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IMPLICATIONS OF SOCIOECONOMIC STATUS ON PARENTAL INTERNAL STATE
LANGUAGE USE WITH CHILDREN

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ABSTRACT

The present study extends upon previous evidence for differences by socioeconomic status in the quantity and complexity of parent-child speech in order to examine how mothers and fathers differ across social strata in the internal state language they use in conversations with their young children. Gender differences in mothers' versus fathers' internal state language use were also explored. Sixty-two families (mother, father, and two siblings between the ages of 2 and 5) were observed discussing emotion-eliciting past events, and mothers and fathers completed questionnaires about their family demographics. Results indicated that socioeconomic status influenced parents' elaborative language explaining the causes and consequences of internal states differently for mothers and fathers. Specifically, as family income-to-needs ratio increased, mothers used less elaborative internal state language with their younger children while fathers used more. Neither family income-to-needs ratio nor parental education was associated with mothers' and fathers' simple references to or elaborative explanations of internal states. Mothers used more elaborative internal state language with their children than fathers in family conversations, but mothers and fathers did not differ in their use of simple internal state language. These results emphasize the need to examine the role of socioeconomic status in the internal state language mothers' *and* fathers' use within the family context.

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Chapter 1

Introduction

The ability to understand internal states such as emotions, needs, thoughts, and desires is important for understanding the perspectives and interpreting the behavior of others and facilitates children's ability to act and respond appropriately in social interactions. Family conversations that draw young children's attention to and discuss internal states offer opportunities for children to learn about internal states. Thus, parents' use of internal state language, which includes references to and explanations of the internal states of oneself and others, has been identified as a crucial component of children's social and emotional development (Bartsch & Estes, 1996; Harris, 1994). However, certain gaps in the literature have left unanswered questions about children's exposure to internal state language in the family context. The bulk of prior research has focused on mothers, while less is known about father-child discussions of internal states. Moreover, little is known about how family socioeconomic status (SES) influences mothers' and fathers' internal state language use.

Internal State Language

Past research suggests that parent-child conversations about internal states are associated with children's development of social-cognitive competencies and with the development of positive social skills that children can employ in their interactions with others. For example, mothers' talk about mental states has been found to predict children's developing theory of mind (Ruffman, Slade, & Crowe, 2002), the capacity to recognize that other's emotions, thoughts, beliefs, and desires may differ from one's own (see Wellman, 2002). Additionally, mothers' talk about emotions has been linked to children's ability to identify facial expressions and situations that are associated with particular emotions (Denham, Zoller, & Couchoud, 1994) and children's

affective perspective taking (Dunn, Brown, & Beardsall, 1991). Moreover, mothers' empathy language has been found to predict children's understanding of the antecedents and consequences of emotions (Garner, Jones, Gaddy, & Rennie, 1997). Research has consistently shown that these social-cognitive competencies are related to children's prosocial behavior (Denham, 1986; Dunn & Cutting, 1999; Iannotti, 1985) and to peer acceptance (Garner, 1996). Other studies have linked parent-child conversations about internal states directly to children's positive social skills. For instance, Fenning, Baker, and Juvonen (2011) found that children whose parents engaged them in more emotion discourse scored higher on parent- and teacher-reported social skills, an association that was mediated by children's use of prosocial problem-solving strategies in conflicts with peers.

Examining parent-child discussions of internal states with young children is particularly important, because early childhood is a crucial time period for social and emotional development. It is during the toddler years that children generally begin to demonstrate emotion understanding, with the first acquisition of feeling-state words occurring around 18-20 months (Bretherton et al., 1986) and the ability to discuss the internal states of themselves and others as well as the causes and consequences of internal states emerging by 28 months (Bretherton & Beeghly, 1982). Moreover, children's capacity to understand false belief generally appears between the ages of three and five, which involves understanding that people act on their own beliefs which can be based on misinformation and is an important milestone in developing theory of mind (Wellman, Cross, & Watson, 2001).

It is also during early childhood that children begin to prepare for formal education with the entrance to preschool around age three or four. A large body of research suggests that social-emotional skills are important to children's potential for academic success, and considering the

well-established influence of parents' internal state language on children's social and emotional development, parent-child discussion of internal states may have far-reaching implications for children's educational and later life outcomes. For example, one study found a link between children's school readiness and their ability to interpret and choose appropriate responses to social situations (Ziv, 2013). More broadly, studies have found that preschoolers with more positive peer interactions have better transitions to formal school settings and are more academically successful (Hampton & Fantuzzo, 2003; Ladd, Kochenderfer, & Coleman, 1996; Ladd & Price, 1987). On the other hand, children who are disliked by their peers have higher likelihoods of poor academic outcomes (DeRosier, Kupersmidt, & Patterson, 1994; Ladd & Coleman, 1997; Wasik, Wasik, & Frank, 1993). While no research directly measures the effects of parents' internal state language on children's academic competence, parent-child conversations about internal states warrant careful attention when considering the factors that support both social skills and school success. On this basis, the present study seeks to identify and understand the various ways in which parents discuss internal states with their children and the family characteristics associated with different approaches to discussing internal states.

Approaches to Discussing Internal States in Parent-Child Conversations

The use of internal state language in parent-child conversations can take many forms. For instance, parents can discuss a variety of different internal states, including emotions, thought processes, needs/wants, and physiological states (Brownell et al., 2013; Dunn, Bretherton, & Munn, 1987; Howe & Rinaldi, 2004; Jenkins, Turrell, Kogushi, Lollis, & Ross, 2003; LaBounty, et al., 2008; Roger, Rinaldi, & Howe, 2012). Past studies suggest that discussions about different types of internal states may not necessarily lead to the same child outcomes. For example, Brownell et al. (2013) found parent-child discussions of physiological

states and mental processes such as knowing and remembering to influence children's helping behavior, while parents' language about emotions influenced helping *and* sharing behavior. Findings such as this emphasize the importance of discussing various internal states with children and examining them separately in research.

Categorizing the different types of internal states parents discuss with their children is not the only way to examine possible differences in the ways parents use internal state language. In fact, past research suggests that there are some approaches to talking about internal states that may be more beneficial to children than others. One important distinction regards the content of the internal state language parents' use. Parents can merely mention internal states in conversations with their children, or they can elaborate upon the causes and consequences of those internal states. Past research suggests that the latter may be particularly important in promoting children's social development. Studies have demonstrated links between causal explanations of emotions and children's emotional role-taking ability (Dunn, Brown, & Beardsall, 1991), theory of mind development (Peterson & Slaughter, 2003), and social problem-solving skills (Fenning, Baker, & Juvonen, 2011). Additionally, Garner et al. (1997) found preschoolers' emotion knowledge to be significantly associated with mothers' causal explanations of emotion but not with mother's un-elaborated comments about emotion. These findings suggest that elaborative discussions of internal states provide children with a deeper understanding of internal states and the situations in which particular feelings commonly arise. According to Fivush (1989), more elaborative internal state language may also better help children learn appropriate responses to emotion-evoking events. Thus, previous research seems to indicate that is the quality of internal state language in parent-child conversations more so than the quantity that benefits children's social and emotional development. However, the factors that

influence parents' discussions of the causes and consequences of internal states with their children remain unclear. One important consideration in determining the family characteristics that render children more or less likely to be exposed to high quality parental internal state language is parent gender.

