the activities.

Puzzle Activity

In the sociodramatic play condition, I framed the puzzle activity as pretend role play within an imaginary scenario, just as in the fishing activity. I introduced the children to a different set of three family figures, and I said, “Let’s pretend you are an animal helper. This family lives on a farm, and they had some farm animals. But they left the barn gate open, and the animals ran away! You can help the family get their missing animals back by putting together these animal puzzles. The more pieces you put together the more animals you will help come home.” In the task-oriented condition, I framed the puzzle activity as a task to complete, with emphasis on extrinsic motivation and individual performance evaluation. I showed the children colorful stickers and said, “You can earn a sticker by doing the puzzle task. I’ll be counting how many puzzle pieces you put together, so you should try as hard as you can. The more puzzle pieces you put together, the better.” In the second portion of puzzles, children received a similar framing of the more challenging twenty-four-piece puzzle of zoo animals.

Distinguishing Private Speech from Social Speech

In the original study, I had the children’s speech transcribed from video and separated it into discrete utterances using the criteria from Winsler et al. (2005). I divided utterances into social and private speech using the method described in Winsler and his associates (Winsler et al. 2000). I then coded the private speech utterances and analyzed them for evidence of perspective taking. Consistent with these approaches, I calculated private speech frequencies by dividing perspective-taking utterances by the time (in minutes) children spent on each activity. I calculated proportions by dividing perspective-taking utterances by total utterances (and multiplying by 100) to obtain a percentage of overall private speech.

Coding Perspective Taking in Private Speech

Based on the literature review above, perspective-taking private speech was operationalized as speech that indicated a shift in perspective, a perspective

other than one's own, that enacted more than one perspective, or that used explicit mental state terms. By this criteria, three forms of private speech qualified as clear evidence of perspective taking: self-questioning, sociodramatic, and mental-state-term private speech.

Self-Questioning Private Speech

When children addressed a question to themselves, I coded it as self-questioning private speech, as I did when they directly answered their preceding question with a separate utterance. An example would be the children asking themselves "Why can't I catch these fish?" or "Does this piece go here?" and answering the latter question with "Yes, it does."

Sociodramatic Private Speech

When the children's speech invoked an imaginary scenario, inhabited a pretend role, or transformed objects symbolically, I coded it as sociodramatic private speech. This included acting within the imaginary scenario from the script (e.g., "I'll get these animals back so the family won't be sad"), creating new imaginary scenarios (e.g., "My dinosaur will suck up the water to help me catch the fish"), interacting with objects as if they were living (e.g., "Here fishy fishy..." or "Come back home, cow"), and symbolically transforming objects (e.g., "this fishing pole is a crane"). I did not code playful utterances lacking sociodramatic qualities as sociodramatic speech. For instance, when children played with the sound, rhythm, or melodic nature of vocalizations (e.g., chanting "fishy-wishy-wishy," singing, or saying playful nonsense words), I did not count it as sociodramatic speech.

Mental-State-Term Private Speech

Any private speech utterance that contained a term from the comprehensive list of mental state terms in figure 3 from Bang, Barns, and Nadig (2013), I coded as mental-state-term private speech. An example would be "I *think* I *know* how to get him" (mental-state words in italic).

Results

Developmental Trajectory of Children's Perspective-Taking Private Speech

To answer the question of the developmental arc of children's perspective taking

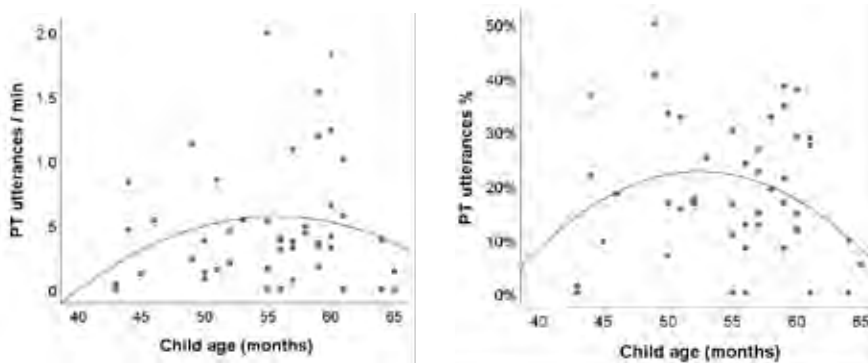


Figure 1. Children’s frequencies (left panel) and proportions (right panel) of overall perspective-taking private speech by age, with quadratic fit line

