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UNIVERSITY OF CALIFORNIA, SAN DIEGO

Children's Beliefs about the Disclosure of Performance Information in the Classroom

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy

in

Psychology

by

Catherine M. Hicks

Committee in charge:

Professor David Liu, Chair
Professor Christopher Bryan
Professor Alan Daly
Professor Gail Heyman
Professor Dana Nelkin

2014

The Dissertation of Catherine M. Hicks is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Chair

University of California, San Diego

2014

DEDICATION

This dissertation is lovingly dedicated to the people outside the system.

To John Snow, who followed logic and statistics against the judgment of all experts and saved the lives of millions;

To Gerald Paltin, who transmuted persecution and exclusion into achievement and compassion;

To Emilie, the first person to ever tell me that school was for people like us.

We weren't supposed to, and we made it anyway.

EPIGRAPH

Then why did you not tell me? A word from you would have sufficed. Or are you like the gods who will speak only when it is too late?

I ended my first book with the words, *no answer*.

C.S. Lewis, Til We Have Faces

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ABSTRACT OF THE DISSERTATION

Children's Beliefs about the Disclosure of Performance Information in the Classroom

by

Catherine M. Hicks

Doctor of Philosophy in Psychology

University of California, San Diego, 2014

Professor David Liu, Chair

This dissertation examines young children's beliefs and predictions about the disclosure of performance information in the classroom. Seven experiments present new evidence about children's reasoning about the disclosure, and contribute to our understanding of children's reasoning about classroom behaviors. Using story scenarios, these experiments examined young children's beliefs about factors impacting this behavior.

Chapter 1 found that while children at all ages (3-6 years) predicted more disclosure of success than failure, there was an age-related decrease in children's predictions of disclosure for both failed and successful performance. This effect was replicated in two experiments, and children were found to predict less disclosure in a nonsupportive peer environment. Chapter 2 investigated 3-11-year-old children's expectations of teasing, theory of mind, information-seeking and disclosure of another's performance information. No age-related changes were found for expectations of teasing or seeking information and no relationship was found between disclosure and theory of mind, but children's predictions of disclosing another's performance decreased significantly with age. Children at all ages were also found to predict high levels of information seeking about peer performance. Chapter 3 found that across all age groups (3-6 years) young children expected characters to both disclose failure to and ask for help from a high-achieving peer, while they showed no preference for the disclosure of success.

Chapter 4 investigated Chinese children's beliefs about performance disclosure and found that older Chinese students (9-11 years) were more likely than younger Chinese students (6-7 years) to reveal failure, but not success. Chinese students predicted less disclosure to a nonsupportive versus a supportive peer. In a second experiment with 3-11-year-olds, with age Chinese students' predicted less disclosure of another's performance, more information seeking for the successful character, and less help-giving from the failed character.

This research provides new evidence for age-related changes in young children's reasoning about performance disclosure and cross-cultural differences in these beliefs, and suggests that even very young children are sensitive to different factors which can impact this disclosure, such as expecting a nonsupportive response. This research points to the preschool years as a crucial developmental time for beliefs about disclosure.

INTRODUCTION

Disclosing information about oneself to another is a foundational social act, and such communications between individuals serve to strengthen social ties, inform decisions, and lay the groundwork for relationships. In particular, disclosing competency serves many important social functions such as letting others know what skills and abilities an individual holds and bolstering one's reputation and social standing; for example, an employee who hopes for a promotion at work may disclose the work they put into a special project in order to let his or her employer know about this competency. Further, obtaining and evaluating performance information about people around us is an essential part of making social comparisons and self-competency judgments that allow us to judge our own abilities and make decisions. For instance, a student who is deciding whether or not to enroll in a difficult calculus class in college may ask friends who have taken the class to disclose their experience of its difficulty and whether they struggled to perform well in the course. However, this disclosure may also come at a social cost; disclosing incompetency or failed performance may lead to a damaged reputation, missed opportunity, and negative social judgments; an employee who reaches out for help on a difficult project may be perceived as less competent than others and subsequently be denied promotion, and a student who fails a test may fear ridicule from peers. Therefore, people face many choices about whether and when to disclose personal competency information to others. This choice is particularly salient in learning environments, where revealing

performance information is often an essential first step towards seeking needed help when a learner is unable to accomplish a task.

The academic classroom is one environment where the disclosure of performance information is a particularly important concern. In the academic classroom, performance information is often formalized in grades, rankings, test scores and other explicit performance assessments that can have great bearing on an individual's future opportunities. Academic advancement is predicated on displaying a certain level of competency at given tasks, and revealing subpar performance may penalize a learner both in terms of advancement and social repercussions. However, revealing this information can also be an important step in learning, giving valuable and necessary data to teachers and mentors who can help a learner to advance in these areas. Disclosing sensitive personal information to peers can also be an important part of friendship, serving to strengthen relational ties and generate support for an individual from sympathetic individuals. On the other hand, revealing this information inappropriately can have many negative repercussions, including social mockery, negative judgments, or even lowered academic standing. Learners in a classroom, therefore, face many choices about whether and how to disclose their own and other's performance information.

Background

Research on children's learning has found that appropriate disclosure of difficulty and concurrent help-seeking is an important predictor of long-term academic success, GPA, and a crucial indicator of individuals' ability to self-regulate their own

academic learning (Ryan, Hicks, & Midgley, 1997; Schunk & Zimmerman, 1997; Zimmerman & Kitsantas, 1997; Zimmerman & Risemberg, 1997). Adaptive help-seeking is a self-regulatory learning strategy which occurs when learners evaluate their own progress towards a goal, judge that they need assistance to continue, and disclose this need to others who can give them necessary help (Paris & Newman, 1990; Ryan et al., 1997).

Nevertheless, as children reach adolescence, previous research has found that students increasingly fail to actively seek help when struggling to understand and achievement with academic tasks, and increasingly avoid disclosing poor performance even at the cost of obtaining help (Newman, 1990; Newman & Goldin, 1990). Despite its many benefits for learning, help-seeking is a difficult choice impacted by many possible negative outcomes; for example, students who perceive that help-seeking will be interpreted as evidence of low ability are more likely to avoid seeking help (Middleton & Midgley, 1997; Nadler, 1997; Ryan et al., 1997; Ryan & Pintrich, 1997). Help-seeking and associated performance disclosure are also impacted by social goals; learners who are deeply concerned with *social status goals* such as visibility and prestige within a peer group are more likely to avoid help-seeking, while learners who hold *intimacy goals* such as maintaining close friendships are less likely to avoid help-seeking (Anderman & Anderman, 1999; Ryan et al., 1997).

Thus, children must learn to navigate through a complex realm of costs and benefits when making decisions about whether or not to disclose performance and take steps towards obtaining help in academic work. In particular, understanding children's

beliefs about the disclosure of performance information provides a meaningful picture of how children are learning to navigate these decisions. While much research has investigated older children's academic help-seeking, little research has investigated what young children believe about performance disclosure. Understanding young children's beliefs about disclosure, and factors which impact this reasoning, will serve to broaden our understanding of later academic and social behaviors in the classroom, and allows us to investigate the early developmental origins of these crucial choices.

It is likely that preschool and early school ages are an important incubator for children's developing understanding about when it is appropriate to disclose personal performance information, however little is known about how these young children reason about disclosure. Do young children predict high or low levels of disclosure? Do young children discriminate between disclosing success versus failure? Do young children expect people to modify their disclosure behavior in response to negative social response, like adults would? Previous research has found that the early school ages are a pivotal developmental time for many cognitive and social abilities that could impact children's beliefs about performance disclosure. At least by the age of five, young children appear to develop some sensitivity towards what others think of their abilities and competency, and are reluctant to reveal competency information about another person (Kim, Harris, & Warneken, 2014), and by the age of seven, children believe that people are more reluctant to reveal negative versus positive performance (Heyman, Fu & Lee, 2008; Zhang, Z, Heyman, Fu, Zhang, D., Yang. & Lee, in press). This suggests that early school-aged children will expect less disclosure

of failed performance; however, it is unknown how preschool and younger children reason about this disclosure. It is also possible that while young children become concerned with revealing competency at these ages, they will not consider classroom performance to reflect their competency and will not show this reluctance to disclose failure.

Some previous research provides evidence for age-related changes in children's reasoning about self-presentation which may affect their disclosure choices, and suggests that younger children will not view performance disclosure with the same concern as older children; children appear to only begin making social comparisons with peers around the age of eight (Ruble, Boggiano, Feldman, & Loebl, 1980; Ruble, Feldman, & Boggiano, 1976), and concerns about modesty and self-presentation do not appear to surface until this age as well (Banerjee, 2002; Banerjee, Bennett, & Luke, 2010; Watling & Banerjee, 2007), suggesting that younger children may not view performance disclosure as threatening to their self-concept nor expect others to use bad performance to make negative social judgments about them. Indeed, some research has found that six-year-olds, but not younger children, predict the nondisclosure of information that should be kept secret from others, compared with information that may be shared (Anagnostaki, Wright, & Bourchier-Sutton, 2010; Anagnostaki, Wright, & Papathanasiou, 2013).

Another open question is whether children's disclosure beliefs change with response to a negative peer environment. Older children have been found to be sensitive to the effects of a nonsupportive classroom—in particular, classrooms that

have been identified to have performance goal structures where a high premium is placed on demonstrating performance, to the exclusion of allowing students to communicate mistakes (Ames & Archer, 1988; Elliot & Church, 1997; Pintrich & De Groot, 1990; VandeWalle & Cummings, 1997). In these environments, students are often reluctant to share negative performance information with both peers and teachers, even when help is needed, due to a greater fear of being perceived as incompetent than students in a more supportive classroom environment (Ciani, Middleton, Summers, & Sheldon, 2010; Rolland, 2012). Recent research has also found that school aged children are sensitive to how peers react to their performance disclosure (Altermatt & Broady, 2009; Altermatt, Pomerantz, Ruble, Frey, & Greulich, 2002); one such study (Altermatt & Broady, 2009) found that fourth- through sixth grade children brought into lab in friend dyads demonstrated more maladaptive learned helplessness after their friend responded to performance disclosure with negative responses. However, it is unknown if a nonsupportive environment will change younger children's beliefs about disclosure.

Even while their understanding of others' emotions are still developing, a large body of research has shown that preschool-age children are clearly sensitive and responsive to negative social interactions from a very early age (Denham, 1986; Vaughn, Vollenweider, Bost, Azria-Evans, & Snider, 2003), which may suggest that children will modify disclosure in response to teasing from a young age. However, while some research has found that preschool children expect people to selectively disclose socially sensitive information, for example believing that boys are less likely

than girls to disclose playing with dolls (Gee & Heyman, 2007), we do not know if young children are selective in their disclosure of academic competency.

Still, recent evidence suggests that children as young as five already make judgments about whether or not it is appropriate to reveal another's performance information, and believe that one should not disclose another person's incompetence (Kim et al., 2014). There is also evidence that children at this age modify their behavior in order to manage their reputations when observed by others (Banerjee, 2000; Watling & Banerjee, 2007; Engelmann, Herrmann, & Tomasello, 2012; Heyman, Barner, Heumann & Schenck, in press; (Leimgruber, Shaw, Santos, & Olson, 2012). If children are concerned with reputation management at this age, it is possible that they also begin to see performance disclosure as an act that will impact their reputations. In this case, it is also possible that young children begin to be sensitive to the ramifications of disclosing performance to peers at this same time, particularly negative information. Children's self-disclosure beliefs across age, and whether these are impacted by nonsupportive responses, are examined in Chapters One and Two.

While little research has examined young children's beliefs about performance disclosure, there has been some work on older children's disclosure beliefs. Previous research has examined children's predictions for the disclosure of performance information, and found that school-aged children prefer to engage in valence matching when revealing achievement—disclosing performance to a similarly achieving peer (Heyman, Fu, & Lee, 2008; Quatman & Swanson, 2002). However, it is unknown if younger children would show these same disclosure preferences; it could be that

young children do not take peer achievement into account when choosing to reveal their performance given that social comparison judgments do appear to be salient until around the age of eight (Banerjee, 2002). On the other hand, while young children do not yet make explicit social comparison judgments, they may still gravitate towards people who perform at a similar level in order to associate with students with similar experiences; these possibilities are examined in Chapter Three.

Finally, disclosing personal and performance information is impacted by a multitude of social and cultural norms around information-sharing and disclosure (Li, 2004), and some research has recently begun investigating Chinese and US children's beliefs about performance disclosure and how these beliefs differ (Heyman, Fu & Lee, 2008). This research reveals that school-aged children in China are more likely to interpret success disclosure as an offer of help than children in the United States, but there is little to no research on how different beliefs about performance may affect young children's disclosure beliefs across these two cultures. Large cultural differences may impact disclosure norms, such as Chinese learners' greater expectation of mistakes as a necessary part of learning (Dweck, Chiu & Hong, 1995). Chapter Four therefore examines young Chinese children's beliefs about disclosure.

Present Research

There are many open questions about what young children believe about disclosing performance information in the classroom, and how they reason about this disclosure. While previous research provides information about older children's reluctance to disclose failure performance, or to a differently-performing peer

(Heyman et al., 2008; Quatman & Swanson, 2002) as well as indicates that children are reluctant to reveal others' performance information (Kim et al., 2014), little is known about whether young children hold these same beliefs. We also do not know whether young children are sensitive to different factors that can impact adults' choices to disclose, such as whether the disclosure is about failure or success, how supportive a recipient may be towards one's self-disclosure, or whether people modify their disclosure according to the relative performance of the recipient. The seven experiments in this dissertation provide some of the first evidence for how young children reason about performance disclosure in the classroom.

The purpose of the research in this dissertation is to investigate young children's beliefs about disclosure in the classroom, focusing in particular on disclosure to peers. In Chapter One, we examine young children's beliefs about disclosure, and examine whether there are age-related changes in preschool children's predictions of disclosure, whether children distinguish between revealing successful or failure performance, and whether a nonsupportive peer environment will impact children's predictions of disclosure. Further, we also examine young children's beliefs about seeking and offering help after failure and success. These experiments determine whether young children expect similar rates of disclosure as older children do, and determine whether young children believe that people will disclose failure and success differentially.

In Chapter Two, we follow several lines of inquiry prompted by results in Chapter One, examining whether young children's theory of mind development will

relate to their predictions of disclosure, what beliefs children hold about the likelihood of teasing responses to disclosure, and whether children believe that people are interested in obtaining performance information in the classroom. We further the inquiry by examining the predictions young children make about disclosing another's performance information. These experiments examine whether children believe that people reason differently about self-disclosure compared to disclosing a peer's performance, and answer open questions about whether children believe that people actively seek out performance information from their peers.

In Chapter Three, we investigate whether young children believe that people will act as selective disclosers depending on the relative performance of the information recipient. This research addresses the open question of whether the valence-matching disclosure preferences observed in older children will be found for younger children. Finally, in Chapter Four we extend these questions cross-culturally with a sample of Chinese children, and examine beliefs about self-disclosure, information-seeking, and disclosing other's information in the classroom with preschool and school-aged children in China in order to examine similarities and differences between Chinese and US children's responses to these questions.

Taken together, this research helps us to map the space of young children's beliefs about disclosing performance information in the classroom. These findings will help us to illuminate previously unanswered questions about what young children believe about disclosure, what factors impact that disclosure, and whether there is evidence for cross-cultural difference in young children's predictions in the United

States versus China. This research has relevance for several areas in social and developmental psychology, including recent debates on young children's reputation management, children's selective trust, and research on older students' disclosure. These experiments will help us to understand how young children reason about disclosing performance information, and provide clues to later disclosure behavior that can have long-term consequences for learners in the classroom.

Chapter 1

Young Children's Beliefs about Self-Disclosure of Performance Failure and Success

Abstract

Self-disclosure of performance information involves the balancing of instrumental, learning benefits (e.g., obtaining help) against social costs (e.g., diminished reputation). Little is known about young children's beliefs about performance self-disclosure. The present research investigates preschool- and early school-age children's expectations of self-disclosure in different contexts. In two experiments, 3- to 7-year-old children (total $N = 252$) heard vignettes about characters who succeeded or failed at solving a puzzle. Both experiments showed that children across all ages reasoned that people are more likely to self-disclose positive than negative performances, and Experiment 2 showed that children across all ages reasoned that people are more likely to self-disclose both positive and negative performances in a supportive than an unsupportive peer environment. In addition to these findings of consistent beliefs across ages, both experiments revealed changes with age—younger children were less likely to expect people to withhold their performance information (of both failures and successes) than older children. These findings point to the preschool ages as a crucial beginning to children's developing recognition of people's reluctance to share performance information.

Children often face decisions about whether to disclose their performance. Such decisions are especially important when performance is seen to reflect on important aspects of one's character or abilities, such as in academic settings. In cases of failures, self-disclosures of poor performance are often needed as a precursor to obtaining help and guidance from others, which can result in more effective learning and improving future performance. However, children may hide information about poor performance to avoid negative social judgments and a diminished reputation from peers. In cases of successes, self-disclosures inform others of one's capabilities and often garner academic and social accolades, but children may hide information about successes to avoid being seen by others as arrogant. Thus, decisions about performance self-disclosure involve the balancing of different instrumental and social goals. Previous research suggests that school-age children recognize the social costs of performance self-disclosure in different contexts (Altermatt & Broady, 2009; Heyman, Fu & Lee, 2008; Zhang et al., in press). However, little is known about preschool-age children's beliefs about the contexts in which people disclose or withhold performance information. The goal of the present research is to help fill this gap.

All children, if appropriately challenged, will at times encounter instances of poor performance. In order to optimize their academic success, students need to know how to disclose poor performance in a manner that allows them to get the help they need (Boekaerts, 1999; Gall & Glor-Scheib, 1985; Newman, 1990, 1998, 2000; Pintrich, 2000; Pintrich & De Groot, 1990). Nevertheless, school-age children often avoid such disclosures; they fail to disclose their own mistakes or to ask for

clarification when they do not understand lessons (Good, Slavings, Harel, & Emerson, 1987). Research suggests that one of the main reasons why students withhold information about failures is because of social concerns of being judged as incompetent (Dijkstra, Kuyper, van der Werf, Buunk, & van der Zee, 2008; Ryan, Pintrich, & Midgley, 2001). Such social concerns are not without merit, as students are more likely to criticize than compliment their classmates' performance (Frey & Ruble, 1987), and children seem to be sensitive to how their peers would respond to performance self-disclosures (Altermatt, Pomerantz, Ruble, Frey, & Greulich, 2002). In a recent study, Altermatt and Broady (2009) examined the impact of the peer environment on children's self-disclosure. They found that fourth- through sixth-grade children's willingness to disclose their failure depended on how a peer responded to a prior disclosure. They brought friend dyads into a laboratory setting and observed children's conversations with each other after one of the children experienced a private achievement-related failure (failing to solve a series of puzzles). Children whose friend responded to the disclosure of failure with adaptive, problem-solving responses demonstrated less maladaptive learned helplessness on a subsequent post-test measure than children whose friend responded with negative responses, or even neutral, but off-task, responses. It appears that school-age children recognize and respond to the potential social costs of disclosing failures.