The Unique Influence of Fathers

Most prior research on parents' use of internal state language has focused on mother-child conversations. Studies that do include both parents suggest that fathers' use of internal state language with their children may be different than mothers' use both quantitatively and qualitatively. Some prior research suggests that mothers, in general, talk with their children about internal states more than fathers (Jenkins et al., 2003; LaBounty et al., 2008). Moreover, one study found interesting differences in the types of elaborative internal state language that mothers and fathers used to discuss the causes and consequences of internal states. Specifically, mothers used more elaborative language discussing emotions during mother-child conversations, while fathers used more elaborative language to discuss thoughts during father-child conversations. However, parents did not differ in their use of elaborative language discussing desires (LaBounty et al., 2008). The same study found fathers' internal state language use to be uncorrelated with mothers' use, at least when parent-child conversations occurred without the presence of the other parent, underscoring the likelihood that children are exposed to different internal state language with their fathers than with their mothers.

Past studies also suggest that fathers' discussions of internal states may uniquely contribute to child outcomes. For instance, LaBounty and colleagues (2008) found that mothers' emotion language and elaborative emotion language predicted children's current emotion understanding, while father's elaborative emotion and desire language predicted children's

present and later theory of mind. These findings suggest that emotion socialization through language may differ between mothers and fathers within the same family, indicating that solely measuring mothers' internal state language may not fully represent the language inputs that contribute to children's social and emotional development in two-parent families.

Mothers and fathers may also use different amounts of internal state language depending on their children's gender. Some researchers have found that mothers discuss emotions and their causes and consequences more often with daughters than with sons (Dunn, Bretherton, & Munn, 1987; Garner et al., 1997), although this finding is not supported in other studies (Jenkins et al., 2003). Additionally, in LaBounty et al. (2008), mothers discussed thoughts and desires more often with girls, while there was no difference in how much they discussed emotion with daughters versus sons. Interestingly, fathers did not differ in their discussions of internal states with boys versus girls in the same study.

Although limited, past research that includes both parents indicates that mothers and fathers do not discuss internal states with their children uniformly and that the effects of parental internal state language on children's social-emotional development are not identical for mothers and fathers. The significance of this is that studies including only mothers may not necessarily be generalizable enough to form conclusions about the internal state language children receive from other adults in the family. Therefore, to gain a more thorough understanding of the internal state language to which children in two-parent families are exposed, the present study investigates the ways parents talk to their children about internal states in conversations that include mothers *and* fathers.

While examining fathers as well as mothers provides a window into possible within-family differences in parental internal state language use, it does not tell us about much about

between-family differences. However, examining differences between families is critically important in order to identify the children who are more or less likely than others to be exposed to the internal state language that most supports children's social-emotional development. Therefore, the present study also investigates socioeconomic status (SES) as a family characteristic that may be associated with differences in parents' discussions of internal states with their children.

Implications of Socioeconomic Status

A large body of research suggests that parent-child talk differs as a function of family SES, such that, in general, higher-SES parents create richer language environments for their children than lower-SES parents (Hoff, 2003). For example, high-SES mothers, compared to low-SES mothers, tend to speak more to their children and respond to children's verbalizations more often (Hoff, Laursen, & Tardiff, 2002). High-SES mothers also tend to use a wider vocabulary and a more complex syntax when talking with their children, and they are more likely to talk with their children for the purpose of conversing together rather than to direct children's behavior (Hoff et al., 2002; Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002). Theories explaining these SES-related differences include differences in parental beliefs about talking to children (Heath, 1983) and differences in the time available for parent-child conversations due to work schedules and other stressors (Snow, Perlmann, & Nathan, 1987). However, the best-supported explanation is a more general difference in language use as a function of SES (Hoff, 2003). For instance, during conversations with the researchers in a study by Hoff-Ginsberg (1991), high-SES mothers spoke more often, produced longer utterances, and used a larger vocabulary. Thus, it seems that SES-related differences in the complexity, richness, and uses of

speech may manifest in SES-related discrepancies in the ways in which parents talk to their children.

The significance of SES-related differences in parent-child speech is apparent in the language development trajectories of children from different social strata. A large body of evidence has established that children from low-SES families demonstrate a slower rate of vocabulary growth compared to children from high-SES families (Arriaga, Fenson, Cronan, & Pethick, 1998; Dollaghan et al, 1999; Feldman et al., 2000; Hoff, 2004). Furthermore, one study found that differences in two-year-olds' vocabulary growth by SES were fully mediated by SES-related differences in the properties of mother-child speech. Given the strong impact of SES-related differences in general parent-child speech, it is possible that these differences may also extend to differences in parental internal state language that have significant implications for children's social-emotional development.

The Present Study

On the basis that lower-SES parents' child-directed speech is less abundant, less complex, and less conversational, the logical assumption follows that the pattern may be similar for parents' use of internal state language. In other words, because general parent-child talk differs by social class, the internal state language that parents include in conversations with their children may also differ by SES in quantity, richness, and purpose. However, despite the many studies that investigate SES-related differences in parents' general speech and children's overall language development, little is known about how parents of different social strata discuss internal states with their children. The current study sought to examine possible SES-related differences in parent-child conversations about internal states and ultimately provide a deeper understanding of the role of SES in parental use of internal state language. Specifically, this

study aimed to test two hypotheses. (1) Compared to higher-SES parents, it was expected that lower-SES parents would use less internal state language in conversations with their children overall. (2) Additionally, it was expected that lower-SES parents would use more simple internal state language than higher-SES parents and less elaborative language discussing the causes and consequences of internal states.

Furthermore, the current study aimed to explore possible differences between mothers' and fathers' use of simple and elaborative internal state language in family conversations. It was expected that the results would be consistent with prior research such that mothers would use more simple and elaborative internal state language with their children than fathers. Hypotheses about parents' use of internal state language with sons versus daughters remained exploratory, as past studies about this association are inconclusive. Ultimately, this study sought to provide a deeper understanding of the various family characteristics that may predict parents' likelihood of using elaborative internal state language that fosters children's social-emotional development.

