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PRESCHOOL CHILDREN'S COGNITIONS ABOUT
BEHAVIOR AND THEIR ACTUAL BEHAVIOR

A Thesis Presented

by

PAIGE H. FISHER

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

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Clinical Psychology

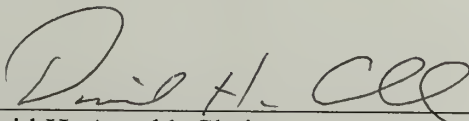
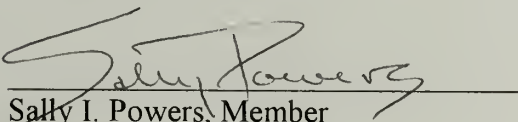
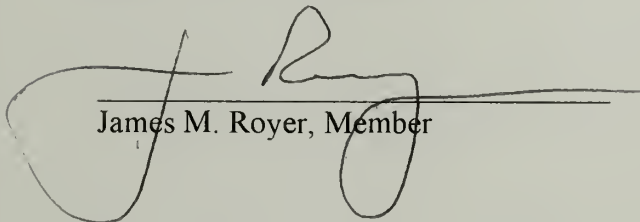
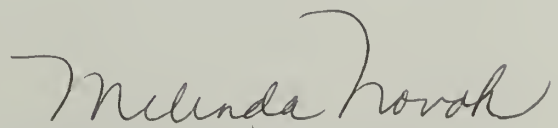
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ABSTRACT

PRESCHOOL CHILDREN'S COGNITIONS ABOUT BEHAVIOR AND THEIR ACTUAL BEHAVIOR

MAY 2001

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This project examined the relationship between children's perceptions and knowledge of behavior and their actual classroom behavior. 28 preschool-aged children in a Head Start center were assessed on a variety of behavioral measures, as well as questioned about classroom rules and hypothetical child behaviors. It was predicted that children's knowledge of classroom rules and their descriptions of hypothetical behavior would be related to their actual behavior. Some support was found for these hypotheses as there were significant relationships between a variety of children's descriptions of the hypothetical behavior and their actual behavior, as well as between global evaluations of children's responses and their actual behavior. Specifically, children with more sophisticated responses were less likely to exhibit a variety of behavior problems, such as delinquency and aggression. Children who expected hypothetical character children to behave inappropriately but expected character teachers to respond successfully to misbehavior were less likely to have a variety of externalizing difficulties. Children who discussed goal-related reasons for behavior were less likely to have attention problems. Lastly, children who anticipated high levels of negative emotional expression were more likely to exhibit withdrawn, somatizing or aggressive behavior.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS.....iii

ABSTRACT.....iv

LIST OF TABLES.....vii

CHAPTER

1. INTRODUCTION.....1

2. METHOD.....8

3. RESULTS.....13

4. DISCUSSION.....19

APPENDIX: SCENARIOS FOR BEHAVIOR CONSEQUENCES MEASURE.....29

BIBLIOGRAPHY.....30

LIST OF TABLES

Table	Page
1. Responses to "Rules Knowledge" and "Behavior Consequences" Measures.....	26
2. Intercorrelations between Categories of "Behavior Consequences" and "Rules Knowledge" Measures.....	28

CHAPTER 1

INTRODUCTION

Externalizing behavior disorders, including Conduct Disorder, Oppositional Defiant Disorder, aggression, and acting out affect approximately 10% of all school-aged children. Such behavior problems are often associated with later drug and alcohol abuse, family violence, crime and psychiatric disturbance. In addition to the suffering these problems cause children and their families, many of our greater societal concerns can be connected back to these childhood disorders (Caspi, Elder, & Bem 1987; Farrington, 1983; Loeber, 1990).

Parent and teacher training programs are the best available treatments for externalizing behavior disorders (e.g., Kazdin, 1987). Adults are taught to use clear, firm, consistent, calm and appropriate discipline practices, which results in more compliance and less aggression (e.g., Forehand et al., 1980; Webster-Stratton, 1990). However, even the most successful interventions leave approximately one third of children with clinically important behavior problems (Schmaling & Jacobson, 1987; Webster-Stratton, 1990) and long-term maintenance of benefits is the exception rather than the rule (Kazdin, 1987, 1993). Additionally, there has been little investigation into the effects of early intervention with preschool children, despite increasing calls for such efforts (Hinshaw, 1992; Kazdin, 1987; Loeber, 1990).

By examining children's cognitive processes associated with behavior problems, we may increase understanding of the development of psychopathology, while also providing for improved treatment programs. If specific factors are found to be critical to children's behavior, these factors could be emphasized, and training programs could be

organized to highlight these features. Introducing such critical factors early in a child's development might have a more profound effect than waiting until behavior patterns have become more entrenched. However, there has been a scarcity of research that investigates young children's cognitions about behavior. In particular, research has not adequately examined children's understanding of rules or how children's understanding of actions relates to their actual behavior. However, associated areas have been examined that relate to the questions at hand and point to their importance.