As with disclosure of negative performance information, disclosure of positive performance information also carries potential social costs. Research suggests that children's recognition of the potential social costs of disclosing and highlighting

successes increases during the early school years (Banerjee, 2000; Bennett & Yeeles, 1990; Watling & Banerjee, 2007). Banerjee (2000) found that children 8 years of age and older viewed modest responses to praise more favorably than nonmodest responses, whereas children 6 to 7 years of age did not show a preference for modest responses. The older children explained that modest responses are preferred because one does not want to appear to be bragging or showing-off (see also Watling & Banerjee, 2007). Therefore, in the middle childhood period, children seem to become acutely aware of the negative ramifications from others and are wary of self-disclosures of both negative and positive performance information.

There is also evidence that school-age children sometimes take into account the social context when reasoning about self-disclosure of performance (Banerjee, 2000, 2002; Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Watling & Banerjee, 2007; Zhang et al., in press). For example, they expect people to act more modestly around peers than teachers (Watling & Banerjee, 2007). In addition, school-age children and adolescents expect people to disclose academic performance with peers who performed at a similar level to their own (Heyman, Fu & Lee, 2008; Zhang et al., in press). Heyman, Fu, and Lee (2008) found that children in China and the United States predicted that negative-performing students are more likely to self-disclose to other negative-performing peers, and they predicted that that positive-performing students are more likely to self-disclose to other positive-performing peers. These findings of context sensitivity in reasoning parallel similar findings of

sensitivity to social context in behavioral disclosures (Altermatt & Broady, 2009; Altermatt et al., 2002).

Although previous research on children's explicit beliefs about performance self-disclosure has focused on the school years (Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Zhang et al., in press), there are important questions to ask about younger children. Do preschool- and school-age children reason similarly about self-disclosure situations? Are young children sensitive to the context impacting performance self-disclosure? Recent findings of age-related changes in beliefs concerning negative performance disclosure about others raise the possibility that there may be similar age-related changes in beliefs concerning performance disclosure about oneself. Specifically, Kim, Harris, and Warneken (in press) found that 7- and 8-year-olds were less likely than 4- and 5-year-olds to endorse disclosing information about others' negative performance, but that there was no such age-related change in the endorsement of disclosing information about others' positive performance. It is also possible that there may be changes in beliefs about disclosure of positive performance given that modesty comes to be viewed more favorably between ages 6 and 8 (Banerjee, 2000). The present research examines whether preschool-age children have even less of an expectation of modesty.

There are also theoretical reasons to suggest that preschool-age children's beliefs about self-disclosure would differ from that of school-age children. Research has shown that social comparison and self-presentation behaviors develop substantially during the early school years (Aloise-Young, 1993; Dijkstra et al., 2008;

Ruble & Frey, 1991). Similarly, the effectiveness of children's verbal lying behavior improves substantially during the preschool and school years (Talwar, Gordon, & Lee, 2007; Talwar & Lee, 2008). And studies suggest that children's self-presentation and verbal lying behaviors are both associated with children's understanding of mental states (Banerjee & Yuill, 1999; Talwar et al., 2007; Talwar & Lee, 2008), which develops throughout the preschool and early school years (Wellman & Liu, 2004). As children develop the understanding that others may hold different beliefs then their own, this new understanding allows them to recognize the possibility that knowledge may be kept from others. And as both theory of mind and self-presentational concerns develop during these ages, young children may increasingly become aware that performance disclosure could be modified in order to affect others' mental states and beliefs, and serve self-presentational goals such as ensuring that others think well of one's own competency. Theoretically, social comparison, self-presentation, and verbal lying behaviors may be linked with children's thinking on self-disclosure. If so, it is possible that children's explicit beliefs and reasoning about performance self-disclosure also change from early through middle childhood in association with developmental advances in social cognition.

There are, however, empirical and theoretical reasons to suggest that preschool-age children's thinking on self-disclosure would be similar to that of school-age children. Recent research suggests that preschool-age children already understand the need to manage their reputations and engage in self-presentation behaviors (Engelmann, Herrmann, & Tomasello, 2012; Engelmann, Over, Herrmann, &

Tomasello, 2013; Heyman, Barner, Heumann & Schenck, in press). In one study, Engelmann, Herrmann, and Tomasello (2012) found that when 5-year-olds are being observed by a peer, they share more and steal less than when they are alone. In addition, research on young children's selective trust of informants has documented that preschool-age children already recognize that people are not always forthcoming with accurate information (Liu, Vanderbilt, & Heyman, 2013; Mascaro & Sperber, 2009; Vanderbilt, Liu, & Heyman, 2011). Conceptually, children's reasoning about informants from the perspective of consumers of information may be associated with their reasoning about informants from the perspective of producers of information. Thus, since 4-year-olds, as consumers of information, recognize different cues suggesting when informants are withholding accruate information (Mascaro & Sperber, 2009; Vanderbilt et al., 2011), they may also recognize the contexts of when informants would want to withhold accurate information.

Present Experiments

Previous research on children's explicit beliefs and reasoning about performance self-disclosure has focused on the school years (Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Zhang et al., in press), yet it is unclear whether younger children have similar beliefs and expectations. As discussed above, research on related psychological constructs suggests both the possibility of preschool- and school-age children reasoning similarly and the possibility of them reasoning differently. Thus, in the present experiments, we compared preschool- and school-age children's predictions of whether a story protagonist would self-disclose his or her

performance to others. In addition, we examined whether children recognize that people are relatively more reluctant to disclose negative than positive performance information, and in Experiment 2, we examined whether children's explicit beliefs and reasoning about self-disclosure of performance take into account the social context.

Although the main aim is to address questions about young children's beliefs about self-disclosure of performance, the present research also informs several theoretical debates centered on young children's social reasoning and behavior. A lot of research has investigated preschool-age children's reasoning about informants in the context of whether to trust an informant as a consumer of information (Birch, Vauthier, & Bloom, 2008; Corriveau & Harris, 2009; Jaswal & Neely, 2006; Koenig & Harris, 2005; Liu et al., 2013; Mascaro & Sperber, 2009; Mills, 2013; Vanderbilt et al., 2011). However, less research has investigated their reasoning about informants from the perspective of the informants as producers of information (for research with school-age children, see Heyman, Fu, & Lee, 2007; Heyman & Legare, 2005). Understanding how children reason about informants from the perspective of the informants as producers of information has implications for questions about how deeply children are reasoning about informants' motives and knowledge in selective trust (Liu, Vanderbilt, & Heyman, 2013). In addition, the present research has implications for debates about how and when children understand and manage their reputations and engage in self-presentation behaviors (Banerjee, 2000; Watling & Banerjee, 2007; Engelmann, Herrmann, & Tomasello, 2012; Heyman, Barner, Heumann & Schenck, in press).

Experiment 1

In Experiment 1, we investigated 3- to 6-year-old children's predictions of whether a story protagonist would self-disclose his or her performance to others. In addition, we examined whether young children recognize that people are relatively more reluctant to disclose failures than successes. Kim, Harris, and Warneken (in press) found that 4- and 5-year-olds are more likely to endorse disclosing others' positive performance than disclosing others' negative performance. In Experiment 1, we examined whether there would be a similar effect for performance self-disclosure. Since performance self-disclosures are often linked with seeking help from others (Boekaerts, Pintrich, & Zeidner, 2000; Nelson-Le Gall, 1985; Newman, 1991, 1994, 2000), we also explored children's predictions of whether the protagonist who failed would ask for help from others.

Lastly, we also considered an exploratory question of whether children are sensitive to the competitiveness of the performance environment in their predictions of disclosure. Previous research with adolescents suggests that competition influences students' willingness to disclose their performance (Ames, 1984; Roseth, Johnson, & Johnson, 2008; Quatman & Swanson, 2002), but it is unclear how young children would reason about impact of competition. Thus, in Experiment 1, we also included an exploratory manipulation of a competitive versus a noncompetitive performance environment.

Method

Participants

One hundred forty-two children participated in Experiment 1; there were forty-two 3-year-olds (21 males, 21 females; *M* age = 3.6 years, age range: 2.8 to 3.9 years), forty-eight 4-year-olds (23 males, 25 females; *M* age = 4.5 years, age range: 4.0 to 4.9 years), and fifty-two 5- to 6-year-olds (25 males, 27 females; *M* age = 5.6 years, age range: 5.0 to 6.5 years). Children in all age groups were recruited from both schools and museums in a city in southern California. The sample was approximately 60% Caucasian (non-Latino), 30% Latino, and 10% Asian. Written parental consent and oral assent from the child were obtained for each participant.

Materials and Procedure

Children were presented with two story vignettes—one about a protagonist who failed in solving a puzzle and one about a protagonist who succeeded in solving a puzzle. The order in which children were presented the two stories was counterbalanced. The stories were presented with cartoon drawings. Following each story, children were asked three memory questions about events in the story to ensure that they understood and remembered the story. Finally, children were asked the target test question about performance disclosure.

In each story, children were introduced to characters in a kindergarten class who were given a new puzzle to solve by their teacher. In the story, the characters were given the puzzle to practice for the next day, when they would be solving the puzzle for a prize. In addition, as an exploratory manipulation, we randomly assigned

children to a *competitive* or the *noncompetitive* prize context condition. In the competitive condition, children were told that only the character who solves the puzzle the fastest will get the prize; in the noncompetitive condition, children were told that everyone who solves the puzzle will get a prize. We also randomly assigned children to stories in which the protagonist and other characters were all boys or all girls.

After introducing the characters, the puzzle, and how prizes were going to be distributed, children were then told that the story protagonist is practicing to solve the puzzle by himself/herself and that no one can see his/her puzzle. In the *failed protagonist* story, children were told that the protagonist "cannot figure [the puzzle] out—she has trouble solving the puzzle. Ashley does not finish her puzzle." In the *successful protagonist* story, children were told that the protagonist "figures [the puzzle] out—she easily solves the puzzle. Ashley finishes her puzzle."

Following each story, children were then asked the target test question about performance disclosure. For the *failed protagonist* story, children were asked, "Does Ashley tell other children that she had trouble solving the puzzle and did not finish her puzzle?" A follow-up question asked about help-seeking: "Does Ashley ask other children for help to solve the puzzle?" For the *successful protagonist* story, children were asked, "Does Ashley tell other children that she easily solved and finished her the puzzle?"

Results

Across two stories, children were asked six memory-check questions. Almost all of the children answered a majority (at least four) of the memory-check questions

correctly, but three children (one in each age group) answered less than four memory-check questions correctly. Therefore, we excluded these three children from our analyses. For the remaining 139 children in our analysis sample, performance on the memory-check questions did not differ between the age groups.

Performance Self-Disclosure

Preliminary analyses found no effect of story order, participant gender, or character gender (all *p*s > .20). Thus, participant gender and character gender were excluded from the following analyses. There was not a significant effect of competitive versus noncompetitive prize context on predictions of failure disclosure or success disclosure (all *p*s > .60). Since children's recognition of the impact of competition was an exploratory question, we excluded competitiveness from the following analyses.

Table 1.1 describes children's predictions of disclosing failed and successful performance by age group. Because performance type (successful versus failed) was manipulated within subjects and the disclosure measure was dichotomous, we conducted a 3 (age: 3-year-olds, 4-year-olds, 5- to 6-year-olds) x 2 (performance type: successful versus failed) repeated measures logistic regression model on children's disclosure prediction. Results showed a significant main effect of age, Wald $\chi^2(2) = 17.73$, $p < .001$, with younger children more likely to predict performance disclosure than older children. In addition, there was a significant main effect of performance type, Wald $\chi^2(1) = 12.97$, $p < .001$, with children expecting greater disclosure of successful performance than failed performance. There was not an interaction

between age and performance type. Thus general expectations of performance self-disclosure decreased with age, but on top of that, expectations of performance self-disclosure was greater for success than for failure.

To further explicate the significant main effect of age, we examined whether children's predictions of self-disclosure were different from chance (i.e., 50%) in each age group for each performance type. Binomial tests showed that predictions of self-disclosure of failed performance were at a level greater than chance for 3-year-olds (p = .028), but not for the older age groups. And binomial tests showed that predictions of self-disclosure of successful performance were at a level greater than chance for 3-year-olds ($p < .001$) and 4-year-olds (p = .001), but not for the oldest age group.

Table 1.1: Proportion predicting self-disclosure by performance type and age in Experiment 1.

Age Group	Successful Performance	Failed Performance
3-year-olds	.90	.68
4-year-olds	.75	.49
5- to 6-year-olds	.53	.43

Follow-Up Question

For the failed protagonist story, children were asked a follow-up question about help-seeking. As in the case of performance disclosure, children's expectations for help-seeking decreased significantly with age (90% of 3-year-olds, 70% of 4-year-olds, and 51% of 5- to 6-year-olds), $\chi^2(2, N = 139) = 16.44$, $p < .001$.

Discussion

In Experiment 1, the results showed that overall, regardless of performance type, expectations of performance self-disclosure decreased with age. That is, 3-year-olds generally predicted that the protagonists would disclose how they performed on the puzzle, whereas older children were significantly less likely to predict that the protagonists would disclose. This finding suggests that younger children's beliefs about performance self-disclosure differ from that of older children. It suggests that with age, during the preschool years and into the early school years, children increasingly view performance as something people keep to themselves. Young children do *not* start out with the expectation that people would generally withhold information about their performance.

Although older children had a greater overall expectation of people being reluctant to self-disclose than younger children, children in all age groups recognized that people are relatively more reluctant to disclose failures than successes. Children's predictions of success disclosure were greater than their predictions of failure disclosure across all ages. The results suggest that young children recognize that people are less likely to reveal information about negative performance than positive performance. This is consistent with previous research showing that children are less likely to endorse disclosing others' negative performance than disclosing others' positive performance (Kim, Harris, & Warneken, in press).

The results did not reveal an effect of our exploratory manipulation of a competitive versus a noncompetitive performance environment. One possibility is that

young children do not consider the impact of competition in their explicit reasoning about self-disclosure, perhaps because they have not yet encountered many competitive situations. It should be noted that this finding on young children's self-disclosure reasoning may or may not be informative about whether competition impacts young children's self-disclosure behaviors. Nevertheless, although research suggests that older children's self-disclosure behaviors are influenced by competition (Ames, 1984; Roseth, Johnson, & Johnson, 2008; Quatman & Swanson, 2002), little is known about the influence of competition on young children's self-disclosure behaviors. Another possibility is that our manipulation of a competitive versus a noncompetitive context for a prize was not a strong enough manipulation. Further research is needed to fully explore different types of competitive situations that young children might recognize.

As with children's predictions of performance self-disclosure, predictions of help-seeking decreased with age. One of the main instrumental goals of performance self-disclosure is to seek help from others (Boekaerts, Pintrich, & Zeidner, 2000; Nelson-Le Gall, 1985; Newman, 1991, 1994, 2000), and it appears that children's expectations of help-seeking are in line with their expectations of performance self-disclosure, and future research should explore this relationship more closely.

In Experiment 1, we sought to determine whether children's beliefs and reasoning about self-disclosure of performance are similar across the preschool and early school years. The findings show that there are both similarities and differences across ages. Children in all age groups similarly recognize that people are less likely

to reveal information about negative performance than positive performance. However, younger children are more likely to expect people to self-disclose information about either negative or positive performance, as well as seek help, than older children. It appears that 3-year-olds generally expect disclosure of one's performance, but still recognize that it is more preferable to disclose successes than failures.

Experiment 2

Findings from Experiment 1 revealed a decline with age in children's overall expectations of performance self-disclosure during the preschool years and into the early school years. At the same time, findings from Experiment 1 revealed a consistent expectation of greater self-disclosure of successes than failures. In Experiment 2, our first goal was to ensure that these findings were replicable, given that these questions have not previously been examined in children this young.

Our second goal was to investigate whether children's beliefs about self-disclosure of performance take into account the social context. Research suggests that school-age children and adolescents recognize that the peer environment impacts people's willingness to disclose their performance information (Banerjee, 2000, 2002; Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Watling & Banerjee, 2007; Zhang et al., in press), but this question has yet to be investigated with young children. As a first step in addressing this issue, we manipulated whether the story protagonist observed classmates being supportive or unsupportive of others' failures. We hypothesized that young children would recognize that people are more likely to self-

disclose in a supportive peer environment than an unsupportive one. Lastly, we considered the exploratory question of whether children's predictions of self-disclosure of success are associated with their normative belief in modesty.

Method

Participants

One hundred six children participated in Experiment 2; there were twenty-three 3-year-olds (9 males, 14 females; *M* age = 3.60 years, age range 3.1 to 3.9 years), twenty-five 4-year-olds (11 males, 14 females; *M* age = 4.55 years, age range 4.0 to 4.9 years), twenty-seven 5-year-olds (13 males, 14 females, *M* age = 5.40 years, age range 5.0 to 5.9 years) and thirty-one 6- to 7-year-olds (11 males, 20 females, *M* age = 6.88, age range 6.0 to 7.9 years). Children were recruited from schools and museums in a city in southern California. The sample was approximately 77% Caucasian (non-Latino), 13% Latino, 7% Asian, and 3% African American. Written parental consent and oral assent from the child were obtained for each participant.

Materials and Procedure

Children were presented with four story vignettes (similar to Experiment 1) about characters in a kindergarten class, two in which a protagonist succeeds at solving a puzzle and two in which a protagonist fails. However, given that the competitiveness of the prize context did not have an effect in Experiment 1, information about prizes were not included in the story vignettes for Experiment 2. For Experiment 2, we introduced a *supportive peer* versus *unsupportive peer* environment manipulation, which was orthogonal to the *failed protagonist* versus

successful protagonist stories; the order in which children were presented the four stories (supportive peer-failed protagonist, supportive peer-successful protagonist, unsupportive peer-failed protagonist, and supportive peer-successful protagonist) was counterbalanced. Throughout the four stories, children were asked six total memory questions about events in the stories to ensure they understood and remembered the stories.

