

Maternal Beliefs Concerning Young Children's Private Speech[†]

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The goal of this study was to understand maternal reports, beliefs, and attitudes about their young children's use of private speech. Mothers of 48 children between the ages of 3 and 5 participated in a semi-structured interview in which they reported on the frequency and context of their child's use of private speech, maternal responses toward such speech use in children, and beliefs about the utility of such speech for children. Interviews were transcribed and responses coded. Mothers also completed surveys on children's self control and parenting style. Results indicated that practically all parents reported that their child engaged in private speech and that such speech was more likely to appear during fantasy play than during problem-solving activities. Parents varied in their personal responses to children's self talk and, as a group, do not appear to actively discourage or encourage its use. Ignoring/allowing child private speech use was common and this response was positively associated with authoritative parenting. Parental reports of the frequency with which their child talks to himself were negatively associated with parental reports of children's self-control. Crib speech, or bedtime monologue, was reported to be very common and was negatively associated with children's self-control and positively associated with children's private speech use. Parents were uniformly positive in their belief that private speech serves important functions and that it helps young children during task activities. Copyright © 2006 John Wiley & Sons, Ltd.

Key words: parent; private speech; maternal belief; attitude; pre-school children

A central idea within Vygotskian and neo-Vygotskian theory is that parents (and other adults) play a crucial role in fostering children's optimal development by providing the primary social, language, and cultural context within which

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[†]Portions of this work were presented in Winsler, A. (Chair). (2003). *Awareness, attitudes, and beliefs concerning children's private speech: Perspectives from children, parents, and teachers*. Symposium presented at the biennial meeting of the Society for Research in Child Development, Tampa, FL, April.

children develop, and by scaffolding, mediating, or guiding children's learning and experiences (Berk & Winsler, 1995; Bodrova & Leong, 1996; Dixon-Krauss, 1996; Lloyd & Fernyhough, 1999; Rogoff, 2003; Vygotsky, 1930–1935/1978; Wertsch, 1985). By engaging children in joint collaborative activities and then providing sensitive and developmentally appropriate assistance contingent upon children's current ability levels, adults provide the scaffold that allows youngsters to progress through their zones of proximal development—to eventually accomplish things independently that they could previously only do with assistance (Conner & Cross, 2003; Neitzel & Stright, 2003; Pratt, Kerig, Cowan, & Cowan, 1988; Vandermaas-Peeler *et al.*, 2002).

A second fundamental idea within the Vygotskian tradition is that private speech (overt self-talk used by children in various situations that is not addressed to others) is the primary socio-cultural tool that children internalize from their social interactions with others and use for both learning and for behavioural and cognitive self-regulation (Berk & Spuhl, 1995; Diaz & Berk, 1992; Fernyhough & Fradley, 2005; Winsler, Diaz, & Montero, 1997). Language, first in the form of joint speech during parent-child interactions, then in the form of children's overt private speech, and ultimately in the form of silent inner speech, is thought to be an important mechanism for children's learning from their social world and also for making the transition from the interpersonal to the intrapersonal plane (Diaz, Neal, & Amaya-Williams, 1990; Winsler *et al.*, 1997). Finally, private speech, and language in general, are thought to play formative roles in the development of children's self-regulation and executive functioning (Barkley, 2001; Bronson, 2000; Kopp, 1982; Luria, 1961; Müller, Zelazo, Hood, Leone, & Rohrer, 2004; Winsler, Diaz, Atencio, McCarthy, & Adams Chabay, 2000; Zelazo, Müller, Frye, & Marcovitch, 2003). With self-directed speech, children are able to distance themselves from the immediate stimulus environment and guide their behaviour instead by internal verbal plans (Diaz *et al.*, 1990; Vygotsky, 1934/1986).

Research on private speech finds children's overt self-talk to be very common throughout early childhood and that such speech becomes less frequent and more internalized during the late preschool and early elementary school years (Bivens & Berk, 1990; Winsler, De León, Wallace, Carlton, & Willson-Quayle, 2003; Winsler & Naglieri, 2003). Although children's self-talk takes on many forms, including bedtime soliloquies (Kuczaj, 1985; Nelson, 1989), imaginary dialogue and sounds effects during children's fantasy and figurine play (Olszewski, 1987), and task-related utterances to the self during problem solving, it is this latter type, the behavioural self-regulatory uses of private speech during problem-solving, that has been most heavily researched and will be discussed below.