Though there has been little study into how children's cognitions about behavioral consequences mediate their behavior, researchers have examined how children's cognitions in the interpersonal peer arena relate to their behavior. One literature identifies a relationship between children's cognitions and their prosocial behavior. Children with behavior problems differ from their peers in the ways they evaluate social stimuli. According to research on social information processing (Crick & Dodge, 1994) aggressive children process information about attributions, outcome expectations and social goals differently than other children and are different from non-aggressive peers on various cognitive dimensions such as irrational thought, consequential thinking, and the ability to evaluate other children and judge social situations (Deluty, 1985; Forman, 1980). Bloomquist, August, Cohen, et al. (1997) found that hyperactive aggressive children were less able to anticipate consequences than their non-aggressive peers were. Cognitive abilities such as problem-solving, perspective taking, reasoning and consequential thinking relate to social competence (Detternborn & Boehnke, 1994; Dodge & Feldman, 1990; Evans & Short, 1991; Mize & Cox, 1990; Mott & Crane, 1994; Pelligrini, 1985; Wright, 1980). Children who can identify socially effective choices

usually behave more competently. For instance, those who describe the outcomes of social strategies function more skillfully in peer settings (Crick & Ladd, 1990), and those who provide more prosocial responses are significantly more likely to behave prosocially (Petit, Dodge, & Brown, 1988; Weidman & Strayhorn, 1992). In sum, these studies have identified that children's cognitions and comprehension regarding peer relationships seem connected to their actual behavior.

However, though this literature has provided a wealth of information about children's social interactions with peers, there has been little investigation into these processes with children's understanding of classroom rules and their interactions with adults in authority. In perhaps the most closely related research, Dodge and Price (1994) included stimuli that involved children interacting with teachers in their larger study of the relationship between behavioral competence and social-information processing patterns with first through third grade children. Experimenters showed children videotaped scenes where actor adults asked actor children to comply with an unpleasant command, such as cleaning up. They found that behavioral competence was correlated with how children encode, interpret, generate, choose and enact behavioral responses when faced with authority driven scenarios. They also found that older children were more skilled in their processing than were their younger peers, and that older children were less likely to interpret teacher's behavior as hostile than were younger children. Their measure, however, looked only at general behavioral competence rather than specific behavioral difficulties. It is unclear from this study if specific behaviors might be related to specific cognitive beliefs children have regarding misbehavior. Additionally, this study provided the story endings, and so does not provide information

as to what children would expect to happen in the story. Lastly, the youngest subjects in this study were first graders, so it provides little information about the behavioral scripts of preschool children.

Other researchers, such as Spivack and Shure in the 1970s, developed a treatment program called interpersonal cognitive problem solving (ICPS), designed to enhance children's social and interpersonal competence. The program emphasizes social problem solving and goal achievement, as well as understanding the consequences of various social approaches. Though the program overall has met with mixed results, the authors have demonstrated that children with higher levels of problem-solving skills and consequential thinking show better behavioral adjustment (Shure, Spivack & Gordon, 1972; Shure & Spivack, 1979; Shure & Spivack, 1980; Shure & Spivack, 1981). Additionally, behavior-training programs that were paired with problem-solving training showed more clinically significant changes in child behavior than did behavior-training alone (Kazdin, Siegel, & Bass, 1992; Spaccarelli & Penman, 1992, Yu, Harris, Solovitz & Franklin, 1986). These results are consistent with the hypothesis that cognitive processes play an important role in moderating children's behavior and that targeting children's cognitive skills might impact their behavior.

Another line of research has shown that children have the ability to predict certain outcomes when given information about an individual or situation (Dozier, 1991; Rholes & Ruble, 1984). Wellman and Bartsch (1988) found that children as young as 3-years-old could accurately predict actions when they are given information about a character's thoughts or needs. Though Zelazo, Helwig and Lau (1996) found that preschoolers used simple systems to understand others' behavior, they were still able to make predictions in

basic causative situations. Clearly, even very young children have the capacity to see cause and effect when assessing behavior. What is not known is if or how such knowledge then relates to their behavior.

In sum, research indicates that preschool children have some ability to predict behavior, that cognitive variables in social information processing are related to social behavior, and that cognitive training seems to positively impact children's behavior. However, this work has rarely explored children's behavior outside of the peer social realm, and has not directly examined children's understanding of rules and consequences. Extrapolating from these findings, children in a classroom likely have cognitive scripts and expectations that affect their behavior.