For the *supportive peer* stories, children were told that the protagonist observes a (successful) classmate being supportive of another (unsuccessful) classmate by saying, "That's ok! Everyone does that sometimes." For the *unsupportive peer* stories, children were told that the protagonist observes a (successful) classmate teasing another (unsuccessful) classmate by saying, "Haha! I can't believe you couldn't do it!" After introducing each peer environment, children were told about the story protagonist failing or succeeding in solving his/her puzzle (as in Experiment 1 stories). Following each story, the children were then asked the target test question about disclosure. The gender of the story characters was randomly assigned between subjects.

Lastly, we asked children one understanding-check question and one exploratory, follow-up questions. For the understanding-check question, we asked children whether the classmate who was teased felt "sad" or "not sad." If children replied "sad," they were asked to rate how sad the classmate who was teased felt ("a little sad," "more sad," or "really sad") to create a 4-point rating scale of sadness. For the follow-up question, children were told about a boy who wins a race in front of all

his classmates and then asked a normative modesty question of whether that boy *should* tell everyone that he won the race.

Results

Across four stories, children were asked six memory-check questions. All children answered at least four memory-check questions correctly, and therefore no children were excluded from this analysis. Performance on the memory-check questions did not differ between the age groups. In addition, children's response to the understanding-check question showed that they understood that a classmate was made to feel sad after being teased by an unsupportive peer. Across all ages, children rated highly that the teased classmate felt sad (M = 3.5 on a 4-point scale; 73% choose the highest response, "really sad"), and their sadness rating did not differ between the age groups.

Performance Self-Disclosure

Preliminary analyses found no effect of story order, participant gender, or character gender (all ps > .11). Thus, participant gender and character gender were excluded from the following analyses. Table 1.2 describes children's expectations of disclosing failed and successful performance under supportive and unsupportive peer conditions by age group. We conducted a 4 (age: 3-year-olds, 4-year-olds, 5-year-olds, 6- to 7-year-olds) x 2 (performance type: successful versus failed) x 2 (peer environment: supportive versus unsupportive) repeated measures logistic regression model on children's disclosure prediction. Results showed a significant main effect of age, Wald $\chi^2(3) = 27.35$, $p < .001$, with younger children more likely to predict

performance disclosure than older children, which replicates the results of Experiment 1. In addition, there was a significant main effect of performance type, Wald $\chi^2(1) = 16.69$, $p < .001$, with children expecting greater disclosure of successful performance than failed performance. Lastly, there was a significant main effect of peer environment, Wald $\chi^2(1) = 3.83$, $p = .050$, with children expecting greater performance disclosure in a supportive peer environment than in an unsupportive peer environment. There were not any two- or three-way interactions between age, performance type, and peer environment (all *p*s > .20).

To further explicate the significant main effect of age, we examined whether children's predictions of self-disclosure were different from chance (i.e., 50%) in each age group for each of the four performance types by peer environment conditions (successful-supportive, successful-unsupportive, failed-supportive, and failed-unsupportive). For the successful-supportive condition, binomial tests showed that predictions of self-disclosure were at a level greater than chance for the three younger age groups (all *p*s < .001), for not for the oldest age group. For the successful-unsupportive condition, binomial tests showed that predictions of self-disclosure were at a level greater than chance for the three younger age groups (all *p*s < .01), for not for the oldest age group. For the failed-supportive condition, binomial tests showed that predictions of self-disclosure were at a level greater than chance for the three younger age groups (all *p*s < .05), for not for the oldest age group. For the failed-unsupportive condition, binomial tests showed that predictions of self-disclosure were at a level greater than chance for 3-year-olds ($p = .035$) and at a level significantly less

than chance for 6- to 7-year-olds (p = .003); they did not differ from chance for 4- or 5-year-olds.

Table 1.2: Proportion predicting self-disclosure by performance type, peer environment, and age in Experiment 2.

	Successful Performance		Failed Performance	
Age Group	Supportive	Unsupportive	Supportive	Unsupportive
3-year-olds	.87	.87	.70	.74
4-year-olds	.92	.84	.76	.64
5-year-olds	.89	.85	.70	.59
6- to 7-year-olds	.39	.42	.39	.23

Follow-Up Question

For the normative modesty question, children's endorsement that a boy *should not* tell others about winning a race increased significantly with age (26% of 3-year-olds, 35% of 4-year-olds, 30% of 5-year-olds, and 97% of 6- to 7-year-olds), $\chi^2(3, N = 106) = 38.83$, $p < .001$. Specifically, there was an increase with age in children's normative belief of modesty (answering "no" on this question). This is consistent with the decrease with age in children's predictions of self-disclosure of success. Indeed, when we combined children's predictions of self-disclosure of success across peer environment, we found that it was negatively correlated with their normative belief of modesty, even after controlling for age, $r(103) = -.20$, $p = .038$. That is, greater normative belief in modesty was associated fewer predictions of self-disclosure of success.

Discussion

The results of Experiment 2 replicated and extended the results of Experiment 1. As in Experiment 1, children's overall expectations of performance self-disclosure differed with age, with older children believing that people will be less likely to disclose performance information. Moreover, across all age groups, children again predicted less disclosure of failures than successes. These results replicate the main findings of Experiment 1 of both similarities and differences across preschool and early school ages in children's explicit beliefs and reasoning about self-disclosure of performance.

Experiment 2 also investigated whether children's explicit beliefs and reasoning about self-disclosure of performance take into account the social context. We examined whether children understand the ramifications of unsupportive peer reactions to others' disclosures. The results showed that children's predictions of performance self-disclosure was greater in the supportive peer environment than in the unsupportive peer environment across all age groups and performance type. This suggests that even in the preschool years, children believe that negative peer responses in the classroom will impact how individuals share performance information. Such beliefs may be an early part of children's developing recognition of the importance of the peer environment and social context on people's willingness to disclose their performance information (Banerjee, 2000, 2002; Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Watling & Banerjee, 2007; Zhang et al., in press).

In Experiment 2, the results showed an association between children's expectation of modesty and their normative belief of modesty. Older children were more likely to believe that a person *will* be modest and more likely to believe that a person *should* be modest, and the two types of beliefs were correlated regardless of age. These findings provide evidence of some coherence in young children's developing understanding of reputation management and self presentation.

General Discussion

Across Experiments 1 and 2, we conducted initial examinations into questions about young children's explicit beliefs about performance self-disclosure. We examined whether preschool- and school-age children have similar beliefs about people revealing their academic performance information. The results showed that during the preschool years and into the early school years, there are both consistencies and changes in children's reasoning about performance self-disclosure. Across the preschool and into the early school ages, children revealed an early recognition of some of the contexts in which people disclose or withhold performance information. However, younger children had higher expectations regarding performance disclosure than did older children.

The present research provides evidence that by 3 years of age children recognize that performance outcome is one context that impacts performance self-disclosure. In both Experiments 1 and 2, children across preschool and into the early school ages reasoned that people are relatively more reluctant to disclose failures than successes. This reliable finding suggests that young children develop an early

awareness of the role outcome valence may play in whether people reveal information about their own performance, which previous research had observed in older school-age children (Heyman, Fu & Lee, 2008; Zhang et al., in press). A previous study found that preschool-age children take into account outcome valence when reasoning about disclosure of *others'* performance (Kim, Harris, & Warneken, in press), and our findings suggest that children around the same age also take into account outcome valence when reasoning about self-disclosure of performance. An intriguing question for future research is to examine whether children's beliefs about disclosure of others' performance are associated with their beliefs about self-disclosure of performance.

The present research also provides evidence that preschool-age children take into account the social context in their explicit reasoning about performance self-disclosure. In Experiment 2, children across preschool and into the early school ages predicted that performance self-disclosure would be greater in a supportive peer environment than in an unsupportive peer environment. This finding may indicate the early development of what previous research has found with school-age children and adolescents, who in both their beliefs and behaviors are sensitive to the peer environment and social context of self-disclosure of academic performance (Altermatt & Broady, 2009; Altermatt et al., 2002; Banerjee, 2000, 2002; Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002; Watling & Banerjee, 2007; Zhang et al., in press). Of course, our manipulation of peer supportiveness only represents a narrow aspect of the different peer environments and social contexts children may encounter. Further research is needed to explore the scope of the types of social contexts young children

are aware of and take into account in their thinking about performance self-disclosure. Moreover, further research is needed to examine how much personal experiences with different peer environments and social contexts plays a role in children's explicit beliefs.

As noted above, both experiments revealed a reliable finding of younger children having a generally higher expectation that people will disclose their performance information than older children. In addition, younger children predicted greater help-seeking than older children. These findings indicate that between the ages of 3 and 7 years, children increasingly come to believe that individuals will be reluctant to disclose performance information (both failures and successes) and seek help. Whereas 3-year-olds expect the self-disclosure of performance information, school-age children are more likely to expect that such information will be withheld from peers. This difference suggests that during the preschool years and into the early school years, children increasingly come to understand the negative social ramifications of disclosing performance information and to believe that people will be selective in disclosing their performance information depending on the social environment.

An increased awareness of the social costs of self-disclosure of *failures* during the early school year likely contributes to students' avoidance of self-disclosure and help-seeking behaviors (Good, Slavings, Harel, & Emerson, 1987; Nelson-Le Gall, 1985; Newman, 1991, 1994, 2000), and our results point to the preschool ages as a crucial beginning to this reluctance to share poor performance information. However,

additional empirical data is required to determine how changing beliefs about performance self-disclosure during the preschool years and into the early school years contributes to performance self-disclosure and help-seeking behavior behaviors.

Similarly, an increased awareness of the social costs of self-disclosure of *successes* during the early school year likely contributes to school-age children's greater recognition of the need to engage in self-presentation behaviors and reputation management (Banerjee, 2000; Bennett & Yeeles, 1990; Watling & Banerjee, 2007). Although young children may exhibit some understanding of reputation management (Engelmann, Herrmann, & Tomasello, 2012; Engelmann, Over, Herrmann, & Tomasello, 2013; Heyman, Barner, Heumann & Schenck, in press), our results suggest that children nevertheless increase their understanding greatly during the early school years (Aloise-Young; 1993; Banerjee, 2000; Bennett & Yeeles, 1990; Dijkstra, Kuyper, van der Werf, Buunk, & van der Zee, 2008; Watling & Banerjee, 2007). Our findings on children's normative belief of modesty in Experiment 2 provide further support for this interpretation. The results showed an association between children's prediction of modesty and their normative belief of modesty. Children 6 to 7 years of age were more likely to believe that a person *will* be modest and more likely to believe that a person *should* be modest, and the two types of beliefs were correlated regardless of age. Interestingly, previous research found that school-age children do not expect people to be reluctant about disclosing others' successes (Kim, Harris & Warneken, in press). Together, these findings suggest that around 6 to 7 years of age, children

become cognizant of the need to be modest about one's own successes, but not necessarily of others' successes.

The present experiments revealed that during the preschool years and into the early school years, there are both consistencies and changes in children's beliefs and about performance self-disclosure. As discussed above, much further research is needed to explore the how personal experiences with different peer environments and social contexts contribute to young children's early and chancing beliefs about performance self-disclosure. Experience with different peer reactions to one's failures and successes is likely to inform children's beliefs even during the preschool years, just as they seem to do during the school years (Altermatt & Broady, 2009; Altermatt et al., 2002). Beyond personal experiences, sociocultural expectations are also potential sources of children's beliefs (Heyman, Fu, & Lee, 2008). In addition, developmental advances in social cognition may contribute to children's reasoning about performance self-disclosure. In particular, developments in children's understanding of nonshared knowledge and hidden emotions during the preschool and early school years (Wellman & Liu, 2004) is associated with their reasoning about deception, self-presentation, and keeping information private (Banerjee & Yuill, 1999; Engelmann, Herrmann, & Tomasello, 2012; Talwar, Gordon, & Lee, 2007; Talwar & Lee, 2008). Lastly, given that the present research suggests that by 3 years of age children already believe that performance self-disclosure is less likely for failures and in the context of unsupportive peers, it is potentially important to intervene on such beliefs in young children as they relate to encouraging students' self-disclosure and

help-seeking behaviors (Good, Slavings, Harel, & Emerson, 1987; Nelson-Le Gall, 1985; Newman, 1991, 1994, 2000).

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Chapter 2

Children's Beliefs about Teasing, Disclosure and Information Seeking in the Classroom

Abstract

Two experiments investigated preschool-age and school-age children's beliefs about teasing responses to disclosure, theory of mind performance, and beliefs about disclosing another's performance information (total $N = 238$). In the first experiment, one hundred twenty-four 3- to 8-year-olds listened to story scenarios about characters in a classroom and were asked whether or not a protagonist character who failed to solve a puzzle would disclose their performance to peers, and whether peers would tease the protagonist character. Children were also given a theory of mind task. Replicating previous results, an age-related decline was found for predictions of self-disclosure, however no age-related change was found for expectations of teasing, and theory of mind performance did not predict disclosure. A second experiment investigated children's beliefs about disclosing others' information, as well as asked whether children expect peers in the classroom to be interested in hearing performance disclosure. One hundred fourteen 3- to 11-year-olds listened to story scenarios and were asked whether or not the protagonist character would ask a peer how the peer performed on a task, whether the protagonist would disclose the peer's performance to their class, and whether the protagonist would offer help to the peer. Across all ages children expected high levels of information seeking and offering help, but there was an age-related decrease in children's belief that the protagonist would disclose the peer's performance.

In Chapter One, Experiments 1-2 investigated young children's expectations about performance disclosure, revealing an age-related decline in children's predictions of disclosure, as well as evidence that even young children discriminate between disclosing success and failure as well as respond to observed peer environment (see Tables 1 and 2). In response to the unsupportive classmate in Experiment 2, we found some evidence that young children are sensitive to the negative social consequences of revealing classroom information, suggesting that this may be one factor in children's reluctance to predict disclosure. However, open questions remain about young children's disclosure beliefs and further factors that may impact it.

Experiments 3-4 investigate several factors that may influence older children's beliefs about disclosure in the classroom and relate to the age-related decline in their expectations for disclosure. It is possible that this decline is observed because as children grow older, they expect more teasing responses to disclosure than younger children do and therefore believe that people will be more reluctant to disclose classroom performance. Children were found to predict less disclosure for a character who observed a nonsupportive disclosure situation, and it could be that 5-year-olds and older children expect more teasing responses from peers than younger children, given factors such as their greater experience with classroom behavior, and subsequently are more likely to believe that people will be reluctant to disclose their performance. It is also possible that older children's increasingly adept theory of mind provides them with a greater sensitivity for imagining the negative social consequences of disclosure (Gopnik, 1993; Wellman & Liu, 2004), and that theory of

mind proficiency will be related to lowered expectations of disclosure. Experiment 3 investigates these possibilities.

Another possibility for this decline is that older children are less likely than younger children to expect other people to be interested in hearing about their performance information. Experiment 4 investigates this possibility, and expands the investigation of children's beliefs about disclosure by asking whether there are age-related changed in young children's beliefs about disclosing *others'* performance information. While Experiments 1-2 found a decrease in predictions of self-disclosure, there are many reasons that children's beliefs about disclosing another's performance information may differ from self-disclosure predictions. Self-disclosure may decrease as children become sensitive to the negative impact disclosure can have on their reputation and self-concept (Engelmann, Herrmann, & Tomasello, 2012; Engelmann, Over, Herrmann, & Tomasello, 2013), but disclosing another's information does not impact one's reputation directly. Nonetheless, people consider the disclosure of other people's personal information inappropriate for a variety of other reasons including following privacy norms held about personal or secret information (Anagnostaki et al., 2010; Anagnostaki et al., 2013), and learning these disclosure rules is another important part of children's developing understanding of disclosure. It is unknown at what ages young children will exhibit this understanding, and whether there are differences between their beliefs about when one should disclose one's own performance versus others' performance.

Experiment 3

There are two main hypotheses that Experiment 3 tests in order to explore possible explanations for the observed decline in children's disclosure predictions. It could be that children's developing theory of mind between the ages of 4-6 enhances young children's ability to imagine the negative consequences and reactions of their peers to performance disclosure (Gopnik, 1993; Wellman & Liu, 2004), and therefore children's expectations for disclosure drop once their theory of mind has developed to a point where young children are able to imagine the negative viewpoints of their peers.

Another possible explanation for the decline in children's disclosure of performance information has to do with social experience: as children grow older and observe more teasing, they might consequently come to expect less disclosure as a means to avoid being teased. Experiment 2 found some evidence that an unsupportive response to disclosure decreased disclosure predictions overall even for very young children, but did not yield an age-related difference that could account for the age change in disclosure. Experiment 3 therefore seeks to examine children's expectations for the overall likelihood of experiencing a teasing response to disclosure of negative performance information and whether these expectations of teasing mirror the age-related decrease in disclosure predictions.

Teasing interactions between peers are complex and undertaken for a large number of different social goals, such as the cultivation of humor and friendship (J. R. Alberts, 2013; Boulton & Hawker, 1997; Drew, 1987; Hopper, Knapp, & Scott, 1981; Nelson & DeBacker, 2008), bullying and aggression (J. K. Alberts, 1992; Keltner,

Young, Heerey, Oemig, & Monarch, 1998; Land, 2003), or behavior correction when another's behavior fails to meet social norms of acceptable behavior (Keltner & Buswell, 1997; Killen & Smetana, 1999; Miller & Hoogstra, 1992). The broad range of teasing behavior in the classroom is outside the scope of this study. Instead, we focus specifically on children's expectations about teasing behaviors as a response to the disclosure of performance information. Although a great deal of research has examined teasing behavior in young children's social world, focusing especially on the identification and origins of behavioral problems in young children (Braza, Braza, Carreras, & Muñoz, 1997; Dawe, 1934; DuPaul, McGoey, Eckert, & VanBrakle, 2001; Rubin & Clark, 1983), little if any research has examined teasing responses to performance disclosure for very young children.

Experiment 3 was conducted in order to investigate potential explanations for the decreased expectations of performance self-disclosure with age. Specifically, Experiment 3 examined whether theory of mind and expectations of teasing mediate the association between age and expectations of performance self-disclosure. For theory of mind, is it already well documented that understanding of mental states also undergoes major changes during the ages where we found decreasing expectations of performance self-disclosure. However, less is known about children's beliefs about the prevalence of peer teasing during the preschool and early school years. We followed Baron and Kenny's (1986) suggested steps for testing mediation to determine whether age-related changes in children's theory of mind and expectation of teasing potentially mediate the age-related decline in their predictions of self-disclosure.

