PRESCHOOL CHILDREN'S CONCEPTUALIZATION OF SAFETY AND MORAL RULES

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CHAPTER I

INTRODUCTION

Injuries have replaced illness as the major source of death and disability for people aged 1 to 45 in the United States (Rice, MacKenzie, & Associates, 1989). About half of all deaths in young children result from injuries and each year 30,000 children suffer permanent disabilities, 600,000 children are hospitalized, and almost 16 million children are treated in emergency rooms because of injury. For preschool children, injuries that occur in the home are responsible for the majority of deaths (National Center for Health Statistics, 1984; Rodriguez, 1990). Preschool children appear to be particularly vulnerable to injury due to their developmental limitations in dealing with dangerous situations, but little research has focussed on addressing the developmental issues involved with physical injury among preschoolers.

Clearly, improving the physical safety of children is a social concern which merits scientific attention. Unfortunately, the field of injury control is still in its infancy. Contributions to the research have primarily been

from the public-health field and only recently has the field of psychology begun to contribute (Spielberger & Frank, 1992). Although ample research exists on the types of injuries that children sustain (Matheny, 1980), and on the development of programs to prevent injuries (e.g. Peterson & Mori, 1985), research is limited on how children of different ages form cognitive representations of safety rules and how possible differences may contribute to safe and unsafe behavior. Additional research is necessary to obtain a greater understanding of the psychological mechanisms involved in unintentional childhood injury. More research from a developmental and conceptual perspective may shed light on *when* and *how* children form concepts of safety and learn to follow safety rules. By understanding when and how children make sense of safety rules, more appropriate intervention strategies could be established.

Researchers have primarily concentrated on describing children's conceptions and descriptions of social-conventional rules, moral rules, and personal rules. Social-conventional rules are those designed to maintain social order. Moral rules are those related to intrinsic

concepts of justice, individual rights, and the welfare of others. Personal rules are those related to an individual's own preferences and choices and do not directly affect others' welfare or disrupt social order (Nucci, 1981; Nucci & Nucci, 1982; Nucci & Turiel, 1978; Turiel, 1978; Turiel, 1977; Weston & Turiel, 1980). However, it is not clear what are the underlying characteristics of safety rules and how these characteristics differ from other rule types.

Additionally, research has attempted to delineate what facilitates the understanding of different types of rules. It appears that the developmental origins of rule conceptualization stems from children's experience with qualitatively different types of social interactions. Naturalistic studies (Nucci & Nucci, 1982; Nucci & Turiel, 1978) have shown that both children and adults respond differently to violations of moral rules (e.g. stealing) as opposed to social-conventional rules (e.g. talking out of turn), and that such variable social reactions shape how a child learns the differences between types of rules. In other words, a child learns to distinguish between

different types of rule concepts depending on the different kinds of social feedback the child receives. However, it is not clear whether or how children learn to distinguish safety rules from other types of rules. It is also unknown at what age children typically begin to learn safety concepts and what facilitates the development of such concepts. It is possible that different kinds of social interactions or different experiences with actual physical injury may facilitate safety rule conceptualization, but such research has not been reported.

Therefore, the purpose of the present study is to investigate how safety rules are conceptualized in relation to other types of rules for preschool children. The focus of the study will be the exploration of safety through a cognitive-developmental perspective. In particular, differences between moral rules and safety rules will be examined. This study will use the conceptual framework and methods from the moral reasoning literature (e.g., Turiel, 1977) which has been used to study the development of various rule systems in children. This study will also investigate certain experiential factors that may

contribute to the development of children's safety rule concepts. In particular, assessments of children's experience with social interactions and injury history will be obtained.

CHAPTER II

REVIEW OF THE LITERATURE

Childhood Injury.

Historically, conceptualizing childhood injury and injury prevention has been through the use of the "host-agent-environment" model (Grantz, 1979; Rivara & Mueller, 1987). The host of an injury is the child; the agent is the injury-causing stimulus; and the environment is the ongoing physical, temporal, and interpersonal setting. This model has been primarily used from a medical, public-health orientation which views the control of injuries in a similar fashion to the control of diseases. Because of the limited focus on human behavior, it is not surprising that the field of psychology has been poorly represented in the area of injury control (Spielberger & Frank, 1992).

Early psychological research viewed injury as characteristic of "accident prone" individuals and thus focused on identifying individual and demographic characteristics of the child/host in an attempt to reduce child injury (Roberts, Elkins, & Royal, 1984). Although no

single accident prone trait has ever been identified, differences in certain characteristics have been found to be related to injury. For example, boys are identified as more at risk for injury than girls (Langley, McGee, Silva, & Williams, 1983). Also, age was related to specific type of injury. For example, toddlers are at risk for poisoning; preschoolers are at risk for drowning; and elementary school children are at risk for pedestrian accidents (Matheny, 1980).

Such differences are partly due to the developmental changes in the child. For instance, toddlers tend to put objects in their mouth during this age and would thus be more prone to poisoning; preschoolers are more mobile and are helpless in the water and would thus be prone to drowning; and school-aged children are allowed in the streets by themselves and would thus be prone to pedestrian accidents. Age differences have particular relevance to understanding injury control because of the interaction of the child's cognitive level, motor development, behavioral skills, and situational access. Identifying personal risk characteristics of the host is considered a precursor to

injury prevention and such identification of high risk individuals facilitated subsequent research on intervention strategies.

Research on injury prevention programs by public-health professionals have focused on attempting to eliminate the injury agent from the host (similar to how one would attempt to remove a virus from a sick child). Common agents of child injury are automobile accidents, drownings, burns, falls, poisonings, etc. (Grantz, 1979). The host-agent-environment model assumes that by eliminating or modifying the hazards that cause injury (the agents), fewer injuries will occur. This method has been highly successful in reducing population-wide childhood injuries (Cataldo, 1991). Examples include mandating child-resistant packaging to reduce poisoning (Walton, 1982); establishing flammability standards for children's sleepwear to reduce burn injuries (Smith & Falk, 1987); mandating the use of child restraint seats in automobiles to reduce deaths from car accidents (Fawcett, Seekins, & Jason, 1987); and mandating the installation of window guards on all high-rise residential buildings to reduce deaths from falls (Spiegel & Lindaman, 1977). All of

these efforts have resulted in significant reductions in these particular injuries.

Although a reduction in injuries has been achieved through altering the injury agent, it is clearly impossible to achieve complete physical separation of the child and potentially dangerous agents. As stated by Peterson and Mori (1985), "it is currently not possible to design kitchens that cannot injure children, houses that do not catch on fire, or environments in which threatening strangers never seek admission" (p. 593). In addition, there will be instances where interventions directed at the environment cannot be implemented, as is the case with a latch-key child (Peterson & Mori, 1985). Not only are children who are home alone likely to encounter potentially injurious situations, but so are children in general when they are even momentarily by themselves. These considerations indicate that interventions directed at changing the child's behavior are warranted.

Unfortunately, the host-agent-environment model does not lend itself to individual interventions because the focus is on the child as a passive participant in a dangerous world. In addition, characteristics of the child identified as at

risk for injury are those which cannot be easily altered, such as age, sex, cultural background, etc. It is precisely for these reasons why psychological research has been limited in the area of injury control. Psychological research tends to be oriented toward behavioral solutions, and psychologists are accustomed to thinking in terms of persuading people to change behaviors, attitudes, and lifestyles (Williams & Lund, 1992). Therefore, conceptualizing injury control in terms of involving the individual child's behavior would be more useful for psychologists.

A more appropriate framework for categorizing injury control for psychological research has been described as the target-method-tactics model (Peterson & Mori, 1985; Roberts, et al. 1984). This behavioral conceptualization of intervention begins by "identifying the target, or focus, of intervention; the method for introducing change; and the tactics for introducing the change method to the target." (Peterson & Mori, 1985, p. 587).

Potential targets of intervention can be the child, parents, or agents of injury. Methods that can be used include legislative/mandated (i.e. legal mandates to improve

safety, such as passing a law to include air bags in all new automobiles), or educational/persuasive (i.e. individual or group instruction of safety precautions or skills, such as persuading expectant mothers to buy a child restraint seat). Tactics through which particular methods can contact targets have been called population-wide tactics (i.e. implementing a method to an entire community, such as through the mass media), milestone tactics (i.e., designing interventions to suit a child at a particular developmental level, such as teaching school-aged children to cross the street safely), and high-risk-group tactics (i.e., approaching individuals particularly at risk for injury, such as teaching children in California safe reactions to earthquakes).

This target-method-tactics model to injury prevention is more appropriate for psychological research because it incorporates the host-agent-environment model and also acknowledges that interventions can focus on altering the child's behavior through methods that can be used directly with children (e.g., educational methods). It also makes use of tactics which can focus more directly on the specific problem at hand. Instead of only focussing on one aspect of

childhood injury (i.e., changing the dangerous agent), applying a combination of approaches can be more useful in designing specific successful interventions.

An overview of injury prevention programs indicates that the most successful interventions for reducing actual number of injuries sustained have involved targeting the injury agent (e.g., automobiles) using legislative methods through population-wide tactics (e.g., mandating use of child car seats), as mentioned earlier in this paper (Fawcett, Seekins, & Jason, 1987; Smith & Falk, 1987; Spiegel & Lindaman, 1977; Walton, 1982). Interventions targeting parents using educational methods through population-wide tactics have also shown some success (Christophersen, Sosland-Edelman, & LeClaire, 1985; Kanthor, 1976; Treiber, 1986).

Interventions targeting the child using educational methods through high-risk-group tactics have shown some success. For example, behavioral programs utilizing intense training through modeling and rehearsals (i.e., educational methods) have successfully taught safe reactions to fires (Jones, Kazdin, & Haney, 1981), have taught home safety

skills to latch-key children (Peterson & Mori, 1985), and have increased children's correct recognition and reporting of emergencies (Rosenbaum, Creedon, & Drabman, 1981).

Interventions targeting the child using educational methods through milestone tactics have also shown some success. For example, interventions have altered preschool children's unsafe responses to a potential child molester (Poche, Brouwer, & Swearingen, 1981), and have trained pedestrian safety skills to school-aged children (Yeaton & Bailey, 1978).

Limitations to the above-mentioned studies still remain and thus further research is warranted. For example, in the educational interventions with parents or with children, improvements in safety behavior was reported, but actual decreases in the frequency of injuries have not been obtained (Peterson & Mori, 1985). In addition, children learned the specific safe behaviors they were taught but could not generalize to other types of dangerous behaviors. It is impossible to teach a child to respond safely in every potentially dangerous encounter. Therefore, it is clear that more research needs to be conducted on why these problems

exist and how to approach them.

One approach would be to gain a better understanding of how children's conceptual and developmental limitations contribute to resulting injuries. This could be done by utilizing interventions strategies which target the child and use educational methods through milestone tactics. However, little is known on how children in different developmental stages conceptualize issues of safety. Knowing the child's age is not enough to guarantee a successful intervention. It is also necessary to gain an understanding of how children of different ages organize concepts of safety and how they incorporate the safety rules they are taught into their general way of responding to their environment.

Before one can begin teaching safety strategies to children, it is important to first know the mental processes that children go through when learning safety rules, what contributes to the learning of safety rules (i.e., what are the developmental origins of safety concepts), and if children of very young ages are even capable of understanding safety rules. By obtaining an understanding of these issues, one can hope to teach children to lead a safer lifestyle. If

children were able to internalize safety rules, then they would be more likely to act safely in many different types of dangerous situations, instead of only the particular situation in which they were taught.

Ample research exists on the types of injuries that children sustain, and on the development of programs to prevent injuries, but research is lacking on how children's cognitive representations of safety rules contribute to safe and unsafe behavior. A possible direction of investigation would include approaching injury control from a cognitive-developmental perspective as other authors have suggested (Coppens, 1985; Garbarino, 1988; Jones & Haney, 1989; Kendall, 1981; Mori & Peterson, 1986; Peterson & Mori, 1985).

Evidence has clearly demonstrated (Garbarino, 1988; Rivara, 1982; Roberts, Elkins, & Royal, 1984) that children of different ages have different experiences with injury, and it follows that they may conceptualize safety behaviors differently. Such safety behaviors are governed by principles or rules that the child has acquired. Currently, there is limited literature which attempts to explain how children conceptualize and learn safety rules.

It is possible that children of different ages conceptualize and learn safety rules in different ways and this may contribute to the selective frequency of injuries that children sustain A younger child may be more prone to injury given their limited cognitive understanding of their environment and their still-developing motor skills. On the other hand, an older child will have a more developed cognitive understanding of their environment and more experience interacting with the world around them, and this may enhance the child's ability to judge the consequences of his or her actions. Another developmental factor is that children of different ages also have differential experience with authority figures who teach and enforce the safety rules and this can potentially affect how they act in unsafe situations. For example, younger children may be less likely than older children to challenge or ignore an authority figure's prescribed safety rules. However, empirical studies on these issues are lacking.

