Early Childhood Research Quarterly 28 (2013) 405–414

Contents lists available at SciVerse ScienceDirect

Early Childhood Research Quarterly

Understanding the role of private speech in children's emotion regulation

Kimberly L. Day[a,*], Cynthia L. Smith[b]

[a] Virginia Tech, Department of Human Development (0416), College of Liberal Arts and Human Sciences, 409 Wallace Hall, Blacksburg, VA 24061, United States
[b] Virginia Tech, Department of Human Development (0416), College of Liberal Arts and Human Sciences, 307 Wallace Hall, Blacksburg, VA 24061, United States

ARTICLE INFO

Article history:
Received 21 October 2011
Received in revised form 15 October 2012
Accepted 27 October 2012

Keywords:
Private speech
Emotion
Emotion regulation
Self-regulation

ABSTRACT

Self-regulation includes both cognitive and affective components, but few researchers have investigated how these components interact to better explain self-regulation. The purpose of this study was to investigate how children's private speech, which is typically related to cognitive ability, was utilized during an emotion-eliciting task. By examining the social and private speech that occurred as children coped with a frustration task, a better understanding of how children regulate their emotional displays can be achieved. Children's speech, emotional expressions (sadness and anger), and emotion regulation strategies (distraction and self-comforting) were coded during a frustration task completed by preschool-aged children ($N = 116$). Children's social speech to mothers and private speech were transcribed. Children's private speech was categorized according to five mutually exclusive categories: vocalizations, inaudible muttering, task-irrelevant, negatively valenced task-relevant, or facilitative task-relevant. Sadness was associated with more social speech and negatively valenced task-relevant private speech, whereas anger was associated with less distraction and facilitative task-relevant private speech and more vocalizations and negatively valenced task-relevant private speech. Additionally, private speech predicted unique variance beyond that explained by the emotion regulation strategies and moderated the relations of emotion regulation strategies to both anger and sadness. These empirical findings support theoretical propositions that language is a factor in children's emotion regulation. The implications of these findings include support for the encouragement of private speech in the classroom because of its relation to emotional, in addition to cognitive, regulatory functions.

Self-regulation is an important socialization goal because children need to initiate actions autonomously, regulate and engage according to social norms without adult supervision, and do so flexibly (Grolnick & Farkas, 2002). Self-regulation has been conceptualized by Grolnick and Farkas (2002) as including motivational, cognitive, affective, and behavioral components. One aspect of children's cognitive self-regulation is private speech, or audible speech that is directed to the self (Winsler, 2009). Because private speech has been found to support young children's cognitive self-regulation, it has been encouraged for use in classrooms as an aid to cognitive development (Winsler, Carlton, & Barry, 2000; Winsler & Diaz, 1995; Winsler, Diaz, Atencio, McCarthy, & Chabay, 2000; Winsler, Manfra, & Diaz, 2007). Whereas a lot of the research on private speech has focused on cognitive aspects of self-regulation, the emotional aspects of self-regulation are typically not considered as much.

Emotional regulation includes the process of altering internal feeling states to accomplish a personal goal (Eisenberg & Morris, 2002; Eisenberg & Spinrad, 2004; Eisenberg, Spinrad, & Smith, 2004). Emotional regulation abilities have been found to be related to children's social skills and peer social status (Calkins, Gill, Johnson, & Smith, 1999; Eisenberg et al., 1993; Keane & Calkins, 2004) as well as academic success and productivity (Graziano, Reavis, Keane, & Calkins, 2007). Children's emotion and emotion regulation strategies are often observed during tasks that children may find frustrating. These tasks have been used to reliably observe emotion in children (e.g., Dyson, Olino, Durbin, Goldsmith, & Klein, 2012; Gagne, Van Hulle, Aksan, Essex, & Goldsmith, 2011; Goldsmith, Reilly, Lemery, Longley, & Prescott, 1993), but researchers have not investigated children's private speech during emotion-eliciting tasks. The purpose of this study was to examine how children's private speech related to their emotionality and emotion regulation during a frustration task.

Past theoretical propositions support the inclusion of private speech in research on children's emotion regulation. According to Thompson (1990), communication abilities and language growth are among the most important cognitive components of emotional regulation. They increase children's ability to use outside

* Corresponding author at: Virginia Tech, Department of Human Development (0416), 409 Wallace Hall, Blacksburg, VA 24061, United States.
Tel.: +1 540 231 1390; fax: +1 540 231 7012.
E-mail addresses: kday08@vt.edu (K.L. Day), smithcl@vt.edu (C.L. Smith).

0885-2006/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.ecresq.2012.10.003

regulatory influences to assist in their early self-regulatory abilities. Kopp (1989) also proposed that language was important to toddlers' ability to self-regulate negative emotions. Improved verbal ability should lead to greater internal regulation because language gives children the ability to describe their feelings and to be able to hear how their emotions affect other people (Kopp, 1989). When children are faced with a frustration task, they can often be observed talking to themselves; however, this speech is typically not examined, even though language can be a tool for regulating frustration (Cole, Armstrong, & Pemberton, 2010; Eisenberg, Sadovsky, & Spinrad, 2005; Thompson, 1990). The current study advances our understanding of the speech that occurs during a frustration task by empirically testing the expectation that children's private speech observed in a frustration task would relate to children's emotionality and emotion regulation strategies in meaningful ways.