Method

Participants

One hundred twelve children participated in Experiment 3; there were twelve 3-year-olds (6 males, 6 females; *M* age = 3.56 years, age range 3.0 to 3.9 years), twenty-two 4-year-olds (9 males, 13 females; *M* age = 4.46 years, age range 4.0 to 4.9 years), twenty-seven 5-year-olds (14 males, 13 females, *M* age = 5.45 years, age range 5.0 to 5.9 years), fifteen 6-year-olds (7 males, 8 females, *M* age = 6.46, age range 6.0 to 6.9 years), twenty-two 7-year-olds (14 males, 8 females, *M* age = 7.48 years, age range 7.0 to 7.9 years), and forteen 8-year-olds (5 males, 9 females, *M* age = 8.47 years, age range 8.1 to 9.1 years). Children were recruited from schools and museums in a city in southern California. The sample was approximately 62% Caucasian (non-Latino), 11% Latino, 19% Asian, and 8% African American. Written parental consent and oral assent from the child were obtained for each participant.

Materials and Procedure

As in Experiments 1-2, children were presented with two story vignettes. In this experiment, however, children were presented first with a Disclosure story vignette and second with a Teasing story vignette. The stories were presented with cartoon drawings. Following each story, children were asked two memory questions about events in the story to ensure that they understood and remembered the story. Finally, children were asked three test questions after each scenario, for a total of six test questions. Following the two story scenarios, children were given two different theory of mind measures focusing on children's understanding of others' beliefs and understanding of others' emotions. Story vignettes were counterbalanced across

gender of the story characters, such that half of the participants received all female characters and half of the participants received all male characters, counterbalanced across participant gender.

Disclosure story. In the Disclosure story, as in Experiments 1-2, children were introduced to characters in a kindergarten class who were given a new puzzle to solve by their teacher: a protagonist and two classmate characters. All children were given only a *failed protagonist* story for this scenario. Children were then told that the story protagonist was practicing to solve the puzzle by himself/herself and that no one could see his/her puzzle. Children were then told that the protagonist "cannot figure [the puzzle] out—she has trouble solving the puzzle. [the protagonist] does not finish her puzzle." Children were then told that both of the classmate characters solved their puzzles.

Following this story, children were asked three target questions related to disclosure. The first question asked whether or not the protagonist character would tell the classmate that s/he could not solve the puzzle. The second question asked whether or not the protagonist character would tell their other classmate that s/he could not solve the puzzle. As opposed to the previous experiments that only asked about disclosure to one classmate, this question was asked twice for two different classmate characters in this experiment in order to examine whether an average disclosure score for children could be a more powerful measure to relate to the theory of mind scores. The third test question asked whether the protagonist would *"tell other children in the class"* that s/he could not solve the puzzle. All three prediction of self-disclosure questions were summed to derive a prediction of self-disclosure score.

Teasing story. In the Teasing story, children were introduced to new characters and read the same initial story as in the Disclosure story. However, in this story children were simply told that "all the other children in the class easily solved and finished their puzzle," whereas the protagonist failed to finish the puzzle. Children were then asked three target questions around expectations of teasing: first*,* "will some children think that [the protagonist] is bad at solving puzzles and not very smart?"*;* second*,* "will some children make fun of [the protagonist] for having trouble finishing her puzzle?"; and third, *"*will any child in the class say to [the protagonist], 'Haha! I can't believe you couldn't do it'.*"* All three prediction of teasing questions were summed to derive a prediction of teasing score.

Theory of Mind Measures. Two theory of mind measures were used: the Real-Apparent Emotions task and the False Belief task. These measures were used in order to test the hypothesis that individual differences in theory of mind acuity would predict higher expectation of teasing and lower expectation of disclosure. The Real-Apparent Emotions task is a theory of mind task that tests children's ability to distinguish between emotions that a person is feeling internally versus the social display of appropriate emotion which may conflict with their internal state (Banerjee, 1997; Wellman & Liu, 2004). Children were presented with a cartoon picture showing the back of a boy's head, and read a short story telling them that the story character had just received an unwanted present from his aunt, and that he had to "hide how he feels, because if his aunt knew his true feelings, she'll never buy him anything again." Children were then asked two test questions: how the character tries to "look on his

face," and how the character "really feels." In order to be scored correct on this task, children had to answer both questions correctly.

The False-Belief task is a classic theory of mind task that tests children's ability to discriminate between their knowledge of a situation and another's inaccurate beliefs about that situation (Leslie, 1987; Wellman, Cross, & Watson, 2001; Wimmer & Perner, 1983). Children were presented with a prop of a Goldfish cracker box with a picture of Goldfish crackers prominently on the front, and a small toy figure of a girl. The experimenter then asked children what they think is in the box ("crackers"), and then show the children that there is actually a toy bird in the box. The experimenter then showed children the toy figure and asked the target question, "Sally has never ever seen inside this Goldfish cracker box[….] So, what does Sally think is in the box? Goldfish crackers or a bird?" Finally, the experimenter asked a memory check question, "Did Sally see inside this box?" In order to be scored correct on this task, children had to answer both questions correctly: "Goldfish crackers" for the target question and "no" for the memory check question. Both theory-of-mind measures were summed to derive a theory-of-mind score.

Results

Two memory-check questions were asked after each story vignette for a total of four memory-check questions. All children answered at least three memory-check questions correct, with the vast majority (105 children) answering all four memory-check questions correct. Preliminary analyses found no effect of participant gender or character gender on self-disclosure, teasing, and theory of mind responses (all *p*s

> .10). Therefore, participant gender and character gender were excluded from subsequent analyses.

The goal of Experiment 3 was to examine whether expectations of teasing and theory of mind potentially explain the association between age and expectations of performance self-disclosure. For our analyses, we followed Baron and Kenny's (1986) suggested steps for testing mediation to determine whether expectations of teasing and theory of mind mediate the age-related decline in children's predictions of self-disclosure.

First, we checked that we replicated previous findings of an age-related decline in children's predictions of self-disclosure during the preschool and early school years. Indeed, there was a significant negative correlation between the prediction of self-disclosure score and continuous age, $r(109) = -.30$, $p = .002$. We also conducted a univariate ANOVA to examine the effect of age group (3-, 4-, 5-, 6-, 7-, and 8-year-olds) on prediction of self-disclosure (see Figure 2.1), which showed a significant effect of age group, $F(5, 106) = 2.65$, $p = .027$, $\eta_p^2 = .11$. Thus, Experiment 3 replicated previous findings of younger children predicting greater performance self-disclosure than older children.

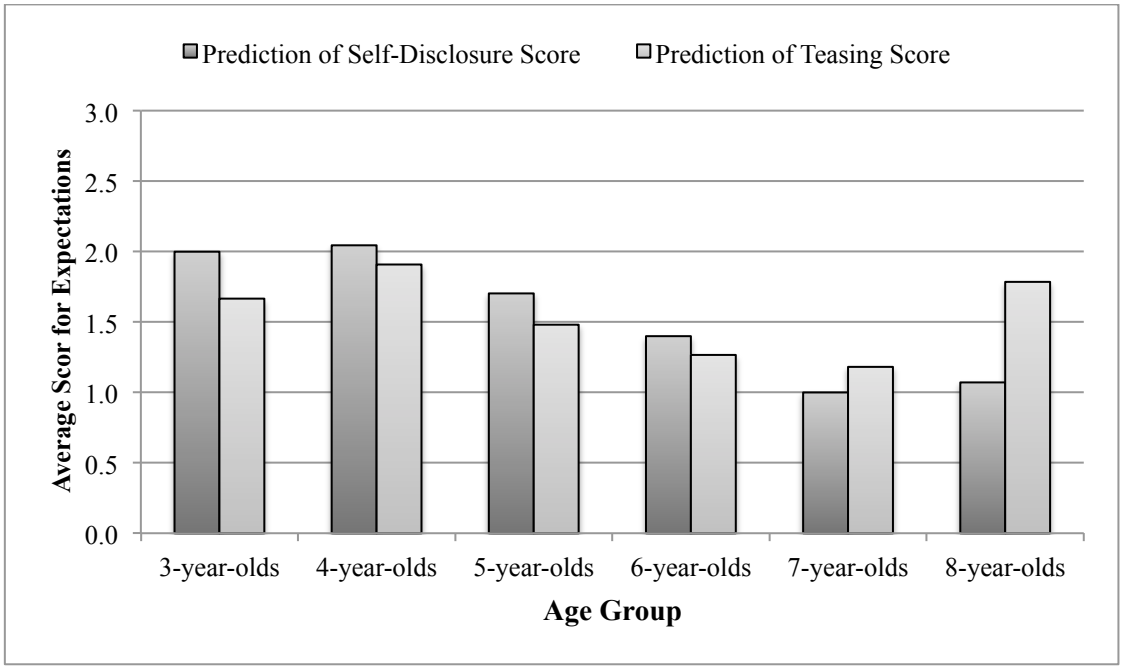

Figure 2.1: Average Scores for Expecting Teasing and Disclosure By Age Group in Experiment 3

To investigate whether children's expectations of teasing mediates the association between age and expectations of self-disclosure, we next examined whether the prediction of teasing score was correlated with age. The results showed that there was not a correlation between prediction of teasing and continuous age ($p > .35$). In addition, a univariate ANOVA to examine the effect of age group (3-, 4-, 5-, 6-, 7-, and 8-year-olds) on prediction of teasing also showed that there was not an effect of age group ($p > .30$; see Figure 2.1). The findings suggest that children's expectation of peers teasing those who perform poorly does not change during the preschool and early school years. With the lack of an association between age and expectations of teasing, the second step of Baron and Kenny's (1986) approach to

testing mediation was not satisfied. Therefore, it appears that the association between age and expectations of self-disclosure is not mediated by expectations of teasing.

To investigate whether children's theory of mind mediates the association between age and expectations of self-disclosure, we examined whether theory-of-mind performance was correlated with age. Children's theory-of-mind score was significantly correlated with continuous age, $r(109) = .51$, $p < .001$. Additionally, a univariate ANOVA to examine the effect of age group (3-, 4-, 5-, 6-, 7-, and 8-year-olds) on theory-of-mind performance showed a significant effect of age group, $F(5, 105) = 6.52$, $p < .001$, $\eta_p^2 = .24$. These findings of improvement with age are consistent with previous research on theory of mind development (Wellman & Liu, 2004). Having satisfied the second step of Baron and Kenny's (1986) approach to testing mediation, we examined whether theory of mind is correlated with expectations of self-disclosure while controlling for age. Controlling for continuous age, the results showed that there was not a correlation between theory-of-mind performance and prediction of self-disclosure. With the lack of an association between theory of mind and expectations of self-disclosure, the third step of Baron and Kenny's (1986) approach to testing mediation was not satisfied. Therefore, it appears that the association between age and expectations of self-disclosure is not mediated by theory of mind development.

Discussion

The results of Experiment 3 replicated previous findings of a decline with age in children's expectations of performance self-disclosure during the preschool and early school years. Moreover, the results suggest that this age-related change cannot be explained by changes in children's expectation of peer teasing and it cannot be explained by developments in theory of mind.

The finding that children's predictions of teasing from peers towards those who performed poorly remained relatively unchanged across ages was surprising. It was not consistent with our hypothesis that children's expectations of teasing would increase at the same time as expectations of disclosure decrease. Therefore, the results did not support the possibility that expectations of greater teasing behaviors from peers are at the root of older children's increased expectation of reluctance to share performance information.

It is possible that children's predictions about both of these behaviors are reflecting a concern with explicit communication and disclosure larger than the specific response to negative performance information from peers. In other words, children become increasingly likely to hide all kinds of information about themselves, not just because they are responding to negative feedback from peers but because disclosure in the classroom environment is decreasing overall, including for explicit teasing behavior.

It is also interesting that children did not expect, across all age groups, that peers would react significantly negatively to failure disclosure. This result is

commensurate with previous research that finds that children do not start making social comparison judgments until around 8-years-old (Banerjee, 2002), however even the oldest children did not expect that revealing failure would provoke negative judgments from their peers in the classroom. It is possible that children at these ages do not consider performance information as revelatory of competency and identity in the same way that older students might, and future studies should examine these differences.

The theory of mind measures in this experiment also failed to yield an explanation for the observed decrease in children's self-disclosure predictions. Children's theory-of-mind performance did improve with age. However, theory-of-mind performance was not associated with predictions of self-disclosure. Thus, our results do not find any evidence for theory of mind development as the mechanism behind the observed decline in young children's predictions of performance disclosure.

Experiment 4

Previous research examining children's beliefs about performance information privacy norms has found that it is not until the age of eight that children begin to understand the social cost of being perceived as arrogant when disclosing about personal success (Watling & Banerjee, 2007; Banerjee, 2000). Experiment 3 provides evidence that children between the ages of 3-8-years-old do not yet expect that failure disclosure will prompt others to think badly of them, nor do children's expectations of teasing overall increase with age.

However, there is evidence that children do begin to understand privacy norms at younger ages, particularly with regard to sharing information. One possible

explanation for the decrease in children's predictions of disclosure is that with age, they become aware that it is often socially unacceptable to share performance information. In one study, Anagnostaki, Wright and Bourchier-Sutton (2010) found that six year olds, but not younger children, judge some information such as a surprise party as "secret," in contrast to "nonsecret" information such as personal preferences. It could be that the decline in children's expectations of self-disclosure reflects a growing belief that classroom performance is a type of private information; older children may view both disclosure of their own performance, and commentary about another's classroom performance, as a violation of these privacy norms.

Additionally, little is known about young children's beliefs about discussing others' performance information. While Experiments 1-3 examined young children's beliefs about self-disclosure, there are many open questions about young children's beliefs about disclosure between peers within the classroom environment. Answering these questions will serve to address this gap, as well as help to clarify whether the age-related changes observed in Experiments 1-3 are specific to children's expectations about *self*-disclosure, or are present for children's expectations for other types of disclosure behavior. It is possible that as older children become more concerned with reputation management (Engelmann et al., 2012; Engelmann et al., 2013; Piazza, Bering, & Ingram, 2011), this concern prompts older children to believe that people will avoid disclosing their performance information. Does children's growing awareness of reputational concerns also change their beliefs about whether or not peers will disclose *their* performance information when asked?

Some recent work has implications for this question. For instance, Kim, Harris and Warneken (2014) found that young children's beliefs about the appropriateness of disclosing another's information became more selective with age, with older children more likely to say it is inappropriate to disclose another's incompetency. However, this study did not examine whether there are age-related differences in how likely children are to ask another person to share their own performance information. As with self-disclosure, it is possible that there is an age-related change in children's beliefs about whether a person in a class would ask about their peers to disclose performance information. If so, it could be that older children, but not younger children, see such information-seeking as socially inappropriate behavior. However, it is also possible that children do not view asking a peer to share their information as subject to the same negative social consequences as sharing one's own information, and that older children will make different predictions about asking another to disclose for the purposes of information-seeking than about disclosing another's performance to a third party.

Finally, it is also possible that the age-related decline in disclosure expectations found in Experiments 1-3 occurs because older children are more likely than younger children to believe that other people will not be interested in this disclosure. Previous research has found that preschool-age children display more egocentric behavior and beliefs than school-age children (Hughes, 1975; Mood, 1979; Rubin, 1973; Rubin & Clark, 1983; Rubin & Maioni, 1975), which could lead younger children to predict higher rates of disclosure of performance information because they expect others to be more interested in their performance activities than older children

do. Therefore, Experiment 4 investigates whether there is an age-related change in children's beliefs about how likely it is that people will seek out information from another peer in the classroom.

Experiment 4 was conducted to investigate young children's beliefs about seeking out information from and disclosing another's performance information, and about offering help. We address these questions by looking at whether children expect information seeking, information disclosure, and offering help to a peer in the classroom. Experiment 4 examines whether children believe others actively seek out information about the performance of others, and whether there are age-related changes in young children's disclosure of others' performance,

Method

Participants

One hundred fourteen children participated in Experiment 4; there were twenty-two 3-year-olds (8 males, 14 females; *M* age = 3.54 years, age range 3.0 to 3.9 years), twenty-eight 4-year-olds (12 males, 16 females; *M* age = 4.42 years, age range 4.0 to 4.8 years), sixteen 5-year-olds (9 males, 7 females, *M* age = 5.32 years, age range 5.0 to 5.7 years) eighteen 6- to 7-year-olds (10 males, 8 females, *M* age = 7.15, age range 6.0 to 7.9 years), fourteen 8-year-olds (9 males, 5 females, *M* age = 8.38, age range 8.0 to 8.8 years), and sixteen 10- to 11-year-olds (9 males, 7 females, *M* age = 10.96, age range 10.3 to 11.6 years). Children were recruited from schools and museums in a city in southern California. The sample was approximately 72% Caucasian (non-Latino), 11% Latino, and 12% Asian. Written parental consent and oral assent from the child were obtained for each participant.

Materials and Procedure

As in Experiments 1-3, in Experiment 4 children were presented with two story vignettes: one featuring a successful protagonist, and one featuring a failing protagonist. As previous experiments found no effect of order, the successful protagonist story was always presented first, followed by the failed protagonist story. The stories were presented with cartoon drawings nearly identical to the previous experimental materials; however, these stories included an illustration of the protagonist standing with a group of children representing the rest of the class. Following each story, children were asked one memory question about the protagonist's performance to ensure that they understood and remembered the story. Finally, children were asked three test questions after each scenario, for a total of six test questions. Children were also asked for open-ended explanations of their response after each test questions. Story vignettes were counterbalanced across gender of the story characters, with some participants receiving all female characters and some participants receiving all male characters.

In both story vignettes, the protagonist character was introduced with two classmates and children were told that the characters were all given a puzzle to solve. In the success story, the protagonist successfully finished the puzzle, while in the failure story, the protagonist failed to finish the puzzle. Following both stories, children were then asked three target questions around disclosure: asking about another's performance, disclosing another's performance to the class, and offering help. Children were first told that the protagonist did not see another classmate's puzzle and were asked the first test question, "*Will Nadine [the protagonist] ask*

Hillary [the second character] if Hillary could solve and finish the puzzle?" Children were then told that the protagonist saw that the third classmate did not finish her puzzle and asked the second target question, *"Would Nadine [the protagonist] tell the other kids that Rachel couldn't solve her puzzle?"* Finally, children were asked the third target question, *"Would Nadine ask Rachel if she wants some help?"* Thus, the three target questions asked about (1) children's expectations of seeking information about peer performance, (2) children's expectations of disclosing another peer's negative performance information to others, and (3) children's expectations of help-giving to peers.