The present study proposes to investigate children's understanding of safety rules from a cognitive-developmental perspective. Specifically, this study will examine if

children as young as 2 1/2 years old see safety rules as distinctive compared to other types of rules (i.e., moral rules), what characteristics of safety rules are most salient in the child's mind (i.e., the harmful consequences, the punishment received for breaking safety rules, etc.), and what types of experiences in early childhood lead to the acquisition and retention of safety rules and safety concepts (i.e., social interactions vs. experiences with physical injury). This study will use the conceptual framework and methods from the moral reasoning literature (e.g., Turiel, 1977) which has been used to study the development of various rule systems in children. A review of this literature will be presented as a context for how children generally conceptualize various types of rules.

Children's Conceptions of Rules

Theoretical considerations on the development of children's conceptualization of rules were pioneered by Piaget (1932/1965). He proposed that children have a unitary concept of rules (i.e., all rules are thought of as the same) and that children develop from viewing rules as fixed to

viewing them as alterable. He did not believe that children could differentiate between different types of rules. In addition, rule-following behavior was believed to be the basis behind moral development. He made generalizations from concepts of game rules to concepts of moral rules in his description of the development of morality and formulated a theory that included a premoral period and two moral stages.

Piaget concluded that preschool children were in a *premoral stage* and thus had little awareness of rules. It was not until the child became older that he or she developed from viewing all rules as unalterable to viewing them as alterable. He asserted that by ages 4 to 5, the child became more aware of rules by watching older children and imitating their behavior. He speculated that children begin to learn rules by their experiences in their environment. Between the ages of 6 and 10, the child enters the stage of *heteronomous morality* and was thought to view all rules as absolutes and unalterable. By age 10 or 11, Piaget asserted that children begin to enter the stage of *autonomous morality*. It is not until this stage that he believed children were able to view rules as arbitrary and alterable. Finally, Piaget concluded

that the transition in moral stages takes place through both cognitive maturation and social experience. In particular, when children begin school and interact more with peers, they soon learn to compromise and make rules when playing together. They also learn that rules are social agreements that are arbitrary and alterable, instead of obligatory statements made by authority figures which are viewed as sacred and unalterable (Piaget, 1932/1965).

Piaget did not make distinctions between potentially different types of rules (i.e., game rules, safety rules, moral rules) that the child may be able to recognize. Piaget believed that children conceptualize rules as unitary concepts and do not differentiate game rules from potentially other types of social rules. If Piaget's findings are accurate, one would not expect preschool children to make distinctions between safety rules and other types of rules because they are supposed to be in the premoral stage until they are 6 years old.

Contrary to Piaget's theories, recent research has indicated that very young children have the ability to distinguish between clearly different conceptual domains

regarding rules, and do not have a unitary concept of rules. Clear evidence has demonstrated that children can conceptualize social rules into at least three conceptually distinct domains: moral, societal, and psychological domains (Turiel,1977; 1983).

Turiel (1977) pioneered the research which described these domains. He reported compelling evidence that children as young as 6 years old make clear differentiations between two types of social rules: social-conventional rules and moral rules. Social-conventional rules serve to maintain order in a particular social system. Examples of social conventions include modes of addressing a teacher, modes of dress, gender associated jobs, modes of eating, etc. Turiel (1977) found that the most salient characteristic of these rules was that they all related to concepts of social organization. These rules were also seen as arbitrary in that alternative actions for a given situation could just as easily be applied. For example, wearing a green uniform to school is simply a convention because one could have easily designated wearing a blue uniform as the proper act. Conventions were also viewed as easily alterable since there

is no intrinsic prescriptive basis to them, rather, they are determined by consensus (Turiel, 1977).

Research describing the characteristics of moral rules identify them as pertaining to the individual rights of people and concepts of justice (Damon, 1975; Kohlberg, 1976; Nucci & Turiel, 1978; Turiel, 1977). Specifically, moral rules are those which stem from factors intrinsic to the actions themselves. Issues such as taking a life, physical or psychological harm to others, honesty, trust, violation of rights, responsibility, etc. are moral in and of themselves, and they relate to justice. In contrast to conventional acts, moral acts are neither arbitrary nor relative to the social context (Davidson, Turiel, & Black, 1983; Shweder, Turiel, & Much, 1981; Turiel, 1977, 1983).

Research investigating preschool children's conceptualization of conventional acts and moral acts have found similar results. Nucci and Turiel (1978) questioned preschool children in a naturalistic setting about spontaneously occurring moral and conventional acts that the children had observed. The authors used "justification categories" to empirically define the content of each domain.

The authors obtained this assessment by asking participants to give reasons to why a particular act was wrong. As expected, the children classified moral acts as those relating to justice, welfare/injury to the victim, personal loss, or violation of personal rights. Conventional acts were classified as those relating to aspects of social organization or maintaining social order (Nucci & Turiel, 1978).

Nucci and Turiel (1978) also used what is known as "criterion judgements" as another assessment to distinguish between rule types. An example of one criterion they measured was "rule contingency" which involved asking participants to judge whether a certain act would be okay to do if there were no rule prohibiting said act. They found that 81% said yes when asked about conventions, but only 14% said yes when asked about moral acts. Thus, moral rules were seen as universal, or context-independent, while social-conventional rules were arbitrary or context-dependent. This was another indication that children were capable of clearly differentiating two types of social rules, each with its specific defining characteristics.

Assessment strategies utilizing verbal reports of preschool children showed the same results. Smetana (1981a) examined children from the ages of 2 1/2 to 4 years to investigate whether children this young conceptualized rules as either moral or social- conventional. She assessed this by asking participants to make the criterion judgements regarding "rule contingency", "rule relativism" (or whether a rule is generalizable to all contexts), "seriousness of transgression", and "amount of deserved punishment" for 10 stories depicting moral or conventional preschool transgressions. Results showed that children of this very young age could make distinctions among the domains. In contrast to social-conventional transgressions, they judged moral transgressions as more serious, deserving of more punishment, generalizable across situations, and not contingent on the explicit presence of a rule. In another study (Smetana, 1985), it was found that preschool children could distinguish between moral and conventional domains by identifying that moral stories pertained to acts involving other's welfare, while conventional stories pertained to acts involving social order.

Research found similar results when interviewing strategies and verbal reports were used with an older population of children to specify characteristics of the different domains. Weston and Turiel (1980) presented 5 to 11 year old children with stories in which children were allowed to hit (moral act) and stories where children were allowed to undress in the playground (conventional act). They found that a majority of participants judged that it was wrong for a school to allow hitting and wrong for students to follow that rule. However, the majority of participants judged it acceptable to permit undressing and acceptable for students to follow that rule. Hence, they found that children's evaluations of a certain type of social rule were based on their judgements about the related act. If they judged an act to be a social convention, then they judged the rule as arbitrary.

The use of naturalistic observations of children in the playground elaborated previous findings about the specific characteristics which empirically defined each domain. A study by Nucci and Nucci (1982) observed children from the 2nd, 5th, and 7th grades and documented a total of 439 moral

events and 1,045 social conventional events. They subsequently interviewed children who had observed these events and asked them to classify the acts. For moral events, the children's responses revolved around the intrinsic (hurtful or unjust) consequences of the actions, while responses to conventional events centered on aspects of the social order. Thus, studies from both laboratory settings and naturalistic situations provide evidence that children from toddlerhood, to middle childhood and early adolescence distinguish between two types of rules: moral and social-conventional.

The robustness of empirical evidence delineating the existence of different conceptual domains for rules, each with their own set of defining characteristics, has been demonstrated with children of different ages and from different cultures. For example, conceptual domain differences have been obtained in non-Western societies. Korean children (Park & Johnson, 1984; Song, Smetana, & Kim, 1987), children and adolescents in Nigerian communities (Hollos & Turiel, 1986), and children in the Virgin Islands (Nucci, Turiel, & Encarnacion-Gawrych, 1983) were found to

develop moral and social conventional conceptualizations of the their social world.

Ample research has been described on the distinctions between the moral and social-conventional domains. Children also conceptualize a third domain that is distinct from moral and social-conventional, namely, the psychological domain (Broughton, 1978; Nucci, 1981; Smetana, 1981b; 1989a). Nucci (1981) found that one aspect of the psychological domain is that children conceptualize the existence of *personal* rules. These are perceived to be primarily of consequence to the actor rather that on other people (moral) or societal order (conventional). They are essentially nonsocial in nature and thus do not involve issues of justice or social order. He found that certain actions were classified as not affecting others, they were one's own business, and they should not be governed by rules. Examples of these acts were choosing friends, decisions about personal appearance, deciding to join an activity, choosing the content of creative works, etc. These actions all defined some private aspect of an individual's life where the issue of "right or wrong" was one of preference rather than obligation or custom (Nucci, 1981).

In contrast to moral and social conventional rules, rules governing personal acts were judged to be inordinate or absurd by the younger participants (age 7), and the oldest participants (up to age 20) rated these rules as unjust.

Thus, in contrast to Piaget's predictions, ample research (Nucci, 1981; Nucci & Nucci, 1982; Nucci & Turiel, 1976; Turiel, 1978; Turiel, 1977; Smetana, 1989; Weston & Turiel, 1980) has found that children do not possess a unitary concept of rules; rather, children define a type of rule depending on the meaning that they attribute to the rule (i.e., whether it pertains to justice, social organization, or personal factors). Children do not move from viewing all rules as fixed to viewing them alterable, as Piaget suggested. Moral rules are viewed as unalterable from the beginning, and social-conventional rules are viewed as alterable from the beginning. Children as young as two and a half years old have a clear awareness of rules and can differentiate between moral and social conventional rules. These children do not seem to be in a premoral stage, as Piaget theorized. Finally, individuals from 7 to 20 years old also differentiate personal rules as a separate category

from moral and social conventional rules.

Given that it has been found that young children make clear distinctions between different types of rules, it would not be unreasonable to investigate whether safety rules are viewed as different from the above mentioned types of rules, and if so, what are the characteristics that set safety rules apart from the others. Do children organize their concepts of safety into a separate domain? Do children view violations of safety rules as serious and deserving of punishment? Do they view safety rules as generalizable, mandatory, unjust, one's own business, or necessary to maintain order? The following section will review the limited research on safety rules.

Children's Conceptions of Safety Rules

Very limited research has been conducted on children's conceptualization of safety rules using the same cognitive developmental framework described previously. Nucci, Guerra, & Lee (1991) compared adolescents' criterion judgments of personal, prudential (safety), and social conventional concepts regarding the harmful effects of drug use. They

found that adolescents did distinguish among the different domains, indicating that they perceived a separate domain for safety rules. For example, they found that the majority of participants categorized the use of drugs as a personal or prudential matter rather than a moral or social-conventional matter.

Research with school-aged children has revealed that this age group also categorize distinct characteristics of safety rules. Tisak & Turiel (1984) investigated whether 6 to 10 year old children could distinguish between the social-interactional, moral aspects of harm and the nonsocial, prudential (safety) aspects of harm. In other words, violations of moral rules not only cause physical injury, but also have an effect on social interactions. Violations of safety rules only involve physical injury to oneself and do not involve hurting of other people. They presented participants with three stories where the transgressions of rules resulted in either physical injury or no physical injury. Results indicated that the children saw both moral and safety rules as important, their violation as wrong, their validity as noncontingent on authority, and as

generalizable. However, the judgments were more extreme for the moral rules than for the safety rules, and the moral rules were judged as more important. The primary distinguishing characteristic of the rules was that for moral rules, children focussed on both the consequences of the act and on the regulation of social relations, while their justifications for the safety rule were based only on the consequences of harm. Safety rules were perceived as nonsocial in nature and as less important than moral rules, regardless of the fact that both resulted in harmful consequences to the actor. It is also important to note that fewer younger children distinguished between the two rule types, but a clear discussion on why this might be the case was not given, leaving open the empirical question of whether younger children actually distinguish between the two domains. In addition, children's judgments on safety rule violations which did not result in physical injury was not investigated.

So far, this literature review has focused on describing the empirical evidence in support of the notion that children conceptualize rules into distinct domains: moral, social-

conventional, psychological, and prudential. Research on the first three domains has indicated that children as young as 2 1/2 years old can identify rules pertaining to different domains. However, research on the prudential domain has only looked at children from age 6 and older. The present study will elaborate on the previous studies by testing children from ages 2 1/2 to 5 1/2 years old to determine if this age group of children can also make distinctions between safety rules and other types of rules (e.g., moral rules).