Chapter 2

Methods

Participants

Mothers, fathers, and their two young children (family $N = 70$) participated in a study that examined family processes and children's social and emotional development. Participants were recruited through birth announcements, flyers posted at local businesses, and a database of local families interested in research. To participate, parents had to be married or cohabitating and have two biological children between the ages of 2 and 5. Because of missing internal state language data for some families, 8 of them were excluded from the current investigation; therefore, 62 families were included in the present study. Mothers were, on average, 32.52 years old ($SD = 3.83$ years) and 56.5% were employed. Fathers were, on average, 34.93 years old ($SD = 4.26$ years) and 95.2% were employed. The median family income was \$83,387 ($SD = \$57,315$, $Range = \$10,000$ - $\$250,000$). Regarding fathers' education, 29.0% had more than a bachelor's degree, 30.6% had a bachelor's degree, 24.2% had some college, and 16.1% had a high school diploma or less. Among mothers, 33.9% had more than a bachelor's degree, 25.8% had a bachelor's degree, 29.0% had some college, and 11.3% had a high school diploma or less. The average household size was 5 family members ($SD = 1.13$, $Range = 4$ to 8). The sample was predominantly White (fathers: 93.5%; 4.8% Hispanic/Latino, and 1.6% other; mothers: 90.3% White; 8.1% Hispanic/Latino, and 1.6% Asian American). The average age of the older and younger children was 57.69 months ($SD = 7.22$ months) and 32.46 months ($SD = 7.3$ months), respectively. Sibling dyads included 16 girl/girl dyads, 18 boy/boy dyads, 11 older boy/younger girl dyads, and 17 older girl/younger boy dyads.

Procedures

Families participated in a 2.5 hour laboratory visit including several interaction tasks designed to elicit a range of emotional and behavioral reactions. The tasks took place in an observational room that was furnished with living room furniture and children's toys. Each task was videotaped using three cameras installed in the top corners of the room. Video files were retained for behavioral coding. During the visit, parents also worked on questionnaires, and any unfinished questionnaires were sent home to complete and return. The university's Institutional Review Board approved this project. The current study uses parent-report demographic data as well as observational data from the family reminiscing task.

Family Reminiscing Task. Towards the middle of the visit, all four family members sat on the couch together for the family reminiscing task ($M = 4.8$ minutes, $Range = 2$ minutes – 8.9 minutes). For this task, the parents were instructed to talk with their children about a positive emotion event and a negative emotion event that the family had experienced together between one week and 3-months prior to the visit. Parents were instructed to discuss these events with their children as they usually would and were allowed to talk about the events in any order and for as long as they wanted.

Measures

Internal State Language. Each family's dialogue was transcribed verbatim from video recordings, and the transcripts were coded for several dimensions of parents' internal state language based on prior research (Brownell et al., 2013; LaBounty, Wellman, & Olson, 2008; Garner et al., 1997). Four basic categories of internal state language were identified: (1) emotions (e.g. happy, sad, angry, scared), (2) desires (e.g. want, need, like, hope), (3) thoughts (e.g. remember, think, know, wonder) and (4) physiological states (e.g. hungry, tired, cold, hurt). Additionally, parents' attempts to evoke empathy or sympathy in the discussions were coded.

Two further distinctions were made. First, parents' simple labeling of internal states was distinguished from their elaboration upon the causes and consequences of internal states. Elaboration statements provide context for the internal state by explaining why a particular internal state occurred and/or what happened as a result of the internal state (Garner et al., 1997; Martin & Green, 2005; Brownell et al., 2013). Second, parents' production of internal state language was distinguished from their elicitation of children's responses to internal state language. Elicitation statements prompt children to actively participate in the discussion of internal states, placing a greater demand of understanding on the children (Martin & Green, 2005; Brownell et al., 2013). Parental prompting of child responses was coded as an elicitation statement regardless of whether the children actually responded to the parents' requests.

Therefore, each transcript was coded for the following: total number of conversation turns (defined as parents' utterances bound by the utterances of other speakers), emotion talk (simple vs. elaborated and produced vs. elicited), desire talk (simple vs. elaborated and produced vs. elicited), thought talk (simple vs. elaborated and produced vs. elicited), physiological state talk (simple vs. elaborated and produced vs. elicited), and empathy. Each code was labeled as being directed to the older sibling, to the younger sibling, or to both children. Additionally, each transcript was coded twice: once for the mother and once for the father. Reliability was established on 10% of the transcripts; proportion of agreement overall .84 for emotion codes, .87 for desire codes, .88 for thought codes, and .57 for physiological codes. Reliability could not be established for empathy statements due the fact that they occurred very infrequently; therefore, these they were not used in the present analyses.

Two composite variables were created for the current study: total simple internal state language (sum of simple emotion, desire, thought, and physiological statements) and total

elaborative internal state language (sum of elaborative emotion, desire, thought, and physiological statements). The two summed variables were generated for each parent-child dyad (mother-older sibling, mother-younger sibling, father-older sibling, father- younger sibling). Additionally, all internal state language variables were converted to proportions of each parent's total conversation turns, defined as utterances bounded by the speech of other family members, to control for the different lengths of each family's conversation and for the amount of time each parent contributed to the discussion.

Socioeconomic Status. Two measures were used to determine each family's socioeconomic status: parental education and income-to-needs ratio. On demographic questionnaires, each parent indicated their highest level of educational attainment as well as an estimate of their annual income. Education attainment was reported on a 1 to 4 scale in which 1 = *less than high school or high school*, 2 = *some college*, 3 = *B.A. or B.S.*, and 4 = *more than a B.A. or B.S.* Annual income was reported on a \$10,000 increment scale ranging from less than \$10,000 to more than \$150,000. The mid-points of mothers' and fathers' income ranges were summed to create a total family income measure. Then, to calculate family income-to-needs ratio, total family income was divided by the United States Federal Poverty Threshold (FPT) for the given year and family size. This calculation resulted in a continuous variable in which a score less than .5 = *extreme poverty*, a score less than or equal to 1 = *poor*, a score between 1 and 2 = *low-income*, a score between 2 and 4 = *adequate income*, and a score greater than 4 = *affluent* (Diemer, Mistry, Wadsworth, Lopez, & Reimers, 2013).

Chapter 3

Results

Preliminary analyses are presented first, including descriptive statistics and correlations. Then, analyses conducted to determine covariates for the multilevel models are reported. Finally, the results of the multilevel models are presented.

Preliminary Analyses

Descriptive Statistics and Correlations. Descriptive statistics are presented in Table 1. Correlations are presented in Table 2. For both parents, family income-to-needs ratio was not correlated with simple or elaborative internal state language with either the older or younger sibling. Additionally, neither mothers' nor fathers' education were correlated with simple or elaborative internal state language to the older or younger sibling. For both parents, family income-to-needs ratio and education were moderately positively correlated.