in private speech, I plotted their frequencies (utterances per min.) and proportions (percentage of total utterances) of perspective-taking private speech against the children’s ages. As shown in figure 1, children’s overall perspective-taking private speech peaked between approximately fifty-two and fifty-six months (4.5 years) of age in this sample. Perspective-taking private speech showed the inverse U-shaped curve that Vygotsky found for the trajectory of children’s private speech in general.

Children’s Use of Perspective-Taking Private Speech and Subtypes

Figure 2 displays descriptive statistics for overall perspective-taking private speech and its three subtypes. Children’s use of perspective taking was substan-

Private Speech Variable	Self- Questioning PS	Sociodramatic PS	Mental-State Term PS	Overall P-Taking PS
Total utterances used by children	145	201	81	427
Number of children who used it (%)	37 (78.7%)	30 (63.8%)	21 (44.7%)	42 (89.4%)
Mean utterances (SD)	1.62 (1.82)	2.16 (3.35)	1.72 (2.63)	4.71 (4.42)
Mean utterances per min (SD)	0.18 (0.19)	0.21 (0.31)	0.10 (0.16)	0.48 (0.48)
Mean proportion of all utterances (SD)	8.1% (8.9%)	7.1% (8.8%)	3.8% (5.6%)	18.8% (12.5%)

Note: P-Taking = Perspective-taking. SD = standard deviation. ** $p < .01$; *** $p < .001$.

Figure 2. Descriptive statistics for children’s perspective-taking private speech and mental state terms combined across activities.

Self-Questioning Private Speech	Sociodramatic Private Speech	Mental-State-Term Private Speech (mental state terms in bold)
FISHING	FISHING	FISHING
Is there any way to get the fish actually?	The people are getting hungry. I don't want them to not survive.	Let me see how many fish I got.
Is this the hard fish of all?	I'm coming (said to family while bringing fish).	I didn't know I could get the nose.
Or is it the easy fish?	Hey you fishy - how you dare to not let me eat you?	I think I know how to get him.
What - ?	I think I need Mickey to help.	I don't think I can try the first one and then –
Why, why does this moving around?	They're eating dinner (the family). Gnum Gnum.	I think I almost got it.
Huh?	Now the family'll only eat these fish - four.	This is a pretend lake.
<ul style="list-style-type: none"> • Is this real or pretend? • (answering self) Pretend 	Steggy (imaginary dinosaur) can you help? Steggy's gonna jump in the river.	This feels very hard.
PUZZLES	PUZZLES	PUZZLES
Ok, how does this work?	Coochee coochee coo (tickling the fish)	I want to... get that spiky one on the nose.
Where is the hippo?	Oh no, ow! (pretending to the fish who was struck by the fishing rod)	I wanna try the purple.
Where this one go?	Hey you knucklehead fish! I'm gonna stare you down. I'm the Daddy.	I'll try again.
Where is the flamingo piece? Now where is... over here?	Surrender, fish!	I'm tryna catch one but it's really...
Is this the same flower?	PUZZLES	PUZZLES
Why it's so easy?	Chicky is going in here.	Let's see here.
Does it fits?	Bock bock BOCK! (embodying the chicken)	Maybe we can turn this one and see what appears.
What should I do?	I need to go back together. (imitates chicken voice of puzzle)	I don't know where it could go
<ul style="list-style-type: none"> • Ok, what's next? (answering) Hair • Elephant? (answering) Okay, no • How about that? (answering) Nope • How 'bout that foot? (answering) That foot doesn't fit • This goes like this? (answering) No, I need a road • Is this right? (answering) Uh, I think so • Put it down there maybe? Aha! (after fitting piece) 	<ul style="list-style-type: none"> Yah I'm back together with my mommy! (imitates chicken voice) I'm trying to fix your chickens! (shouts in the family's faces) Oh no horsie is broken! (because puzzle is not put together) Brother! (makes a sheep talk to the brother of the family) Moo, moo (embodying the cow) Don't see me. (Talking to lion's eye on the puzzle piece she is holding) Wait, the family sees their chicken coming back. 	<ul style="list-style-type: none"> I know it. I think that belongs over... I think his feet goes down here That's funny. Real tired today. I like the chicken. I'm going to try this.