In addition, how children *develop* the concept of safety rules has not been studied. This will be a second focus of the present study: investigating possible origins of safety rule concept formation. Although research is lacking in this area, ample research exists on how children develop moral and social-conventional concepts, and some research exists on how children develop psychological or personal concepts. The following section will review this literature.

Developmental Origins of Moral, Social-Conventional, and Personal Rules

Research on the development of the moral, social conventional and psychological domains has been conducted. It has been hypothesized that each domain develops out of qualitatively different interactions with the environment and people (Turiel, 1977, 1983). Although each domain may be coordinated in judgments about a single event or may be related in the sense that one domain provides information that may stimulate development in a different domain (Smetana, 1983; Turiel & Smetana, 1984), each domain is viewed as a distinct and independent conceptual system. As such, research has delineated the process of development within each domain.

For example, research on the development of concepts of justice or morality (Damon, 1975, 1980; Kohlberg, 1976; Kohlberg & Turiel, 1971), of social convention (Turiel, 1975, 1977), and of personal or psychological concepts (Broughton, 1978) demonstrates how each follows a distinct sequential course of development. Further, each sequence has a unique origin and endpoint in development, and each appears to

develop out of different types of social interactions. Qualitatively distinct types of social interactions with different classes of events or reactions lead to the construction of different types of social and conceptual knowledge (Ast, Cicchetti, & Rabideau, 1989; Much & Shweder, 1978; Nucci & Nucci, 1982a, 1982b; Nucci & Turiel, 1978; Sanderson & Siegal, 1988; Smetana, 1983; Smetana, Kelly, & Twentyman, 1984).

Moral judgments arise from children's experience with events or actions that affect their own and other's rights or welfare. Children who observe or are victims of pain or perceived injustice generate prescriptions regarding such events and realize that the act is wrong with or without a rule prohibiting such act (e.g., Smetana, 1983). These concepts have been empirically tested through research on naturally occurring transgressions among toddlers (Smetana, 1984, 1989b), preschool children (Nucci & Turiel, 1978), and school-age (Nucci & Nucci, 1982a, 1982b) children.

Social-conventional knowledge is developed through an increased understanding of the prohibitions regarding acts rather than from experience with the acts themselves (Weston

& Turiel, 1980). Toddlers and preschool children do not readily respond to naturally occurring violations in social conventions (Nucci & Turiel, 1978), nor to violations of school regulations (Much & Shweder, 1978). However, they do show an understanding of such events because they evaluate them differently than moral events (Smetana, 1981a; Smetana, Kelly, & Twentyman, 1984). With increasing age, children begin to initiate responses to conventional transgressions (Nucci & Nucci, 1982a, 1982b).

Concepts in the psychological domain, such as inferences about other's thoughts, intentions, feelings, and knowledge of personality, self, identity, and personal rules, appear to develop through a person's attempts to understand others and represent internal, psychological processes that are not directly given or observable in social interaction. This form of knowledge does not arise from the effects of actions on others, but through repeated social interactions and social experience with people (Broughton, 1978; Nucci, 1981; Smetana, 1983; Turiel, 1977).

Therefore, moral judgments arise from social interactions involving the intrinsic characteristics of actions, such as

their consequences for the rights and welfare of others. The interpretation of social-conventional and psychological events is not given in the intrinsic nature of the events themselves, but is given in the social system or constructed from social interaction. While all judgments have their origins in children's experience with social relation events, judgments are not located in the events themselves but are actively constructed. Children agree in their classification of events and actions as content for the domains to the extent that they interpret the events or social interactions in similar ways (Smetana, 1983).

Although the literature describes possible origins of the moral, social conventional, and psychological domains, no research has described the origins of the prudential domain and what leads to the conceptualization of safety acts. Does different experience with social interactions lead to concepts of safety, or do children learn safety rules through their experiences with physical injury? Answers to this question have not been studied. It is therefore necessary to investigate how very young children form concepts of safety.

In summary, the purpose of the present study will first

be to investigate how safety rules are conceptualized in relation to other types of rules for preschool children. In particular, differences between moral rules and safety rules will be ascertained. This study will also investigate certain experiential factors that may contribute to the development of children's safety rule concepts. In particular, assessments of children's experience with social interactions and injury history will be obtained.

CHAPTER III

STATEMENT OF THE PROBLEM

Research on how children conceptualize safety rules has been limited. Although it has been shown that children from ages 6 to 10 years old (Tisak & Turiel, 1984) and adolescents (Nucci, Guerra, & Lee, 1991) can differentiate safety rules from other types of rules, no research exists on whether younger children can make such distinctions. Preschool children were able to differentiate moral rules from social-conventional rules (Smetana, 1981a), but it is not known whether preschool children can differentiate between safety rules and moral rules.

In addition, research has looked at the developmental origins of the concepts of morality, social-conventional knowledge, and personal concepts. However, no research has been done on the origins of a child's concepts of safety. Research investigating possible origins of the concepts of safety and on discovering if preschoolers conceptualize safety rules in a different domain from moral rules would enhance knowledge which could be utilized in developing

programs to teach children to live a safer lifestyle.

Prior to designing intervention programs to address safety behaviors, research is needed for understanding how children cognitively form the concept of safety. An educational method of teaching safety to children would be limited if one does not first know if the child is cognitively capable of grasping the concepts being taught. In addition, if one is to use a developmental milestone tactic (Peterson & Mori, 1985), one first needs to understand developmental principles of children of particular ages. If one understands the world from the child's perspective, then intervention programs which are designed to match the developmental level of the child would be more likely to be effective in guiding safety behavior and generalizing to additional situations.

Therefore, the purpose of this study is two-fold. The first goal is to determine if preschool children distinguish between moral and safety concepts based on the criteria used in other studies. Specifically, this study will investigate if the younger preschool children in the study will have more difficulty than the older preschool children distinguishing

the two types of rules. In addition, this study will investigate whether children's judgments are affected by the type of consequences that result from rule violations.

The second goal of this study will be to investigate whether amount of social experience is related to children's evaluation of moral and safety rule violations. Specifically, the relationship between the amount of day care experience of a child and the degree of importance placed on moral rules will be assessed. In a study looking at the effects of amount of day care experience of preschool children on social interaction, Schindler, Moely, and Frank (1987) found that day care experience was related to increased social participation. Another study found that participants with more hours and months of day care engaged in more cooperative play and peer interaction (Field et al., 1988). Therefore, children with more day care experience may have more developed concepts of morality given their additional experience with social relations.

In addition, the relationship between injury history and children's concepts of safety will be measured by obtaining information from the parents on the frequency of injuries

their children have sustained, and on their children's injury related behavior. The parents will complete an injury history questionnaire and the Injury Behavior Checklist to assess if an increased frequency of injuries or injury related behavior are related to more developed concepts of safety.

It is possible that children who have not entered school, or who have had less social experience may perceive moral and safety rules differently from children with more social experience. Very young children may tend to have more experiences with safety rules they learned from their parents because a child's primary activities involve the exploration of the physical environment and this increases the likelihood of injury. In the study by Tisak & Turiel (1984), school-aged children were able to articulate how both moral and safety rules were similar with regard to potential physical injury resulting from the violation of the rule. In addition, these children can recognize that moral rules are social in nature, while safety rules are not. However, it is still unclear how preschool children might judge moral rules as compared to safety rules.

It is likely that safety rules are the first type of rules that children learn through their exploration of the environment, natural consequences, and social consequences. It is possible that as soon as an infant is mobile, he or she starts to learn about safety through consequences he or she encounters and through consequences imposed on by the parent for breaking safety rules. It is clear that the first role of the parent is to ensure the safety of their children before attempts are made to teach them to get along with their peers or to learn social conventions. Therefore, very young children may view safety rules as more important than moral rules.

The present paper proposes to utilize methods derived from previous studies to determine if preschoolers can differentiate safety and moral rules. This will be done using the following criterion judgements: seriousness of transgression, rule contingency, rule relativity, evaluation of deserved punishment, and negation of rule by authority. Each of these are explained in further detail in the methods section.

Smetana (1981a) found test-retest reliability in using similar criterion judgements for differentiating moral and social-conventional rules in 2 to 4 year-olds. In addition, Tisak and Turiel (1984) found reliability in their measures of differentiating moral rules from prudential rules in 6 to 10 year-olds. Therefore, it is assumed that the measures utilized in the present study will also be reliable because of the similarity in the types of measures used. Nevertheless, the measures utilized in this study are different because they incorporate negative and neutral outcomes for each story. Therefore, test-retest reliability was assessed for the measures used.

Participants were divided into four age groups of preschool children (3, 4, 5, and 6 year-olds). These age groups were selected partly because Piaget separated children younger than 4 into the premoral stage and 4 to 6 year-olds into the heteromonous stage. Also, Tisak and Turiel (1984) found moral vs. prudential differences in children older than 5 1/2 years-old. In addition, Smetana (1981a) demonstrated that children as young as 2 1/2 could reliably be interviewed regarding their conceptions of rules using similar methodology.

The present study tested five hypotheses. First, it was hypothesized that moral rules would be distinguished from safety rules throughout the participants tested. Smetana (1981a) and Smetana (1985) found that preschool children were capable of distinguishing different *types* of rules and did not see all rules as the same. In addition, ample research demonstrates that children can distinguish different domains of rules and this study is expected to replicate such findings.

Second, it was hypothesized that differences in children's judgments of moral and safety rules would be less pronounced in younger children. In other words, the younger preschool children in the study were expected to differentiate less between safety and moral rules compared to older children. Tisak & Turiel (1984) found age trends (i.e. the younger the child, the less differentiation between moral and safety rules). This age trend was expected to continue in the present sample. It was speculated that the two types of rules might be judged as equally important by the youngest children. A large part of very young children's socialization is focussed on safety and avoiding injury. It

is likely that the first goals of early socialization is to keep the child safe, which continues to be a goal until the child can regulate himself or herself. Moral socialization occurs to prepare the child for social situations and to get along with other children. It is therefore possible that moral and safety rules may be seen as equally important by very young children. It is also possible that the youngest children in the sample might judge safety rules as *more* important than moral rules because safety issues may be more salient in the young child's mind since this may be what parents have emphasized in their socialization goals.

A third hypothesis was that transgressions of both moral and safety rules that result in negative outcomes would be judged more harshly than transgressions with no negative outcome. Preschool children's judgments about an event are to some degree dependent on the consequences of the event (Nelson, 1980; Piaget 1932/1965). Children use the resulting consequences of a transgression as one of the basis for judging rule breaking behavior. The more damage that results, the more harshly the behavior of breaking the rule is judged. However, this may only occur with regard to moral

rules because safety rule violations that result in injury may be viewed as already punished. Therefore, children may not judge safety rule violations resulting in injury as deserving of punishment. In the present study, rule items used to measure the criterion judgments will depict consequences which result in physical harm and those which do not result in physical injury to victims in the stories presented to participants.

A fourth hypothesis was that individual differences in day care experience (i.e., amount of social interaction) would be correlated with children's judgments of moral rules. Children who have had more daycare experience may view moral rules as more important and as deserving more punishment. In addition, number of siblings may also influence children's judgments of moral rules because having siblings may increase the opportunity for social interaction.

Finally, the fifth hypothesis was that individual differences in the number of injuries a child has experienced and/or injury behavior frequency will be correlated with more extreme safety rule judgments. However, the direction of the difference could not be predicted from existing literature.

Whereas the frequency of injuries may sensitize children to safety situations, it is also known that dangerous behavior (at least in adults), especially when followed by no injury, may lead to judgments of dangerous situations as being less dangerous (Horvath & Zuckerman, 1993).

CHAPTER IV

METHOD

Participants

Participants were 120 preschool children attending nursery schools and day care centers from two cities in the Midwest. Participants were categorized into four age groups with 30 participants (15 male and 15 female) in each group. Specific ages per group were as follows: Two years, eight months (2-8) to 3-4 (M = 3-0), 3-8 to 4-4 (M = 3-11), 4-8 to 5-4 (M = 5-1), and 5-8 to 6-4 (M = 5-11). The 3 month separation between groups was intentional to assure appropriate group differentiation. Participants were primarily middle-class and Caucasian (94.5%). Participants were recruited via parental consent forms which were distributed with permission from school officials. Also, children were asked if they wished to participate in the study. Only willing children proceeded to the experimental session. Participant recruitment and experimental procedures conformed to APA research guidelines and were approved by the Oklahoma State University Institutional Review Board (IRB).

The approval form is included at the end of the thesis.

To obtain the 120 participants in the desired age groups, approximately 635 recruitment letters were distributed in 15 different preschools. A total of 222 consent forms were returned. Of these, 84 children did not participate in the study because they were either too old, too young, fell between age groups, or were not interviewed because the desired number of children in their age group had already been obtained. In addition, 3 children did not want to participate, 4 of the children's parental questionnaires were incomplete, 2 children left day care before they could be interviewed, 6 protocols were deemed invalid because the children did not complete the entire experimental session (they were either picked up by their parents in the middle of the session, were very shy and stopped answering questions, walked away to play with something else, or could not communicate well in English), and 2 completed protocols were considered invalid because the children never quite understood the measures and could not pay attention to the stories without considerable re-direction.