Mothers' simple internal state language to older siblings was positively correlated with mothers' elaborative internal state language to older siblings. Similarly, mothers' simple internal state language to younger siblings was positively correlated with mothers' elaborative internal state language to younger siblings.

Fathers' simple internal state language to older siblings was also positively correlated with fathers' elaborative internal state language to older siblings, but this association was not as strong as the correlation observed with mothers' simple and elaborative internal state language to older siblings. While mothers' simple and elaborative language to younger siblings was correlated, this relationship was not apparent with fathers.

Interdependence between mothers' and fathers' internal state language. Mothers' and fathers' education were moderately positively correlated with each other. No

interdependence was found for mothers' and fathers' use of simple and elaborative internal state language with either older or younger siblings.

Child sex differences in parental internal state language. To determine mean level differences in the internal state language parents used with sons versus daughters, independent samples *t* tests were conducted. Results from independent samples *t* tests indicated that mothers' simple internal state language to older sibling boys and girls ($M_{\text{male}} = .231, M_{\text{female}} = .20, t(60) = 1.051, p = .298$) did not differ significantly. Additionally, mothers' elaborative internal state language to older sibling boys and girls ($M_{\text{male}} = .053, M_{\text{female}} = .043, t(60) = .837, p = .406$) did not differ significantly. Furthermore, fathers' simple internal state language to older sibling boys and girls ($M_{\text{male}} = .211, M_{\text{female}} = .188, t(60) = .706, p = .483$) did not differ significantly. Finally, fathers' elaborative internal state language to older sibling boys and girls ($M_{\text{male}} = .033, M_{\text{female}} = .024, t(60) = .914, p = .364$) did not differ significantly. Regarding parents' internal state language with younger siblings, mothers' simple internal state language with younger sibling boys and girls ($M_{\text{male}} = .154, M_{\text{female}} = .189, t(60) = -1.165, p = .249$) did not differ significantly. Additionally, mothers' elaborative internal state language with younger sibling boys and girls ($M_{\text{male}} = .026, M_{\text{female}} = .034, t(60) = -.865, p = .390$) did not differ significantly. Fathers' simple internal state language with young sibling boys and girls ($M_{\text{male}} = .139, M_{\text{female}} = .187, t(60) = -1.800, p = .077$) differed marginally, such that fathers' used more simple internal state language with younger daughters than with younger sons. Finally, fathers' elaborative internal state language to younger boys and girls ($M_{\text{male}} = .010, M_{\text{female}} = .018, t(60) = -1.257, p = .214$) did not differ significantly.

Differences in parental internal state language with older and younger siblings. To examine whether there were differences in parents' internal state language use with their older

versus younger children within the same family, paired sample t tests were conducted. The results indicated that mothers' simple internal state language to older siblings and younger siblings ($M_{os} = .216$, $M_{ys} = .169$, $t(61) = 2.49$, $p = .016$) differed significantly, such that mothers' used more simple internal state language with older siblings than with younger siblings. Mothers' elaborative internal state language to older siblings and younger siblings ($M_{os} = .048$, $M_{ys} = .029$, $t(61) = 2.744$, $p = .008$) also differed significantly, such that mothers' used more elaborative internal state language with older siblings than with younger siblings. Fathers' simple internal state language to the older sibling and the younger sibling ($M_{os} = .198$, $M_{ys} = .160$, $t(61) = 1.849$, $p = .069$) differed marginally, such that fathers' used more simple internal state language with older siblings than with younger siblings, although there was more variability across the sample in this measure. Finally, fathers' elaborative internal state language to the older sibling and the younger sibling ($M_{os} = .028$, $M_{ys} = .014$, $t(61) = 2.71$, $p = .009$) differed significantly, such that fathers' used more elaborative internal state language with older siblings than with younger siblings.

Covariates. To determine the covariates that needed to be included in the multilevel models, correlations were explored between parents' simple and elaborative internal state language and family demographic characteristics. Age difference between siblings, older siblings' age, younger siblings' age, fathers' age, and older siblings' sex were not associated with mothers' or fathers' simple and elaborative internal state language to either older siblings or younger siblings. Mothers' age was negatively correlated with fathers' simple internal state language to younger siblings ($r = -.262$, $p = .04$) and marginally positively correlated with fathers' elaborative internal state language to older siblings ($r = .229$, $p = .074$). Additionally, younger siblings' gender was marginally positively correlated with fathers' simple internal state

language to younger siblings ($r = .226, p = .077$), such that fathers used more simple internal state language with younger daughters than with younger sons. Furthermore, younger siblings' birth order ($r = -.275, p = .035$) and the number of children in the family ($r = -.296, p = .022$) were both negatively associated with father's elaborative internal state language to younger siblings. Finally, mothers' race ($r = -.29, p = .022$) was negatively associated with mothers' simple internal state language to older siblings, such that non-Caucasian mothers used more simple internal state language with older siblings than Caucasian mothers. However, the sample of non-Caucasian mothers in this study was very small (9.7%). Given these associations, parents' race (Caucasian vs. non-Caucasian) was included in the older sibling simple internal state language model and younger siblings' birth order and the number of children in the family were included in the younger sibling elaborative internal state language model.

Correlates of parents' internal state language

To investigate whether family income-to-needs ratio and parents' education were associated with parents' simple and elaborative internal state language use with their children, multilevel models were conducted using the mixed data procedure in SPSS 22. Multilevel modeling accounted for the nested structure of the data, specifically parents within families. This accounted for the interdependence between mothers' and fathers' internal state language. Models were estimated with restricted maximum likelihood (REML), because it produces less biased estimates and standard errors with small sample sizes (Snijders & Bosker, 2012). Data were treated as repeated within the dyad, and heterogeneous compound symmetry was used to allow the error to vary between mothers and fathers (Kenny, Kashy, & Cook, 2006). Parent gender, the distinguishing variable, was effect coded (Father = 1; Mother = -1). Continuous predictor variables were grand mean centered. To examine whether the association between

parents' education and family income-to-needs ratio differed for mothers and fathers, interaction terms were created by multiplying mothers' and fathers' SES variables by parent gender (Aiken & West, 1991). When the interactions with parent gender were significant, follow-up multilevel models using a two-intercept approach were conducted to test whether the simple slopes for mothers and fathers were significantly different from zero (Cook & Kenny, 2005).

Separate models were conducted predicting parents' simple and elaborative internal state language for both older siblings and younger siblings, resulting in a total of four models. Models were fit that included mothers' and fathers' education, family income-to-needs ratio and the relevant covariates.