First, children's use of private speech is often associated with task success and increased behavioural regulation (Berk & Spuhl, 1995; Fernyhough & Fradley, 2005; Lee, 1999; Winsler *et al.*, 1997), however, as is the case with the use of any strategy, self-talk is not always linked with immediate gains in task performance and instead may either predict later performance or be unrelated to performance (Bivens & Berk, 1990; Bjorklund & Douglas, 1997; Gaskill & Diaz, 1991; Siegler & Stern, 1998; Winsler & Naglieri, 2003). Also, children tend to use private speech when they need extra help completing a task, either because the task is particularly challenging or because they are cognitively, emotionally, or motivationally spent. Thus, a common pattern is to see increased private speech usage by children when the task activity they are engaging in presents obstacles or gets more difficult (Behrend, Rosengren, & Perlmutter, 1992; Duncan & Pratt, 1997; Vygotsky, 1934/1986). Also, children with problems of self-control rely

heavily on overt private speech and appear to be delayed in their internalization of such speech (Berk & Potts, 1991; Winsler, 1998; Winsler, Diaz *et al.*, 2000).

Second, children's private speech is influenced by their historical and immediate social context. Children who have been exposed to rich language environments and cognitive stimulation at home, situations more typical of families of higher socioeconomic status (SES), appear to use and internalize private speech earlier than children from families of lower SES (Berk & Garvin, 1984; Diaz, Neal, & Vachio, 1991; Quay & Blaney, 1992). Children are also more likely to engage in private speech when they are in a social context that affords them the opportunity—when they are either alone or in the presence of an autonomy-supportive and non-directive adult—compared to when in the presence of an adult who is either regulating the child's behaviour or discouraging speech use (Behrend *et al.*, 1992; Lee, 1999; Winsler, 1998; Winsler & Diaz, 1995). Relatedly, children's private speech may be facilitated by authoritative parenting practices, and optimizing children's use of private speech might be one of the mechanisms through which authoritative parenting has its positive effects on children's learning (Berk & Spuhl, 1995; Berk & Winsler, 1995; Winsler, 1998; Winsler *et al.*, 1997).

Although much has been learned about children's use of private speech, important areas that have not been investigated are the attitudes and beliefs that adults have about children's self-talk, and the socialization practices that parents and teachers engage in concerning children's private speech that may ensue on the basis of those beliefs. Parental value systems and beliefs are known to be important, not only for predicting parental behaviour and child outcomes in a wide variety of domains, but also for providing meaning and historical coherence to daily parent-child interactions (Murphey, 1992; Sigel & McGillicuddy-DeLisi, 2002; Sigel, McGillicuddy-DeLisi, & Goodnow, 1992). Parental preconceptions, expectations, and beliefs about their child, even before the child is born, predict how parents will interact with the child as well as some aspects of the attachment relationship that eventually forms between parent and child (Frodi, Bridges, & Shonk, 1989; Kiang, Moreno, & Robinson, 2004). Maternal prior perceptions of adolescence predict mothers' expectations for their own children during that period (Buchanan, 2003) as well as both parenting behaviour and children's adjustment during the adolescent years (Collins, 1992; Tilton-Weaver & Galambos, 2003). Mothers' knowledge of child development and their beliefs and expectations for their child predict not only the quality of the environment provided in the home but a variety of child cognitive and behavioural outcomes (Benasich & Brooks-Gunn, 1996; Stoiber & Houghton, 1993). Finally, inappropriate expectations and little knowledge about child development are associated with poor parent-child joint problem solving and child abuse (Azar, Robinson, Hekimian, & Twentyman, 1984).

Maternal beliefs about development influence the teaching practices and activities mothers engage in with their preschool-aged children, which in turn predict children's developmental outcomes (Sigel & McGillicuddy-DeLisi, 2002). Parental beliefs about how preschoolers learn math, for example, predict their teaching practices during mathematical activities (Musun-Miller & Blevins-Knabe, 1998). Within the domain of language, parental expectations for children are associated with children's literacy development, even within homogenous socioeconomic groups (Castro, Lubker, Bryant, & Skinner, 2002). Similarly, children's oral language proficiency is predicted by maternal beliefs about child development via the maternal speech given to children (Donahue, Pearl, & Herzog, 1997); likewise maternal beliefs about reading predict parent-child

literacy activities as well as children's later reading competence (Sonnenschein *et al.*, 1997). Finally, the accuracy of parents' estimations of their children's language skill is positively associated with children's language ability (Miller, C.L., 1998; Pelligrino, 2001), and this pattern of parental accuracy in their judgments about children positively predicting child outcomes is true for other domains as well, such as parental estimations of how well children will do on cognitive tasks (Miller, S.A., 1988).

The present study explores parental perceptions and beliefs about children's private speech. The literature discussed above suggests that it is likely that parental beliefs about children's private speech will be related to their responses to children's self-talk and children's private speech use itself. In adulthood, talking out loud to oneself in the presence of others is often seen as psychopathological behaviour in as much as overt self-talk, at least in the form of conversations with the self, is an active symptom for schizophrenia. If parents had strong negative views about their child's self-talk, they might discourage its use among young children, a practice that would be inconsistent with recommendations from the literature (Berk & Winsler, 1995; Lee, 1999; Winsler & Diaz, 1995). Understanding parental beliefs about children's private speech may also be important for intervention efforts based on enhancing children's self-control or performance via children's private speech or self-instructions (Diaz & Berk, 1995; Perkos, Theodorakis, & Chroni, 2002; White & Manning, 1994; Winsler, 1998). If parents happen to possess strong, negative attitudes about children's private speech, then their children may also have similar views about self-talk, and one or both of these perceptions may need to be addressed in order for self-talk interventions to work.