Stimuli

Stimuli were twenty-four 8 1/2 X 5 1/2 monochrome ink drawings on poster board illustrated by an artist. They depicted four stories (3 pictures each) of common moral transgressions and four stories of common safety transgressions (Smetana, 1981; Tisak & Turiel, 1984). Two of the stories from each domain depicted a resulting physical injury, while the other two stories did not. The gender of the actors were consistent with the gender of the participant and the characters in the stories were given a male or female name depending on the gender of the participant. Figure 1 presents an example the stimulus drawings used to depict a safety rule transgression (See Figure 1 on page 50).

The four moral transgression stimuli included drawings and a story line depicting: (1) a child pushing another child, causing a cut on his or her knee, (2) a child throwing a rock at another child, causing a minor scalp injury, (3) a child taking another child's snack away during snack time, causing no physical harm (the snack owner had finished eating), and (4) a child spraying water on another child, causing no physical harm (the child was wearing a bathing suit for swimming pool play).

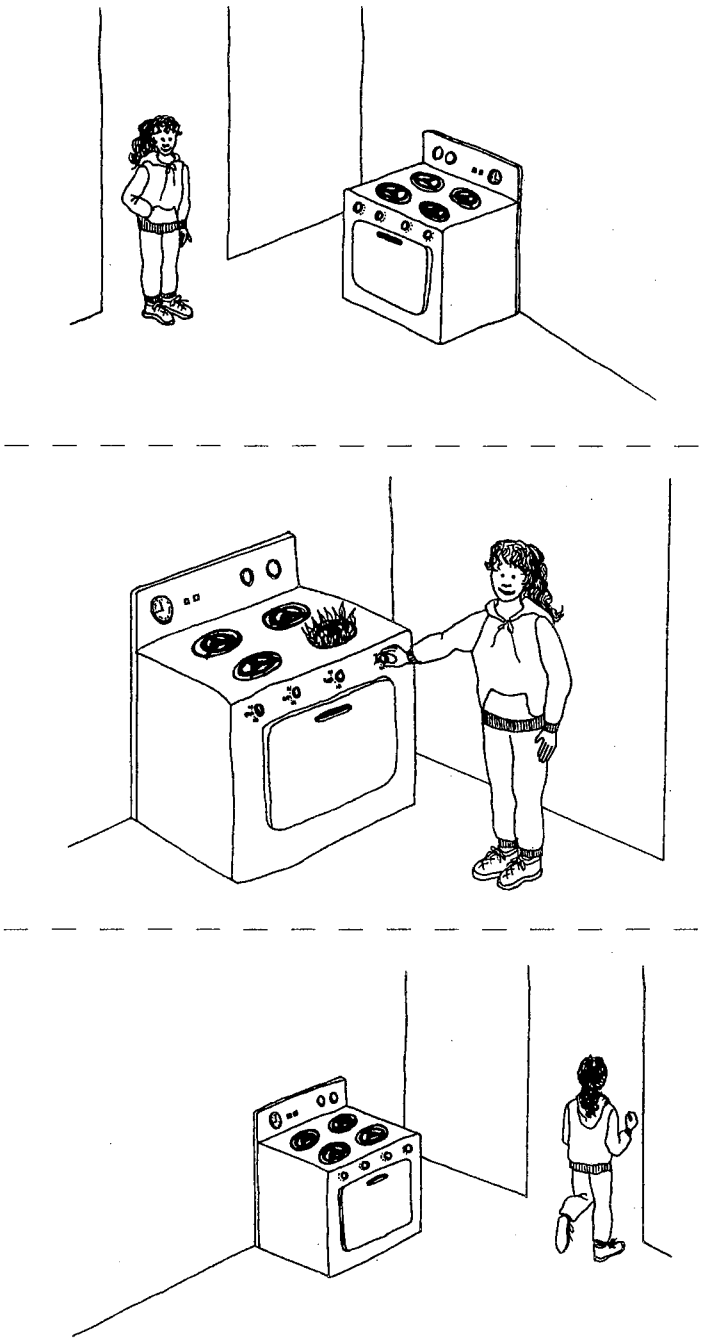

Figure 1. Stimulus drawings for safety rule violation of touching the stove. The child was presented with the drawings and told: "In this school there is a kitchen. There is a rule that says 'Don't touch the stove.' But Jenny broke the rule and turned on the stove. She turned it off and went back to the classroom."

The four safety transgression stimuli included drawings and a story line depicting: (1) a child running in the rain, falling, and causing a cut on his or her knee, (2) a child approaching a swing set and getting hit on the head by another child's swing, causing a small cut on the head, (3) a child breaking a safety rule by climbing a workman's ladder, causing no physical injury (even though the child jumped off a high rung), and (4) a child exploring the control knobs of a stove in the day care kitchen, causing the flames to go on, but resulting in no physical injury (flames were turned off).

Each story was described using the following format: (1) State the rule: "In this school there is a rule that says 'no _____'. What is the rule?" (child answers). (2) Describe rule breaking behavior: "But, Julie (or other common name consistent with the gender of the child) breaks the rule. She _____." (3) State the consequence of breaking the rule: "Julie slipped in a puddle and gets a cut on her knee." (See Appendix A for the stories presented to the participants).

Measures

Five types of assessment criteria, derived from previous studies (Nucci, 1981; Nucci & Turiel, 1978; Smetana, 1981; Tisak & Turiel, 1984; Turiel, 1977) were used in the present study. Figure 2 presents the scales used to measure each dependent variable (See Figure 2 on page 55). Each of the following was assessed:

a) Seriousness of Transgression, or how wrong the child believes it is to break a particular rule. The degree of wrongness they attribute to the violation of the rule is considered an index of how important they view the rule to be. Participants were asked "Do you think it was bad to ? (stating what act violated the rule) How bad was it?" Positive responses were measured using a four-point scale drawing depicting four circular faces of increasing size and with progressively larger and more exaggerated frowns. Each face was verbally labelled to indicate that the transgression was either "okay" (smallest face), "a little bit bad," "very bad," or "very, very bad" (largest face). The children were asked to point to the face that told how bad the transgression was. A value of 1 (smallest face) through 4

(largest face) was assigned depending on which face was selected (Smetana, 1981).

b) Rule Contingency, or whether an act is viewed as wrong contingent on the rule. In other words, an act may be viewed as wrong even though there may not be a rule prohibiting that act. An example would be saying the act of hitting is wrong even though there may be a rule that permits hitting. This was measured by asking the child, "What if there were no rule, would it be OK to _____(the transgression)?" "Yes" responses were assigned a value of 1, and "no" responses were assigned a 0 value. Children were shown a line drawing of a hand with a "thumbs up" sign to indicate "yes" and a "thumbs down" to indicate "no".

c) Rule Relativity/Generalizability, or whether the rule is relative to the child's particular setting and not generalizable to other contexts, or vice versa. That is, a child may see a rule as okay to use in school, but not okay to use at home or in another school. To measure this, the child was asked, "Would it be okay to ____(the transgression) in some other school?". "Yes" responses were assigned a value of 1, and "no" responses were assigned a 0 value.

Children also used the "thumbs up/thumbs down" drawing to facilitate their responses.

d) Evaluation of Deserved Punishment, or a measurement of how much punishment an actor should be given for a particular transgression. To measure this, participants were asked, "Should the teacher punish _____(the actor) for ____(the transgression)?", and if so, "How much, a little, or a lot." Responses were scored on a three-point scale where an answer of "no" = 0, "a little" = 1, and "a lot" = 2. Children were shown a drawing depicting a little circle and a big circle to indicate "a little" or "a lot".

e) Negation of Rule by Authority, or whether a teacher could legitimately dispose of a particular rule and whether this would be wrong. To measure this, participants were asked, "Would it be okay to _____ (the transgression) if the teacher let kids do this?". "Yes" responses were assigned a value of 1, and "no" responses were assigned a 0 value. Children also used the "thumbs up/thumbs down" drawing to facilitate their responses.

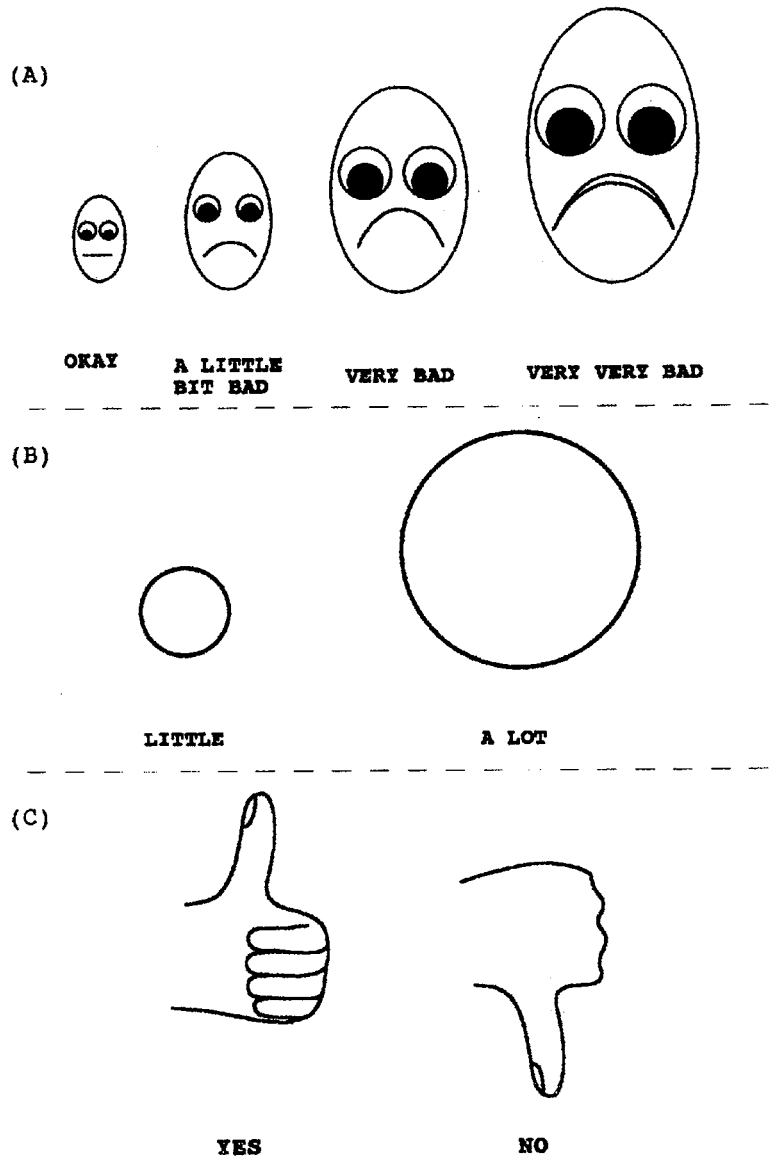

Figure 2. (A) "Four Faces" scale used to measure Seriousness of Transgression, (B) Rating scale used to measure Deserved Punishment, and (C) Rating scale used to measure Rule Contingency, Rule Relativity, and Rule Negation.

Measures Completed by Parents

Parents of the children were asked to fill out the consent form (See Appendix B and C), and a demographics questionnaire which included an assessment of their child's day care experience, the number of siblings the child has, and other social contacts. In addition, the Injury Behavior Checklist (IBC) (Speltz, Gonzales, Sulzbacher, & Quan, 1990), and an assessment of the frequency of injuries experienced by their child was given (See Appendix D and E).

Procedure

The 120 preschool children were individually interviewed by an adult experimenter in a separate classroom for approximately 15 to 25 minutes. They were generally seated across from the experimenter either by a little table or on the floor with the experimenter. In addition, 24 (20%) of the participants were reinterviewed 2 to 4 weeks later to assess the reliability of the measures. Six children per age group were reinterviewed. Only children who still corresponded to their originally assigned age group after the

2 to 4 week period were reinterviewed.

The experimenter initially gained rapport with the children in a particular classroom by visiting beforehand and assisting the teacher with snack time or other activities. The teachers also introduced the experimenter and announced that the experimenter would be playing some story games about rules with them. Individual participants were then asked "Would you like to play a story game with me?" before proceeding to a separate classroom. Children were first instructed in the use of the "thumbs up/thumbs down" drawing, the "a little/a lot" drawing, and "four-faces" scale. After a participant had gained an understanding of this measure and correctly identified the meaning of each face, they proceeded with the experimental session.