Differences in mothers' and fathers' internal state language. The main effect of parent gender was included in all models to explore mean level differences between mothers' and fathers' simple and elaborative internal state language to older and younger siblings. In the older sibling simple internal state language model, mothers' and fathers' simple internal state language to older siblings did not differ significantly. Mothers' and fathers' simple internal state language to younger siblings also did not differ significantly. In the older sibling elaborative internal state language model, there was a significant main effect, such that mothers' used more elaborative internal state language than fathers with older siblings. In the younger sibling elaborative internal state language model, there was also a significant main effect, such that mothers' used more elaborative internal state language than fathers with younger siblings.

Socioeconomic status and parents' internal state language. The results indicated that parent education was not associated with mothers' and fathers' simple internal state language to older siblings. Family income-to-needs ratio was also not associated with parents' simple internal state language to older siblings. Additionally, the interaction between parent gender and

parent education was non-significant for parents' simple internal state language to older siblings. No significant interactions with parent gender and family income-to-needs ratio emerged for parents' simple internal state language to older siblings.

In the model predicting parents' simple internal state language to younger children, neither parent education nor family income-to-needs ratio was associated with mothers' and fathers' simple internal state language to younger siblings. The interaction between gender and parent education was also non-significant for parents' simple internal state language to younger siblings. Additionally, there were no significant interactions with parent gender and family income-to-needs ratio for parents' simple internal state language to younger siblings.

In the model predicting parents' elaborative internal state language to older children, parent education and family income-to-needs ratio were not associated with mothers' and fathers' elaborative internal state language to older siblings. The interaction between gender and parent education was also non-significant for parents' elaborative internal state language to older siblings. Finally, no significant interactions emerged with parent gender and family income-to-needs ratio for parents' elaborative internal state language to older siblings.

In the model predicting parents' elaborative internal state language to younger siblings, parent education and family income-to-needs ratio were not associated with mothers' and fathers' elaborative internal state language to younger siblings. The interaction between gender and parent education was also non-significant for parents' elaborative internal state language with younger siblings. The interaction between parent gender and family income-to-needs ratio was marginally significant for parents' elaborative internal state language to younger siblings. This interaction indicates that the association between family income-to-needs ratio and elaborative internal state language to younger siblings differs for mothers and fathers. On the

basis that the power to detect interactions in non-experimental studies is low, we tested the simple slopes and plotted this interaction (McClelland & Judd, 1993). The simple slope for mothers ($b = -.002$, $SE = .002$, $p = .31$) was not significantly different from zero, although the pattern of the effect suggested that mothers' used more elaborative internal state language with younger siblings as family income-to-needs ratio decreased. The simple slope for fathers ($b = .002$, $SE = .001$, $p = .11$) was also not significantly different from zero, although the pattern of the effect indicated that fathers' used more elaborative internal state language with younger siblings as family income-to-needs ratio increased.

Chapter 4

Discussion

When parents talk to their young children about internal states, it fosters children's understanding of the feeling states that affect the behavior of themselves and others and supports children's development of prosocial behavior (Denham, Zoller, & Couchoud, 1994; Fenning, Baker, & Juvonen, 2011). Past research suggests that parents' elaborative explanations about the causes and consequences of internal states may encourage children's understanding of emotions beyond parents' simple references to internal states in parent-child conversations (Garner et al., 1997). However, despite evidence for SES-related differences in the richness and complexity of parent-child speech (Hoff, 2003), little is known about the effects of family SES on parents' likelihood of using elaborative internal state language in conversations with their young children. Furthermore, few studies examine both mothers' *and* fathers' use of internal state language with their children, and none investigate the influence of SES on parental internal state language for mothers versus fathers. The current study examined parental use of simple and elaborative internal state language with young children and its association with family SES, and it also explored differences by parent gender in simple and elaborative internal state language use with children. Overall, mothers used more elaborative internal state language than fathers, although parents did not differ in their use of simple internal state language. Family SES did not predict parents' use of simple or elaborative internal state language, although the results indicated that family income-to-needs ratio may influence parents' elaborative internal state language use with younger siblings differently for mothers than for fathers. These results reinforce the need to examine associations between SES and parental internal state language within the family context using a large, diverse sample.

Parental internal state language with girls and boys. The current study found that fathers with younger girls use a marginally significant greater proportion of simple internal state language with younger children than fathers with younger boys. No other significant differences between mothers' and fathers' use of simple and elaborative internal state language with sons versus daughters were found. Prior research on child gender differences in parental internal state language is inconclusive. The current findings are consistent with some past studies that found that both mothers and fathers (Jenkins et al., 2003; LaBounty et al., 2008) and mothers alone (Dunn, Brown, & Beardsall, 1991) use similar amounts of internal state language with daughters and sons. However, these findings are not consistent with other studies that have found that mothers use more feeling state language (Dunn, Bretherton, & Munn, 1987) and elaborative emotion language (Garner et al., 1997) with girls than with boys. Fathers were not examined in either of these studies. One study of both mothers' and fathers' conversations with their children during a book reading task found that parents' used more internal state language with sons than with daughters (Roger, Rinaldi, & Howe, 2012). Because of the variability of past findings, it is difficult to draw conclusions from the current study on child gender differences in parental use of internal state language.

It is important to note that wide methodological variations between prior studies may contribute to the inconsistency of past findings about child sex differences in parental internal state language use. Previous studies differ greatly in the aspect of internal state language that they focused on; for example, some researchers have distinguished between unelaborated and elaborated comments about emotions as did the current study (Garner et al., 1997; LaBounty et al., 2008), while other studies did not (Dunn, Bretherton, & Munn, 1987; Jenkins et al., 2003). Furthermore, some studies examined only emotion language (Garner et al., 1997), while others

included other categories of internal state language such as desire, thought, and physiological references (Dunn, Bretherton, & Munn, 1987; LaBounty et al., 2008; Jenkins et al., 2003). In other words, it is difficult to compare these findings and examine them with the current results, because the different ways of measuring parental internal state language in the literature may influence the data about parents' talk with daughters versus sons. Additionally, because many past studies examine only mothers' internal state language use (Dunn, Bretherton, & Munn, 1987; Dunn, Brown, & Beardsall, 1991; Garner et al., 1997), it is not clear that these prior findings can be generalized as we start to also consider fathers' internal state talk. Thus, the current results underscore the need to replicate studies of child gender differences in parental internal state language in studies that assess consistent aspects of internal state language and more importantly include both mothers and fathers.