At the present time, practically nothing is known about parents' normative beliefs about children's private speech. The only relevant study known to the authors to date asked parents of young adults (age 17–24) with Down's syndrome to comment on the frequency and type of self-talk used by their children (Glenn & Cunningham, 2000). These authors found that parents reported private speech use, either currently or in the past, in 91% of these youth with Down syndrome. Parents reported that such speech occurred both when the youth were alone and in the presence of others and that about half of their children's private speech was imaginary/fantasy in nature, 35% involved self-dialogue in real situations, and 15% of such speech was used for self-direction. Maternal reports of the private speech of these youth with special needs were not related to children's social, behavioural, language, or cognitive functioning, suggesting that such speech is a normal and natural occurrence and not to be seen as a symptom of psychopathology within this population.

Children's views about their own self-talk are likewise largely unknown except for one study (Manfra, 2003). Manfra interviewed 53 preschool children about their beliefs concerning children's overt private speech. Using a combination of methods, including general questions about the child's own private speech, a video clip showing the participating child talking out loud to him/herself during a previous task activity, a video clip of another child talking to himself, and acted out scenarios with doll figurines pretending to carry out various tasks with and without speaking out loud to themselves, Manfra found that 3–5-year-olds generally have quite positive views about private speech. Children reported that such speech was a good thing and that it was helpful (e.g. made task completion easier, faster, etc.). Interestingly, children's views about their own self-talk were somewhat more positive than their perceptions of other children's use of self-talk.

A few investigators have recently begun to explore early childhood teachers' beliefs about children's private speech (Deniz, 2004; Oliver, Edmiaston, & Fitzgerald, 2003). Deniz (2004) found that kindergarten and first-grade teachers were aware of their children's self-talk in the classroom and that there was much variance in teacher beliefs about this child behaviour. Although the majority of the 13 teachers studied were neutral or positive in their take on children's private speech and generally ignored this behaviour in the classroom, several teachers held negative beliefs about children's self talk and actively discouraged its use in their classrooms, citing fears (generally unfounded according to classroom observations) that it disturbs other children and the teacher. Also, a few teachers were very positive about children's self-talk, encouraging it and using such speech as both an assessment and learning tool in the classroom. Oliver *et al.* (2003) found similar results with her sample of regular and special education (K-3) teachers although they found that special education teachers were more likely than regular teachers to use children's private speech as a tool for enhancing children's learning. Both studies found that teachers generally were correct in their beliefs about age-related trends in children's speech use and degree of internalization, the situational and task contexts in which private speech was most likely to be observed, and the diversity of functions that private speech may serve for children.

The present study explores parental beliefs about children's private speech. The following research questions were addressed: Are parents aware of their child's self-talk? How often do children talk to themselves according to parents? Under which contexts do parents notice children's self-talk? What do parents think about children's private speech? Do they think that children's private speech is a good thing? Do they discourage or encourage their children to talk to themselves or ignore such behaviour? Are mothers' attitudes and responses toward children's private speech, and reports of the extent to which their children talk to themselves related to their own self-reported parenting style, or to children's self-control? Finally, the present study also represents the first to explore parental attitudes and self-reported practices about their own use of private speech both as adults and as children. Thus, the following questions were also addressed here. Do parents report talking to themselves as adults or as children? Do they think that private speech is useful for themselves as adults? Is parental report about their own self-talk related to their responses concerning children's private speech?

METHOD

Participants

Mothers of 48 preschool children between the ages of 3 and 5 years ($M = 52.9$ month, $S.D. = 9.5$, $Min = 37$, $Max = 71$, 54% female) participated in the study. The families were primarily Caucasian according to parental self-report (89% Caucasian, 4% Hispanic, 2% Asian-American, 4% 'Other/Mixed') with an average income of about \$90,000, which is representative of the median income in the mid-Atlantic, metropolitan and suburban, geographic area in the United States where data collection occurred. Most parents had earned at least a 4-year college degree (86.4%), and most were married (93%) with two parents living in the home. Maternal age was an average of 34.4 years ($S.D. = 3.7$). Typically, only the mother was present for the interview, however, on four occasions the child's

father was also present to varying degrees during the interview. In some of these cases, the father was silent, in others the father contributed to the interview and gave his own answers to some of the questions, and in other cases the mother and father contributed a joint answer. In cases where a differing maternal and paternal answer to a question was offered, only the maternal answers were used for the analyses. Families were recruited from local daycare and preschool centers and from community organizations providing activities for preschoolers (i.e. group music and movement classes).