Figure 3. Selected examples of perspective-taking private speech subgroups by activity

tial, with 18.8 percent of total private speech utterances involving perspective taking. Subtypes included self-questioning (8.1 percent of utterances), sociodramatic (7.1 percent of utterances), and mental-state-term private speech (3.8 percent). Nearly all children (89.4 percent) used some form of perspective-taking private speech.

Implicit Perspective Taking versus Explicit Mental-State-Term Use

Figure 3 provides selected examples of children’s private speech utterances from each perspective-taking subtype, grouped by activity.

According to DT theory, these subtypes can be classified into two groups: implicit forms of perspective taking (self-questioning and sociodramatic private speech) and perspective taking that explicitly uses mental-state terminology (mental-state-term private speech). I conducted analyses of covariance (ANCOVAs) to compare children’s use of implicit and explicit forms of perspective taking in private speech. I included child age as a covariate, but it showed no interaction with private speech subtype. These analyses revealed that children engaged in significantly more implicit than explicit perspective taking. Implicit perspective taking predominated in terms of private speech utterance frequency, $F(1, 46) = 25.53, p < .001$; and proportion of utterances, $F(1, 45) = 30.99, p < .001$.

	Fishing		Puzzles		F (activity)
	Mean	SD	Mean	SD	
Self-Questioning PS/min	0.08	(0.14)	0.29	(0.32)	17.83***
Self-Questioning PS%	3.58	(8.79)	11.5	(9.66)	13.83***
Sociodramatic PS/min	0.34	(0.56)	0.11	(0.24)	7.22*
Sociodramatic PS%	10.3	(12.7)	3.82	(7.87)	9.11**
Mental-State-Term PS/min	0.08	(0.20)	0.12	(0.26)	0.44
Mental-State-Term PS%	4.08	(10.2)	4.19	(7.15)	0.00
Overall P-Taking PS/min	0.49	(0.67)	0.52	(0.59)	0.07
Overall P-Taking PS%	17.7	(16.2)	19.6	(14.2)	0.35

Note: n = 45 for all ANCOVAs. P-Taking = perspective-taking. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 4. Estimated means and standard deviations of perspective-taking private speech subtypes

Perspective-Taking Private Speech by Activity (Fishing versus Puzzles)

Next, I compared children’s mean levels of perspective-taking private speech between the fishing and puzzle activities, with ANCOVA results shown in figure 4. I included age as a covariate, but it showed no interactions with activity type. Total perspective-taking private speech and mental-state-term private speech were equivalent across activities. However, children used significantly more self-questioning speech (frequency and proportion) on puzzles and significantly more sociodramatic speech (frequency and proportion) on fishing.

Perspective-Taking Private Speech by Condition (Sociodramatic Play versus Task Oriented)

Finally, I compared children’s perspective-taking private speech between the sociodramatic play and task-oriented conditions, with ANCOVA results in figure 5. Age showed some interactions with condition. Children in the sociodramatic play condition used more frequent sociodramatic private speech, while self-questioning and mental-state-term private speech were equivalent across conditions.