Parental internal state language with older and younger children. The present study is unique in that it examined family conversations about emotional events involving two parents and two children. The results indicated significant differences between mothers' simple and elaborative and fathers' elaborative internal state language with older versus younger siblings, such that mothers used more simple and elaborative internal state language with older siblings and fathers used more simple internal state language with older siblings. Additionally, the difference between fathers' elaborative internal state language with older versus younger children was marginally significant in the same direction. These findings suggest that both mothers and fathers direct more internal state language to older siblings and less internal state language to younger siblings when both children are present during family conversations. One interpretation of this finding is that because older children tend to have more developed language abilities than their younger siblings, they may elicit more child-directed talk from their parents

by listening more closely, engaging in the conversation more actively, and demonstrating a better understanding of conversation topics. In the current study, it was fairly common for younger children to leave the family conversation and play by themselves while parents continued to talk to the older sibling or to sit with the family but not contribute to the conversation much at all. It is important to note that because the current study was not longitudinal, I could not assess whether parents use more internal state language with younger children as they age and develop more advanced language abilities.

In the current study, internal state language directed toward a specific child was coded under the assumption that the internal state language that is important for children's development is the parental speech directed specifically at them. However, in interpreting the finding that parents use larger proportions of simple and elaborative internal state language with older versus younger children, it is important to consider whether this is in fact the case. This raises the question as to whether younger siblings listen to and benefit from the internal state language parents direct to older siblings when both siblings are in the same room. Other studies, unlike the current study, have measured the parental internal state language that younger children receive as encompassing speech directed to either sibling when both siblings are present under the alternative assumption that younger children are still exposed to parents' talk with older siblings even when the speech is not specifically directed at them (Jenkins et al., 2003). To shed further light on the dynamics of children's exposure to internal state language within the family context, future research is needed to examine whether younger siblings listen to parents' talk with older siblings, to investigate the effects of passive exposure to internal state language on younger siblings, and to study parental internal state language with older and younger siblings over time.

Mothers' and fathers' internal state language use. One aim of the current study was to explore possible differences between mothers' and fathers' use of simple and elaborative internal state language with their children in family conversations. As noted previously, this study is unique in that it examined family discussions. The results indicated that mothers used significantly more elaborative internal state language with both older and younger children than fathers, but mothers and fathers did not differ significantly in their use of simple internal state language with older or younger children.

This finding is consistent with the study conducted by LaBounty et al. (2008), in which mothers used more emotion language and causal emotion language than fathers during a parent-child book-reading task. Furthermore, LaBounty and colleagues found that differences between mothers' and fathers' emotion talk emerged when mothers' and fathers' discussed picture books with their children separately. The current finding extends upon this past study, suggesting that mothers' continue to use more elaborative language than fathers' even when both parents are involved in the same conversation.

While the current study found no differences between mothers' and fathers' simple internal state language, this may have been due to the aggregation of parents' emotion, desire, thought, and physiological state language into two variables representing simple or elaborative statements. On the basis of the LaBounty et al. (2008) findings that mothers used more simple emotion language than fathers, it is possible that a similar pattern would have emerged in the current study had parents' statements about different types of internal states been analyzed separately. Such a pattern would be consistent with previous research suggesting that mothers use more emotion-based language than fathers in general (Kornhaber & Marcos, 2000, Kuebli, Butler, & Fivush, 1995; Leaper et al., 1998). However, the frequency of parents' use of some

categories of internal state language was very low in this study, precluding the ability to explore differences in the specific categories of internal state language in the current investigation.

Socioeconomic status and parents' internal state language. The primary aim of this study was to determine if general SES-related differences in parent-child speech extend to differences in parental internal state language to young children. It was hypothesized that (1) higher-SES parents would use more internal state language with their children in general than lower-SES parents and that (2) higher-SES parents would use more elaborative statements explaining the causes and consequences of internal states than lower-SES parents. Contrary to the study's hypotheses, neither parental education nor family income-to-needs ratio was significantly associated with parents' simple or elaborative internal state language in conversations with their children. However, the current study did find an unexpected marginally significant interaction between family income-to-needs ratio and parent gender, which suggested that fathers' elaborative internal state language to their younger child increases with increasing family income-to-needs ratio, while mothers' elaborative internal state language to their younger child decreases with increasing family income-to-needs ratio.

This interaction effect between family income-to-needs ratio and parent gender on parents' elaborative internal state language to younger siblings is surprising, considering that past studies have found a significant positive correlation between family SES and properties of mothers' general child-directed speech (Hoff et al., 2002; Hoff, 2003). It is not immediately clear why this association occurred. However, one interpretation of these findings involves the complexity of the speech parents across different social strata use to explain internal states to their young children as well as mothers' versus fathers' awareness of their young children's language abilities. Specifically, it is possible that higher-SES mothers may use more complex

language to explain the causes and consequences of internal states than lower-SES mothers, making it difficult for very young children of higher-SES families to understand and respond to their mothers' elaborative statements. Thus, if mothers are more likely than fathers to take into account the still nascent conversation capacities of their younger children, then higher-SES mothers may refrain from using their typical complex elaborative statements when they are speaking with very young children who may not comprehend the speech. Lower-SES mothers, on the other hand, may generally use more basic language to explain the causes and consequences of internal states that is easier for very young children to understand, making it less necessary for lower-SES mothers to restrain from using elaborative internal state language with their younger children. However, because the complexity of parents' elaborative internal state language was not measured in the current study, this possibility could not be examined.

Another potential explanation for these unexpected findings is that because family income-to-needs ratio sums mothers' and fathers' incomes before dividing the total by the Federal Poverty Threshold for the given year and family size, this variable may reflect fathers' income more so than mothers' as only slightly more than half of the current sample of mothers was employed (56.5%) compared to almost all of the current sample of fathers (95.2%). Furthermore, in families in which fathers hold high-salary jobs with very demanding schedules, it may necessitate that mothers refrain from working to stay home with their children in some cases. Thus, as family income-to-needs ratio increases, this could reflect a positive change in fathers' social status but a negative change in mothers' status for some families, producing the bidirectional interaction between family income-to-needs ratio and parent gender. However, because within-family associations between mothers' and fathers' incomes were not measured in the current study, this explanation could not be tested.