Procedure

Setting

All interviews took place in an on-campus child development research laboratory. The children were visiting the lab to participate in another study and while the children were occupied in another room, parents were interviewed for the present purposes. Parents completed an audio-taped, semi-structured interview with a male graduate student experimenter while their child was in the next room (separated by a one-way mirror). After completing the interview, the parents were given survey measures to complete. The children completed a selective attention problem-solving task in the other room in the context of another study and 73% of the children engaged in at least some private speech during that task.

Parent Interview

A semi-structured parent interview was designed to tap parents' views about children's private speech.¹ The interview focused on five main issues: (1) the frequency with which parents observe their child talking to themselves (i.e. 'Have you observed your child talking to him/herself during play? During what percentage of the time that your child is involved in fantasy play/problem solving does s/he use private speech?'), (2) the contexts in which this behaviour is seen more frequently (i.e. 'In what situations does your child talk to him/herself?' 'Does your child use different amounts of private speech when s/he knows that you are in the room?'), (3) parental beliefs about the positive or negative function(s) that such speech may serve for their children (i.e. Does private speech serve any purpose? Do you think it has a positive, neutral, or negative effect on children?), (4) parental responses when such speech is observed (i.e. 'How do you react to your child's self talk—do you ignore it, comment on it, get involved in the play. . .?'), and (5) parents' own use of self talk, both presently as an adult and when the parent was a child (i.e. 'Do you notice yourself sometimes talking to yourself? Do you think such speech helps you, hinders you, or has no effect? Do you remember talking to yourself when you were a child?'). Parents were also asked if they thought the child was aware of their own speech when s/he was talking to the self.

The interviewer was sure to define any potentially unclear terms (e.g. private speech, problem solving, etc.) and reach agreement with the parent about the meaning of such terms before using them in an interview question. At the beginning of the interview, private speech was clearly defined for parents as children talking out loud to themselves while they were engaged in some kind of solitary play or task. Before coming in to the laboratory, parents had been told in a general sense that their child was going to participate in a study about children's language and private speech, and care was taken to ensure that parents

were not exposed to the experimenters' views about children's self-talk. Parents were aware that they were talking to a graduate student. Parents were allowed to elaborate as much as they liked on any given question and sometimes the discussion led to another question elsewhere on the interviewer's list of required questions, and when this happened, the interviewer smoothly transitioned to that other question. However, in such cases, the interviewer was required to go back and ask all of the required questions that may have been skipped during the transition. Different naturally flowing, conversational, follow-up questions were asked depending on the nature of the parent's responses, but then the interviewer would return to the protocol. The interviews took approximately 30 min to complete. All interviews were audio-taped via a portable cassette tape player so they could be fully transcribed later. A different trained graduate student transcribed the taped interviews. The transcripts were verified for accuracy by one other person, and then used to code the parents' responses to the questions.

Typically, questions had an intuitive dichotomous (yes/no, positive/negative) answer to use for coding purposes. On questions where parents showed considerable variance in their qualified yes answers, such answers were expanded to fall into an ordinal four-category system (0=no, 1=yes a little, 2=yes, 3=yes a lot). Other times, the respondent's answer was already in the form of a continuous number (i.e. percentage of time your child does 'x'). Other coding for some questions included categorizing mothers' answers into a three-level response (i.e. more, less, same/equal), and other answers required more codes. Usual maternal responses to child private speech, for example, varied both in terms of what parents said they did and in how many different responses they reported. Response categories were derived empirically and initially fell into four categories: (a) ignore (i.e. 'I just let her alone,' 'I usually ignore it because I want him to have his own little conversations'); (b) explicit comment on the speech (i.e. 'When I see him in the room talking to himself, I always try to sneak in and say 'what are you doing?' I'm like 'why are you saying that?'); (c) get involved in activity/answer speech (i.e. 'I try to get involved... join in'); and (d) other/multiple/depends/unclear (i.e. 'If I'm in another room I just tend to ignore it. If I'm there sometimes I get involved and will play with whatever she is doing'). To avoid small cell sizes, and because explicitly commenting on the speech and getting involved in the child's play at that moment both involve turning the child's private speech into social speech/interaction, categories (b) and (c) were combined for reporting purposes.

Parenting practices questionnaire (PPQ)

Mothers completed the PPQ (Robinson, Mandleco, Olsen, & Hart, 1995), a self-report measure of their authoritative, authoritarian, and permissive parenting practices. This instrument is composed of 62 items describing various types of parental attitudes, behaviours, and actions (e.g. 'I know the names of my child's friends,' 'I grab my child when s/he is being disobedient'). Mother's rated each item on a five-point Likert scale ranging from 'Never' (score =1) to 'Always' (score =5) such that larger numbers indicate higher levels of the parenting practice associated with the item. Items on the scale yield one overall score for each of the three parenting styles (authoritative, authoritarian, permissive). The 27-item authoritative scale, the 20-item authoritarian scale, and 15-item permissive scale have been shown to be internally consistent ($\alpha=0.91, 0.86, 0.75$, respectively) for a wide age range of children (Robinson *et al.*, 1995). With the

present sample of preschool children, internal consistency was somewhat lower (0.74, 0.72, and 0.70, respectively).