	<u>Sociodramatic</u>		<u>Task Oriented</u>		<i>F</i>	<i>F</i>
	<u>Play</u>				(cond)	(age x cond)
	<i>Mean (SD)</i>	<i>n</i>	<i>Mean (SD)</i>	<i>n</i>		
Self-Questioning PS/min	0.22 (0.19)	24	0.16 (0.19)	23	1.24	1.15
Self-Questioning PS%	7.23 (8.51)	24	9.74 (8.53)	22	0.95	6.69*
Sociodramatic PS/min	0.32 (0.31)	24	0.11 (0.31)	23	5.58*	1.15
Sociodramatic PS%	8.23 (8.80)	24	6.27 (9.02)	22	0.56	1.73
Mental-State-Term PS/min	0.09 (0.11)	24	0.13 (0.19)	23	0.73	4.87*
Mental-State-Term PS%	4.01 (3.72)	24	4.10 (3.85)	22	0.00	4.54*
Overall P-Taking PS/min	0.62 (0.50)	24	0.40 (0.44)	23	2.77	6.30*
Overall P-Taking PS%	19.2 (11.2)	24	20.2 (13.6)	22	0.10	17.45***

Note: PS/min = Private speech utterances per minute. PS% = Proportion of total private speech utterances. + *p* < .10; * *p* < .05; ** *p* < .01. Cond = condition. P-Taking = perspective taking.

Figure 5. Estimated means and standard deviations for private speech variables across activities by pedagogical condition, with ANCOVA (age as covariate) results and interactions

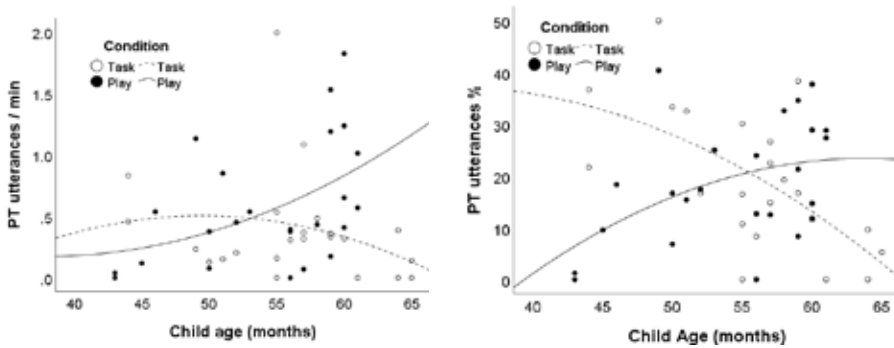


Figure 6. Children’s frequencies (Panel A), and proportions (Panel B) of overall perspective-taking private speech for sociodramatic play and task-oriented conditions by age, with quadratic fit lines for each subgroup

Although children’s overall perspective-taking private speech did not differ significantly between conditions, interactions between condition and child age were evident, as shown in figure 6. In panel A, younger children show similar frequencies of perspective taking in each condition, but as children get older these levels diverge, with older children in the sociodramatic condition engaging in increasingly more frequent perspective taking than their same-age peers in the task-oriented condition. In panel B, younger children used higher proportions of perspective taking in the task-oriented condition, while older children used higher proportions of perspective taking in the sociodramatic play condition. (These interactions in overall perspective-taking private speech appear to be driven by the significant interactions among self-questioning and mental-state-term subtypes, as shown in figure 5.)

Discussion

This article aims to make a theoretical and empirical reply to Piaget’s assertion that Vygotskian theory has little to offer for understanding egocentrism. Guided by Vygotskian and neo-Vygotskian theory on private speech and sociodramatic play, the empirical study I have described explored how these two cornerstones of development might contribute to children’s growth in perspective taking. I discuss the findings in light of this theoretical framing.

First, I found children's perspective-taking private speech to follow the same inverted U-shaped curve that Vygotsky discovered for children's private speech in general. This pattern held for frequency of perspective taking and children's proportions of perspective-taking utterances relative to all private speech. This latter finding suggests that perspective taking may occupy a smaller portion of young preschoolers' private speech (e.g., three-year-olds in this sample), a larger portion for four-year-olds, and again a diminishing portion of five-year-olds' private speech. Although in need of replication from future studies, such a pattern implies that a developmental process of internalizing various perspectives occurs within the overall arc of children's private speech internalization. Such a prospect seems to align with the DT framework in proposing private speech as a key vehicle for children's social understanding and perspective-taking capacities.