It seems probable that before a child exhibits a particular behavior, he or she has some expectation of the results. For example, if a child consistently tantrums after an adult says "no", it may be at least partly because the child believes that such behavior will ultimately help to achieve his or her goals. It seems likely that in addition to factors such as impulse control or aggressive temperament, children's beliefs about the outcomes of their actions might influence his or her behavioral choices. Children who have a clear and constructive understanding of both what is expected of them and the consequences of their behavior might be more likely to behave appropriately.

This project investigated the relationship among children's understanding of rules, their descriptions of behavioral outcomes or consequences and their actual behavior. Because so little is known about children's cognitive processes about appropriate behavior, learning what is most salient to young children as they strive to understand behavior might reveal important mechanisms in their decision-making process as well as

suggest further areas of study. This project focused on two areas of children's understanding of behavior: 1) their knowledge of classroom rules and 2) their descriptions of outcomes of behaviors.

It is likely there are relationships between children's knowledge in these areas and their own behavior. Children's comprehension of rules would seem to be a prerequisite for following them, yet no research has looked at a relationship between this knowledge and behavior. Children's beliefs about outcomes of behavior have also not been looked at previously in the literature. Providing a descriptive account of children's internal experience of responses to their behavior could yield insights into their decision-making regarding their actions. The present study will investigate whether there is a relationship between children's descriptions of rules and behavior and their own actions.

Children's classroom behavior was studied for several reasons. The day care setting can be an important environment in which to study child behavior. As of 1994, day care centers served 61% of the 3-5 year-old population (National Center for Educational Statistics). These early education experiences can have important ramifications for children's development (Howes & Olenick, 1986; McCartney, 1984; Phillips, McCartney, & Scarr, 1987; Russell, 1990). Though some studies have examined teacher roles in grade school settings, there has been less comparable research in preschools. The few existing studies have demonstrated that teacher discipline affects child behavior (Atwater & Morris, 1988; Brown & Elliot, 1965; Sherburne, Utley, McConnell, & Gannon, 1988). With so many children in early childhood settings and evidence that these experiences impact children's behavior development, day care is an important environment to examine.

In this study, two predictions were evaluated. 1) There will be a relationship between children's knowledge of rules and their actual behavior. It seems reasonable to hypothesize that better understanding of classroom expectations facilitates appropriate behavior. Therefore, children who are better able to identify and describe classroom rules are expected to behave more appropriately. 2) Similarly, children's descriptions of hypothetical misbehavior and their beliefs about behavioral outcomes relate to their own behavior. More specifically, there will be a relationship between children's behavior problems and both the content and the quality of their responses to hypothetical scenarios about misbehavior.

CHAPTER 2

METHOD

Participants

Participants for this project were 28 low-SES preschool children from 5 Head Start classrooms in Springfield, MA. Head Start income eligibility guidelines require that enrolled children live in families that are either below the poverty line or receive some form of public assistance. FY 1999 income guidelines stipulated a maximum income of \$11,060 for a family of 2. The sample included 16 boys and 12 girls with ages ranging from 3.5 to 5 years of age and a mean age of 4.44 ($SD = .61$). 93% of children in the study were Hispanic or biracial, and the remaining 7% were Caucasian. These children and their families were subjects in the UMass Preschool Project, a NIMH sponsored longitudinal study evaluating a program designed to prevent conduct disorders in high-risk children.

Procedure

Behavioral assessments were conducted in January at the day care center by bilingual graduate students. The measures evaluating children's knowledge of rules and expectations of consequences, which lasted approximately 15 minutes, were administered one-on-one at the participants' day care center. Children were asked if they would play with the interviewer in the hallway. Initially, interviewers conversed informally with subjects in order to increase their familiarity with the interviewer and so the interviewer could determine if the child was more comfortable using Spanish or English. Interviews were then conducted in the participant's preferred language (or a mix between both languages). Interviews are described below. Subjects' responses were audiotaped and

then transcribed and coded by two undergraduate research assistants who were trained using sample scripts.

Measures

Classroom Behavior

Teachers completed the Achenbach Child Behavior Checklist, a normed, well-validated measure (Achenbach & Edelbrock, 1986). The CBC provides T-scores for the following categories: Withdrawn Behavior, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Aggressive Behavior and Delinquent Behavior.

Language Ability

The Expressive One-Word Picture Vocabulary Test, a measure with norms for preschool aged children, was used to control for subjects' language ability.

Knowledge of Classroom Rules

The first level of assessment, the "Rules Knowledge Measure" measured children's knowledge of classroom rules by asking each subject "What are the rules in your classroom?"

Expectations of Behavioral Consequences

In order to assess children's behavioral scripts, the second step consisted of 3 hypothetical scenarios or the "Behavior Consequences Measure" (for example: "Ben is playing with a truck. Jennifer comes over, grabs the truck and begins to play with it."). Subjects were asked a set of questions designed to explore children's scripts of what happens next and why. (See Appendix for complete scenarios). Illustrations of the scenarios were included to make it easier for young children to understand and engage in the task.