Self-control rating scale (SCRS)

The SCRS (Kendall & Wilcox, 1979) was filled out by parents to assess children's self-control. This 33-item instrument, which also uses a five-point Likert scale, has yielded strong internal consistency (Cronbach $\alpha=0.98$), and high test-retest reliability across 4 weeks ($r = 0.84$) with a large cross-sectional sample (Kendall & Wilcox, 1979). Construct validity has been demonstrated by correlations between the SCRS and other measures of children's self-control (e.g. the matching figures test, the Q score from the Porteus mazes, and behavioural observations) (Kendall & Wilcox, 1979). Further, the discriminant validity of the SCRS is supported by low and non-significant correlations with IQ and mental age. The internal consistency for this measure on the current sample of preschoolers was high (0.86) after removing two poorly functioning items ('Does the child work toward long-range goals' and 'In answering questions, does the child give one thoughtful answer, or blurt out several answers all at once'). This is the first known study involving private speech to date to have used the SCRS.

RESULTS

Preliminary analyses revealed that none of mothers' responses to the interview questions varied significantly as a function of child gender and, thus, gender of child was ignored for the remainder of the analyses below. In general, maternal responses did not vary systematically by age of child either. In the few cases where age of child is relevant, it will be discussed below.

Frequency and Context of Children's Private Speech Use

Table 1 provides an overview of the descriptive results for the major interview questions. Overall, practically all mothers (98%) reported that they have observed their child use private speech (Y/N 50/50 one-way $\chi^2(1) = 44.08$, $p < 0.001$), with a full 15% of respondents spontaneously offering that their child talks to him/herself 'a lot.' About three out of four (72.3%) parents reported that their child uses private speech during problem-solving tasks (one-way $\chi^2(1) = 10.08$, $p < 0.001$) and parents estimated, on average, that about 40% of their children's problem solving contains self-talk. Parents' report that 72.3% percent of their children use private speech during tasks is remarkably similar to the actual percentage of children who used self-talk during their task that day in the other room (73%). Practically all parents (94%, $\chi^2(1) = 36.75$, $p < 0.001$) reported child private speech use during fantasy/ imaginary play, with the estimate being that about 70% of such activities by their child contain self-talk. Parents, therefore, appear to believe that children's private speech is more likely during fantasy play compared to problem-solving activities (paired $t(46)$ comparing the two percentages of time parents gave for problem-solving and fantasy play speech = 6.6, $p < 0.001$, effect size $d = 1.16$). About 40% of mothers thought that children would talk more to themselves when the parent was not present. Only one mom (2%) believed that their child would use more speech with a parent present, and the rest (58%) were not sure or thought that it would depend on the situation.

Table 1. Descriptive statistics on answers to major parent interview questions

Have you observed your child talking to self?	2%	No
	8%	Yes, a little
	75%	Yes
	15%	Yes, a lot
Does child talk to self during problem-solving tasks?	72.3%	Yes
Does child talk to self during imaginary play?	93.6%	Yes
Percentage of time during imaginary play child talks to self?	68.8 (25.5)	M(S.D.)
Percentage of time during problem solving child talks to self?	40.9 (22.4)	M(S.D.)
Child's use of private speech when you are NOT in the room?	2.1%	More when parent IS in room
	42.6%	More when parent is NOT in room
	42.6%	No difference
	12.8%	Unclear/other
Child talks to self at bedtime?	42.6%	No
	55.3%	Yes
	2.1%	Unclear
Is private speech helpful or harmful to child's task progress?	2.3%	Harmful
	6.7%	Doesn't matter/unclear
	71%	Helpful
How do you usually respond to child's private speech?	20%	Very helpful
	40.4%	Ignore
	14.9%	Comment/get involved
	44.7%	Unclear/varies
Is child aware of his/her private speech?	34.8%	No
	52.2%	Yes
	13%	Unclear/don't know
	20.9%	No change
Result if you make child aware of his/her self-talk?	11.6%	Increases
	46.5%	Decreases
	20.9%	Unclear/varies
Do you talk to yourself?	95.7%	Yes
Does private speech help you?	2.8%	Harmful
	25%	Doesn't matter/unclear
	72.2%	Helpful
Did you talk to yourself when you were a kid?	19.5%	No
	56.1%	Yes
	24.4%	Unclear/can't remember