Participants were told that they were going to look at some stories about rules and then asked to tell the experimenter some examples of rules they have in their school. If a child did not understand what a rule was, it was explained. Participants were shown each of the eight stimulus drawings with their corresponding story line in random order. After each story, they were asked the above-

mentioned questions. If a child did not understand a rule or what was happening in the drawing, an explanation was given. Responses were recorded on answer sheets. Participants were subsequently debriefed about the importance of following the rules, keeping safe, and going to an adult if they are unsure about a particular situation.

CHAPTER V

RESULTS

The analyses were run using the SYSTAT statistical package (Wilkinson, 1989). Significance levels were set at .05. Hypotheses #1, #2 and #3 were tested by subjecting the data of each of the five dependent variables (i.e. seriousness of transgression, deserved punishment, rule contingency, rule relativity, and rule negation) to a 4(Age) X 2(Gender) X 2(Domain) X 2(Outcome) repeated-measures analysis of variance (ANOVA) with age and gender as between-group factors and domain and outcome as within-group factors. Tukey honestly significant difference (HSD) post-hoc multiple comparison tests of mean differences were performed to clarify significant interaction effects obtained from the ANOVAS.

Hypothesis 1

It was first hypothesized that moral rules would be distinguished from safety rules throughout the participants tested as evidenced by significant main effects of domain for each of the dependent variables. Table 1 presents the means

for each dependent variable according to domain. Only on the seriousness of transgression variable was a main effect of domain obtained, $F(1, 112) = 6.78$, $p < .01$. This effect indicates that violations of prudential rules were rated more serious ($M = 3.12$) than moral rule transgressions ($M = 2.91$). There were no significant domain main effects on measures of deserved punishment, $F(1, 112) = 0.25$, $p > .05$; rule contingency, $F(1, 112) = 2.32$, $p > .05$; rule relativity, $F(1, 112) = .23$, $p > .05$; or rule negation, $F(1, 112) = 2.54$, $p > .05$ (See Table 1 below).

Table 1
Mean Ratings on the Moral and Prudential Domains for Each Dependent Variable (DV)

	Domain	
DV	Moral	Prudential
Seriousness	2.91**	3.12**
Punishment	1.54	1.55
Contingency	0.40	0.37
Relativity	0.24	0.23
Negation	0.49	0.45

Note. Ratings of Seriousness were 0= Not bad, 1= Okay, 2= A Little bit bad, 3= Very bad, and 4= Very very bad. Punishment ratings were 0= None, 1= A little, and 2= A lot. Ratings of the remaining DV were 0= No, 1= Yes. Data were subjected to 4 X 2 X 2 X 2 ANOVAs. A domain main effect was obtained on the Seriousness variable.
**$p < .01$.

In addition to the domain main effect on the Seriousness variable, there were significant Domain X Outcome interactions for all dependent variables: Seriousness of transgression, $F(1, 112) = 23.28$, $p < .001$; deserved punishment, $F(1, 112) = 22.84$, $p < .001$; rule contingency, $F(1, 112) = 7.10$, $p < .01$; rule relativity, $F(1, 112) = 8.37$, $p < .01$; and rule negation, $F(1, 112) = 9.75$, $p < .01$. The significant Domain X Outcome interactions indicate that differences between moral and prudential mean ratings were not constant across type of outcome (negative vs. neutral). In other words, children perceived differences in how they viewed the moral vs. the prudential domains, but this is evident only when the effects of outcome are taken into consideration. The patterns revealed in the Domain X Outcome interactions for each dependent variable are presented in Figure 3. Each graph illustrates a pattern of more differentiation of ratings between negative and neutral outcomes for the moral domain than for the prudential domain (See Figure 3 on page 62). Analysis of these interactions with Tukey HSD multiple comparison tests further confirms the differentiation of domains by comparing means within-domains and between-domains.

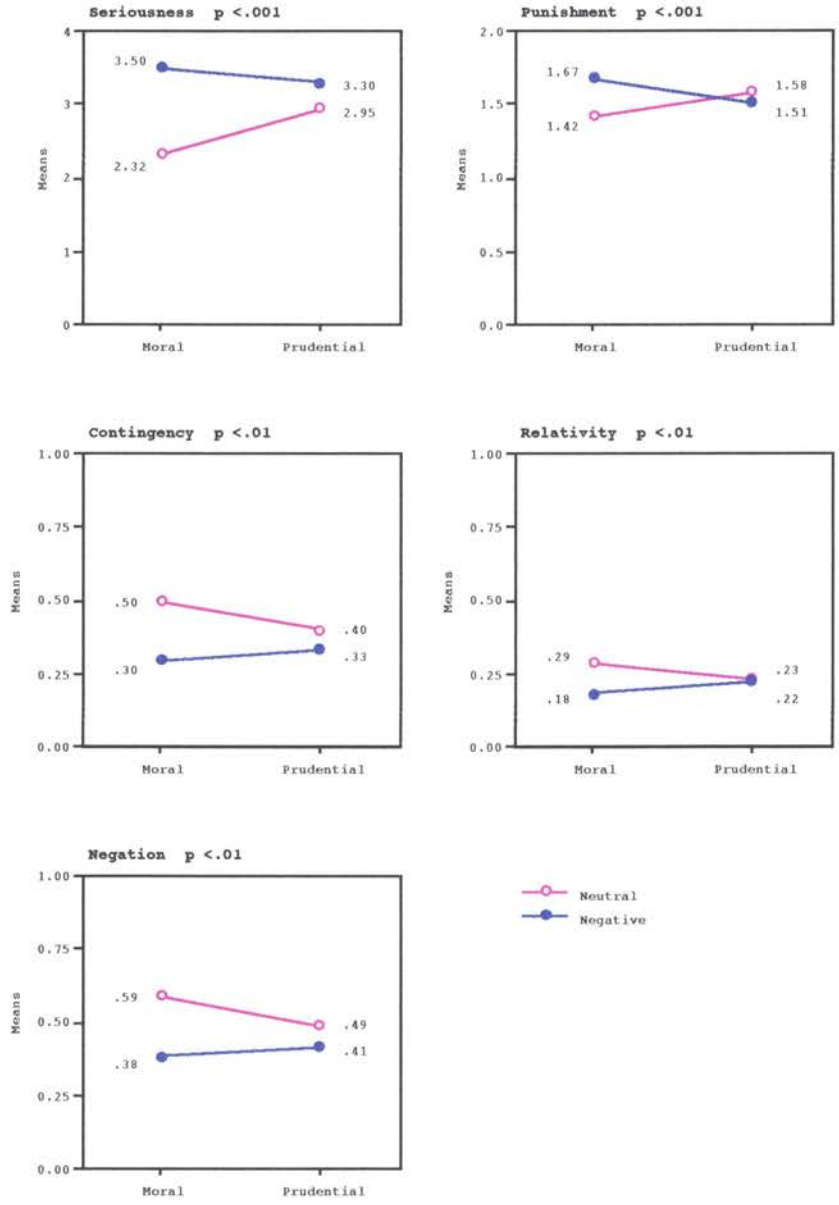

Figure 3. Patterns revealed in the Domain X Outcome interactions for each dependent variable. There was differentiation of ratings between negative and neutral outcomes for the moral domain, but not for the prudential domain.

The within-domains results are presented first. Table 2 presents the within-domain means for negative vs. neutral outcomes for each dependent variable. Differences between means were significant for the moral domain for all dependent variables except relativity. However, there were no significant mean differences for the prudential domain (See Table 2 below).

Table 2
Means for Within-Domain Differences in Negative vs. Neutral Outcomes for Each Dependent Variable (DV)

	Domain			
	Moral		Prudential	
	Outcome		Outcome	
DV	Negative	Neutral	Negative	Neutral
Seriousness	3.50***	2.32***	3.30	2.95
Punishment	1.67**	1.42**	1.51	1.58
Contingency	.30**	.50**	.33	.40
Relativity	.18	.29	.22	.23
Negation	.38***	.59***	.41	.49

Note. Means were subjected to a Tukey HSD multiple comparison test.
**$p < .01$, ***$p < .001$

As evidenced by the significant differences between means in the moral domain, outcome made a greater difference to children when asked to judge moral transgressions as opposed to prudential transgressions. Children were more likely to judge moral transgressions as more serious when a negative outcome resulted (M = 3.50) than when a neutral outcome resulted (M = 2.32). However, outcome did not affect children's judgments of prudential rules, as evidenced by no within-prudential-domain differences.

On measures of deserved punishment, moral transgressions resulting in a negative outcome were rated as deserving more punishment (M = 1.67) than those resulting in a neutral outcome (M = 1.42). However, prudential transgressions resulting in a negative (M = 1.58) or neutral outcome (M = 1.55) were rated as deserving the same amount of punishment. Outcome was not a factor in determining punishment for prudential transgressions.

On measures of rule contingency, children were more likely to judge moral transgressions as okay to do in the absence of a rule when a neutral outcome resulted (M = .50) than when a negative outcome resulted (M = .30). However,

outcome was not a factor in determining whether a prudential transgression was okay to do in the absence of a rule.

On measures of rule relativity, moral transgressions resulting in a neutral outcome were equally likely to be rated as okay to break in another school (M = .29) than those resulting in a negative outcome (M = .18). Similarly, prudential transgressions resulting in a negative (M = .22) or neutral outcome (M = .23) were rated the same.

Finally, on measures of rule negation, children were more likely to judge moral transgressions as okay to do if the teacher permits it when a neutral outcome resulted (M = .59) than when a negative outcome resulted (M = .38). These differences were not obtained for the prudential domain (See Table 2 on page 63).

Between-domain differences were only obtained on the seriousness, contingency, and negation measures. Moral/negative violations were judged more serious than prudential/neutral violations ($p < .001$), but moral/neutral violations were judged *less* serious than both prudential/negative ($p < .001$) and prudential/neutral ($p < .001$) violations. On the contingency measure, the only

significant between-domain comparison ($p < .05$) was the moral/neutral with the prudential/negative comparison. The same was true for the negation variable.

Hypothesis 2

Secondly, it was hypothesized that differences in children's judgments of moral and prudential rules would be smaller in younger children. The younger preschool children were expected to differentiate less between safety and moral rules compared to older preschool children, possibly judging characteristics of the two domains as equal. Support for this hypothesis would be a significant Age X Domain interaction. However, no interactions of this type were found on any of the dependent variables (All F's > 2.1 and p's >.10). However, significant Age X Domain X Outcome interactions were found for three of the dependent variables: Seriousness of transgression, $F(3, 112) = 3.20$, $p < .05$, deserved punishment, $F(3, 112) = 4.05$, $p < .01$, and rule contingency, $F(3, 112) = 2.92$, $p < .05$. For each of these three dependent variables, results indicate that the pattern

observed for the Domain X Outcome interaction varies depending on the age of the child. Figure 4 presents the graphs of the Age X Domain X Outcome interaction for the seriousness variable. These graphs reveal a pattern of increased differentiation with age for the moral domain, but not for the prudential domain (See Figure 4 on page 68). Figure 5 presents the graphs of the Age X Domain X Outcome interaction for the punishment variable. These graphs demonstrate that the younger children attributed the same amount of punishment to moral and prudential transgressions resulting in a negative outcome as those resulting in a neutral outcome. However, 6 year-olds attributed more punishment to moral transgressions resulting in a negative outcome, but they still attributed the same amount of punishment regardless of outcome to prudential transgressions (See Figure 5 on page 69). Figure 6 presents the graphs of the Age X Domain X Outcome interaction for the contingency variable. These graphs indicate no differentiation on ratings between negative and neutral outcomes for either domains, except for ratings given by the 6 year-olds (See Figure 6 on page 70).