Coder Classification of Children's Responses:

Quality of Responses to "Rules Knowledge Measure" and "Behavior Consequences Measure"

Children's responses were coded in three ways: three global categories for rule generation and scenarios, a calculation of the number of rules children provided and thirteen categories that classified the stories children told during the scenario portion. The 3 global categories were assessed on a likert scale of 1 to 7, with 7 being the highest possible rating. For both measures, the global categories were Quality of Responses (completeness, sophistication and specificity of responses), Fluency of Responses (ease with which subject understood task, relevance of responses, amount of repetition within subject answers) and On-Task Behavior (the participant's ability to continue with the interview, the amount of redirection the participant needed and the participant's level of misbehavior). For the "Rules Knowledge Measure," Intraclass Correlations (ICCs) were .81 for Quality, .91 for Fluency, and .96 for On-Task Behavior. For the "Behavior Consequences Measure," ICCs were .90 for Quality, .70 for Fluency and .91 for On-Task Behavior.

For the rules section, the number of rules generated by each subject was tallied. The ICC was .95.

Content of Responses to "Behavior Consequences Measure"

For the hypothetical scenarios, thirteen overall categories were coded with subcategories such as positive/negative or child/teacher behavior. These categories were chosen by initially classifying the content of children's responses into thematic groups

and then piloting coding schemes to see which categories remained discernible and independent.

Appropriateness of behavior (child/teacher). This category was coded if the scenario character behaved in a manner that would be considered "well-behaved" during the situation. The ICC for appropriate behavior was .72 for the child character and .92 for the teacher character.

Inappropriateness of behavior (child/teacher). This category was coded if the scenario character behaved in a manner that would be considered "poorly-behaved" during the situation. The ICC for inappropriate behavior was .93 for the child character and .83 for the teacher character.

Emotional expression (positive/negative). This category was coded due to the expression of emotions within the scenario such as anger, sadness, frustration, happiness, pleasure, etc. The ICC for this negative emotional expression was .90. Positive emotional expression was almost never coded and was unreliable.

Instrumental goal (positive/negative). This category was coded when a child character behaved in order to get a tangible object, or to obtain what s/he desires. The ICC for negative instrumental goals was .85. Positive instrumental goals were almost never coded and were unreliable.

Relational goal (positive/negative). This category was coded when a child character behaved in order to affect or influence a relationship with another person, or the other person's opinion of them. The ICC for positive relational goals was .39. Negative relational goals were almost never coded and were unreliable.

Compliance/non-compliance. This category was coded when a child character behaved in such a way that was either yielding or non-yielding to the request of another character. The ICC was .91 for compliance and .88 for non-compliance.

Consequences. This category was coded when the subject's response indicated that the teacher provided some form of consequence to the child character. The ICC for consequences was .70.

Success of teacher response. This category was coded after the child character behaved in a manner that would typically necessitate a teacher response, and the teacher's response was considered a successful reaction to the child behavior. The ICC for success of teacher response was .84. Teacher non-response was also coded, but as the ICC was .52, results should be viewed with caution.

Reason for teacher behavior (appropriate/inappropriate). This category was coded if the subject's rationale for teacher characters' behavior was an appropriate or inappropriate way for a teacher to behave. The ICC for appropriate reason for teacher behavior was .96, while inappropriate reason was not reliable.

Teacher states rule. This category was coded if the teacher character explained that a behavior was inappropriate because the behavior was in conflict with an existing rule. The ICC for this category was .64.

Included teacher without prompting. This category was coded if the subject's initial response to the scenario situation included the teacher without being prompted by the interviewer's question "what did the teacher do?" The ICC for this category was .96.

Unreliable categories. Other categories that were created but were not coded reliably were Teacher Responding Unsuccessfully and Teacher Responding Ambiguous.

CHAPTER 3

RESULTS

Data Analytic Strategy

Correlations were examined to determine any significant relationships among reliable categories of the “Rules Knowledge Measure” or “Behavior Consequences Measure” and the CBC. For all categories that were significantly correlated with CBC scores, correlations with the Expressive One-Word were calculated. If the correlation was higher than .20 (regardless of p value), a multiple regression analysis was conducted to determine whether the category predicted CBC scores controlling for language ability.

Descriptive Statistics

Description of Classroom Rules

Of the 28 subjects, 18 were able to provide at least one relevant classroom rule. The average number of rules provided was 2. Of the 18 that did provide relevant responses, many of the responses were general statements to behave appropriately, such as "don't behave badly", "be good," or "listen to the rules". 6 of the 18 made some reference to avoiding physical aggression such as "don't hit, "no fighting," and "don't throw rocks." Some of the other rules listed involved clean up activities such as "put away the toys," communicating respectfully such as "say nice things," level of noise such as, "be quiet," and "don't yell," and following rules of order, such as "get back in line." Other themes included behaviors that they most likely performed in their classroom but did not qualify specifically as rules such as "play," "eat," "make drawings." One caution regarding drawing conclusions from these data is the language ability of many of the subjects was well below national norms.

