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Deception Research Involving Children: Ethical Practices and Paradoxes

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This commentary draws on the thoughtful contemplation and innovative procedures described in the special section articles as well as current professional codes and federal regulations to highlight ethical practices and paradoxes of deception research involving children. The discussion is organized around 4 key decision points for the conduct of responsible deception research involving children: (a) evaluating the scientific validity and social value of deception research within the context of alternative methodologies, (b) avoiding and minimizing experimental risk, (c) the use of child assent procedures as questionable ethical safeguards, and (d) debriefing as both remedy and risk.

Keywords: children, deception, risk

Since Milgram (1963) published his well known obedience experiments, the use of deception in psychological research has been widely practiced and ethically debated (Baumrind, 1964, 1985, 1990; Kelman, 1967; Milgram, 1964; Sieber, 1983a; Sieber, Iannuzzo, & Rodriguez, 1995). Deceptive techniques intentionally withhold information or misinform participants about the purpose of the study, the experimental procedures or equipment, or the roles of research team members (Sieber, 1982). By their very nature, deception studies compromise an individual's ability to make a fully informed decision about research participation. Some studies designed to examine negative emotional states or antisocial behaviors may intentionally provoke such feelings or behaviors. At the same time, deception research can have the advantage of keeping participants naïve

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about the purpose and procedures of a study, thereby increasing methodological realism and spontaneous response to experimental manipulation. Ethical arguments have thus focused on whether deceptive research practices violate moral principles to respect individual autonomy and to do no harm or are justified on the basis of their potential societal benefit. Children's dependence on adult decision making and maturational vulnerabilities in the cognitive skills necessary to understand the nature of research and deception add levels of complexity to ethical decisions to conduct deception studies with child participants.

The lack of consensus within the scientific and bioethics communities about the moral rightness of deception research has produced federal regulations and scientific codes of conduct that permit decisions to employ deceptive procedures but place restrictions on them (American Psychological Association [APA], 2002; Department of Health and Human Services [DHHS], 2001). These restrictions recognize that the decision to employ deceptive research methods requires special ethical consideration regarding participant autonomy and harm but leaves the evaluation of each individual study's ethical acceptability to the judgment of the investigator and institutional review boards (IRBs).

Although there have been a fair number of metaethical articles and empirical studies on deception involving adult research participants (e.g., Milgram, 1964; Ross, Lepper, & Hubbard, 1975; S. S. Smith & Richardson, 1983), there is a paucity of moral debate or data on the ethical justification for and effect of deception research on children (Fisher, Hoagwood, & Jensen, 1996; Goodman & Tobey, 1994; Hurley & Underwood, 2002). The three articles presented in this special section represent a major step forward for the field of developmental psychology in (a) highlighting the ethical issues that must be considered when deceptive methods are planned for research involving children, (b) the ethical safeguards essential to the responsible conduct of deception research, and (c) data on participant and parental reactions to planned procedures that can contribute to the continued evolution of moral thought in the field.

The articles in the special section by Hubbard (2005/this issue), Underwood (2005/this issue), and Hinshaw (2005/this issue) describe the scientific justification for and the ethical dilemmas of conducting laboratory research on children's anger and aggression, most notably the need for and issues raised by the use of deceptive methods. This commentary draws on the thoughtful contemplation and innovative procedures described in the special section articles as well as current professional codes and federal regulations to highlight ethical practices and paradoxes of deception research involving children. The discussion is organized around four key decision points for the conduct of responsible deception research involving children: (a) evaluating the scientific validity and social value of deception research within the context of alternative methodologies, (b) avoiding and minimizing experimental risk, (c) the use of child assent procedures as questionable ethical safeguards, and (d) debriefing as both remedy and risk.

SCIENTIFIC VALIDITY, SOCIAL VALUE, AND EVALUATION OF ALTERNATIVES

According to the APA's Ethical Principles of Psychologists and Code of Conduct (APA, 2002; hereinafter called the Ethics Code), investigators considering the use of deceptive methodologies have special ethical responsibility to determine that the deceptive techniques are justified by the study's prospective scientific, educational, or applied value (Standard 8.07a, Deception in Research). The centrality of scientific merit for justifying experimentation with human participants was first formally articulated in the Nuremberg Code (1946), which stated that an "experiment should be such as to yield fruitful results for the good of society" (Principle 2).

Scientific Validity

When evaluating the potential benefits of research using deception, investigators have argued that such procedures are the only way to produce the degree of experimental realism or ecological validity necessary to ensure a formal relation between data and conclusions that can yield scientific facts relevant to the question under study (Fisher & Fyrberg, 1994). The ethical justification for the scientific validity of deceptive studies rests in part on confidence that participants find the experimental situation to be realistic and take it seriously (Aronson & Carlsmith, 1968; Freedman, 1987; Rutstein, 1969).

The contributing authors in this special section carefully discuss the importance of experimental realism and the steps they have taken to ensure their methods for investigating children's anger reactions, response to peer rejection, or antisocial behaviors have face validity for the children and rigorous experimental controls. For example, Hinshaw's (2005/this issue) testing session, designed to observe children's antisocial behaviors in response to temptation, was realistic in light of the goals and activities of the summer camp the children were attending. Underwood (2005/this issue) and Hubbard (2005/this issue) provided extensive and standardized training for child actors employed to provoke participant anger and monitored the actors' behaviors during each experimental episode.