Children displayed substantial amounts of perspective taking in their private speech, totaling nearly a fifth of all utterances. Implicit forms of perspective taking predominated, in the form of self-questioning and sociodramatic private speech. Children exhibited significantly less explicit perspective taking, with mental-state-term private speech comprising less than four percent of all utterances. Again, this accords with DT framework's predictions that utterances featuring overt mental state terms should be fewer than utterances that engage different perspectives without explicit mention of mental states. This study provides the first direct comparison, to the author's knowledge, of implicit and explicit forms of perspective taking in private speech. The evidence supports the DT model's assertion that dialogic speech enacting distinct perspectives (even if implicit) is more critical than overt mental-state discourse for children's development of social understanding.

Across the fishing and puzzle activities, children's overall levels of perspective-taking private speech were quite consistent. The subtypes, however, showed distinct patterns. While mental-state-term private speech was consistent across activities, children used significantly more self-questioning speech on puzzles and significantly more sociodramatic speech while fishing. Although speculative, it could be that different forms of perspective taking are more relevant or useful during particular activities. In this case, self-questioning private speech may have helped children enact an adult's perspective, for instance that of a parent or teacher, on their puzzle activity. Children's questions often seemed to contain cognitive content such as planning, observing, and strategizing about what piece to place next, which appeared well suited to the puzzle activity. Children's style of posing questions to themselves—and often answering them—

called to mind typical adult-child interactions in which adults use questions to prompt children to plan their next action or to direct their attention to particular aspects of the puzzle that would help them complete it. In contrast, children's more abundant sociodramatic private speech during the fishing activity may have reflected the fact that the fishing materials were quite colorful and playful in nature and may have encouraged children to create their own imaginary scenarios and characters, even if they were not in the sociodramatic play condition.

Finally, did the sociodramatic play condition enhance children's perspective-taking private speech relative to the task-oriented condition? Here the answer is equivocal. On one hand, self-questioning and mental-state-term private speech did not differ between conditions. On the other hand, children did use more frequent sociodramatic private speech in the sociodramatic play condition. This suggests that framing the activity with an imaginary scenario and pretend roles encourages children to engage the various perspectives implied by sociodramatic play. Children entered and operated within the pretend fishing scenario with a hungry family and within the scenario of the farm family who lost its animals, in both cases enacting perceptions of objects and situations as simultaneously real and imaginary. Children took the perspectives of characters in pretend roles including fishermen and fisherwomen, the fish themselves, various members of the fish-eating family and the farm family, the families as a whole, barnyard and zoo animals, and even new characters that they created themselves. The latter includes an imaginary dinosaur and Mickey Mouse, both of whom came to help the children catch fish from the pond. In sum, the sociodramatic condition appeared to enrich this tapestry of multiple perspectives on people, objects, and reality itself.

This inquiry followed the classic studies of other post-Vygotskian researchers who conducted experiments comparing children's self-regulation and memory in play and nonplayful conditions. As reviewed by Bodrova and her associates (Bodrova, Germeroth, and Leong 2013), five-year-old children assigned the pretend role of a soldier guarding a military object managed to stand still much longer than children merely told to stand still (Manuilenko 1975), and a later study (Ivanova 2000) replicated this. Similarly, children recalled more items from a grocery list within a grocery store play scenario than when they were asked simply to memorize the list (Istomina 1975). My present study had a constraint similar to these previous experiments: To attain a clear comparison of children's behavior in play and nonplay conditions, I as the experimenter suggested the playful framings for each activity instead of the children inventing them. In

addition, each playful scenario in these experiments implied a clear goal, such as standing still, remembering a list, or catching fish and completing puzzles in the present study. Inevitably, this differs from naturalistic conditions in which children choose more freely among themselves (though often with adult guidance) the roles and scenarios they play out, the potential goals of their play, and if and when they will engage in sociodramatic play at all.