After each test question, participants provided open-ended explanations for their responses, which were coded by two independent raters. Raters first identified and agree on eight main categories for coding, and responses were then coded into these categories by the two raters, who gave synchronous ratings on the classification for 100% of responses. The categories were (0) other, (1) reference to success, (2) boasting/arrogance, (3) reference to teasing, (4) reference to helping, (5) reference to hurt feelings, (6) reference to friendship, (7) reference to failure.

Results

Three children answered both memory check questions incorrectly, and were excluded from the dataset. For the remaining 111 children, memory question performance did not differ between age groups. As no significant differences were found for ages 6-7 or 10-11 and these two groups of children were in the same grade levels and drawn from the same classrooms, these samples were respectively grouped

together. No significant effects were found for subject gender, character gender, or ethnicity, therefore these variables were excluded from subsequent analyses.

Information-seeking. For both the success condition and the failure condition, no age-related changes were found when participants were asked whether the protagonist would request the information about the other character's performance (Figure 2.2 and Figure 2.3). Over all age groups, asking about a peer's performance information was high and did not significantly differ between conditions (74% in the success condition, 78% in the failure condition).

Disclosing another's performance to the class. Data from the success and failure conditions on the question of whether the protagonist would disclose the information about the other character's performance were first analyzed separately using nominal logistic regression. In the failure condition, we found a significant effect of age group on the second test question, $\chi^2(5, N = 112) = 42.72$, $p < .0001$, indicating that older children were less likely than younger children to predict that the failure protagonist character would disclose the peer character's failure to their classmates (Figure 2.2). This result was confirmed by a negative correlation between raw age and positive responses, $r = -.50$, $p < .0001$. In the success condition, we likewise found a significant effect of age group, $\chi^2(5, N = 111) = 54.63$, $p < .0001$, indicating that older children were less likely than younger children to predict that the successful protagonist character would disclose the peer character's failure to their classmates (Figure 2.2). This result was confirmed by a negative correlation between raw age and positive responses, $r = -.49$, $p < .0001$. Finally, a matched pairs analysis

found no significant difference between the success and failure condition to this question.

Helping the peer classmate. For both the success condition and the failure condition, no age-related changes were found on the question about whether the protagonist would offer help. Over all age groups, children's predictions that the protagonist would help the peer were high and did not significantly differ between the success or failure protagonist characters (88% in the success condition, 86% in the failure condition).

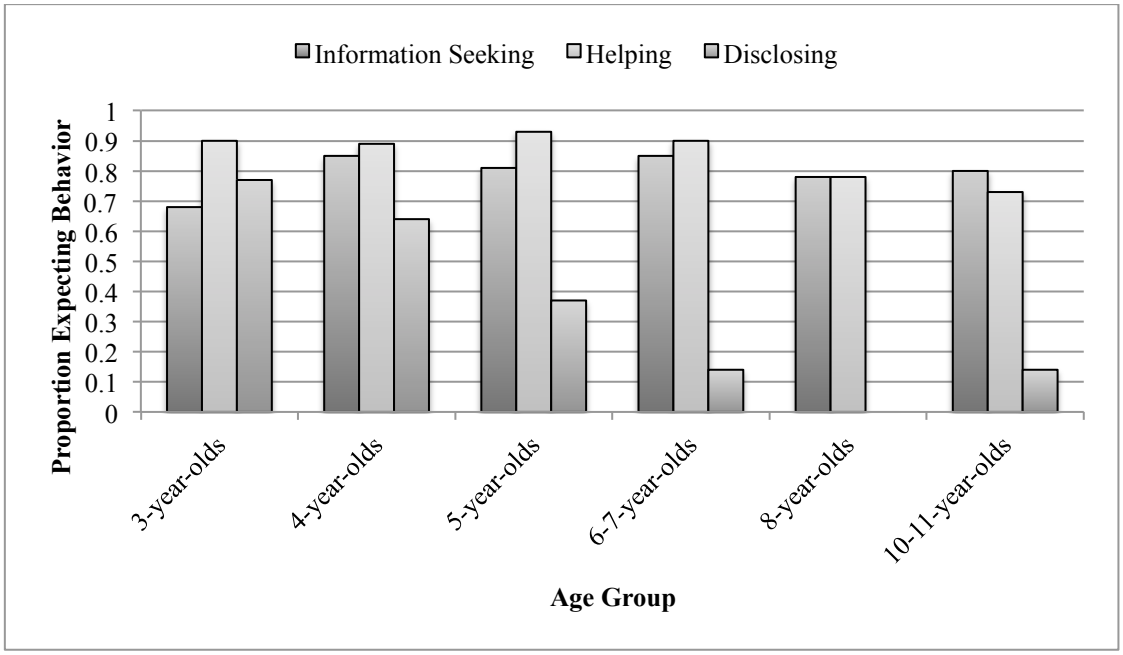

Figure 2.2: Failure Condition Responses by Age Group in Experiment 4

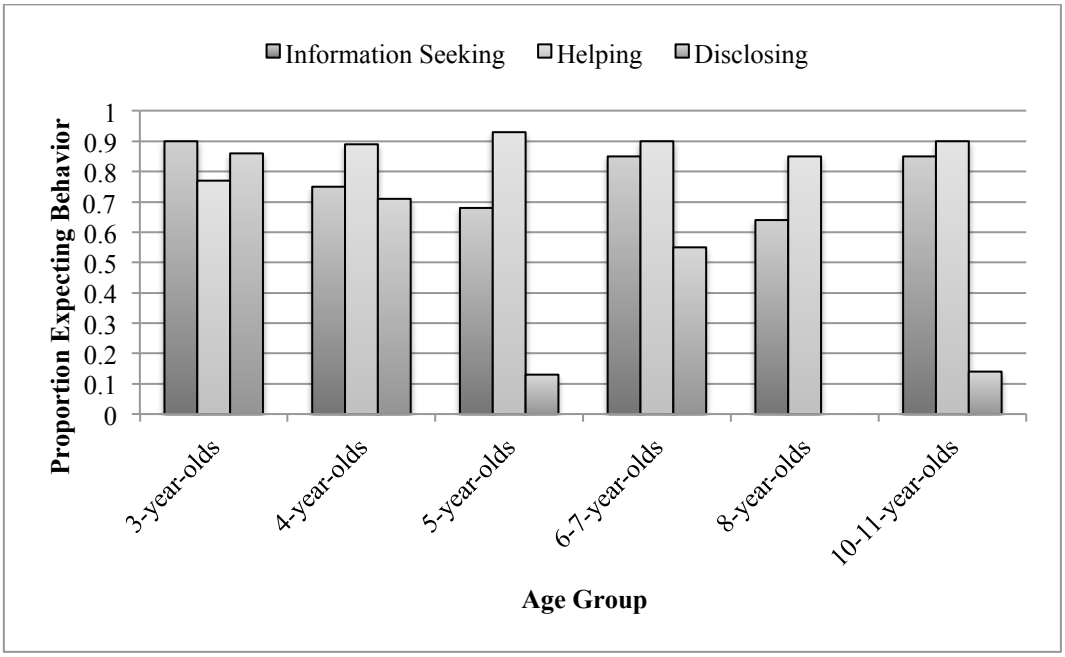

Figure 2.3: Success Condition Responses by Age Group in Experiment 4

Open-ended responses. Children who expected the character to ask about the classmate's performance most often referenced wanting to obtain information about the classmate's performance (65%; e.g. *"to see how he did"; "because she wants to know if she got it right").* Children who reported that they did not expect disclosure overwhelmingly referenced the negative emotional and social consequences of such disclosure (95%; e.g. *"that would be mean"; "she would be embarrassed/hurt"*). Children explained their responses regarding whether they would offer help by referencing the recipient's need for help (97%; e.g. *"because he needs help"; "because he wasn't able to solve it"*).

Discussion

Experiment 4 examined children's beliefs about asking for a peer's performance information in the classroom. For all age groups, children predicted high

rates of information seeking, and no age-related changes were found for both asking a peer about their performance on a puzzle task and offering to help a peer. However, there was a significant age-related decline in children's predictions of disclosing a peer's failure to their classmates. This result is commensurate with previous research finding that older children are more discriminatory than younger children when making judgments about whether it is acceptable to disclose competency information about another person (Kim, Harris & Warneken, 2014).

It is interesting that children across all age groups predict a high level of information-seeking from peers in the classroom for both successful and failed protagonists. Unlike the observed decline in children's predictions of self-disclosure, this experiment found that children believe that people are likely to ask a peer to disclose information about *their* performance, suggesting that the decline in children's self-disclosure predictions is not because older children believe that other people will not be interested in their performance information. In fact, children at all ages appear to believe that people are highly interested in acquiring performance information from peers. However, older children were less likely than younger children to endorse the disclosure of this performance information to others; this result suggests that older children have similar beliefs about how people will handle their own as well as other people's performance information when making disclosure decisions.

It is also possible that growing concerns about social comparison prompt children to seek information from peers even while they become increasingly unlikely to pass that information along to other classmates. Future studies should examine how

older children's understanding of and increased concern with social comparisons may relate to their expectations for disclosure in the classroom.

General Discussion

Experiments 3 and 4 examined children's beliefs about teasing responses to disclosure, information seeking about peer performance, and disclosing another person's information in the classroom. Experiment 3 found an age-related decrease in predictions of disclosure commensurate with previous findings from Experiments 1-2. However, no age-related change was found for young children's expectations of teasing. While it was seen in Chapter One that children do respond to a nonsupportive environment, predicting less disclosure, it does not appear that a rise in children's baseline expectations of teasing are related to the observed decline in children's beliefs that people will disclose performance information. Finally, while theory of mind did improve by age for young children as expected, evidence was not found for a relationship between theory of mind performance and expectations of disclosure.

Experiment 4 provided evidence that young children at all ages tested do believe both successful and unsuccessful performers will be interested in others' performance information and seek to obtain this information from peers. Nonetheless, Experiment 4 also found that children believe people will be increasingly unlikely to disclose this information to others even though they wish to obtain it themselves; there was a significant age-related decrease in children's belief that a person would reveal the peer's information to the class, for both success and failure. Interestingly, there was no observed change in children's beliefs that a person would offer to help a peer who was failing at a task, which were high across all ages. Likewise there was no

effect of successful and failed performance on these beliefs; across all ages, children expected characters to offer help to others regardless of whether they themselves were able to complete the task.

Taken together, these results suggest that by the age of five, even though children believe people are interested in acquiring performance information, they also believe that people will withhold another's information from peers, suggesting that children believe it is inappropriate to disclose this information, even when it is positive. While children's expectations for teasing responses to disclosure do not increase during these ages, children do appear to be growing more sensitive to the privacy of performance information and the subsequent ramifications of disclosing performance whether it is one's own or another's information. Further studies should investigate what factors may lead children to predict that disclosure is inappropriate, and whether there are differences in young children's beliefs about self-disclosure versus disclosing another's information.

Acknowledgements. We would like to thank the children who participated and their parents, the Reuben H. Fleet Science Center and Birch Aquarium and all members of the Brain and Cognitive Development Lab who helped with these experiments. This research was supported by the Anderson Fellowship from the Psychology Department of the University of California, San Diego.

Chapter 3

Children's Selective Disclosure of Failure Performance

Abstract

Children's beliefs about preferential disclosure were examined in this experiment. One hundred thirty-nine 3- to 6-year-olds listened to a short story scenario about a protagonist who either failed or succeeded at a puzzle task, and were then asked whether the protagonist would disclose their performance to either a high- or low-achieving peer. Across all ages, children expected significantly more disclosure of failure performance to the high-achieving peer, as well as significantly more help-seeking from the high-achieving peer. No significant difference was found between the high- and low-achieving peer for either success disclosure or help-seeking after success. These results show that even preschool-age children expect people to have a preference for information-sharing towards a high-achieving peer, which is contrary to the patterns observed in adolescents, who preferentially disclose to peer who achieve at a similar level to their own. This suggests that young children prioritize competency when seeking help from a peer in the classroom, and are not as sensitive as older children and adolescents are to the possibility of negative social comparisons after failure disclosure.

Academic performance indicators, such as grades and classroom assignments, carry information that people use to make inferences and form opinions and judgments about both their own and others' abilities. As students in a classroom, children therefore must make many decisions about whether and how to disclose their performance to peers, teachers, parents and others. Disclosure of mistakes and failures may carry negative social weight, causing others to think badly of you; disclosure of successes may also carry negative social weight, causing others to think you are arrogant or boastful (Altermatt & Pomerantz, 2003; Banerjee, 2000; Dijkstra et al., 2008; Juvonen & Wentzel, 1996; Watling & Banerjee, 2007). On the other hand, disclosure of information about oneself serves a crucial function in interpersonal relationships, promoting trust and supportiveness in friendships and even enhancing positive teaching and mentoring relationships (Blickle, Schneider, Perrewé, Blass, & Ferris, 2008; Downs, Javidi, & Nussbaum, 1988; Mazer, Murphy, & Simonds, 2007, 2009; Reis & Shaver, 1988). Students' disclosure of performance information to their peers in the classroom is therefore likely subject to multiple pressures including social norms, academic achievement beliefs, and reputational concerns, and it is important to understand how young learners navigate this type of disclosure as such disclosure is also critically important to productive help-seeking; if a learner is struggling to understand a concept or cannot complete and assignment, it may be necessary to turn to another for help. Such help-seeking is a foundational part of adaptive learning behavior, and can be crucial for academic success (Karabenick & Knapp, 1991; Newman, 1990, 1998, 2000; Newman & Goldin, 1990; Ryan et al., 1997; Ryan & Pintrich, 1997). Furthermore, research with school age- children has found that

establishing a friendship with a higher-achieving peer can have an important positive effect on low-achieving children's academic performance (Altermatt & Pomerantz, 2005).

Research has found that elementary school-age children and adolescents prefer to disclose information about their performance to a similarly-achieving peer instead of a peer who has achieved more than they have (Heyman, Fu & Lee, 2008; Quatman & Swanson, 2002). School-age children in particular avoid disclosing low performance to a higher achieving peer (Heyman, Fu & Lee, 2008). Research with younger children has found that between the ages of 3- and 6-years-olds children's predictions that a classroom character will disclose performance information decrease for both the disclosure of failure and the disclosure of success; a similar decrease was found for children's predictions of help-seeking behavior in Experiment 1. However, no research has examined whether within the act of disclosure itself, younger children prefer to disclose to either low or high achieving peers.

While young children's selectivity as information providers is still an open question, some evidence can be found from the body of research in developmental psychology that has examined children's selectivity as information *recipients* (Corriveau & Harris, 2009; Liu et al., 2013; Mills, Legare, Grant, & Landrum, 2011; Vanderbilt, Heyman, & Liu, 2014; Vanderbilt et al., 2011). While children as young as 3-years-olds have been found to distinguish between levels of expert knowledge (Lutz & Keil, 2002) and identify as well as remember an accurate vs. inaccurate informant up to a week later (Corriveau & Harris, 2009), a developmental trend has emerged for the development of targeted inquiry and young children's skepticism: 3-year-olds

struggle significantly more than older children to differentiate between knowledgeable and ignorant informants (Koenig & Harris, 2005). For example, 3-year-olds fail to discriminate between helpful and deceptive "tricker" informants and follow deceptive informants' instructions even when 3-year-olds have observed the "tricker" informant give false information about a task; 5-year-olds, on the other hand, discriminate consistently between helpful and deceptive informants and are able to modify their own behavior in response (Liu, Vanderbilt & Heyman, 2013). The preschool years therefore appear to be an important time for the development of children's selectivity in taking in information from others. However, it is unknown whether children develop a similar selectivity in their disclosure of information during these same years. As young children are developing selectivity in their acceptance of information from others, are they also developing selectivity in their disclosure of information?

One reason that even very young children may develop selectivity in information disclosure is that this disclosure is fraught with social concerns for children. Recent research has found evidence that children as young as five or six take steps to manage their reputations in the eyes of their peers, modifying their behavior to seem more fair or more prosocial both in front of real peers, and even when they are simply told that their actions will be observed by an imaginary peer (Engelmann, Over, Herrmann, & Tomasello, 2013; Engelmann, Herrmann, & Tomasello, 2012; Piazza, Bering, and Ingram, 2011). Such reputational concerns may also inform children's choices about whom to disclose to, for instance, children may believe that their reputations will be negatively affected by confiding their low performance to a high achieving peer and that a low achieving peer would be more understanding. However,

it is unknown at what age such sensitivity would develop, and whether young children would consider performance information as reflective of reputation as social behaviors like sharing and generosity.

Experiment 5

Experiment 5 investigates whether or not young children will expect preferential disclosure of both negative and positive performance information to a high or low achieving peer. While research has examined older children's patterns of selective disclosure (Heyman, Fu & Lee, 2008) and Experiments 1-3 examined young children's expectations for overall disclosure, this research extends the question of selective disclosure to a younger age group. In addition, while research has examined the role of selective trust and children's development of skepticism in accepting others' information and young children's behavior modification as a form of reputation management (Koenig & Harris, 2005; Pasquini, Corriveau, Koenig, & Harris, 2007; Engelmann, Herrmann, & Tomasello, 2012; Liu, Vanderbilt & Heyman, 2013), research has not examined whether or not young children attempt to selectively present performance information to their peers at these ages.

Method

Participants

One hundred thirty-nine children participated in Experiment 5; there were thirty-six 3-year-olds (17 males, 19 females; *M* age = 3.61 years, age range: 3.0 to 3.9 years), thirty-six 4-year-olds (20 males, 16 females; *M* age = 4.4 years, age range: 4.0 to 4.9 years), thirty-five 5-year-olds (20 males, 15 females; *M* age = 5.4 years, age range: 5.0 to 5.9 years) and thirty-two 6-year-olds (15 males, 17 females; *M* age = 6.4

years, age range: 6.0 to 6.9 years). Children in all age groups were recruited from both schools and museums in a city in southern California. Experimental questions were asked across two separate experiments, and participants were randomly selected from each experiment within each of the four age groups. Written parental consent and oral assent from the child were obtained for each participant.

Materials and Procedure

Children were presented with two story vignettes illustrated with cartoon drawings, one about a protagonist who failed in solving a puzzle and one about a protagonist who succeeded in solving a puzzle. Following each story, children were asked three memory questions about events in the story to ensure that they understood and remembered the story. Gender and story order were counterbalanced across conditions, and participants were randomly assigned to either a boy or a girl story.