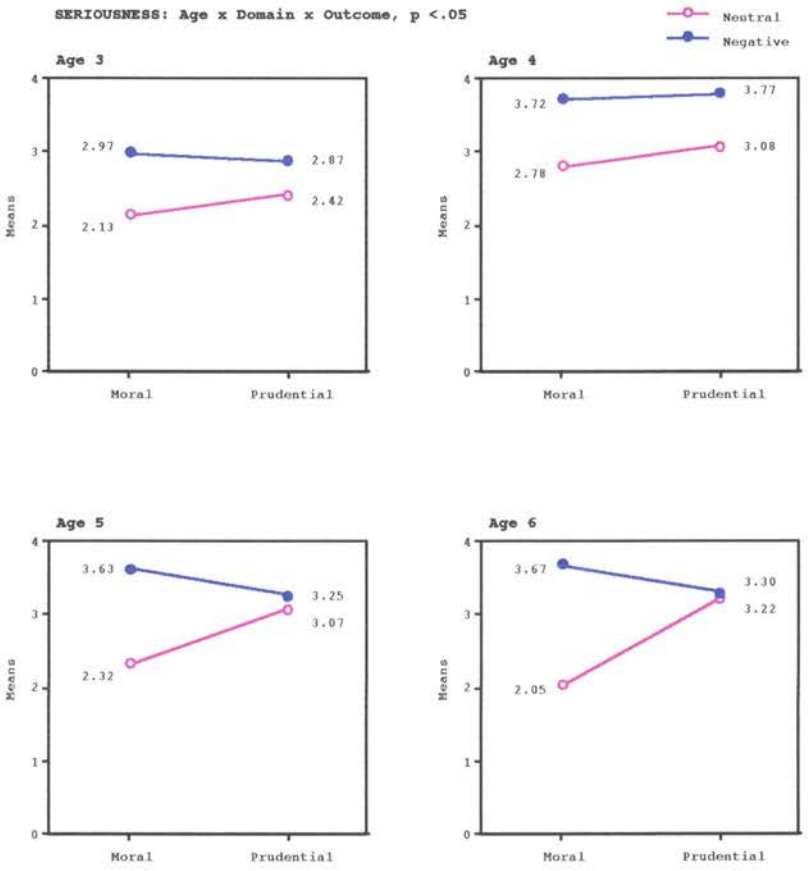

Figure 4. Patterns revealed in the Age X Domain X Outcome interaction for the Seriousness variable. There was differentiation of ratings between negative and neutral outcomes for the moral domain and these differences increased with age, but for the prudential domain, no significant differences were obtained for any age.

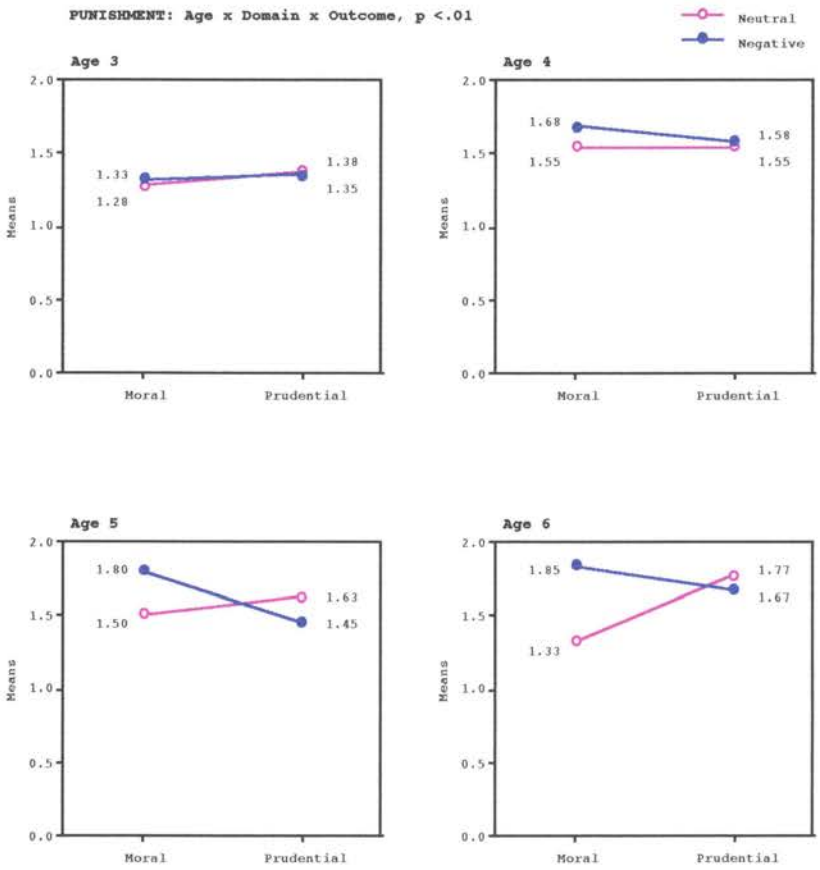

Figure 5. Patterns revealed in the Age X Domain X Outcome interactions for the Punishment variable. The 3, 4, and 5 year-olds attributed the same amount of punishment to moral transgressions resulting in a negative outcome as those resulting in a neutral outcome. This was also the case for prudential transgressions. However, 6 year-olds attributed more punishment to moral transgressions resulting in a negative outcome, but they still attributed the same amount of punishment regardless of outcome to prudential transgressions.

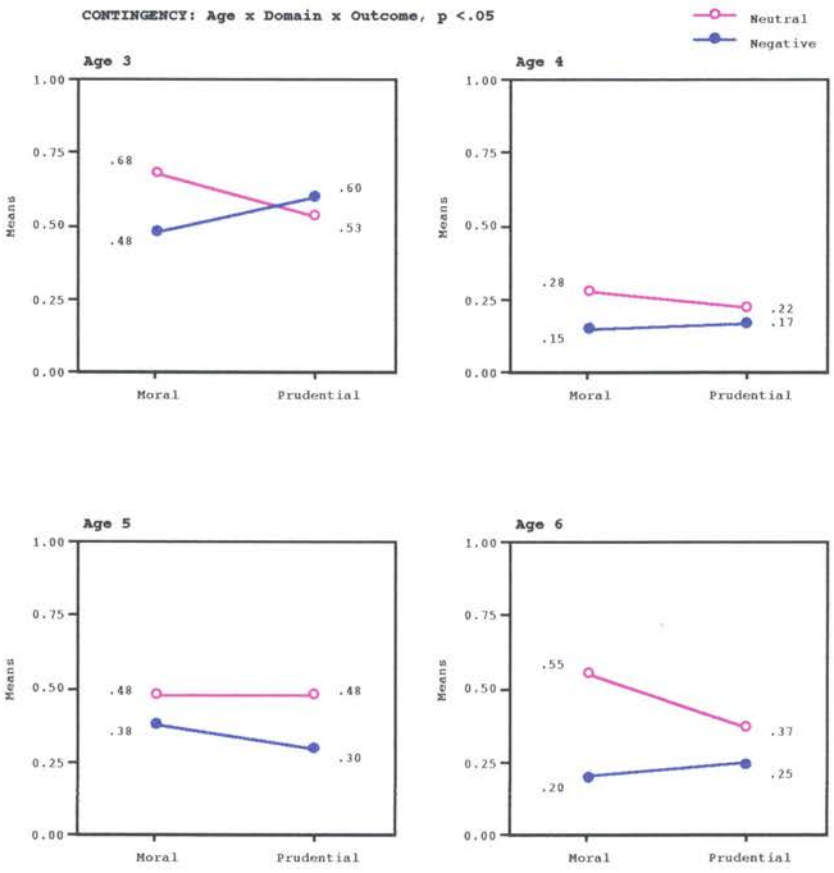

Figure 6. Patterns revealed in the Age X Domain X Outcome interactions for the Contingency variable. No differentiation was obtained on ratings between negative and neutral outcomes for both the moral domain and the prudential domain by the 3, 4, and 5 year-olds. However, the 6 year-olds diffentiated between negative and neutral outcomes in the moral domain.

Analysis of these 3-way interactions with Tukey HSD multiple comparison tests provided additional information regarding age differences in the patterns previously described under Hypothesis #1. Table 3 presents the within-age means descriptive of the significant 3-way interactions for the seriousness, punishment, and contingency measures (See Table 3 on page 73). As seen earlier for the seriousness measure, there was differentiation of ratings between negative and neutral outcomes for the moral domain and these differences increased with age, but for the prudential domain, no significant differences were obtained. Between-domain differences were not obtained for the 3 year-olds, but for the 4, 5, and 6 year-olds, results indicated that they rated moral/neutral violations as less serious than prudential/negative or prudential/neutral violations ($p < .05$ to $p < .001$).

On the punishment measure, 3, 4, and 5 year-olds attributed the same amount of punishment to moral transgressions resulting in a negative outcome as those resulting in a neutral outcome. The same pattern was

obtained for prudential transgressions. However, 6 year-olds attributed more punishment to moral transgressions resulting in a negative outcome, but they still attributed the same amount of punishment regardless of outcome to prudential transgressions. Between-domain differences on the punishment measure were only obtained for the 5 and 6 year-olds. The 3 and 4 year-olds did not differentiate between-domains. The 5 year-olds assigned more punishment to moral/negative violations than to prudential/negative violations ($p < .05$). The 6 year-olds assigned more punishment to prudential/negative ($p < .025$) and prudential/neutral ($p < .005$) violations than to moral/neutral violations.

On the rule contingency measure, no differentiation was obtained on ratings between negative and neutral outcomes for the moral domain and for the prudential domains, as described previously, except for the 6 year-olds, who diffentiated between negative and neutral outcomes in the moral domain. The 6 year-olds were also the only age group to obtain between-domain differences. They viewed moral/neutral violations as more contingent on the presence of a rule than prudential/negative violations.

Table 3

Means for Within Age Differences in Negative vs. Neutral Outcomes

	Domain			
	Moral		Prudential	
	Outcome		Outcome	
DV	Negative	Neutral	Negative	Neutral
Seriousness				
Age 3	2.97*	2.13*	2.87	2.42
Age 4	3.72***	2.78***	3.77	3.08
Age 5	3.63***	2.32***	3.25	3.07
Age 6	3.67***	2.05***	3.30	3.22
Punishment				
Age 3	1.33	1.28	1.35	1.38
Age 4	1.68	1.55	1.58	1.55
Age 5	1.80	1.50	1.45	1.63
Age 6	1.85***	1.33***	1.67	1.77
Contingency				
Age 3	.48	.68	.60	.53
Age 4	.15	.28	.17	.22
Age 5	.38	.48	.30	.48
Age 6	.20**	.55**	.25	.37

*$p < .05$, **$p < .01$, ***$p < .001$

Hypothesis 3

The third hypothesis predicted that transgressions of both moral and safety rules that result in negative outcomes would be judged more harshly than transgressions with no negative outcome. However, it was also speculated that children may not judge safety rule violations resulting in injury as deserving of punishment. A main effect of outcome would confirm the hypothesis that overall negative outcomes would be judged more harshly regardless of domain. Results indicated strong main effects of outcome for all the dependent variables: Seriousness of transgression, $F(1, 112) = 66.19$, $p < .001$, deserved punishment, $F(1, 112) = 4.72$, $p < .05$, rule contingency, $F(1, 112) = 34.75$, $p < .001$, rule relativity, $F(1, 112) = 14.40$, $p < .001$, and rule negation, $F(1, 112) = 29.81$, $p < .001$. Table 4 presents the mean ratings on negative and neutral outcomes for each dependent variable. The outcome main effects were also qualified by the Domain X Outcome and the Age X Domain X Outcome interactions previously described. As noted before when discussing the first two hypotheses, there were

diffences in how children rated negative vs. neutral outcomes for the moral stories compared to the prudential stories (See Table 4 below).

Table 4
Mean Ratings on Negative and Neutral Outcomes for Each Dependent Variable

	Outcome	
DV	Negative	Neutral
Seriousness	3.40***	2.63***
Punishment	1.59*	1.50*
Contingency	0.32***	0.45***
Relativity	0.20***	0.26***
Negation	0.40***	0.54***

*$p < .05$, ***$p < .001$.

Hypotheses 4 and 5

The fourth hypothesis was that individual differences in day care experience would be correlated with children's judgments of moral rules. In addition, number of siblings was also speculated to influence children's distinctions between moral and safety rules. The fifth hypothesis was that individual differences in the number of injuries a child has experienced and/or injury behavior frequency would be

correlated with more extreme safety rule judgments. In order to examine individual differences in children's judgements of moral and safety rule transgressions, Pearson partial correlations were conducted on the social interaction measures and the injury and injury behavior measures, controlling for age.

Social interaction measurements were obtained from the parental questionnaires. These measures were the number of hours of neighborhood play, hours spent in day care per day, total number of siblings, and a total amount of time spent in day care throughout the child's life. These measures were correlated with total moral score for the seriousness measure and total moral score for the punishment measure. No significant correlations were found for any of the age groups.

Measures of injury and injury behavior were obtained from the total score of the Injury Behavior Checklist and a total number of injuries sustained score. These measures were correlated with total prudential score for the seriousness measure and total prudential score for the punishment measure. No significant correlations were found for any of the age groups.

Reliability

Test-retest reliability was obtained 2 to 4 weeks after the initial interview for 24 (20%) of the participants (Six participants per age group). Similar to procedures utilized by Smetana (1981a), correlation coefficients were computed on means of summed moral items and summed prudential items to increase the range of variance. Table 5 presents the Pearson correlation coefficients obtained for moral and prudential measures for each dependent variable. Smetana (1981a) obtained a correlation coefficient of .66, $p < .01$ for conventional items and interpreted this finding as indicative of adequate reliability. In addition, Wilkinson (1989) reported that a coefficient of .466 represents a moderate correlation. Correlation coefficients in the present study ranged from .48 to .89. In addition, all correlations were significant at the .05 level or higher (See Table 5 on page 78). Therefore, these findings were interpreted as indicating acceptable reliability for the measures utilized in the present study.