Thus, the experimental approximation of sociodramatic play featured in this study must be considered a limitation. As Elkonin (2005) mentions, experimental work on sociodramatic role play has been difficult, likely because of challenges in representing its full scope. Within this constraint, however, children's playful creativity became evident in the way they extended and modified the initially presented imaginary scenario or created new scenarios. As discussed in Sawyer and Brooks (2021), children invented entirely new roles and situations (e.g., "my dinosaur will suck up the water to help me catch the fish"), and symbolically transformed objects in ways far afield from their initial meaning (e.g., "this fishing pole is a crane"). Moreover, given that sociodramatic play was not operationalized in its full scope, the enhancement of sociodramatic private speech and associated perspective taking in the play condition could be considered even more notable. We might expect play and playful private speech in children's everyday settings to have an even greater impact in promoting perspective taking and lessening egocentrism than in this experimental approximation.

Somewhat curiously, overall perspective-taking private speech showed an interaction between children's age and their assigned experimental condition. In terms of perspective-taking frequency, younger children were similar between conditions; as their ages increased, however, children in the sociodramatic-play condition showed increasingly frequent perspective taking while their peers in the task-oriented condition declined in perspective taking. This suggests that sociodramatic play enhanced perspective taking specifically among older preschoolers, who may be more capable than younger children of engaging multiple perspectives through private speech during play.

In terms of proportions, younger children showed higher percentages of perspective taking in the task-oriented condition, while older children showed higher percentages in the sociodramatic condition. While older preschoolers may be more developmentally prepared to engage the myriad of perspectives offered by sociodramatic play, what might explain younger children's greater perspective taking in the task-oriented condition? This pattern appears driven by self-questioning and mental-state-term private speech, of which younger

children in the task-oriented condition used more. While again speculative, in the task-oriented context, young children may rely more on mental-state-term and self-questioning modes of perspective taking than they would in a sociodramatic-play context, when sociodramatic private speech appears more likely to come to the foreground.

An alternate explanation for this interaction involves the developmental trajectory of private speech becoming internalized as inner speech. By this account, young children in the task-oriented context may have used more perspective-taking private speech (especially mental-state-term and self-questioning subtypes), while older children in the same condition conducted perspective taking silently via inner speech. This would explain the initially high and then decreasing curve of perspective taking in the task-oriented condition. Conversely, young children in the sociodramatic-play condition may have relied on sociodramatic speech for perspective taking, but at initially low levels because this form of perspective taking lies slightly outside their zone of proximal development. In contrast, older children in the condition may have been in the developmental sweet spot for sociodramatic speech, which drove their higher levels of overall perspective-taking private speech. We need further studies to sort out these possibilities.

The results of this initial foray into examining children's perspective-taking private speech in sociodramatic and task-oriented contexts should be viewed as offering preliminary support for key predictions of the DT framework. These include the classic inverted U-shape trajectory of perspective taking within private speech that portends a process of internalizing perspectives as private speech itself undergoes an internalization process. Second, the preponderance of private speech utterances using implicit forms of perspective taking over utterances containing explicit mental-state terms suggests a dynamic in which the specific words that children use in their private speech are less important than the perspectives expressed within them. I suggest that researchers examine additional potential forms of both implicit and explicit perspective taking in children's speech, so that we might achieve a fuller inventory of the possible forms that perspective taking may assume. If researchers have access to transcripts of private speech from previous studies, these can be reexamined and reinterpreted from the lens of perspective taking.

In neo-Vygotskian theory, sociodramatic play is regarded as the leading activity for preschoolers—the most powerful generator of developmental growth in multiple areas. Sociodramatic private speech may similarly be a leading form

of self-directed speech. Appearing especially enhanced and perspective rich during sociodramatic play, sociodramatic speech may serve a pivotal role in enacting, adopting, and shifting among the various social, emotional, and cognitive perspectives. In sum, far from representing a hangover from egocentrism, children's private speech appears to be a key pathway through which children can imaginatively refract and internalize the multiplicity of perspectives that accompany and facilitate practical human activity.

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