1. Children's self-regulation

1.1. Private speech

The goal of private speech is to be able to communicate with the self to support self-regulation (Vygotsky, 1934/1986). As discussed by Berk and Winsler (1995), private speech is an important aspect of child development because it is believed to be the intermediate stage between using language primarily for social communication and using language internally as thought. As private speech is internalized, it supports children's ability to be more internally regulated. Private speech has a typical developmental course, becoming more internalized throughout the childhood years (Berk & Winsler, 1995). Private speech usage tends to have an inverted-U shape with increased use over the preschool years and less use in the early elementary years (Berk & Winsler, 1995). In addition, children become more capable of regulating their own behavior and rely less on caregivers with age (Eisenberg & Morris, 2002). Preschool-aged children were the focus of the current study because they are at the developmental stage where they are likely to use high amounts of external private speech and are also becoming more skilled at regulating their own emotions. Private speech could aid children in their attempts to internalize their regulation. In contrast, certain categories of children's private speech may be more common alongside greater negative emotionality, potentially reflecting a lack of emotion regulation.

There are many types of private speech, and some have been found to be related to better self-regulation (e.g., Winsler, de León, Wallace, Carlton, & Willson-Quayle, 2003). When the research on private speech is primarily focused on cognitive tasks (Bivens & Berk, 1990; Manfra & Winsler, 2006; Winsler & Naglieri, 2003), private speech is typically classified for its relevance toward the task (Al-Namlah, Fernyhough, & Meins, 2006; Berk, 1986; Manfra & Winsler, 2006; Patrick & Abravanel, 2000). Researchers have begun to investigate private speech during self-regulation tasks, where children must plan and guide their own behavior in order to achieve a goal (Manfra, Winsler, Chandler, & Ducenne, 2002; Winsler, Ducenne, & Koury, 2011) and, therefore, this research has included emotional and motivational aspects in the categorization of private speech (e.g., Atencio & Montero, 2009; Chiu & Alexander, 2000; de Dios & Montero, 2003; Manning, White, & Daugherty, 1994). Private speech categories can be seen as related to emotional regulation in that they included coping with mistakes, which may be related to negative emotions (e.g., "I messed up but that's why I have an eraser"), or reinforced progress and accomplishments, which may be related to pride and positive emotions (e.g., "This is really looking good," "I did my best").

Manning et al. (1994) found that 5-year-old children who used more cognitive and metacognitive private speech (speech related to the task) and less task-irrelevant (speech unrelated to the task) and nonfacilitative private speech (speech related to the task that inhibited or stopped efforts) had higher levels of autonomy, performed better academically, and exhibited more creativity. Therefore, task-irrelevant and nonfacilitative private speech were seen as the least beneficial forms of private speech, while cognitive and metacognitive were seen as the most positive and beneficial. Winsler et al. (2011) found that preschool-aged children who used more task-relevant private speech and less task-irrelevant private speech and social speech (speech directed to another person) also performed better on self-regulation tasks. It is likely that the children who performed better cognitively were also better at regulating the emotions associated with completing the task. However, emotion regulation was not measured; thus, the relation between private speech and emotion regulation could not be directly examined. By investigating the private speech that children used during an emotion-eliciting task, the goal of this study is to describe the relation of private speech to children's emotions and emotion regulation.

Tasks used to measure children's private speech in previous research have also been used in emotion regulation research. For example, both Manfra et al. (2002) and Winsler et al. (2011) examined private speech in different types of delay tasks, where children were asked to wait to open a present or asked to wait to play with an exciting toy. The tasks used in these studies were similar to tasks used by researchers investigating emotion regulation, as sadness and anger are typically seen when children are asked to wait to do something fun (Calkins & Johnson, 1998; Cole et al., 2011; Dennis, Cole, Wiggins, Cohen, & Zalewski, 2009; Grolnick, Bridges, & Connell, 1996). Tasks that are typically perceived as cognitive and used to elicit private speech are also evoking emotion from children, which is why researchers interested in emotion regulation also use them.

In one study that examined how private speech related to emotion regulation, Broderick (2001) trained speech/language pathologists to transcribe children's private speech as it was spoken in naturalistic observations at a Head Start center. It was found that preschoolers who were well-regulated emotionally, as determined from teacher report of emotion regulation, used more private speech overall and used less emotionally negative private speech than more poorly regulated children. While this study demonstrated that children's private speech was related to children's emotion regulation, researchers have yet to examine how private speech is related to emotion regulation in tasks that are specifically designed to tax children's emotion regulation abilities. Limitations of Broderick's methodology were that children's social speech was not collected and that the speech was coded from transcriptions without a video recording to allow for the context of the speech to be considered. Building on Broderick's study, the current study examined relations among children's private speech, observed emotion and emotion regulation within the same task, rather than relying on teacher-report of children's general regulatory abilities.

1.2. Emotion regulation

Often times, emotions and emotion regulation strategies, specifically distraction and self-comforting, are investigated together to determine the effectiveness of the regulation strategy (e.g., Diener & Mangelsdorf, 1999; Stifter & Braungart, 1995). Distraction is defined as shifting attention away from the object of frustration, and self-comforting is defined as repetitive behaviors used to self-soothe (Calkins et al., 1999; Calkins & Johnson, 1998). Empirical findings related to the use of these strategies have been mixed. Some researchers (Buss & Goldsmith, 1998; Calkins et al., 1999; Calkins & Johnson, 1998; Grolnick et al., 1996; Stifter & Braungart,