Bedtime Private Speech

Slightly more than half (55%) of the parents reported that their child talked to him/herself in bed before going to sleep. Zero order correlations revealed that children who talked to themselves before bed were also reported by their mothers to be the ones who use much private speech during problem-solving activities ($r = 0.54$, $p < 0.001$, and to a lesser extent during fantasy play, $r = 0.28$, $p = 0.07$), who have greater difficulties with self-control ($r = -0.50$, $p < 0.001$),

and who are younger ($r = -0.35$, $p < 0.001$). Although child age was neither associated with parent-reported child private speech use nor with parent-reported child self-control, partial correlations were also conducted controlling for age of child and the above associations did not change. Thus, parents of younger children reported more of this type of 'crib speech' than did parents of older children. This is likely due to a recency effect of the parent having more, and more recent, chances to observe a younger child's behaviour before going to bed due to napping being a more common activity for younger children. It would appear that as children get older, parents are less likely to actively recall their child's bedtime verbal behaviour.

Maternal Attitudes and Behaviour Toward Children's Private Speech

The vast majority of parents (91%) felt that private speech was useful or very useful to children; that it helped kids progress toward task completion or enhanced the activity in which they were engaged rather than harming them. About 40% of mothers reported that they typically ignored such speech from their children (although many would 'listen in' because it was interesting), with 15% reporting that they typically respond to the speech itself or get involved in and join the child's play or work activities when children are talking to themselves. The rest of the mothers were not sure they had a typical response and stated essentially that it depends on the situation and other factors. None of the mothers mentioned anything about explicitly encouraging or discouraging private speech in their children. To see whether parental response to children's speech was linked with their views about its helpfulness, an ANOVA was conducted with parental views about the helpfulness of the speech (1= harmful, 2= slightly harmful, 3= indifferent/unclear, 4= helpful, 5=very helpful) as the dependent measure and parental response to private speech (ignore, get involved, unclear/depends) as the independent variable. Although parents who ignore child private speech had slightly more positive views about the helpfulness of their child's self-talk ($M = 4.29$, $S.D. = 0.59$), than those who respond/get involved ($M = 4.00$, $S.D. = 0.58$), and those whose reactions vary ($M = 3.95$, $S.D. = 0.60$), this difference was not statistically significant, $F(2, 41) = 1.62$, $p = 0.20$, effect size $d = 0.53$. Similarly, maternal reports of the frequency of children's private speech during problem solving and fantasy play did not vary as a function of parental response to such speech (whether they as parent ignored or got involved with their children's self-talk) as indicated by non-significant ANOVAs.

Parenting Style

To see whether parental response to children's private speech was related to authoritative parenting style, a series of ANOVAs was conducted with parental response to speech (ignore, get involved, unclear/depends) as the independent variable and authoritative, permissive, and authoritarian parenting style as the dependent measures in turn. With authoritative parenting as the dependent measure, the result was significant, $F(2, 44) = 3.44$, $p < 0.05$, effect size $d = 0.82$, indicating that parents who are more authoritative in their child rearing style are more likely to ignore/allow their child's private speech as opposed to getting directly involved or reacting otherwise. Authoritarian and permissive parenting did not vary as a function of parental response to children's self-talk.

Authoritative parenting, however, was not associated with the frequency with which children were reported to talk to themselves in either fantasy play ($r = -0.01$, ns) or problem-solving situations ($r = -0.16$, ns). Authoritarian (r 's = 0.11 to 0.12, ns, respectively) and permissive parenting (r 's = 0.20 to 0.28, ns) were similarly unassociated with parental reports of the frequency of their child's private speech. Finally, none of the parenting style measures were significantly related to mothers' views about the extent to which private speech was helpful to the child (r 's range = -0.20 to 0.08 , ns).

Children's Self-Control

Parents reported more frequent use of private speech among children who were rated as being lower in self-control on the SCRS (proportion of time child uses PS during problem solving tasks $r = -0.58$, $p < 0.001$, during fantasy play $r = -0.29$, $p < 0.05$). This finding is consistent with the literature demonstrating that children with self-regulatory difficulties use much self-talk and may be delayed in the internalization of such speech. It is interesting to note that the association between self-control and amount of parent-reported private speech use was greater in the problem-solving than in the fantasy play context, suggesting that children with self-control difficulties are not *always* more likely to talk to themselves, just more likely to do so during problem-solving situations where perhaps their self-regulatory skills are challenged. Finally, parents' views about the helpfulness of children's private speech were not related to their children's levels of self-control ($r = 0.06$, ns).

Parental Private Speech Use

A surprising 96% of mothers reported that they sometimes or often talk to themselves currently as adults. Also, a full 72% stated that they find their use of such speech as helpful to them, with 25% believing that their self-talk does not seem to matter for their own performance and completion of tasks. Only one mother felt that her own use of private speech was harmful or not good. Finally, the majority of mothers (56%) reported that they talked to themselves often as a child, and about 20% of mothers thought that they did not talk to themselves as children. The remaining group of mothers stated that they could not remember whether they talked to themselves as children.