The current finding that neither family income-to-needs ratio nor parental education was significantly associated with parents' simple and elaborative internal state language was also surprising, considering the literature that has generally shown the child-directed speech of lower-SES parents to be less abundant, less complex, and less rich than that of higher-SES parents (Hoff, 2003; Hoff, Laursen, & Tardiff, 2002). One possible interpretation of these results is that lower-SES families do generally elaborate upon the causes and consequences of internal states in family conversations, but they do so in a more straightforward and less descriptive way than higher-SES families. If this is the case, it is possible that there is an association with SES and parents' elaborative internal state language that the current study was unable to detect. This study's coding scheme was limited in that parents' statements were coded as elaborative if there was any explanation of the causes or consequences of internal states, while the complexity of the elaborative statements was not evaluated. Thus, for example, an elaborative statement such as "*We all felt sad when the lamp broke*" would receive the same code as a more descriptive explanation like "*It made us so sad when the lamp fell off the table and shattered, especially because it used to be Grandma's lamp!*" The latter statement surely provides more details for understanding the internal state in question and the context in which it occurred, and it uses a more sophisticated syntax and a wider vocabulary. However, the current coding scheme would not detect this difference. Future studies that distinguish between mean lengths of parents' utterances could shed light on the possible differences in complexity between lower- and higher-SES parents' explanations of the causes and consequences of internal states.

Another explanation is that it is not the content of parents' internal state language that differs across SES so much as the function of parents' internal state language in conversations with their children. For instance, telling children about internal states serves a different function

in parent-child discussions than asking questions about internal states to prompt children's active participation in conversation. One study by Brownell et al. (2013) found individual differences in parents' proportions of production versus elicitation statements of internal state language in parent-child conversations, although SES was a controlled variable in this analysis. The researchers proposed that parents' elicitation of child responses about internal states generates children's interest in and motivation to attend to the internal states of themselves and others more than parents' production of internal state language alone. Furthermore, research on general SES-related language differences in parent-child speech suggests that higher-SES mothers are more likely to talk with their children for the purpose of conversing together rather than to direct children's behavior (Hoff, 2003). Thus, it is possible that lower-SES parents use more direct, non-eliciting internal state language with their children than higher-SES parents. Future research exploring parents' production and elicitation statements is needed before drawing conclusions regarding the link between SES and internal state language.

Another potential reason for the few associations found between SES and parents' internal state language in this study is that parents' internal state language in a laboratory setting does not represent the range of parents' internal state language in naturalistic settings. Previous evidence suggests that lower-SES parents may engage their children in less conversation because work schedules and other stressors leave little available time for parent-child discussions (Snow, Perlmann, & Nathan, 1987). Therefore, it could be that lower- and higher-SES parents use similar proportions of simple and elaborative internal state language when placed in a controlled laboratory setting and instructed to talk to their children about past events, but that lower-SES parents use less internal state language with their children as they go about their day-to-day lives. In other words, the types of focused family conversations observed in the current study might

occur less frequently in lower-SES households than in higher-SES households. Future studies of parents' simple and elaborative internal state language during the course of their daily lives could shed light on this possibility.

It is also probable that the methodological decision in the current study to calculate proportion scores of parents' internal state language to overall conversation turns masked a real and meaningful difference across families in the amount of internal state language parents direct to their children. Families in the current sample varied widely in the length of time they spent discussing internal states, and some parents' interactions with their children lasted longer as a result. Additionally, past research suggests that higher-SES mothers tend to speak to their children and respond to their children's verbalizations more often than lower-SES mothers (Hoff, Laursen, & Tardiff, 2002). If these differences in parents' volubility in general child-directed speech extend to differences in the amount of time they spend discussing internal states, then children of lower-SES families may receive less parental internal state language than children of higher-SES families despite similar proportion scores of internal state talk to general talk across the sample. Researchers in past studies have chosen not to correct for differences in conversation durations between families for this reason (see Hoff, 2003). Replication of the current study using frequency rather than proportion scores of parental internal state language is needed to explore this possibility.

A final explanation for the few associations between SES and parents' internal state language involves the limited range of SES in the current sample. The vast majority of participants in the sample fell within a moderate-to-high income range based on family income-to-needs ratio (21.0% low income, 46.8% adequate income, 22.6% affluent), while only a small portion of the sample scored very low on this measure of SES (6.5% poor, 3.2% extreme

poverty). It is possible that the most prominent differences in parental-child talk about internal states occur between families who are extremely poor and families who are not. If this is the case, the internal state language of parents with varying but still moderate incomes would not necessarily be expected to differ significantly. In other words, SES may influence parental internal state language when distinguishing between impoverished families and families who are not extremely poor, but the effects of SES may not matter after a certain level of income. Because of the lack of families in the current sample at the very low family income-to-needs ratio range, this study was unable to detect such a pattern. This possibility underscores the need for future studies of the relationship between SES and parents' simple and elaborative internal state language with a larger and more diverse participant sample.

Limitations

Several elements of the current study limit its scope and require further examination. First, the participant sample was fairly small and relatively homogenous. While some variability in family SES was present, few families had income-to-needs ratios denoting that they were poor or in extreme poverty. The sample was also largely Caucasian. Thus, results of this study should be interpreted given these limitations, as it is possible that the lack of diversity across the sample and the sample size contributed to the current findings. Replication of the current study with a larger, more representative sample is needed to clarify the associations between SES and parental internal state language.

Second, the current study relied on family conversations that parents were instructed to conduct with their children in a laboratory setting. Parents were told to discuss a positive emotion-eliciting event and a negative emotion-eliciting event the family had experienced together; however, not all families may naturally choose such conversation topics on a regular

basis. Furthermore, the flow of the laboratory conversations was fairly atypical, as parents had to abruptly switch between discussing the positive and negative events part-way through the discussion. Therefore, the current study may not necessarily be generalizable to the everyday impromptu conversations families have together in more naturalistic settings.

Third, because the current study was cross-sectional, inferences about parents' internal state language to their children over time were not possible. Some children in the sample were very young, just barely having reached their second birthday and participating in family conversations at a very basic level. Longitudinal studies that measure parents' internal state language over time as children age and acquire more advanced language abilities could be an important supplement to the current study.

Finally, family conversations are shared activities to which all members contribute. However, the current investigation only examined parents' input to the discussions. Families in the study varied widely in the extent to which children appeared interested and engaged in conversations as well as in children's linguistic abilities. An important next direction for future research is to investigate children's input during family conversations as well to determine the extent to which parents' internal state language is influenced by children's language capacity, attention, and self-regulation, among other factors.

Conclusion

The current findings provide new insight into the dynamics of parents' internal state language use within the context of family conversations about past events, suggesting that multiple factors may influence parents' likelihood of elaborating upon the causes and consequences of internal states versus simply referencing internal states. The data indicates that mothers and fathers may use differential amounts of elaborative language with their children,

that fathers of younger daughters may use more simple internal state language than fathers of younger sons, and that both parents may use more simple and elaborative internal state language with older children than with younger children. These findings emphasize the importance of including both parents and multiple siblings in studies of internal state language. With regards to family SES, the data was unanticipated. However, the finding that family income-to-needs ratio may influence parents' use of elaborative internal state language with younger children differently for mothers' and fathers' affirms the need for future research that examines associations between SES and internal state language within a family context, despite the few associations found between parental education or family income-to-needs ratio and parents' internal state language in the current analysis. Overall, the current study reinforces the need for further investigations of mothers' and fathers' simple and elaborative internal state language across different social strata using a large, diverse sample.