In each story, children were introduced to three characters in a kindergarten class and told these characters were all given puzzles to solve by their teacher. Children were then told that the story protagonist is practicing to solve the puzzle by himself/herself and that no one can see his/her puzzle. In the *failed protagonist* story, children were told that the protagonist "cannot figure [the puzzle] out—she has trouble solving the puzzle. Ashley does not finish her puzzle." In the *successful protagonist* story, children were told that the protagonist "figures [the puzzle] out—she easily solves the puzzle. Ashley finishes her puzzle." In both stories, children were told that one of the classmate characters "easily solved and finished her puzzle" (the high achieving peer), while one of the classmate characters "cannot solve and didn't finish her puzzle" (the low achieving peer). After the memory check questions, children

were then asked two target questions: to which of the two classmate characters would the protagonist disclose, and from which of the two characters would she ask for help to solve the puzzle.

Results

Across two stories, children were asked four memory-check questions. Almost all of the children answered at least three memory-check questions correctly, but two children answered less than three memory-check questions correctly. We excluded these two children from our analyses. For the 137 children in our analysis sample, performance on the memory-check questions did not differ between the age groups. There were no significant effects for participant gender, story character gender, and story scenario order, so these were excluded from subsequent analyses.

Failure Disclosure and Asking for Help

Selective disclosure. Across all ages, children's expectations for disclosure of failure predicted preferential disclosure to the high achieving peer; a chi square test showed that disclosure to the high achieving peer was significantly greater than disclosure to the low achieving peer, $X^2(1, N = 137) = 28.97, p < .0001$ (Figure 3.1). A targeted chi square test for 3-year-olds alone also found that disclosure to the high achieving peer was significantly greater than disclosure to the low achieving peer, $X^2(1, N = 35) = 6.42, p < .01$, providing evidence that even as young as 3 years of age, children already expect more disclosure of failure performance information to a high achieving peer. However, a targeted chi square test for the oldest age group showed that for 6-year-olds, there was no significant difference in predictions of disclosure between the low and high achieving peer ($p = .85$). A nominal logistic regression also

found an age-related decline in this preference, $X^2(3, N = 137) = 16.39$, $p < .001$, indicating that older children were less likely than younger children to disclose to the high achieving peer.

Asking for help. For help-seeking, across all ages, children predicted asking for help after failure significantly more from the high achieving peer; a chi square test showed that overall asking for help from the high achieving peer was significantly greater than asking for help from the low achieving peer, $X^2(1, N = 137) = 43.27$, $p < .0001$. No age-related change was found for this effect in a nominal logistic regression. Confirming this, a targeted chi square test for the youngest age group also showed that 3-year-olds predicted asking for help from the high achieving more than the low achieving peer, $X^2(1, N = 35) = 6.42$, $p < .01$, indicating that children as young as 3-years-old were more likely to predict disclosure to the high achieving peer. Similarly, a targeted chi square test showed that the oldest age group, 6-year-olds, also predicted significantly more asking for help from the high rather than the low achieving peer, $X^2(1, N = 31) = 17.06$, $p < .0001$.

Success Disclosure and Asking for Help

In the success condition, children did not show preferential disclosure to either the low or high achieving peer across all ages ($p = .08$), remaining not significantly different from chance. Children also did not distinguish between asking for help from the low or high achieving peer in the success condition ($p = .35$).

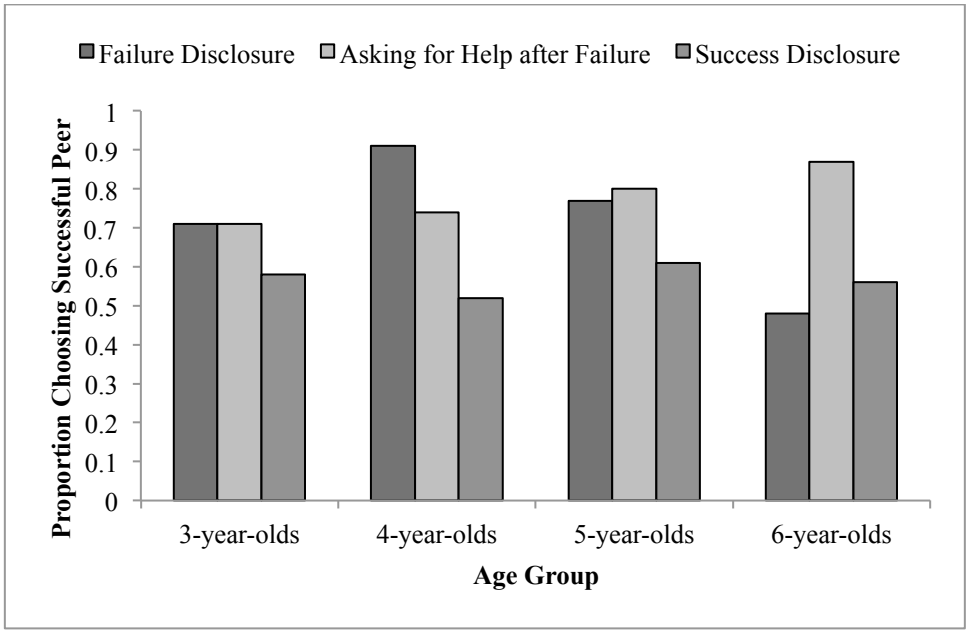

Figure 3.1: Disclosure to Successful Peer in Experiment 5

Discussion

In this experiment, evidence was found that young children distinguish between high and low achieving peers when making predictions about whom a character would chose to tell about failure. At least until the age of six, children were found to significantly predict greater disclosure of failure performance in a classroom to a high achieving peer who had been successful at a given task. When asked to predict the disclosure of failure, however, children in all age groups did not discriminate between disclosing to the high or low achieving peer.

It is interesting that an age-related decline was found for children's expectations of this preferential disclosure. 6-year-olds, the oldest age group in this experiment, differ from the younger age groups in their expectations for the disclosure of failure. While younger children in every other age group predicted disclosure

significantly more to the high achieving peer, 6-year-olds did not differ in their predictions of disclosure between the high or low achieving peer. Yet this oldest age group still systematically predicted more asking for help from the high achieving peer, indicating that this was not simply an overall failure of this age group to distinguish between the high and low achieving peers. Previous research suggests that older children become increasingly reluctant to divulge their performance information to a higher achieving classmate (Heyman, Fu & Lee, 2008) as well as increasingly reluctant to disclose performance information at all (see Tables 1 and 2), and it is possible that the 6-year-olds in this study are beginning to incorporate these mores into their own predictions about disclosure. It is important to understand how and why children's disclosure predictions change at these ages, as these changes suggest that the preschool and early school-age years may present a fruitful period for early intervention strategies which teach learners to adaptively seek help from higher-achieving peers, a behavior which has been linked to greater academic achievement (Altermatt & Pomerantz, 2005).

These results also prompt questions about young children's reputation management. While recent research has found that young children are concerned with managing their reputations in their social and sharing behaviors (Engelmann, Herrmann, & Tomasello, 2012; Piazza, Bering, and Ingram, 2011), very young children do not appear to be concerned about the effect that disclosing failure to a high achieving peer might have on their reputation. It is possible that young children's preference for disclosure to a high achieving peer may indicate that young children have not yet developed awareness or concern for reputation; it is also possible that

academic performance information is simply not considered relevant to reputation in these age groups. Future studies should investigate the intersections between reputation management and academic performance, clarifying when academic information becomes an indicator of social status for young children as well as investigating how young children conceive of their reputations in relation to performance disclosure.

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Chapter 4

Chinese Children's Beliefs about Self-Disclosure and Disclosing Peer Performance

Abstract

In two experiments, children in China were asked to make predictions about a classroom character's self-disclosure, information seeking, help-giving, and disclosure of another's performance information (total $N = 224$). Eighty-four children in two age groups (ages 6-7 and 9-11) were tested in the first experiment, which found an age-related decrease in children's predictions of self-disclosure of success, but an age-related increase in children's predictions of self-disclosure of failure. All ages differentiated between disclosing success and failure, but young children were more likely to predict revealing success while older children were more likely to predict revealing failure. One hundred forty children (ages 3-11) were tested in the second experiment, which found a similar age-related decrease in children's predictions of disclosing another's performance information. This experiment also found an age-related increase in information-seeking from the successful character and an age-related decrease in help-giving from the failure character, suggesting that older Chinese children expect only successful performers to offer help to classmates.

In Chapter Four, we extend the previously asked questions about children's beliefs about disclosure in the classroom to a Chinese population of children in order to investigate similarities and differences in Chinese students' beliefs about disclosure. Little developmental research has examined preschool and early school-aged children's beliefs about the disclosure of classroom performance in China compared with children in the US, and Experiments 6 and 7 provide one of the first examinations of this topic with younger children.

Chinese and US populations are characterized by many major cultural differences that are beyond the scope of this dissertation; however, there are specific differences in the realm of cultural beliefs about learning and achievement that point towards possible differences in US and Chinese children's beliefs about performance disclosure. One such difference has been found in learners' attitudes towards the malleability of performance. Chinese learners are more likely than US learners to endorse malleability of achievement, self-agency in learning and the necessity of self-improvement, often leading to high academic achievement in these populations (Chen & Uttal, 1988; Comber & Keeves, 1973; Li, 2001, 2002, 2003, 2005, 2010). For example, Chen & Uttal examined parental beliefs about their child's achievement in both China and the US, and found that American parents were more likely to indicate satisfaction with their child achieving a lower score than the one they believe their child capable of achieving. Further, research on implicit theories of intelligence has found that collectivist cultures, such as China and India, demonstrate greater levels of belief in incremental theory of intelligence than American populations; Chinese and Indian students are more likely to endorse the position that achievement is primarily

due to behavioral effort rather than innate talent, and that mistakes are a cue to increase effort, not a signal of inability (Chiu, Hong & Dweck, 1997). This difference suggests that Chinese children may believe people will disclosure differently from US children; cultural norms that encourage a growth-oriented approach to mistakes made during learning could mean that young Chinese children will believe in higher rates of failure disclosure than US children.

More generally, research on differences between Chinese and US students' approaches to learning has focused on the distinction between Chinese cultural emphasis on learning as a life-long value and the US cultural emphasis on learning as a task with a discrete end, finding that this value-based approach in Chinese culture encourages Chinese students to invest a great deal of effort into their learning and achievement (Li, 2001; 2002; 2003; 2005; 2010). These differences also may impact how Chinese children interpret performance disclosure. Li (2005) found that when asked to describe and respond to a narrative about a learner solving problems in the classroom, Chinese 6-year-olds focused more on dispositional characteristics of a learner such as diligence and persistence while US 6-year-olds tended to focus on task-oriented aspects such as strategy use and ability, although both groups valued learning at similar levels. It is possible that these differing cultural values will produce very different expectations from young children: Chinese children may be inclined to view help-seeking as a positive behavior that reflects an individual's high virtue of learning by demonstrating diligence and persistence.

Further support for these differences in learning beliefs which may impact children's beliefs about disclosure comes from previous research that has found that older Chinese students hold more incremental theories of achievement than US students, a belief which has been tied to viewing failure as a temporary setback rather than proof of innate inability (Chiu, Hong & Dweck, 1997). Incremental theorists tend to be more willing to persist at difficult tasks and exhibit greater levels of mastery oriented learning behaviors such as instrumental help-seeking (Dweck, 1999; Chiu, Hong & Dweck, 1997), which could prompt greater expectations for failure disclosure as children begin to learn these culturally normative learning beliefs in the early school years. Furthermore, recent research suggests that school-aged Chinese children are more inclined than US children to believe criticism should be accepted (Heyman, Fu, & Lee, 2013), which could also lead children to be more willing to disclosure performance failure as subsequent criticism may be perceived as more expected and less threatening.

Some recent research has examined Chinese children's beliefs about disclosure directly, but many open questions remain about these disclosure beliefs, particularly in younger children. In one such study, Heyman, Fu and Lee (2008) found that school-aged Chinese students are more likely to interpret disclosure of success as an implicit offer of help compared to American students, who are more likely to interpret this disclosure as bragging. This result could suggest that younger Chinese children will more readily expect people to disclose success to their peers as it is more likely to be interpreted as socially acceptable help-offering rather than boasting. However, this study also found that children from both the US and China engaged in valence-

matching, showing a preference to disclosure performance information to a peer who achieved at a similar level to their own compared with a peer who achieved at a higher level, which provides evidence that school-aged children are sensitive to peer responses to disclosure and use peer competency information to inform choices about disclosure. It is unknown, however, if younger children will show this same awareness. Another recent study (Zhang, Z, Heyman, Fu, Zhang, D., Yang, & Lee, in press) found that school-aged children in China also judged disclosure as more appropriate when the disclosure was enacted with a peer at a similar performance level as the protagonist. And in fact, further research has found that Chinese children are taught more explicit social behaviors for demonstrating modesty by not promoting their own accomplishments (Genyue, Heyman, & Lee, 2011), which could lead Chinese children to expect less success disclosure than US children. Research has also found that school-aged Chinese children rate lies which promote modesty or spare another's feelings more favorably than truth-telling which promotes immodesty such as boasting (Fu et al., 2010; Ma, Xu, Heyman, & Lee, 2011); it is possible that concern with modesty could also lead younger Chinese children to expect less success disclosure than children in the US do. Finally, little to no research has addressed what expectations younger children, preschool and early school-aged, hold for the disclosure of performance information.

Experiment 6

Experiment 6 investigates children's beliefs about performance information disclosure in the classroom. This research examines whether or not age-related changes in self-disclosure predictions will be found with school-aged Chinese

children. This experiment also investigates Chinese children's beliefs about the relative disclosure of success versus failure, and whether these beliefs are affected by a nonsupportive peer response to disclosure.

While US children at all ages distinguish between success and failure, predicting more disclosure of success than failure (see Figure 2.1), there are many cultural differences that suggest Chinese children may weigh different social concerns when disclosing these types of performance information. For example, Chinese children's greater emphasis on modesty (Fu, Heyman & Lee, 2011) and greater tendency to endorse incremental theory of intelligence (Chiu, Hong & Dweck, 1997) could lead them to view success disclosure as less acceptable and failure disclosure as more acceptable than American children. On the other hand, Chinese children's interpretation of success disclosure as an offer of help (Heyman, Fu & Lee, 2008) could lead them to predict more success disclosure given that it may constitute a socially positive behavior. Experiment 6 therefore examines Chinese children's beliefs about the relative disclosure of success and failure performance. In addition, this experiment examines whether or not older school-aged Chinese children will alter their disclosure beliefs in response to a nonsupportive peer interaction.

Participants

Eighty-four children (42 male and 42 female) from a public school in Eastern China participated in this experiment. The younger group ($N = 42$) included first graders (ages 6.58-7.58; $M = 6.8$), and the older group ($N = 42$) included fourth- and fifth-graders (ages 9.33-11.91; $M = 10.08$). The sample was 100% Han Chinese. Chinese graduate students who were blind to the hypotheses of the study tested

participants, and all stories were read in Chinese. Parental or legal guardian consent was obtained as well as oral assent from each child.

Materials and Procedure

As in Experiment 2, children were presented with short story vignettes focusing on disclosure in the classroom. Each child was presented with two conditions: supportive or teasing. In each condition, children were presented with two classmate characters that are each given a puzzle to solve. One character easily solves the puzzle, and one character fails to solve the puzzle. The failed character then discloses his or her failed performance to the successful character. In the supportive condition, the successful character responds, *"That's ok! This happens to everyone sometimes."* In the teasing condition, the successful character response, *"Haha! I can't believe you couldn't do it!"*

Target questions in Experiment 6 asked participants if *they* themselves would disclose both their own hypothetical success and hypothetical failure in either condition, yielding four test questions across the two conditions which asked for a first-person response from participants, rather than a third person response as was collected in the previous experiments in Chapters 1-3. This change was initiated at the request of Chinese research assistants, through a concern that after translation, young Chinese students would find the hypothetical scenario questions about another person too confusing. Participants were therefore asked to imagine that they themselves were also solving a puzzle, and if they would disclose their own failure performance or success performance to the successful character on a 5-point scale from "definitely no" to "definitely yes." The order of the scenarios (*supportive* versus *teasing*) and the

performance type of the protagonist that was presented first (*failure* versus *success*) was counterbalanced. For each participant, all story characters were either exclusively male or exclusively female. The procedure took approximately 5 minutes to complete per child.

After each test question, participants provided open-ended explanations for their responses. A native Chinese speaker then translated a randomly selected sample of these responses into English. Raters first identified and agree on eight main categories for coding, and responses were then coded into these categories by two independent raters, who gave synchronous ratings on the classification for 99.7% of responses. The categories were (0) other, (1) reference to success, (2) boasting/arrogance, (3) reference to teasing, (4) reference to helping, (5) reference to hurt feelings, (6) reference to friendship, (7) reference to failure.

Results

Gender and order effects were not found for responses to the four test questions and were therefore excluded from subsequent analyses. This experiment collected participants' responses as continuous data and therefore analyses were run as ANOVAs.

Age-related changes in Performance Disclosure. An age-related increase was found for the disclosure of failure in both the supportive condition, $F(1, 82) = 4.49$, $p < .05$, and the teasing condition, $F(1, 82) = 10.59$, $p < .01$. This result was further supported by a positive correlation between continuous age and the disclosure of failure in both the supportive condition, $r = .22$, $p < .05$, and the teasing condition, $r = .33$, $p < .001$. These findings indicate that older children chose to disclose failure

performance significantly more than younger children did (Figure 4.1). An age-related decrease was found for the disclosure of success in both the supportive condition, $F(1, 82) = 13.69$, $p < .001$, and the teasing condition, $F(1, 82) = 12.20$, $p < .0001$, indicating that older children chose to disclose success performance significantly less than younger children did. This result was further supported by a negative correlation between continuous age and the disclosure of success in both the supportive condition, $r = -.37$, $p < .001$, and the teasing condition, $r = -.35$, $p < .0001$.

Disclosing Success versus Failure. Examining the youngest age group (6.5-7.5-years-old), a matched pairs analysis found that in the supportive condition children chose to disclose success ($M = 3.92$; $SD = 1.36$) significantly more than failure ($M = 3.14$; $SD = 1.58$): $t(41) = 2.55$, $p < .01$ (Figure 4.2). A matched pairs analysis found the same result in the teasing condition, with the youngest children choosing to disclose success ($M = 3.71$; $SD = 1.51$) significantly more than failure ($M = 2.28$; $SD = 1.51$): $t(41) = 5.00$, $p < .0001$. However, examining the oldest age group (9.3-11.9-years-old), a matched pairs analysis found that in the supportive condition children chose to disclose failure ($M = 3.78$; $SD = 1.27$) significantly more than success ($M = 2.78$; $SD = 1.35$): $t(41) = -4.01$, $p < .0002$. A matched pairs analysis found the same result in the teasing condition, with the oldest children choosing to disclose failure ($M = 3.35$; $SD = 1.46$) significantly more than success ($M = 2.54$; $SD = 1.40$): $t(41) = -3.13$, $p < .001$. These results confirm the age-related change in performance disclosure of success versus failure, as well as provide evidence that at all ages children

differentiate between success and failure disclosure, although the tendency to disclose one more than the other is reversed between the two age groups.