Awareness of Private Speech

A slight majority of parents (52%) believed that their children were generally aware of their self-talk when talking to themselves, that is, that their child knows when they are talking to themselves. Another 35% believed that their preschool child was unaware when they are talking to themselves, and 13% were not sure enough to venture a prediction. When asked what would happen if, during an episode in which their child was using private speech the parent drew attention to the fact that the child was talking to the self, the largest group (47%) thought that that would lead the child to stop or decrease such self-talk.

DISCUSSION

The present study represents the first to explore parental beliefs about and practices toward children's private speech. Mothers of preschool children in this study were aware of their child's self-talk and revealed a fairly rich and accurate understanding of this developmental phenomenon. Mothers report considerable private speech use by their preschool children in both problem solving and fantasy play situations. Practically all mothers (98%) reported that their preschool-age child talked to themselves in at least one context with 72% saying that their child uses private speech during problem-solving and 94% saying that their child talks to the self during fantasy play. These estimates were right on target in terms of the percentage of children who actually talked to themselves during their experimental visit and these maternal estimates are certainly consistent with the frequencies with which children have been observed to talk to themselves more generally in the private speech literature. Maternal average estimates of 40% of their child's problem-solving activities and 70% of fantasy play containing overt private speech, give additional strong support to the conclusions made in the research literature that private speech is a ubiquitous phenomena during early childhood. Consistent with what is found in the research literature, many mothers report that such speech use is more common when parents are not present, however, parents also correctly reported that the effect of parental presence on children's private speech depends on the situation (Behrend *et al.*, 1992; Lee, 1999; Winsler, 1998, Winsler & Diaz, 1995). Thus, similar to what has been found concerning the usefulness of maternal reports for studying other, rather specific and curious child behaviours, such as the presence of imaginary companions and personified objects (Gleason, 2004), it would appear that maternal reports may provide useful information about children's private speech as well.

Parents were also practically uniformly positive in their attitudes about private speech use in their children. Parents believe that such speech is a natural phenomenon that enriches their child's play and helps their child accomplish tasks. Indeed, 93% of mothers reported that self-talk is useful to children during their pursuits and has important functions, either in helping regulate the child's behaviour or helping the child succeed with their immediate task or goal. Such parental views are consistent with the research findings on the self-regulatory functions of children's private speech (Berk & Spuhl, 1995; Lee, 1999; Winsler *et al.*, 1997). Unfortunately, such uniformly positive maternal attitudes about private speech made it difficult to find associations in the present study between maternal attitudes and other phenomena such as maternal practices or reports of private speech frequency, due to the restriction of range observed for attitude. It is also possible that the restricted range in terms of the relatively high SES of the participating families limited the variance observed in maternal attitudes about children's self-talk. Further research will be needed to determine whether mothers with fewer financial resources and mothers from more diverse ethnic backgrounds share these positive views about children's private speech.

It is interesting to note that 96% of these parents reported that they sometimes talk to themselves as adults. Further, almost three out of four (72%) mothers believed that their own private speech as an adult is helpful/useful to them. Although there is limited research on private speech use among adults, studies have similarly found that adolescents and adults do use private speech on a variety of different tasks and that such speech shows some similar patterns as child speech in terms of its self-regulatory functions, relations with task difficulty,

and microgenetic internalization (Azevedo, Sánchez, Alarcón, & De la Mata, 2002; Duncan & Cheyne, 2001; Kronk, 1994; Ramirez & Smith, 1994). Although the formative role of private speech in the development of executive function and self-regulation is likely no longer present in adulthood, it is interesting to note that adults at times continue to use verbal self-regulatory strategies.

One of the goals of the present investigation was to learn about how parents respond to their children when they are talking to themselves. There was no evidence that parents actively discourage this behaviour in their children—no mothers reported actively trying to discourage, reduce, or eliminate private speech in their children. Similarly, there was no evidence in this study that parents actively encourage or go out of their way to promote self-talk in children. A sizable group (40%) of parents reported, however, that they systematically ignore self-talk in their children, that is, they just let it be and do not respond to it or get involved in any way. A small group of mothers (15%) mentioned that they typically get involved with their child in some way when they see them talking to themselves, either by entering into the conversation or joining in the child's activity or interacting with the child in some other way. Although these latter parental responses were not articulated as conscious responses designed to stop the child's use of private speech, socially interacting with children when one notices that they are talking to themselves certainly has the consequence (intended or not) of reducing the child's immediate opportunity to use private speech, at least in the short term during those very interactions.