Appendix A

Tables

Table 1

Descriptive Statistics

	Mother		Father	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Education	2.82	1.03	2.73	1.06
Income to Needs Ratio	3.23	2.40	3.23	2.40
OS Simple	.22	.11	.20	.13
YS Simple	.17	.12	.16	.11
OS Elaboration	.05	.05	.03	.04
YS Elaboration	.03	.04	.01	.02

Note. OS = Older Sibling, YS = Young Sibling

Table 2

Correlations among Study Variables

Measure	1	2	3	4	5	6
1. Income-to-needs	---	.50**	-.15	.07	-.07	-.13
2. Education	.44**	.49**	-.06	.07	-.04	-.11
3. OS Simple	.04	.19	-.21	.15	.29*	-.05
4. YS Simple	-.02	-.10	.01	.22	-.05	.27*
5. OS Elaboration	-.02	-.04	.30*	-.23	.11	.19
6. YS Elaboration	.24	.04	-.01	.21	.16	.12

Note. Correlations above the diagonal are for the mother and below the diagonal are for the father. Cross-parent correlations are on the diagonal (bolded). OS = Older Sibling, YS = Younger Sibling. * $p < .05$. ** $p < .01$.

Table 3

Multilevel Models Producing Simple and Elaborative Internal State Language with Older and Younger Siblings

	Simple Internal State Language						Elaborative Internal State Language					
	Older Sibling			Younger Sibling			Older Sibling			Younger Sibling		
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>
Intercept	.25	.03	7.30	.16	.01	14.56	.04	.01	9.05	.02	.00	6.61
Mothers' race	-.05	.01	-1.34	---	---	---	---	---	---	---	---	---
YS birth order	---	---	---	---	---	---	---	---	---	-.002	.01	-.27
Number of children	---	---	---	---	---	---	---	---	---	-.002	.006	-.67
Parent gender	-.01	.01	-.59	-.01	.01	-.58	-.01*	.004	-2.63	-.01*	.002	-2.61
Education	.01	.01	1.04	-.001	.01	-.12	-.002	.004	-.48	-.002	.002	-.70
Income-to-needs	-.004	.004	-.85	.001	.01	.26	-.000	.002	-.20	-.000	.001	-.02
Parent gender * education	.01	.01	1.24	-.01	.01	-1.03	-.001	.004	-.23	.001	.003	.28
Parent gender * income-to-needs	.001	.01	.22	-.000	.004	-.002	.001	.002	.34	.002 [†]	.001	1.98

Note. YS = Younger Sibling. * $p < .05$. [†] $p < 1.0$

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ACADEMIC VITA

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EDUCATION:

The Pennsylvania State University.....Expected Graduation: May 2015
University Park, PA

- Schreyer Honors College
- Bachelor of Arts, Psychology
- Minor, Education Policy Studies

Undergraduate Honors Thesis

Implications of Socioeconomic Status on Parental Internal State Language with Children

- Examines the effects of socioeconomic status on the early language learning experiences and emotional development of children ages two to five years

Honors and Awards

- Psychology Department Student Marshal.....May 2015
- Recipient, Charles N. Confer Memorial Award in Psychology.....Feb. 2015
- Recipient, Costello Family Scholarship in Psychology.....Feb. 2014
- Recipient, College of the Liberal Arts Enrichment Award.....Nov. 2012
- Scholar, Paterno Fellows Program.....Aug. 2011 – Present
- Dean's List.....Fall 2011 – Fall 2014

RESEARCH EXPERIENCE:

Undergraduate Lab Coordinator and Research Assistant.....May 2012 – present

Penn State Family and Child Development Lab

University Park, PA

- Supervise undergraduate research assistants, manage research assistant recruitment, establish and reinforce organizational procedures, and manage lab email communication
- Assist in coaching subjects ages two to five years and their parents as they participate in experiments in a laboratory setting
- Perform behavioral event coding of recorded family interactions using INTERACT9
- Train research assistants to reliably perform behavioral event coding and supervise completion of coding projects

TEACHING EXPERIENCE:

Intern Tutor, Pennsylvania Literacy Corps.....January 2015 – May 2015
State College, PA

- Tutor an adult English-language learner for forty hours per semester
- Write lesson plans designed to foster English-language ability and critical thinking skills
- Complete a detailed case study on an adult learner and their tutoring progress

Pre-Service Teacher and Student, The Philadelphia Urban Teaching Seminar.....May 2014
Philadelphia, PA

- Observed a master teacher in a fourth grade classroom for two weeks in an urban elementary school in the Philadelphia School District
- Led small group lessons and worked individually with students
- Completed an educational case study of one student
- Participated in evening seminars on the topic of urban education
- Completed community service projects in the city of Philadelphia, including the renovation of a public park and cultural center

Classroom Assistant, The Goddard School.....June 2013 – Aug. 2014
State College, PA

- Assisted lead teachers in preparing and delivering lessons, mostly in a kindergarten classroom
- Prepared and led enriching activities for children ages twelve months to seven years
- Communicated with parents about their children’s academic progress

Group Coach, Penn State Friendship Group.....Aug. 2013 – May 2014
University Park, PA

- Taught weekly mental health practicum sessions for seven-year-old-boys to strengthen their social skills
- Collaborated with three other coaches to create developmentally appropriate and engaging lessons
- Discussed children’s progress with family members during parent conferences
- Participated in seminar-style lectures focused on child development, psychopathology, and social skills development

Assistant Group Supervisor.....May 2013 – Aug. 2013
Centre County Child and Family Development Council
State College, PA

- Supervised and led activities for students in kindergarten through sixth grade at an after-school program and a summer day camp

LEADERSHIP EXPERIENCE:

Guide, The Penn State Marching Blue Band.....Aug. 2014 – Jan. 2015

- Coach fellow marching band members in upholding high standards of musical excellence and in executing field marching drills
- Recruit and train potential new band members and assist in selecting the most competent prospective members during the audition process
- Manage fellow band members’ adherence to attendance policies, music memorization requirements, and uniform standards

SERVICE EXPERIENCE:

Penn State Global Medical Brigades.....Dec. 2013 – Jan. 2013

- Volunteered in a mobile medical clinic in Ghana, Africa, for ten days to provide free medical care to impoverished community members

SKILLS:

Foreign Language Skills

- Competent in Spanish reading, writing, speaking, and listening

Computer Skills

- Proficient in operating Microsoft Office, SPSS, and Interact9