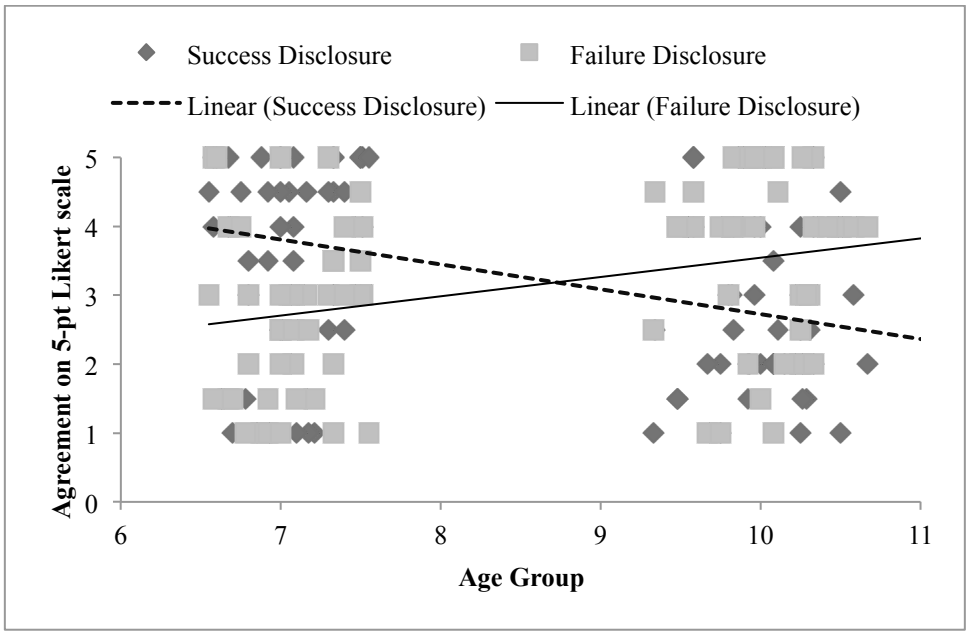

Figure 4.1: Chinese Children's Disclosure of Success and Failure by Age in Experiment 6

Nonsupportive vs. Supportive condition. A matched pairs analysis found that across all ages and all types of performance, children choose disclosure significantly more in the supportive condition (M = 3.41; SD = 1.07) than the nonsupportive condition (M = 2.97; SD = 1.17): $t(83) = -3.82$, $p < .0001$ (Figure 4.2). This result was also found for disclosing failure performance specifically, $t(83) = -3.74$, $p < .001$, indicating that children across all ages were more likely to disclose failure in the supportive condition (M = 3.46, SD = 1.46) than they were to disclose failure in the nonsupportive condition (M = 2.82, SD = 1.57). This result was also found for each age group respectively. Children in the youngest age group were more likely to

disclose failure in the supportive condition (M = 3.14, SD = 1.58) than they were to disclose failure in the nonsupportive condition (M = 2.28, SD = 1.51), $t(41) = 2.93$, p = .005. Children in the oldest age group were similarly likely to disclose failure in the supportive condition (M = 3.78, SD = 1.27) than they were to disclose failure in the nonsupportive condition (M = 3.35, SD = 1.46), $t(41) = 2.41$, p = .02. However, there were no significant differences between the supportive and nonsupportive condition in children's disclosure of successful performance, both for all ages and for each age group respectively.

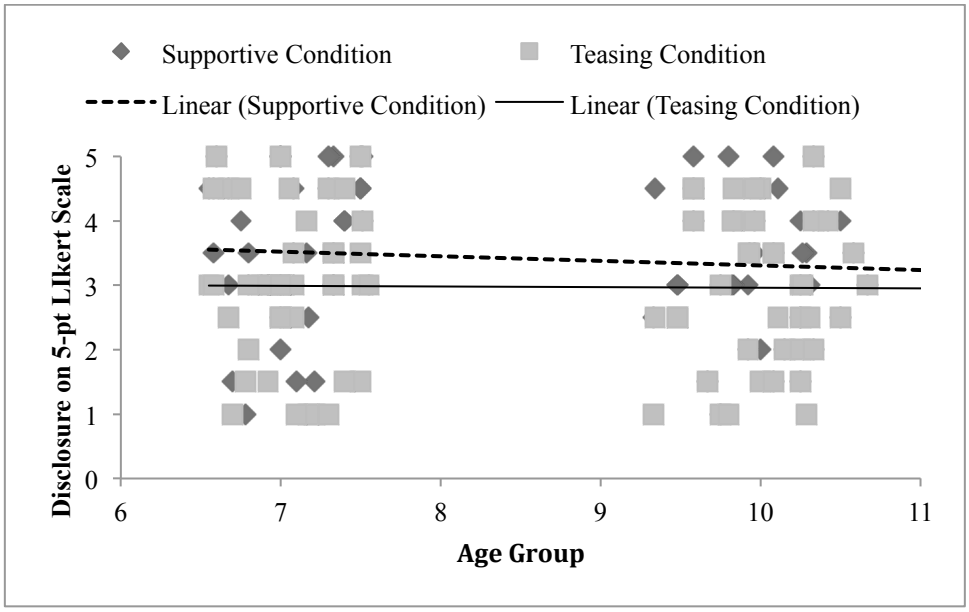

Figure 4.2: Chinese Children's Disclosure in the Supportive and Teasing Conditions by Age in Experiment 6

Open-ended responses. In the supportive condition, children who responded that they would disclose about failure or disclose about success both frequently referenced helping or obtaining help in their explanation (57% overall, e.g. *"Because*

he will teach me," "I can teach him"), while children who chose nondisclosure overwhelmingly referenced teasing (85%, e.g. *"Because he will tease me"*). In the teasing condition, however, while children who chose to disclose still referenced obtaining help, children who did not choose disclosure most frequently referenced either a fear of appearing boastful in the success condition (25%; e.g. *"That would be like flaunting one's superiority")*, or a fear of being teased in the failure condition (30%; e.g. *"I don't want him to tease me")*.

Discussion

In Experiment 6, Chinese children were asked whether or not they would disclose their own performance information in a hypothetical situation. Two age-related changes were found; older children were more likely to say they would disclose failure, but less likely to say they would disclose success, than younger children. Congruent with results found for younger US children in Experiment 2, a nonsupportive condition produced an effect on all age groups in this study (6-8- and 9-11-year-olds), with children less likely to say that they would disclose failure performance to a nonsupportive versus a supportive peer. Chinese children also differentiated between success and failure disclosure, but the younger and older age groups showed a different pattern of beliefs; the younger age group responded with greater disclosure of success while the older age group responded with greater disclosure of failure.

Chinese children's greater willingness to disclose failure than success is particularly intriguing, and contrasts with research on school-aged children in the US which finds children at these ages responsive to the negative social costs of failure

disclosure (Altermatt & Broady, 2009). It is possible that this behavior reflects the greater cultural belief in incremental learning strategies found in Chinese versus US culture (Chiu, Hong & Dweck, 1997). Previous research on learners' mindsets has found that incremental theorists are less troubled by failure and mistakes, seeing these as necessary steps along the paths toward mastery (Dweck, Chiu, & Hong, 1995; Dweck & Molden, 2005). It is also possible that children's changing beliefs about the likelihood of disclosing performance success with age could reflect Chinese children's developing understanding of and greater emphasis on modesty concerns (Fu, Heyman & Lee, 2011), which leads Chinese children to believe that success disclosure is less appropriate than American children do. Future studies could examine these possibilities.

Finally, the use of first person instead of third person viewpoint in Experiment 6 yields a measure of children's self-reports about their own disclosure behavior, and it is possible that participants responded to this question in terms of what they believe they *should* do, in contrast to how they expect other people to behave. This interpretation could lead children to give responses according to what they believe is most socially acceptable and desired by the experimenter, rather than responses about what they believe is actually most likely in this situation. Future studies should therefore investigate children's expectations for behavior and carefully distinguish this from beliefs about what is most socially acceptable.

Experiment 7

In experiment 4, children's beliefs about seeking information, disclosing the performance of, and offering help to a peer were investigated with a population of young children recruited from Southern California. However, disclosure norms and self-disclosure behaviors are strongly influenced by cultural norms around expectations for peer relationships, socio-emotional behavior, access to and use of technology, and beliefs about education and privacy (e.g., Derlega, & Chaikin, 1976; Derlaga, & Berg, 1987; Collins, & Miller, 1994; Bargh, McKenna, & Fitzsimons, 2002). It is therefore critical for research on these topics to extend towards broader cross-cultural exploration of these same questions. While Experiment 6 provided a picture of children's beliefs about self-disclosure, it was unknown if Chinese children would differ from American children in their beliefs about disclosing another's performance, seeking information from another, and help-giving. Therefore, Experiments 7 was undertaken in order to examine these disclosure beliefs with a Chinese population. Experiment 7 also investigated disclosure beliefs from younger age groups in China utilizing identical methodologies as the previous experiments, enabling a more direct comparison with the American data.

Recent research has revealed some key differences between Chinese and US students' beliefs about the disclosure of performance information. For example, one recent study has examined Chinese and US students' responses to performance information disclosure (Heyman, Fu & Lee, 2008). One key finding from this research is that Chinese elementary-age students are more likely to interpret disclosure

of success as an offer as help, in contrast to US elementary-age students, who were more likely to interpret such disclosure as bragging. It is possible that because of their belief that success disclosure and help-offering are intertwined, Chinese children will also have different beliefs about offering help to peers in the classroom than US children do; while US children predicted high rates of help-seeking in both the success and the failure conditions (see Figures 2.1 and 2.2), Chinese children may predict higher rates from the success condition. Experiment 7 examines this possibility.

Experiment 6 allowed us to examine children's beliefs about self-disclosure and found age-related changes in children's responses to failure disclosure, with older children choosing to disclose failure more than success. However, it is unknown whether similar age-related changes will be found for children's beliefs about disclosing another's performance. While it is possible that self-disclosure for success is dampened by modesty concerns, or that Chinese children are more willing to disclose failure because they hold stronger incremental theories about achievement compared with US children (Dweck et al., 1995; Dweck & Molden, 2005), disclosing another's performance may not create these same concerns for children. Therefore, Experiment 7 addresses whether there are age-related changes in Chinese children's beliefs about disclosing another's performance. Finally, as in Experiment 4, Experiment 7 also asks whether there are age-related changes in young children's beliefs about whether people will seek out performance information from their peers in the classroom.

Method

Participants

140 children (70 male and 70 female) from a public school in Eastern China participated in Experiment 7; there were eleven 3-year-olds (5 males, 6 females; *M* age = 3.68 years, age range 3.4 to 3.9 years), twenty-nine 4-year-olds (14 males, 15 females; *M* age = 4.36 years, age range 4.0 to 4.9 years), thirty-two 5-year-olds (15 males, 17 females, *M* age = 5.52 years, age range 5.0 to 5.9 years) ten 6-year-olds (6 males, 4 females, *M* age = 6.27, age range 6.0 to 6. years), nineteen 7-year-olds (9 males, 10 females, *M* age = 7.32, age range 7.0 to 7.5 years), nine 8-year-olds (5 males, 4 females, *M* age = 8.74, age range 8.6 to 8.8 years), fifteen 10-year-olds (7 males, 8 females, *M* age = 10.75, age range 10.4 to 10.9 years) and fifteen 11-year-olds (9 males, 6 females, *M* age = 11.35, age range 11.0 to 11.6 years). Chinese graduate students who were blind to the hypotheses of the study tested participants, and all stories were read in Chinese. Parental or legal guardian consent was obtained as well as oral assent from each child. The sample was 100% Han Chinese.

Materials and Procedure

Experiment 7 utilized the same methodology as Experiment 4, translated for Chinese students. Thus as in Experiment 4, subjects were read story scenarios and were asked to predict whether a character in a classroom would ask a peer about their performance information, whether they would tell others in the class this information, and whether they would offer to help the peer in question. These questions were asked across both a success and failure condition for each child, for a total of six target questions. Two memory check questions were also asked for each story scenario. Story scenarios were counterbalanced for gender.

After each test question, participants provided open-ended explanations for their responses. A native speaker of Chinese translated responses to English. Raters then first identified and agree on eight main categories for coding, and responses were then coded into these categories by two independent raters, who gave synchronous ratings on the classification for 99.7% of responses. The categories were (0) other, (1) reference to success, (2) boasting/arrogance, (3) reference to teasing, (4) reference to helping, (5) reference to hurt feelings, (6) reference to friendship, (7) reference to failure.

Results

All 140 children answered the memory check questions correctly, and therefore none were excluded from the dataset. No significant effects were found for subject gender or character gender, therefore these variables were excluded from subsequent analyses.

Information-seeking. Data from the success and failure conditions on the question of whether the protagonist would disclose the information about the other character's performance were analyzed separately using nominal logistic regression. In the failure condition, no significant effect of age was found ($p = .30$), although positive responses were relatively high overall, between 60%-72% for most age groups (Figure 4.3).

In the success condition, we found a significant effect of age group, $\chi^2(7, N = 140) = 16.97$, $p = .01$, indicating that older children were more likely than younger children to predict that the successful protagonist character would ask the peer character about their performance (Figure 4.4). In addition, no groups responded

below chance: 3-year-olds gave a positive response 54% of the time, and this response increased to 93% for 11-year-olds. The age-related change was confirmed by a positive correlation between raw age and positive responses, $r = .29$, $p < .001$. Finally, a matched pairs analysis indicated that across all ages children predicted more information seeking in the success condition ($M = .76$, $SD = .42$) than in the failure condition ($M = .62$, $SD = .48$); $t(140) = -2.90$, $p < .01$.

Disclosing another's performance to the class. Data from the success and failure conditions on the question of whether the protagonist would disclose the information about the other character's performance were first analyzed separately using nominal logistic regression.

In the failure condition, we found a significant effect of age group on the second test question, $\chi^2(7, N = 139) = 41.28$, $p < .0001$, indicating that older children were less likely than younger children to predict that the failure protagonist character would disclose the peer character's failure to their classmates (Figure 4.3). This result was confirmed by a negative correlation between raw age and positive responses, $r = -.43$, $p < .0001$. 3-year-olds gave high positive responses to this question (90%) compared with 11-year-olds (0%). A small but significant matched pairs analysis indicated that across all ages children expected more disclosure to the class from the successful character ($M = .38$, $SD = .48$) than the failure character ($M = .30$, $SD = .46$); $t(138) = -1.99$, $p = .04$.

In the success condition, we also found a significant effect of age group, $\chi^2(7, N = 139) = 18.87$, $p < .01$, indicating that older children were less likely than younger children to predict that the successful protagonist character would disclose the peer

character's failure to their classmates (Figure 4.4). This result was confirmed by a negative correlation between raw age and positive responses, $r = -.34$, $p < .0001$. 3-year-olds had a high positive response rate of 72% compared with 11-year-olds' low positive response rate of 14%.

Helping the peer classmate. For the success condition, no age-related changes were found on the question about whether the protagonist would offer help ($p = .19$; Figure 4.4); for all age groups positive responses were high, ranging between 81% for 3-year-olds and 86% for 11-year-olds. However, for the failure condition, we found a significant effect of age group, $\chi^2(7, N = 140) = 29.95$, $p < .0001$, indicating that older children were less likely than younger children to predict that the failed protagonist character would offer to help the peer character (Figure 4.3). This result was confirmed by a negative correlation between raw age and positive responses to this question, $r = -.36$, $p < .0001$. While 3-year-olds had a high positive response rate to this question (90%), 11-year-olds had a low positive response rate (33%). Finally, a matched pairs analysis indicated that across all ages children expected more offering help in the success condition ($M = .84$, $SD = .36$) than in the failure condition ($M = .53$, $SD = .50$); $t(139) = -6.33$, $p < .0001$.