Table 1 shows the average numbers of rules and average quality level, as well as standard deviations for the “Rules Knowledge Measure”. Children in this sample did not generate a high number of rules, as the average number was less than 2 and the highest number was 8. The average quality of their responses was generally considered of low quality by the coders.

Description of Child Responses to Scenarios

Table 1 shows the average amount of times each type of response was generated across the entire interview. Subjects were more likely to have teachers’ behaving appropriately than inappropriately. Negative emotionality was more commonly expressed by characters than positive emotionality as was inappropriate versus appropriate behavior for children (though the scenarios themselves might have been biased in this direction.) Children more often mentioned instrumental goals than relational goals when explaining child character behavior. In terms of mentioning consequences, the standard deviation was high, which indicates that some children mentioned no consequences and others mentioned quite a few.

An independent t-test was run to investigate effects of gender and no significant differences were found.

Relationships between and within the “Rules Knowledge Measure” and the "Behavior Consequences Measure"

Table 2 lists intercorrelations between coded categories on the “Rules Knowledge Measure” and the "Behavior Consequences Measure." These specific categories were chosen because they correlated with other categories above .4.

There were moderate correlations between many of the categories on the "Rules Knowledge Measure" and the "Behavior Consequences Measure," suggesting that there might be general cognitive patterns that influence children's responses. For instance, child inappropriate and teacher appropriate behavior responses were more likely among children who were also able to generate a higher number of rules during the "Rules Knowledge Measure".

Relationship of Child Interview Responses to Child Behaviors

Number of Rules Generated

It was predicted that the number of rules children generated would be negatively correlated to the amount of externalizing behavior they demonstrated. Contrary to these predictions, number of rules was not significantly related to any externalizing behaviors. A positive correlation was found between number of rules a subject generated when asked "what are the rules in your classroom?" and the level of withdrawn behavior (withdrawn T-score, $r = .39$, $p < .05$), indicating that more withdrawn subjects were able to produce more rules. As withdrawn behavior and number of rules were both correlated with language test scores on the Expressive One-Word (withdrawn T-Score, $r = .44$, $p < .02$, number of rules, $r = .45$, $p < .02$), a regression was conducted to see if language test scores were driving the relationship between number of rules and withdrawn behavior. Regression coefficients indicated that when both number of rules generated and language test scores were independent variables, neither was a significant predictor of withdrawn behavior. Therefore, it is difficult to draw any conclusion about these relationships without further study. No other CBC scores were significantly related to the number of rules generated.

Quality of Child's Responses to "Behavior Consequences Measure"

The quality of the participants' responses was averaged across scenarios to form an overall global rating of quality: a measure of the sophistication, comprehensiveness and relevance of subjects' answers. As predicted, a strong negative correlation was found between the quality of subjects responses and both social problems and delinquent behavior (social problems T-score, $r = -.38$, $p < .06$, delinquent behavior T-score, $r = -.42$, $p < .03$), indicating that children who demonstrate more highly developed and complex understanding of classroom behavior have more successful peer interactions, and are more compliant with classroom rules.

Specific Categories within "Behavior Consequences Measure"

Appropriate or inappropriate character behavior. Participants' accounts of the characters' scenario actions were coded as appropriate or inappropriate character behavior. In terms of child character behavior, inappropriate behavior was strongly negatively correlated with the participants' delinquent behavior and externalizing problems overall (delinquent behavior T-score, $r = -.39$, $p < .05$, externalizing problems total score, $r = -.40$, $p < .05$). There was also a negative trend for a relationship with social problems (social problems T-score, $r = -.35$, $p < .08$). This relationship suggests that children who described inappropriate behaviors for the scenario characters were more likely to be more socially appropriate, compliant with classroom expectations and have fewer acting-out problems overall. Participants who were able to pay appropriate attention were also more likely to describe teacher behaviors that were coded as appropriate (attention problems T-score, $r = -.42$, $p < .03$), and there were similar trends

for children low in social problems and able to comply with classroom expectations (social problems T-score, $r = -.36$, $p < .08$, and delinquent behavior T-score, $r = -.40$, $p < .07$).

Consequences. Participants who identified consequences from the teacher after misbehavior tended to be children with fewer attention problems, though this relationship was not significant (attention problems T-score, $r = -.35$, $p < .08$). There was also a negative trend for subjects without social problems to identify consequences though results were not significant (social problems T-score, $r = -.33$, $p < .10$).