Maternal response to her child's private speech was not related to her reports of the utility of that speech for the child, nor to her perceptions of how often the child used private speech. Thus, it appears that parental behaviour when children are talking to themselves, rather than being linked with maternal attitudes about such speech or child behaviour, might be related to more global parental styles or beliefs. Indeed, parents in this study who were highly authoritative in their self-reported parenting style were more likely to ignore children's self talk and not get involved. It has been hypothesized that one of the positive things that authoritative parents do with their children is provide effective scaffolding during joint parent-child activities (Berk & Spuhl, 1995; Berk & Winsler, 1995) and that stimulating children's use of social and private speech for problem solving during such interactions might be one of the mechanisms through which scaffolding has its positive effects on children's learning (Berk & Spuhl, 1995; Winsler *et al.*, 1997). The results of the present study are consistent with such hypotheses, suggesting that authoritative parents may be more likely to ignore (and thereby allow) private speech use in children.

Interestingly, the parents who reported in the interview that their children talked to themselves a lot tended to be the same parents who later rated their children as evidencing poorer self-control in the parent survey. This is consistent with research on the private speech of children with self-regulatory difficulties (children either clinically diagnosed with ADHD, or preschoolers at risk for such a diagnosis on the basis of teacher-reported behaviour problems) that finds that such youngsters frequently talk to themselves, even more than normally developing children of the same age, in an apparent attempt to regulate their thinking and behaviour, and that such children may be delayed in their internalization of private speech. That is, they go on talking out loud to themselves while other children have moved on to either partially internalized (whispers and inaudible muttering) or fully internalized (silent inner speech) forms of verbal mediation (Berk & Potts, 1991; Winsler, 1998; Winsler, Diaz *et al.*, 2000). However, because the present study involves maternal reports on

children's behaviour over time in the naturalistic home setting, the present study offers an important source of replication to add to the above-mentioned exclusive laboratory studies showing increased private speech use among children with poor self-control. It is also interesting to note that the association between maternal reports of child private speech and child self-control were higher for child self-talk during problem-solving situations compared to fantasy play settings, further suggesting that children with difficulties in self-control rely on self-speech specifically during challenging situations. Another interpretation perhaps worthy of additional study, however, is that there is single source bias and mothers happen to interpret child private speech itself as an indicator of poor self-control. This interpretation seems unlikely, however, given the overwhelmingly positive attitudes mothers evidenced here about children's self-talk.

The majority of mothers reported that their child either did, or continues to, engage in crib speech. Although discussion of children's bedtime monologues or soliloquies can be found in the literature (Kuczaj, 1985; Nelson, 1989), these reports have been anecdotal and based on a very small number of children who happen to have been systematically observed to talk to themselves at bedtime. The present study is the first to provide an estimate (albeit maternal report) of the incidence of this interesting pre-sleep speech behaviour among young children, and the incidence rate found here (55%) is quite high. More research is needed on this specialized form of self-talk in early childhood in order to learn about other potential functions of such speech and relations with children's functioning in multiple domains. Bedtime monologues were found here to be more likely to occur among children who have difficulties with self-control, and among children who use private speech often in problem-solving situations. Perhaps children predisposed to have difficulties in the area of self-regulation begin using speech early on at bedtime in special ways that are either positively or negatively related to their future development of self-control. It will be important for future research to determine the extent to which the findings here pertaining to children's crib speech, obtained via parental report only, are confirmed when they are examined systematically with independent and directly observational measures.

Another form of children's self-talk worthy of additional investigation according to the results of this study is children's self-speech during their fantasy and role-playing activities. Researchers have almost exclusively focused on children's private speech during goal-directed, problem-solving activities typically asking questions about task performance and self-regulatory functions of such speech. Parents report, however, that such private speech during task activities is less frequent and that private speech is actually more common during fantasy play. Studies have not yet directly compared children's private speech use in fantasy play versus problem-solving situations *per se*, although other related distinctions between children's activity settings (i.e., free play versus goal-directed, or open-ended versus closed ended activities) have been explored in terms of their effect on children private speech and these have yielded mixed results (Krafft & Berk, 1998; Winsler, Carlton, & Barry, 2000).

It is important to note that the present investigation is limited in that the sample used was fairly advantaged socio-economically and quite homogenous with respect to Caucasian ethnicity and family structure (married with two parents). Parental beliefs about all phenomena are certainly known to vary across cultures (Chao, 1996; Cote & Bornstein, 2000; Savage & Gauvain, 1998) and parental attitudes about children's private speech likely also vary across cultures.

Additional work exploring these issues with a more diverse sample is clearly in order. Also, the small sample utilized in the present study limited the power to find statistically significant results. The present investigation, however, does provide important new data as an initial exploration into the new territory of parental beliefs about private speech.

Understanding parental views toward children's self-talk may be important for intervention efforts designed to help youngsters use such speech for effective self-guidance (Diaz & Berk, 1995). The results of this study show that parents, at least predominantly Caucasian middle-class parents, are largely aware of such speech use in their children and that parents believe such speech to be quite positive and helpful for their children. This is welcome news for professionals involving parents with the implementation of self-instructional training interventions for children as it means that they will likely not encounter resistance or negative biases on the part of such parents.

Note

1. A copy of the complete interview protocol is available upon request to the first author.

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