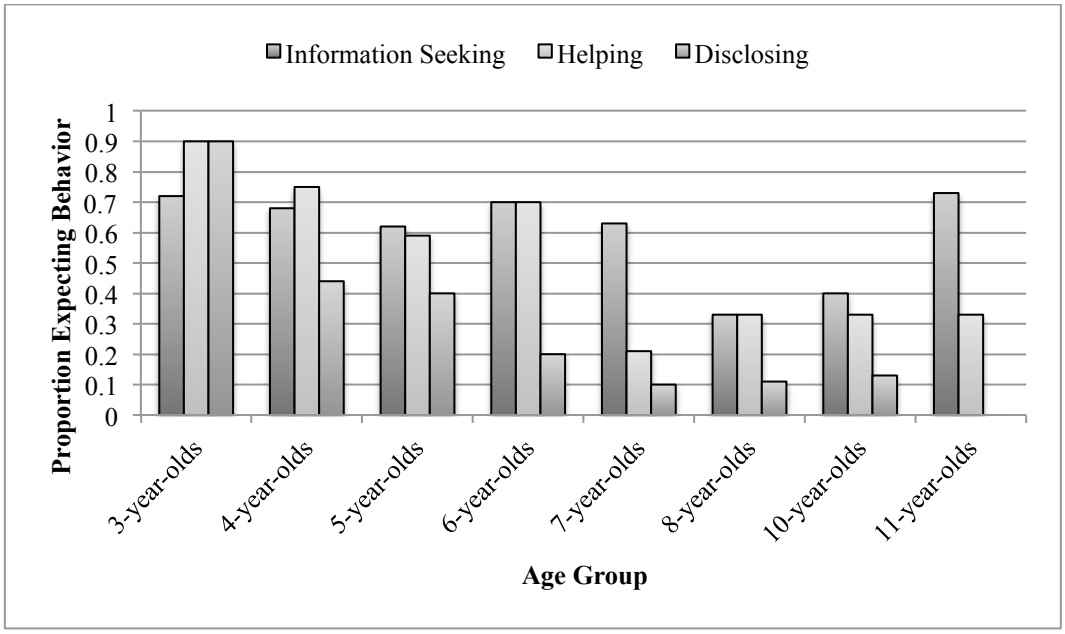

Figure 4.3: Chinese Children' Predictions By Age Group for Failure Condition in Experiment 7

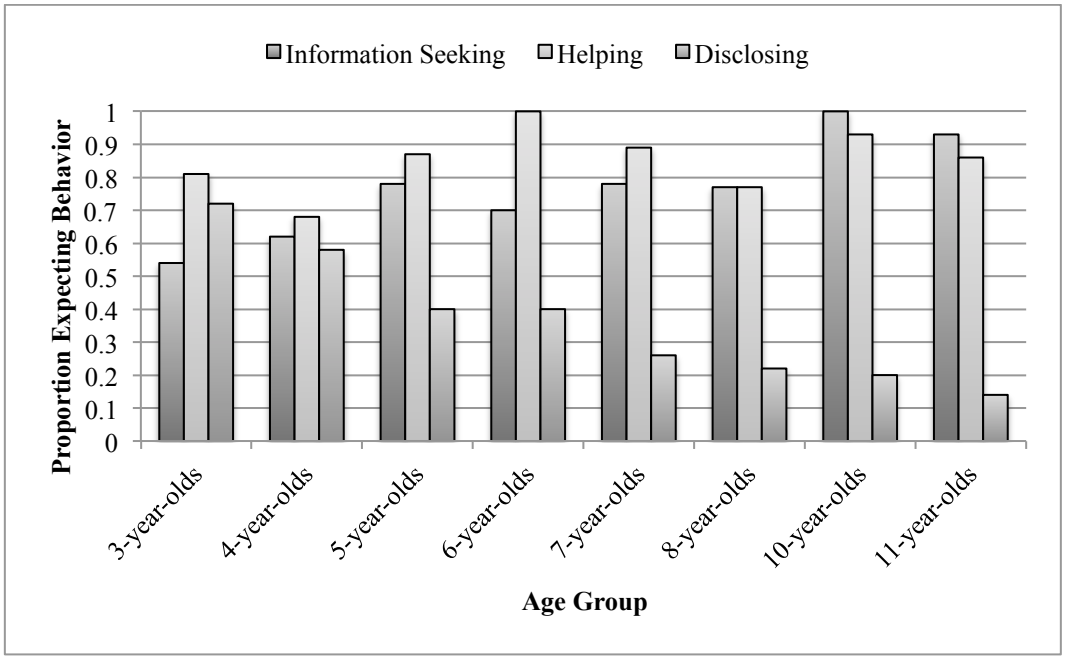

Figure 4.4: Chinese Children's Predictions by Age Group for Success Condition in Experiment 7

Open-ended responses. Children tended to give explanations that focus on obtaining help when they expected the character to disclose another's performance

(44% of total explanations in the success condition and 47% of total explanations in the failure condition), but no clear pattern of explanation emerged for children who expected nondisclosure. For information-seeking across both the failure and success conditions, children who predicted information-seeking overwhelmingly (71%-88%) explained their predictions simply as an attempt to discover the performance of another (e.g. *"He wants to know if [the peer] solved the puzzle"*). However, children who did not expect information seeking tended to explain this answer by referencing the peer's possible failure (63%; e.g. *"maybe he couldn't solve the puzzle," "She doesn't know if [the peer] couldn't solve the puzzle"*). Finally, children tended to predict that the successful, but not the failed protagonist would offer to help the peer (Figure 5.1 and 5.2) and most often gave helping explanations when predicting that the successful classmate would offer help (72%; e.g. *"It is good to help others," "she cares about her classmate and wants to help"*), but explanations of incompetency when predicting that the failed protagonist would not try to help their peer (70% e.g. *"He can't solve the puzzle," "It's a waste of time because she didn't solve it"*).

Discussion

Experiment 7 investigated young Chinese children's beliefs about disclosing peer performance information, seeking information from, and offering to help a peer across a large age range (3-11-year-olds). Several interesting age-related changes were found; older children were more likely than younger children to predict that a successful character would ask a peer how they performed on a task, but the same result was not found for a failed character. As with US children in Experiment 4, there was an age-related decrease in Chinese children's disclosure predictions regarding the

disclosure of a peer's information for both the successful and failed protagonist. Finally, older children were less likely than younger children to predict that the failed character would offer to help the peer, while this decrease was not found for the successful character.

Children's qualitative responses in this experiment also provide an intriguing window into Chinese children's interpretations of these classroom situations. For example, participants' strong tendency to explain help-giving in terms of the competency of the giver, particularly when explaining why the failed character would not offer help, differs from the pattern observed for US children, who expected high levels of help-giving from both the failed and successful protagonist (Figure 4.2). This difference suggests that older Chinese children may make decisions about offering and seeking help based on judgments of competency more than US children do, who instead see offering help as a socially positive action regardless of the performance level of the giver. In contrast, our results suggest that Chinese children believe that there is little value to a failed protagonist offering help to another. Further research should investigate Chinese children's beliefs about the appropriateness of help-giving in light of these competency judgments.

General Discussion

Experiments 6 and 7 investigated Chinese children's beliefs about self-disclosure, information-seeking, disclosing a peer's performance, and offering help in the classroom. Overall, there are several interesting age-related changes in children's beliefs about disclosure. Experiment 6 found that by the ages of ten and eleven, Chinese children expect less disclosure of success, but more disclosure of failure than

younger children at the ages of six to seven, suggesting that school-aged Chinese children may view the disclosure of failure as normative and socially acceptable in the classroom and more likely than the disclosure of success. However, children in all ages responded to a teasing manipulation, expecting less disclosure after viewing a nonsupportive peer response to disclosure. Thus, children appear to be sensitive to the negative possibility of social responses to disclosure and expect behavior to be modified in response.

Experiment 7 examined a broad age range (3- to 11-years), allowing us to investigate age-related changes across the preschool and grade school years. This experiment found several interesting age-related changes in Chinese children's beliefs about disclosure that differ from the changes found with US children in Experiment 4. Older children were more likely than younger children to predict that a successful character would ask a peer how they performed on a task, but this result was not found for the failure character. One reason for the difference between the successful and failed character here is that this result could reflect Chinese students' growing belief that successful students have a responsibility to aid lower-achieving students and that self-disclosure of success constitutes offering such aid (Heyman et al., 2008); indeed, Experiment 7 also found that students believed a successful student, but not a failed student, would offer to help the peer character, and focused on the incompetency of the failed character in their explanations. One interpretation of the increase in information-seeking for the successful character is that older Chinese children believe that successful characters should seek out information from classmates in order to

determine whether their classmates need help, and future studies should examine this possibility.

GENERAL DISCUSSION

A series of seven experiments examined preschool and school-aged children's beliefs about the disclosure of performance information to peers in the classroom and found age-related changes for US and Chinese children's beliefs about both self-disclosure and disclosure of a peer's information to others, seeking performance information from peers, and helping peers (see Table A for a summary), as well as evidence for young children's discrimination between success versus failure disclosure and supportive versus nonsupportive peer responses to disclosure. These experiments provide new evidence that preschool and early-school ages are an important developmental time period for beliefs about performance disclosure in the classroom, and young children's nascent concerns about disclosure which may impact future reluctance to seek help and disclose academic struggles (Anderman & Anderman, 1999; Ryan et al., 1997; Newman, 1990). However, these experiments also point to key differences in young children's beliefs about disclosure as compared to older children's beliefs.

Chapters 1-3 examined US children. In Chapter One, young children's beliefs about performance disclosure were investigated. Two experiments examined children between the ages of three and six found that older children, around the ages of 5- and 6-years-old, expected lower rates of disclosure overall than preschool aged children (Table 1.1). This result indicates that very young children do not expect the same reluctance to disclosure as older children do, and points to these ages as a crucial window of change in disclosure beliefs. However, children at all ages distinguished

between revealing success versus failure information and predicted more disclosure of successful performance overall, suggesting that even 3-year-olds, despite predicting overall high levels of disclosure, are still sensitive to the fact that people are less likely to disclose performance which makes them appear incompetent. Children at all ages were found to respond to a teasing manipulation, expecting less disclosure of both success and failure after observing a nonsupportive peer response to disclosure (Table 1.2). These results suggest that even young children may be aware of the negative social cost of revealing negative performance information, and expect people to modify their behavior in response to nonsupportive environments. Further, this experiment provides evidence that children's observations of their peer environment may play a crucial role in young children's developing beliefs about the appropriateness of disclosure: observing responses to disclosure in the classroom at these ages may be a key factor in whether children believe that mistakes are proof of inability, or an expected part of the learning process. Previous research has found that when students believe asking for help is proof of inability, they avoid this disclosure at the cost of their own achievement (Middleton & Midgley, 1997; Nadler, 1997; Ryan et al., 1997; Ryan & Pintrich, 1997). Future studies should examine the connection between young children's observation of nonsupportive responses to disclosure and their later achievement beliefs, and explore whether observing supportive responses to disclosure could be leveraged into a valuable adaptive learning intervention that encourages young children's later help-seeking behaviors.

In Chapter Two, two experiments tested several hypotheses for factors that may help to explain the observed decline in children's predictions of self-disclosure,

and addressed open questions about children's beliefs about disclosing other's performance. Experiment 3 explored two possible factors that may impact the decrease in children's expectations of disclosure; an age-related change in children's expectations of teasing in the classroom, and individuals' developing theory of mind abilities during this developmental window. However, theory of mind was not found to predict differences in children's beliefs about disclosure. Further, Experiment 3 found that children's expectations of teasing did not change with age (Figure 2.1), and that children did not expect peers to tease or even think badly of a protagonist who reveals failure to their class significantly more than chance. Thus while young children do appear to be sensitive to nonsupportive peer reactions to disclosure when they occur and change their predictions for disclosure accordingly, we did not find evidence that children's overall belief in the likelihood of this response is a significant factor in their decreasing predictions for performance disclosure. However, there are many ways to examine children's expectations of teasing response, and a stronger manipulation could find a relationship to the developmental decline in disclosure; further studies should examine other possible scenarios for children's expectations of nonsupportive responses. Children's decreasing predictions of disclosure could reflect their belief that people disclose less due to an overall awareness that performance information is considered private rather than a specific fear of negative retaliation from peers; future studies should investigate these possibilities.

Experiment 4 investigated children's beliefs about information-seeking in the classroom, examining the hypothesis that older children are more likely than younger children to believe that other people are simply not interested in their performance

disclosure, and that this belief underlies their lessened predictions of disclosure. In addition, Experiment 4 investigated children's beliefs about disclosing a peer's performance information, as it was unknown if children would expect similar levels for disclosure of personal versus another's performance information, as well as whether or not children would differentiate between a successful and failed performer in their predictions about offering help to a peer. This experiment found that children at all ages believed both successful and failed performers would actively seek out performance information from a peer (Figures 2.2 and 2.3), indicating that even though older children predict less self-disclosure *to* others, they also predict that people will want to know performance information *from* others. This suggests that the age-related decrease in self-disclosure predictions does not stem from children's belief that others are disinterested in finding out how others perform in the classroom, but instead hinges on older children's belief that self-disclosure may socially inappropriate.

Further evidence for older children's growing awareness of how disclosure may be socially inappropriate was found in children's beliefs in disclosing a *peer's* performance, which followed a similar age-related change as self-disclosure, with older children predicting decreased levels of disclosure compared to younger children (Figures 2.2 and 2.3). This suggests that children's growing sensitivity to the ramifications of performance disclosure are not solely driven by self-interest in concerns about how one's own competency is perceived or concern with reputation management, but extend to their understanding of what is socially acceptable to share even when the performance is not one's own. Further studies should examine these

age-related declines, as well as differences in children's reasoning about disclosing information about the self and information about others. Finally, all age groups were found to predict relatively high levels of help-giving from both the successful and the failed performer to a peer classmate, indicating that preschool and early school-aged children expect others to offer help to others, regardless of their own competency.

In Chapter Three, one experiment examined whether children believe that people are selective in their disclosure contingent on the performance of the information recipient. Experiment 5 revealed that children at all ages (3- to 6-years-old) predicted greater levels of failure disclosure to as well as asking for help from a high-achieving versus a low-achieving peer (Figure 3.1), suggesting that even as early as preschool, children expect that people will be more likely to reveal their failure to someone who can help them. Contrariwise, previous research has indicated that school-aged children prefer to valence-match in their choice of disclosure recipient, choosing to disclose to a similarly-achieving peer (Heyman et al., 2008). The results of Experiment 5 indicate that young children do not share this preference, and instead tend to use competency as their metric for performance disclosure; further studies should examine this difference between younger and older children.

Finally, Chapter Four describes two experiments that examined Chinese children's beliefs about disclosure, allowing some comparisons between US and Chinese children's understanding of performance disclosure and illuminating interesting cross-cultural differences and similarities in these beliefs. Experiments 6-7 investigated Chinese children's beliefs about self-disclosure, information-seeking, disclosure of a peer's performance information, and offering to help a peer classmate.

School-aged (6-7 and 9-11-years-old) Chinese children responded to a nonsupportive peer interaction by predicting less disclosure, indicating sensitivity to the negative repercussions of performance disclosure (Figures 4.1 and 4.2). However, the two age groups differed in their relative disclosure for success and failure: older Chinese children (ages 10-11-years) predict significantly more disclosure of failure than success compared with the younger age group (ages 6-7-years).

In Experiment 7, an age-related change indicated that older Chinese children predicted significantly more information-seeking by the successful peer, although no such result was found for the failed peer (Figures 4.3 and 4.4). Additionally, while all US children across the same age range predicted high levels of helping from both the successful and the failed peer in Experiment 4 (Figures 2.2 and 2.3), Experiment 7 found that Chinese children predicted significantly more help-giving from the successful peer, and in their qualitative responses, Chinese children most often referenced competency as their explanation for expecting the failed character to not offer help to the peer classmate.

Overall, these results answer several open questions about young children's beliefs about disclosure. Firstly, the preschool and early school years appear to be an important developmental time for beliefs about disclosure. Children as young as 3-years-old respond to a teasing interaction and believe that a person who viewed a nonsupportive response to disclosure would be less likely to disclose than a person who viewed a supportive response, and think that people are more likely to reveal success than failure. However, these experiments also find that young US children across all ages believed that people are interested in obtaining performance

information, and expect people to preferentially disclose to a higher-achieving peer even when they are disclosing failure, seemingly without fear of negative repercussions from this disclosure. One explanation for this discrepancy is that children in the very early school years are torn between their interest in obtaining information, and their growing awareness that performance disclosure is often unacceptable. However, by the early school years, children also believe that it is unacceptable to disclose either one's own or other people's information to others, appearing to recognize that disclosure is not always acceptable behavior.

Secondly, despite their growing sensitivities to limitations on disclosure, young children still appear more optimistic than older school-aged children and adolescents about the likelihood of performance disclosure, and appear to hold different beliefs about this disclosure. Preschool and early school-aged children's belief that people would selectively disclose failure to the high-achieving peer suggests that young children, unlike older children, do not yet expect the type of disclosure valence-matching that older children prefer, and do not appear to fear negative repercussions from disclosing performance to someone who is more competent; an age-related decline indicated that older children were less likely than younger children to reveal failure to the high-achieving peer, even though they still preferred this peer to the low-achieving peer. Across these same ages, children's expectations of teasing in response to disclosure also remain constant and are not significantly different from chance, unlike older school-aged children who tend to expect negative responses to failure disclosure (Heyman, Fu & Lee, 2008). Still, children's decreasing predictions of *peer* performance disclosure as well as self-

disclosure, provide further evidence that the ages of 3- to 6-years-old are a crucial developmental time for children's growing awareness of the complex social norms which govern performance disclosure.

Finally, these experiments find evidence for both similarities and differences between North American and Chinese children's beliefs about disclosure. Older (9- to 11-years-old) Chinese children's preferential disclosure of failure over success compared with younger children (6- to 7-years-old; Figure 4.1) could occur because Chinese children are less threatened by failure and are more likely to believe that mistakes are a normal part of learning more than US children do, a cultural difference that previous research has found between US and Chinese populations (C.-y. Chiu, Hong, & Dweck, 1997; Dweck et al., 1995). However, there are other possible interpretations for this difference; Chinese cultural emphasis on modesty, for instance, could lead children to believe that people will be more likely to disclose failure as a means of demonstrating the socially valued attribute of humility (L.-H. Chiu, 1992; Gee & Heyman, 2007; Heyman, Fu, & Lee, 2007; Stigler, Smith, & Mao, 1985). Further research should examine this difference more closely and explore these possibilities.

There is also some evidence that Chinese children believe that successful and failed performers will behave differently in offering help to peers. While US children (3- to 11-years-old) predicted similarly high levels of help-giving from both failed and successful performers (Figures 2.1 and 2.2), Chinese children at these same ages predicted that successful performers will be more likely to ask peers about *their* performance, and offer help to peers, compared with failed performers (Figures 5.1

and 5.2). This focus on the giver's competency was also reflected in Chinese children's qualitative explanations. Previous research has found that school-aged children in China were more likely to interpret success disclosure as an offer of help compared with US children, who interpreted such disclosure as bragging (Heyman et al., 2008). One possible explanation for children's expectations of help-giving in Experiment 7 is that Chinese children believe that successful performers have an obligation to help their peers that failed performers do not have, and future studies should investigate these beliefs.

The results presented in this dissertation are among the first to present an in-depth picture of children's beliefs about performance disclosure in the classroom, and some of the first studies to examine these questions across a large developmental range. While even very young children adapt and modify disclosure behavior in response to factors such as peer environment, preschool early school-aged children were found to hold differing beliefs about disclosure from older children and adolescents, and children appear to become increasingly sensitive to the ramifications of performance disclosure during the early school years. These studies also provide some of the first evidence for cross-cultural similarities and differences in young children's beliefs about disclosure for the US and China.

People make many choices about when, how, and who to disclose personal information to throughout their lives, and beliefs about whether and when disclosure is appropriate can have long-term consequences for peer relationships, evaluations of competency, seeking needed help, and maintaining social and academic reputations. This dissertation identifies key age-related changes in children's beliefs about

disclosure, and provides evidence that young children's beliefs about disclosure undergo crucial change during the preschool and early school-aged years, as well as points toward cultural differences in these beliefs. Understanding children's early beliefs about disclosure serves to not only broaden our understanding of young children's reasoning in the classroom, but deepen our awareness of the complex ramifications that people weigh when choosing whether or not to disclose information about themselves to others.

Table A: Summary of major age-related changes across all experiments.

	Age-related Changes	
	US	China
Disclosure of Failure	Decrease	Increase
Disclosure of Success	Decrease	Decrease
Expectations of Teasing	No	n/a
Information Seeking	No	Increase for successful
Disclosing Peer Performance	Decrease	Decrease
Helping a Peer	No	Increase for successful; decrease for failed

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