Negative emotional expression. The presence of positive or negative emotion expressed by characters in the scenarios was also coded. Negative emotion was positively correlated with somatic complaints ($r = .47$, $p < .02$) with positive trends for both internalizing and externalizing CBC scores (withdrawn T-score, $r = .33$, $p < .10$, aggressive behavior T-score, $r = -.33$, $p < .10$) suggesting that subjects whose characters express negative emotion have high incidence of bodily complaints such as stomach aches and headaches, are more likely to be withdrawn, and tend to behave aggressively. As this category was also positively correlated with the Expressive One-Word ($r = .48$, $p < .02$), a regression was conducted to further understand this relationship. Though regression analyses indicated that while neither negative expression nor One-Word scores were significant predictors of somatic complaints, negative expression had a p value of .08, while one-word scaled scores had a p value of .43. This suggests that the emotional expression category contributes more significantly to the relationship with somatic complaints than does the language test score.

Goals. Participants were asked why child characters behaved as they did. Clearly goal-oriented responses were coded as instrumental or relational goals with positive or negative valence. Negative instrumental goals showed a strong negative relationship with attention problems (attention T-score, $r = -.43$, $p < .03$), suggesting that children who had difficulty paying attention were less likely to describe characters' behaviors as striving for a tangible outcome. As language ability was correlated with negative instrumental goals ($r = .23$, $p < .26$), a regression was conducted to assess the influence of language ability on the relationship. Analyses indicate that negative instrumental goals have a significant relationship with attention problems ($B = -.48$, $p < .02$), while the influence of language ability is not significant. Positive relational goals showed a strong negative relationship with aggressive behavior (T-score, $r = -.41$, $p < .04$) suggesting that children who behave aggressively in class are less likely to determine character behavior that values positive relationships. Though positive relational goals were correlated with the Expressive One-Word (One-Word scaled scores, $r = .46$, $p < .02$), regression analyses indicate that while the language test score is not close to significant, positive relational goals has a Beta of $-.46$ and a p value of $.06$. This suggests that the negative relationship between aggression and positive relational goals is not driven by language ability.

CHAPTER 4

DISCUSSION

To date, there has been little investigation into the relationship between children's behavioral scripts or expectations regarding classroom behavior and their actual behavior. Additionally, not much is known about how children think about behavior, especially in authority-oriented situations. Studies on social-information processing with peer relationships, cognitive problem solving and predictive ability, suggest that it is reasonable to hypothesize that the expectations or beliefs that children develop regarding behavior and its outcomes could then influence the way they behave in the classroom. Additionally, Dodge and Price (1994) provide initial support for the idea that social-information processing mechanisms affect children's interpretations of interactions with authority and their general behavioral competence. The present study provides additional support for this hypothesis, as well as identifies cognitive relationships with specific kinds of behaviors and with a younger cohort. Also, as participants in this study completed the stories in hypothetical scenarios rather than discussed a completed story they had seen, this study provides a more flexible context to examine children's expectations.

In terms of specific behaviors, this study identifies some potential patterns. Preschool children who exhibit early delinquent behaviors stand out most specifically. Coders rated their overall responses as lower in quality, and therefore as containing less complexity and sophistication than responses of other children. This might mean that such children are thinking about behavior in a more simplistic, less consequential manner. These children are also less likely to expect teachers to behave in an

authoritatively appropriate manner. In these scenarios, this might mean that the teacher did not deliver consequences or in some way “misbehaved” herself or showed inappropriate emotional responses. For children showing emergent delinquent behaviors such as lying, swearing or seeming to lack remorse, they do not expect teachers to behave proactively in response to misbehavior. An additional interesting finding is that these children were less likely to describe character children as behaving in ways that were considered inappropriate by the coders. Perhaps well-behaved children are noticing actual misbehavior occurring in the classroom and then telling stories that are in-line with their observations. Delinquent acting children, as the children misbehaving within the actual classroom, are perhaps less attuned to this perception of behavior.

Children with social problems show a similar response pattern. Though it is possible that the moderate correlation of social problems with delinquent problems is responsible for the similar pattern, it might also be the case that distinctive behavioral scripts exist for children with social problems. Such children, who have a difficult time understanding how to relate appropriately with others, might provide unsophisticated responses and have difficulty understanding appropriate teacher responses to situations. As the type of interview and coding system used in this study does not allow for further distinctions between types of appropriate and inappropriate behaviors within the scenario stories, follow-up studies and analyses would need to be done in order to identify if there are more specific distinctions between children with social problems and children with delinquent behaviors.