Table 5

Test-retest Pearson Correlation Coefficients for the Moral and Prudential Scores on Each Dependent Variable (DV)

(n = 24)

DV	Moral	Prudential
Seriousness	.59**	.58**
Punishment	.48*	.59**
Contingency	.82***	.89***
Relativity	.68***	.76***
Negation	.78***	.81***

*p < .05, **p < .01., ***p < .001.

CHAPTER VI

DISCUSSION

The focus of this study was the exploration of children's safety judgments through a cognitive-developmental perspective. The purpose of the study was two-fold. The first goal was to determine if preschool children *distinguish* between moral and safety rule concepts. Specifically, this study investigated if younger preschool children had more difficulty than older preschool children distinguishing moral and safety rules. Similarly, this study investigated how negative or neutral consequences of rule violations might impact children's judgments of the two rule domains. The second goal of the study was to investigate experiential factors that may contribute to the *development* of children's moral and safety rule concepts. Specifically, this study investigated whether children's experience with social interactions was related to moral rule judgments, and whether children's experience with injury was related to safety rule judgments.

First Goal of the Study: Do Children Distinguish Between Moral and Safety Rule Concepts

Previous research (e.g., Smetana, 1981a; Tisak & Turiel, 1984) has shown that the following five criterion judgments can reliably be used as measures in distinguishing different rule domains: Seriousness of transgression, amount of deserved punishment, rule contingency, rule relativity, and negation of rule by authority. All of these criteria were used in the present study. Three hypotheses addressed the first goal of this study:

The first hypothesis predicted that moral rules would be distinguished from safety rules throughout the participants tested as evidenced by significant main effects of domain for each of the dependent variables. This has generally been the accepted manner of determining domain differences. In a strict sense, the first hypothesis was not verified according to the standards of previous studies because a main effect of domain was only found on the seriousness of transgression measure.

The second hypothesis predicted that younger preschool children would differentiate less between safety and moral rules compared to older preschool children, possibly judging characteristics of the two domains as equal. Support for this hypothesis would be significant Age X Domain interactions for each of the dependent variables. However, no interactions of this type were found on any of the dependent variables. According to this standard, the second hypothesis was not confirmed.

The third hypothesis predicted that transgressions of *both* moral and safety rules which result in negative outcomes would be judged more serious than transgressions with no negative outcome, as evidenced by main effects of outcome on all the dependent variables. Results indicated main effects of outcome for all the dependent variables, confirming the third hypothesis. However, upon further analysis of the Domain X Outcome and the Age X Domain X Outcome interactions, results revealed that outcome only had an impact on moral judgments and *not* on prudential judgments. This was evidenced by significant mean differences in the moral/negative vs. moral/neutral ratings,

but no significant differences were found in the prudential/negative vs. prudential/neutral ratings. Thus, it can not be concluded that children judged *both* moral and prudential rule violations which resulted in negative outcomes as more serious than those which resulted in neutral outcomes because prudential rules were judged equally serious, regardless of outcome. Analysis of the interactions not only altered the interpretation of the third hypothesis, but also the interpretation of the first and second hypotheses.

Even though the first two hypothesis were discomfirmed according to the strict predictions made, the Domain X Outcome and the Age X Domain X Outcome interactions offer additional important information necessary for interpreting the results accurately. Once these interactions were explored in depth, results indicated that the first two hypotheses were indeed confirmed.

Fist, the patterns revealed in the Domain X Outcome interaction revealed differences in domains because it was clear that children did not judge moral rules in the same manner as prudential rules when outcome was taken into

consideration. Outcome affected children's judgments of safety rules, but outcome did not affect children's judgments of prudential rules. This is observed not only in the graphs presented, but also when mean differences are analyzed. Thus, the results demonstrate that children differentiated between domains, confirming the first hypothesis.

Secondly, the Age X Domain X Outcome interaction revealed the same pattern just discussed (outcome had an impact for moral judgments, but not for prudential judgments), but this interaction also revealed that younger children perceived less differences between the domains when outcome was taken into consideration, confirming the second hypothesis. Other results provided additional support to the first two hypotheses. For example, the domain main effect on the seriousness measure indicated that prudential rules were judged more important (i.e. violations of the rule were seen as more serious) than moral rules. Safety issues appear to be more salient in the minds of preschoolers because safety rules are judged more important. These findings also support the conclusion that children distinguish between safety rules and moral rules.

As discussed earlier, previous research has primarily determined differences in domain by using main effects and has not included variables to produce complex interactions. The design of the present study made it possible to get complex effects because additional factors (e.g., negative and neutral outcomes) were included. One study which did include negative and neutral outcomes in their stories of moral and prudential rule transgressions was the study by Tisak and Turiel (1984).

In comparing the variables that were used both in the Tisak & Turiel (1984) study and the present study, Tisak & Turiel (1984) found significant domain (moral vs. prudential) main effects on their variables measuring rule contingency, rule relativity, and negation of rule by authority. Specifically, when comparing moral vs. prudential rules, they found that children were more likely to say that a prudential transgression was okay in the absence of a rule, more likely to say that prudential rules were less generalizable, and less likely to object to having the prudential rules changed by authority. However, they concluded that only a minority of participants judged prudential rules differently from

moral rules. By contrast, results in the present study did not find main effects for rule contingency, rule relativity, or negation of rule by authority. However, when comparisons were made after separating domains further by outcome, differences were found. Specifically, preschool children judged moral rule violations which resulted in a neutral outcome as more contingent on the presence of a rule, and more okay for authority to dispense of the rule, than prudential rule violations which resulted in a negative outcome. Tisak and Turiel (1984) also assessed the importance attributed to moral and prudential rules, which was equivalent to the present study's measure of seriousness of transgression. Three important results were discussed with regard to judgments of seriousness:

First, Tisak and Turiel (1984) found no significant main effect differences when comparing the two moral rule transgressions (stealing and pushing) even though the "pushing" transgression resulted in an injury. They did find that the younger participants in their study (6 year-olds) judged the "pushing" violation more harshly because it caused physical harm. The older subjects (8 and 10 year-olds)

judged the two moral rules equally because both pertained to welfare. However, results from the present study indicated that moral rule violations resulting in injury were judged significantly more harshly than moral rule violations which did not result in harm.

Secondly, Tisak and Turiel (1984) found that the majority of children (52%) judged the stealing rule violation (moral/neutral) as more wrong than the running in the rain and getting a cut on the knee (prudential/negative) rule violation. However, results from the present study indicate that preschoolers reversed their judgments of seriousness. They judged prudential/negative as significantly more serious than moral/neutral violations. They also judged prudential/neutral violations as more serious than moral/neutral violations, indicating that prudential rules are of high priority to preschool children.

Thirdly, the majority (63%) of 6 year old children in the Tisak and Turiel (1984) study judged moral/negative violations to be more wrong than prudential/negative violations, but the present study indicated that these two types of rule violations were judged equally serious. Again,

even though previous studies have found the moral rule transgressions to be the most serious types of violations, the participants in the present study judged prudential rule transgressions to be equally serious when both types of rules result in a negative outcome. However, if both result in a neutral outcome, the prudential rule violations were judged more serious. This same pattern was observed for 4, 5, and 6 year old children in the present study, but the 3 year old children did not show these differences in judgments between-domains. The 3 year-olds rated moral and prudential rules equally serious regardless of outcome. This supports the second hypothesis which predicted that younger children would have more difficulty distinguishing between-domains.

Similarly, the Age X Domain X Outcome interaction for the Punishment measure revealed that 3 and 4 year-olds did not assign different punishment between-domains or within-domains. The 5 year-olds did not differ within-domain, but they did assign significantly more punishment to moral/negative rule violations than to prudential/negative rule violations. The 6 year-olds differed significantly within the moral domain, assigning more punishment to

moral/negative than to moral/neutral. However, the 6 year-olds did not differ within prudential domain, assigning the same amount of punishment regardless of outcome. Differences were also found between-domains for the 6 year-olds, assigning more punishment to prudential/neutral than to moral/neutral, and more punishment to prudential/negative than to moral/neutral. For the contingency variable, there were no within-domain or between-domain differences for the 3, 4, and 5 year old children, but the 6 year old children differed within-moral-domain and between-domains. Overall, children of different ages demonstrated different patterns in judging moral and prudential rule violations. Younger children differentiated less, as evidenced by less within-domain and between-domain differences found.

Possible interpretations of these results are that safety is very salient in the lives of preschoolers, particularly younger preschoolers, regardless of whether a negative outcome results from a safety rule transgression. Turiel (1977) reported that different interactions with the environment will result in the formation of the distinct rule domains, and that experiences that stimulate development in

one domain are different from those that stimulate development in another domain. It is possible that the developing child encounters safety issues before moral issues, and first develops an understanding of the prudential domain through interactions with both the physical environment and social environment. This interpretation is consistent with research on children's conceptions of moral vs. social-conventional rules, for which correspondingly different socialization patterns have been documented (Nucci & Nucci, 1982a, 1982b; Nucci & Turiel, 1978; Smetana; 1984, Smetana 1989; Turiel 1977).

Perhaps preschool children have been socialized by their parents to view safety rules as very important. For example, it is possible that parents and teachers react in an exaggerated fashion to a potential safety rule violation (e.g., when the child is about to run in front of a car), even though no injury ultimately results. This response from adults may facilitate the child's learning that safety rules are very important. Therefore, the findings of this study possibly reflect the frequency of socialization feedback from parents and teachers about safety behaviors. Previous

research indicates that social interactions strengthen the development of rule domains (Turiel, 1977).

Future research is indicated to investigate factors which account for the eventual change in moral vs. safety rule priorities reported to occur in older children (Tisak & Turiel, 1984). This change in priority may be due to the amount of socialization regarding safety rules vs. the amount of socialization regarding moral rules. Perhaps older children are less exposed to potential safety rule violations because their cognitive and motor abilities have improved and they no longer rely primarily on their parents to keep them safe. In addition, social interactions and moral issues may become more salient to older children as they become more involved in peer relationships.

Another possible interpretation of the results is that children may learn safety and moral behavior by modeling their parent's reactions to transgressions. Parents may not respond seriously to moral transgressions which result in a neutral outcome. For example, the data demonstrated that children viewed moral transgressions resulting in a neutral outcome as less serious and deserving less punishment than

moral transgressions resulting in a negative outcome. Parents may view instances of moral/neutral transgressions as "no harm done, so it is not wrong" even though a moral rule was violated. Subsequently, young children may learn that it is not serious to violate a moral rule if no negative outcome results.

The first goal of the study was accomplished. Results revealed that preschool children were able to differentiate between safety and moral rules and that negative outcomes do not affect prudential judgments but do affect moral judgments. These differences are speculated to correspond to socialization patterns in early childhood, with safety rule socialization being of high priority for preschool children.

Second Goal of the Study: Investigate Experiential Factors that Contribute to the Development of Children's Moral and Safety Rule Concepts

The second goal of this study was to gain knowledge on possible origins of moral and safety concepts. Specifically, this study investigated whether children's experience with social interactions was related to moral rule judgments, and

whether children's experience with injury was related to safety rule judgments. The fourth and fifth hypotheses addressed this goal.

The fourth hypothesis predicted that individual differences in day care experience would be correlated with children's judgments of moral rules. The fifth hypothesis predicted that individual differences in the number of injuries a child has experienced and/or injury behavior frequency would be correlated with more extreme safety rule judgments. However, no correlations were found between amount of social interaction and judgments of moral rules. Similarly, no correlations were found between injury experience and judgments of safety rules.

One interpretation for these null findings may be that the measures used to measure social interaction were invalid. Since no previous research had addressed individual differences in prudential judgments, standardized measures were not available. In addition, it was predicted that at least in the moral domain, a correlation between the moral and the social interaction measures would be obtained because previous research (Nucci & Nucci, 1982a, 1982b; Nucci &

Turiel, 1978; Smetana; 1984, Smetana 1989; Turiel 1977) had demonstrated that social interaction contributes to the development of moral concepts.

Another interpretation of the null findings might be that there was no significant variability in the types of social interactions experienced by the participants. If the second goal of the study was to investigate individual differences, but individual differences were not obtained in the data, then correlations could not be substantiated. Future research might address this problem by obtaining more detailed measurements on the types of social interactions a particular child experiences. For example, children could be divided into groups descriptive of children who tend to be highly social in day care vs. children who are relatively isolated and withdrawn at day care, and then assess their development of moral concepts.