Children with attention problems also had distinctive expectations about behavior. In much the same way as children with delinquent behaviors, children with attention

problems were less likely to discuss teachers behaving in an appropriate manner. Perhaps children with difficulty attending to what is happening around them have more difficulty encoding or understanding and therefore predicting appropriate behavior. They might then be less likely to behave appropriately themselves without accurate scripts to guide their behavior. Additionally, children with attention problems were less likely than other children to identify goals and a purpose behind character behavior. Perhaps one reason for misbehavior in children with difficulty paying attention is they do not hold a schema for goals or future benefits. As there is no conceptualized goal to work for, their behavior is not necessarily purposefully directed.

In addition to type of behavior, the amount of negative emotion attributed to scenario characters had relationships with different behavior problems. Children who experienced somatic complaints (with similar trends for aggressive and withdrawn children) were more likely to include negative emotions in the stories that they told. It seems reasonable that children who experience excessive physical problems without a known medical cause might expect such affect to exist in social interactions. Though there was some confound with language ability for this relationship, regression analyses demonstrate that language ability contributes less to the relationship than does negative emotions expressed.

An interesting finding regarding aggressive children is the lowered likelihood that they would mention positive relational goals, even after controlling for language ability. Though reliability of the relational goals category is low, this finding might provide further support for the idea that social aggression can be related to a breakdown in

children's ability to prioritize positive social relationships (Crick & Dodge, 1994; Crick & Dodge, 1996)

Though this study did not find a strong significant relationship between expectation of teacher consequences and actual behavior, these findings provide preliminary support for such a hypothesis. There was a negative trend between lack of consequences and attention problems, which suggests that children who do not anticipate consequences might be less likely to pay attention in classroom situations. However, the correlational design of this study does not allow for clear conclusions to be drawn, and it is also possible that having difficulty paying attention makes children less likely to attend to consequences or a third factor such as impulsivity influences both attention problems and lack of expectation of consequences. Other findings, such as the positive relationship between consequences and number of rules generated, and the positive relationship between consequences and instrumental goals, support the idea that understanding of consequences might be an important component of behavior.

In terms of children's descriptions of classroom rules, most children in this sample did seem to understand the concept of rules and provided at least one rule. Many of them seemed to understand rules as maxims of behavior without describing specific rules that they were supposed to follow. When they were able to name specific rules, they were most often guidelines to decrease aggressive behavior.

Regarding the relationship between children's generation of classroom rules and actual behavior, children who were able to identify more rules were more likely to be withdrawn. However, language ability was also related to both number of rules and withdrawn behavior, so it is impossible to know at this juncture if there is an actual

relationship between rules generation and withdrawn behavior or if this is merely a reflection of a shared relationship with language ability. The number of rules generated was not correlated with any externalizing behaviors. One possible explanation for this non-finding is that this sample of children did not yet understand the concept of a rule well enough to demonstrate such a relationship.

In addition to this difficulty generating and providing specific rules, this subject group also demonstrated a similar lack of sophistication in their responses to the scenario questions of the “Behavior Consequences Measure.” Though previous piloting demonstrated subjects with similar economic backgrounds could have sophisticated and complex answers, many subjects in this cohort did not. Considering that the vast majority of these subjects scored well below national norms on language tests, it is difficult to evaluate how much low language skills might have hindered their ability to discuss their knowledge of rules or descriptions. These language difficulties are likely due in part to the low-income environments in which many of these children were raised. The predominance of children who spoke Spanish as their first language but were schooled in bilingual classrooms might also have contributed to this effect. In addition to its small size, these language issues clearly prohibit this sample from being considered representative, so any findings must be viewed with caution. The representativeness of this sample is also limited by the relative uniformity of income-levels, ethnic backgrounds and type of early childhood program.

Another caution lies in being able to draw clear conclusions from these findings. Interpreting the meaning of the relationships found must be done on a purely hypothetical nature as there was neither an experimental manipulation nor a longitudinal component to

this study. It is possible that children's behavior might cause them to think in certain ways or other factors altogether might be influencing the relationship.

Therefore, future studies could include an experimental manipulation where children were exposed to a behavioral training program, either by working to change the ways parents and teachers interact with children or by working directly with the children themselves. Researchers could then investigate if children who were exposed to the behavior training showed, in addition to a change in behavior, a change in their own schemas or behavioral scripts (such as greater attention to positive and negative consequences). Such findings would more clearly demonstrate that the way children conceptualized and understood behavior and its outcomes influenced the ways in which they actually behaved.

Additionally, this study's findings that externalizing children usually provided less cognitively sophisticated responses and less goal-directed behavior might indicate that preschool children's misbehavior originates in impulsive and negative affect, rather than cognitive planning. Many current parent and teacher training programs focus little attention on children's emotional responses, but investigating the role of affect in children's misbehavior might indicate important modifications to these programs.

Further directions for future research lie in alternate methods of assessing children's knowledge. Rather than using hypothetical scenarios where the children are asked to talk about other children, participants might be asked what they would do in certain situations. Though this could increase the likelihood of demand characteristics, it might also more clearly tap into children's beliefs about the outcomes of their own behavior. Rather than using hypothetical scenarios, children might also be asked about

real life situations that they have themselves been in, or witnessed. Though this might limit the range of behaviors that can be assessed, it might make the task easier for children, especially preschoolers, to provide sophisticated answers. Lastly, although the CBC is well-normed and validated and teachers who completed the checklists were not aware of the experimental hypothesis, multiple measurements of children's actual behavior would increase the validity of these findings. Objective measurements such as videotaped observations, or parent reports would provide alternative perspectives regarding children's behavior and increase the likelihood that findings were not related to some aspect of teacher experience alone.

With further study and validation, these two measures the "Rules Knowledge Measure" and the "Behavior Consequences Measure" might function as screening instruments to identify specific cognitions that influence children's inappropriate behavior. Treatment could then be focused on addressing and reshaping such cognitions to help children function in a manner that would increase their behavioral success.

Table 1: Responses to “Rules Knowledge” and “Behavior Consequences” Measures

Category	M	SD
Rules Knowledge Measure		
1. Average Number of Rules Generated	1.9	2.3
2. Average Quality of Responses – Rules	2.4 ^a	1.67
3. Average Fluency of Responses – Rules	2.4 ^a	1.8
4. Average on Task Behavior – Rules	3.1 ^a	1.4
Behavior Consequences Measure		
5. Average Quality of Responses – Scenarios	3.2 ^a	1.7
6. Average Fluency of Responses – Scenarios	2.9 ^a	1.5
7. Average on Task Behavior – Scenarios	3.3 ^a	1.4
8. Appropriate Child Behavior	1.6	1.8
9. Inappropriate Child Behavior	2.8	2.0
10. Appropriate Teacher Behavior	2.0	1.4
11. Inappropriate Teacher Behavior	.23	.40
12. Negative Emotional Expression	1.6	1.8
13. Instrumental Goals	.88	1.1
14. Relational Goals	.17	.40
15. Child Compliance	1.0	.90
16. Child Non-Compliance	1.0	.90
17. Consequences	1.9	4.0
18. Appropriate Reason for Teacher Behavior	1.1	1.3

Continued next page

Table 1 continued.

19. Inappropriate Reason for Teacher Behavior	.04	.13
20. Including Teacher without Prompting	.48	.84
21. Success of Teacher Response	1.2	1.3

Note. These values represent the average number of occurrences in each category across all three scenarios.

^aMaximum possible value = 7.

Table 2: Intercorrelations between Categories of “Behavior Consequences” and “Rules Knowledge” Measures

Categories	1	2	3	4	5	6	7	8
Children ($n = 28$)								
1. Average Quality	--	.42*	.78***	.70***	.45*	.68***	.76***	.40
2. Number of Rules		--	.48*	.51**	.53**	.59***	.57**	.10
3. Inappropriate Behavior (Child)			--	.69***	.48*	.61***	.71***	.44*
4. Appropriate Behavior (Teacher)				--	.64***	.80***	.81***	.57***
5. Negative Instrumental Goals					--	.52**	.59*	.49**
6. Consequences						--	.87***	.58***
7. Teacher Responds Successfully to Child Behavior							--	.45*
8. Included Teacher Without Prompting								--

Note. Some correlations might exist because the categories themselves are related, such as Appropriate Teacher Behavior and Consequences.

* $p \leq .02$ ** $p \leq .005$ *** $p \leq .001$

APPENDIX

SCENARIOS FOR BEHAVIOR CONSEQUENCES MEASURE

Scenario 1:

One day during school, Ben is playing with a truck. Jennifer comes over, grabs the truck and begins to play with it.

- a) What happens next?
- b) Why did s/he do that?
- c) (If the child doesn't mention the teacher in a.) What does the teacher do?
- d) Why does the teacher do that?

The next day, someone is playing with the truck. Jennifer wants the truck.

- a) What does she do?
- b) Why does she do that?

Scenario 2:

One day in class, James wants to feed the class pet. The teacher says no. James starts crying and screaming.

- a) What happens next?
- b) Why did s/he do that?
- c) (If the child doesn't mention the teacher in a.) What does the teacher do?
- d) Why does the teacher do that?

The next day, James wants to feed the class pet. The teacher says no.

- a) What does he do?
- b) Why does he do that?

Scenario 3:

Kenisha and Manuel are playing with blocks during free play. They are in the middle of making a huge castle, but it is not finished. The teacher says its time to clean up.

- a) What happens next?
- b) Why does he/she do that?
- c) (If the child doesn't mention the teacher in a.) What does the teacher do?
- d) Why does the teacher do that?

The next day, Kenisha and Manuel are making their castle again. The teacher says its time to clean up.

- a) What do they do?
- b) Why do they do that?

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