With regard to prudential items, lack of variability also appeared to be a significant problem. For example, the mean score for number of serious injures reported during the child's lifetime was 1.8, with the majority of parents reporting no injuries. Again, since individual differences

were not found on this measure, significant correlations could not be obtained. Variability was obtained on the Injury Behavior Checklist (scores ranged from 6 to 54, with a mean of 26), which measures injury related behavior. Results may indicate that injury related behavior is simply not correlated to injury related concepts. Children might be behaving differently, but their behavior does not necessarily lead to differences in their concepts of safety. This is consistent with previous research on adults which has demonstrated that experiencing injuries may sensitize one to dangerous situations, or may desensitize one to dangerous situations, especially if a safety rule violation is followed by no injury (Horvath & Zuckerman, 1993). Overall, the results did not provide enough information to accomplish the second goal of the study.

Perhaps the second goal could have been addressed more clearly if children had also been asked to provide statements of why they thought a particular rule violation was wrong (obtaining justification categories). This has been done in other studies (Smetana, 1985; and Smetana, Bridgeman, & Turiel, 1983) successfully with preschool children. For

example, Smetana (1985) demonstrated that children (ages 3 to 6) were able to state the reasons why they thought a particular rule violation was wrong. The children's responses were categorized as pertaining to other's welfare, unjust act, rule or authority prohibits act, act creates disorder, etc. Responses obtained from children's justification categories would provide information on how children reason about moral and safety rules, which would provide an indication of possible origins of rule concepts. The use of justification categories would also define the content of each domain more clearly.

Implications

Knowledge obtained from this study can possibly serve as a guide to understand better how children form the concept of safety and how they learn from and process the experiences they encounter when safety rules are violated. A significant finding in this study was how the impact of negative vs. neutral outcomes of rule transgressions influenced children's judgments of safety and moral rules. The results indicated that consequences were a factor in judging moral rules, but

consequences were not a factor in judging prudential rules.

Knowing more about how children perceive consequences can aid in developing intervention programs. For example, perhaps parents and teachers could teach preschool children the importance of following moral rules by reacting even when a moral rule violation results in a neutral outcome. It would also be important to explore why safety becomes less important as children grow older. Given the significant age differences found in this study, perhaps knowledge obtained in this study can be implemented in developing intervention programs which match the developmental level of preschool children and aid in preventing injury.

Conclusions

The purpose of the study was two-fold. The first goal was to determine if preschool children distinguish between moral and safety rule concepts. Specifically, this study investigated if younger preschool children had more difficulty than older preschool children distinguishing moral and safety rules. Similarly, this study investigated how negative or neutral consequences of rule violations might

impact children's judgments of the two rule domains. The first goal of this study was accomplished. Substantial evidence obtained from significant interactions demonstrated that children distinguished between the moral and safety domains. Children also judged prudential rule violations as more serious than moral rule violations. In addition, the interactions revealed that younger preschool children differentiated less between domains. Another major finding was that preschool children appear to use the consequences when judging moral rules, but consequence do not appear to affect children's judgments of prudential rules. Prudential rules were still judged serious and deserving of punishment whether a negative outcome resulted or not.

The second goal of the study was to investigate experiential factors that may contribute to the development of children's moral and safety rule concepts. Specifically, this study investigated whether children's experience with social interactions was related to moral rule judgments, and whether children's experience with injury was related to safety rule judgments. This second goal was not accomplished. Difficulties with the measures and lack of

variability in the data were interpreted as possible explanations for the lack of correlations found.

Results of this study are speculated to correspond to socialization patterns in early childhood, with safety rule socialization being of high priority for preschool children.

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Appendix A: Stories Presented to Participants

Moral Stories:

(1) The kids are at recess. In this school there is a rule that says "No pushing".
But Susie came along and broke the rule. She pushed Mary.
Mary gets a cut on her knee.

(2) The kids are at recess. In this school there is a rule that says "No throwing rocks".
But Mike broke the rule. He picked up a rock and threw it at Jim.
The rock hit Jim on the head. He got a cut on his head.

(3) Here the kids are eating snack together. In this school there is a rule that says "No stealing".
But Emma broke the rule. She stole Amy's apple.
Emma runs off with Amy's apple, but Amy didn't mind. She didn't want it anyway.

(4) These kids are ready to go swimming. In this school there is a rule that says "Don't spray people with water".
But Steve broke the rule. He sprayed Frank with water.
But Frank didn't mind. He already had his bathing suit on.

Safety Stories:

(5) It starts to rain during recess. In this school there is a rule that says "No running in the rain".
But Julie breaks the rule. She starts running in the rain.
ulie slipped in a puddle and gets a cut on her knee.

(6) The kids are outside at playtime. In this school there is a rule that says "Don't stand too close to the swing".
But Danny broke the rule. He walked too close to the swing.
Danny got hit and got a cut on his head.

(7) In this school a man is working on the roof. There is a rule that says "No playing around the workman's ladder".
But Helen broke the rule and started climbing the ladder.
She then jumped off the ladder and ran back to the classroom.

(8) In this school there is a kitchen. There is a rule that says "Don't touch the stove".
But Sam broke the rule and turned on the stove.
He turned it off and went back to the classroom.

Appendix B: Letter to Parent.

Dear Parent:

The _____ day care center is participating in a research project conducted by Maria Ast, doctoral candidate, and Dr. Richard Potts from the Psychology Department at Oklahoma State University. The study concerns what young children think about safety rules. Surprisingly, very little is known about how children understand safety rules, although it is known that simple "safety" demonstrations are not very effective in improving children's safety behavior. Results of this project will hopefully lead to a better understanding of how children can learn safety rules.

In this study, children will be interviewed individually at the day care by Ms. Ast for about 15 to 20 minutes. They will be shown black and white drawings that tell stories about common safety rules (such as "Don't go near a hot stove"), as well as social rules (such as "Don't take anyone's snack"). They will be asked several questions about the different stories. The purpose is to see how children of different ages understand and judge different types of rules. At the end of the interview session, they will be given brief instructions about safety and the importance of following safety and social rules. We are also interested on what types of experiences might affect children's understanding of safety rules, so we are also asking you to complete a brief questionnaire about your child's behaviors at home, including any injuries he or she may have received.

Children will be asked if they would like to participate, and will do so only if they choose. They can end the interview at any time for any reason. Our experience has shown that children find participation in these projects quite enjoyable. Children's interview statements and your questionnaire answers will be completely confidential and will be seen only by the researchers directly involved in the project. Results will be compiled in group statistical terms, and not on an individual basis. When the analyses are completed, we will be happy to report the findings of the study and their importance to our understanding of child development. We hope that you will let your child participate. If so, please complete the attached forms and return them to your child's day care teacher. You may keep this page for your own information. If you have any questions, please contact one of us at 744-6027. You may also contact University Research Services, 001 Life Sciences East, OSU, Stillwater, OK 74078, telephone 744-5700. Thank you for your cooperation.

Sincerely,

Maria Ast, M.S
Psychology graduate student

Richard Potts, Ph.D
Assistant Professor of Psychology

Appendix C: Consent Form.

Please keep the first page for your own information. Return this page together with the attached questionnaire.

_____

(Print your child's first and last name)

has my permission to participate in the study concerning children's understanding of safety rules being conducted by Maria Ast, M.S. and Dr. Potts of OSU.

_____ _____

(Your signature) (date)

PLEASE FILL OUT THE QUESTIONNAIRE ON THE FOLLOWING PAGES. THESE FORMS SHOULD TAKE ONLY 5 OR 10 MINUTES TO COMPLETE. ALL INFORMATION THAT YOU PROVIDE WILL BE KEPT CONFIDENTIAL. PLACE THE COMPLETED FORMS IN THE ENVELOPE PROVIDED, SEAL, AND RETURN TO YOUR CHILD'S TEACHER. YOUR EFFORT IS GREATLY APPRECIATED. THANK YOU!

If you would like us to send you a summary of the general results of the study, please indicate your mailing address below:

_____

_____

Appendix D: Injury Behavior Checklist.

Dear Parent: Please provide the following information concerning behaviors your child may sometimes show. Be assured that all of the information that you provide will be confidential and seen only by the researchers involved in this study.
Use the 0-1-2-3-4 scale to indicate how often your child may show the behaviors listed. Circle the appropriate number for each of the 24 items.

	not at all	very seldom (1 or 2 times in all)	some-times (about once/ month)	pretty often (once/ week)	very often (more than once/ week)
1. Runs out into the street	0	1	2	3	4
2. Jumps off furniture or other structures	0	1	2	3	4
3. Jumps down stairs	0	1	2	3	4
4. Rides bike in unsafe areas	0	1	2	3	4
5. Runs or bumps into things	0	1	2	3	4
6. Falls down	0	1	2	3	4
7. Plays with fire	0	1	2	3	4
8. Puts fingers or objects near appliances or outlets	0	1	2	3	4
9. Leaves the house without permission	0	1	2	3	4
10. Refuses to use car seat (or belt) or to stay seated in car	0	1	2	3	4
11. Plays with sharp objects	0	1	2	3	4
12. Pulls/pushes over furniture or heavy objects	0	1	2	3	4
13. Falls out window or down stairs	0	1	2	3	4
14. Puts objects or nonfood items in mouth	0	1	2	3	4
15. Gets scratches, scrapes, bruises during play	0	1	2	3	4
16. "Takes chances" on playground equipment	0	1	2	3	4
17. Tries to climb on top of furniture or cabinets	0	1	2	3	4
18. Stands on chairs	0	1	2	3	4
19. Explores places that are off limits	0	1	2	3	4
20. Gets into dangerous substances	0	1	2	3	4
21. Plays carelessly or recklessly	0	1	2	3	4
22. Comes into contact with hot objects	0	1	2	3	4
23. Behaves carelessly in or around water hazards	0	1	2	3	4
24. Teases and/or approaches unfamiliar animals	0	1	2	3	4

Appendix E: Injury Questionnaire and Demographics.

In this section, we are interested in the types of injuries that your child may have experienced. Please complete the chart below. Simply indicate which, if any, of the listed injuries your child has received, and if so, how many times it has occurred.

type of injury	number of times	type of injury	number of times
broken bones	_____	animal bite/scratch	_____
muscle strain/sprain	_____	poisoning	_____
serious cut	_____	water inhalation	_____
concussion	_____	electric shock	_____
burns (fire or chemical)	_____	other (explain)	_____

Next, we would like for you to provide some information about your household which may also be relevant to children's judgments about safety. Please mark with an "X" where appropriate:

Is yours a two-parent household? Yes_____ No_____.

What level of education did you complete?:
some high school____ high school diploma____ some college_____ college degree_____.

If married, what level of education did your spouse complete?:
some high school____ high school diploma____ some college_____ college degree_____.

What is your child's date of birth? Please write month, day, and year: _____/_____/_____.

How many younger brothers/sisters does your child have? _____. Older ones? _____.

How many days in a typical week does your child play with other children in the neighborhood? _____.

Information about daycare/preschool:

How old was your child when he or she started attending day care? (Please mark an "X" at the correct point on the time line below):

Has your child stayed out of day care for an extended length of time and then returned?:
Yes_____ No_____. If yes, for how long was your child out of day care? _____.

How many days per week is your child in day care? _____. How many hours per day? _____.

Thank you sincerely for providing this information.

VITA

María Elizabeth Ast

Candidate for the Degree of

Doctor of Philosophy

Thesis: PRESCHOOL CHILDREN'S CONCEPTUALIZATION OF SAFETY AND MORAL RULES

Major Field: Clinical Psychology

Biographical:

Education: Graduated from Nogales High School, Nogales, Arizona in May 1985; received Bachelor of Arts degree in Psychology from University of Rochester, Rochester, New York in May 1989; and received Master of Science degree in Psychology from Oklahoma State University, Stillwater, Oklahoma in July 1993. Completed the requirements for the Doctor of Philosophy degree in Clinical Psychology from Oklahoma State University, Stillwater, Oklahoma in July 1995.

Experience: Clinical Experience: St. Louis Psychology Internship Consortium, St. Louis, MO (8/94-present); L.E. Rader Diagnostic & Evaluation Center, Sand Springs, OK (9/93-7/94); Edwin Fair Community Mental Health Center (8/92-7/93), Hillside Children's Center (10/89-7/90), Mt. Hope Family Center, Rochester, NY (9/88-5/89). Teaching Experience: Introductory Psychology and Developmental Psychology at OSU, Introductory Psychology at University of Rochester. Research Experience: Oklahoma State University (8/90-7/95), University of Rochester (6/87-6/89).

Professional Memberships: American Psychological Association, Society for Research in Child Development, Southwestern Psychological Association.

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH

Date: 12-21-93 **IRB#:** AS-94-013

Proposal Title: PRESCHOOL CHILDREN'S CONCEPTUALIZATION OF SAFETY AND MORAL RULES

Principal Investigator(s): C. Richard Potts, Maria E. Ast

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____ Date: January 24, 1994
Chair of Institutional Review Board