Social Value

A study may be well designed relative to its hypothesis but have little scientific, social, or educational value because the hypothesis itself is trivial or the data cannot be effectively translated into the body of scientific knowledge or into useful application (Fisher & Fyrberg, 1994; Freedman, 1987; Sieber, 1990). Thus, the evaluation of the usefulness to science or society of both the experimental hypothesis and potential results of a study plays an integral role in cost–benefit decisions. The articles in this special section persuasively describe the scientific and practical value

of their topics. Hubbard (2005/this issue) and Underwood (2005/this issue) cite a body of empirical work demonstrating the relation of anger regulation and expression to social success and the lack of such skills to maladaptive reactive aggression. Hinshaw's (2005/this issue) literature review illustrates the predictive relation between children's covert antisocial behaviors and adolescent delinquency.

Alternative Methods

Scientific validity and social value are necessary but not sufficient justification for deceiving research participants and exposing them to stressful procedures to which they might not otherwise agree. Ethical decisions to employ deceptive techniques must also demonstrate that nondeceptive alternative procedures do not offer sufficient scientific controls to test the hypothesis under investigation (APA, 2002, Standard 8.07a,). Failure to use scientifically valid nondeceptive alternative methods simply because of inconvenience or financial cost may under some circumstances be a violation of this standard (Fisher, 2003a).

The authors in this special section carefully lay out their justifications for rejecting nondeceptive alternative methods. Hubbard (2005/this issue) and Underwood (2005/this issue) explain the weaknesses of alternative methods compared to laboratory-based provocation designs to study children's anger and aggression in response to peer behaviors. Hubbard cites the lack of reliable and well validated self-report or observational measures of children's anger and notes that, even if such measures were developed, it is questionable whether global ratings by adults could capture critical aspects of children's anger-regulation processes. Underwood's decision to use provocation rested in part on evidence that children's self-reports of emotional responses are only weakly correlated with observed angry behaviors (Underwood & Bjornstad, 2001). Hinshaw (2005/this issue) discusses how global ratings of children's covert antisocial behaviors by parents or teachers are hard to validate because the behaviors may occur without adult knowledge.

Naturalistic observation. Hinshaw (2005/this issue), Hubbard (2005/this issue), and Underwood (2005/this issue) rejected the use of naturalistic observation for the following reasons: (a) Observing and obtaining a representative sample in naturalistic settings would take prohibitively long periods; (b) naturalistic observation cannot produce the standardized anger-provocation stimuli needed to adequately compare responses of socially vulnerable and nonvulnerable groups; (c) laboratory techniques permit establishment of baseline periods and analysis of relations among observational data, physiological measures, and self-report; and (d) observation of covert antisocial behaviors in natural settings is not feasible because by definition such behaviors occur outside of adult supervision.

The Methodological Paradox

The requirements of APA (2002) Standard 8.07a paradoxically encourage research psychologists to resolve the ethical tension between their fiduciary responsibility to produce scientifically valid data and their obligation to respect the autonomy and privacy rights of research participants by privileging the former. This bias toward the value of scientifically valid and valuable knowledge over individual autonomy reflects the utilitarian metaethical values ubiquitous in Western science (Mill, 1861/1957). With its focus on utility and the "greater good," the utilitarian framework finds that benefits to science and society can outweigh the rights of individual participants to self-determination and privacy (Fisher, 1999). For example, federal regulations permit IRBs to waive all or part of informed consent, parental permission, or child assent requirements if (a) the research involves no more than minimal risk, (b) the research does not adversely affect participant rights and welfare, (c) the research could not be practically carried out without the waiver, and (d) whenever appropriate participants are provided additional postexperimental information (DHHS, 2001, 45CFR46.116d and 408c). Thus, within the utilitarian cost–benefit framework of current scientific regulations and codes of conduct, investigators' obligation to protect individual autonomy may be superseded by their responsibility to produce reliable data that can provide future benefits to society (Fisher, 1999).

As the ethical choices made by the special section investigators illustrate, the ethical responsibility of investigators to select methods providing the greatest scientific validity and social value paradoxically encourages decisions to employ ethically controversial deceptive practices. The need to standardize peer provocation led Underwood (2005/this issue) and Hubbard (2005/this issue) to create a setting in which children are given the false impression that they are losing a competitive game to a peer who chooses to provoke them. The difficulty of observing children's covert antisocial behaviors led Hinshaw to use a controlled-stimulus setting in which participants are led to falsely believe they will fail an academic test.

AVOIDING AND MINIMIZING HARM

Do the contributions of an experiment to science and society override psychological scientists' obligation to do no harm? Even if deceptive techniques have significant scientific, educational, or social value and thus meet the criteria of Standard 8.07a, Standard 8.07b prohibits withholding information or misleading prospective participants about procedures causing physical pain or severe emotional distress (APA, 2002). The prohibitions in this standard are absolute and do not depend on the duration of physical pain or whether severe emotional harm can be alleviated during debriefing procedures (Fisher, 2003a). It is clear from the descriptions

of methods in the special section articles that none of the studies were designed to cause child participants physical pain or severe emotional distress.

The APA Ethics Code standards on deception do not prohibit participant exposure to mild harms or discomforts. This approach is consistent with federal regulations permitting investigators to conduct research involving children that presents no greater than minimal risk (DHHS, 2001, 45CFR46.404). For guidance on the use of mildly discomforting procedures, psychologists can turn to APA (2002) Ethics Code Standard 3.04, Avoiding Harm. Under this standard, psychologists must take reasonable steps to avoid harming research participants and to minimize harm when it is foreseeable and unavoidable. Similarly, under federal regulation 45CFR46.111a1 (DHHS, 2001), IRB approval of research depends in part on judging that research risks are minimized by procedures that are consistent with sound research design and that do not unnecessarily expose participants to risk.

Minimal Risk Research

Under federal regulations, research risks are considered minimal if the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests (DHHS, 2001, 45CFR46.102i). It is reasonable to agree with the authors of the special section articles that the adverse consequences of behaviors provoked, tempted, or observed without permission in their studies are no different from experiences children ordinarily encounter in their daily lives. All children have interactions with bullying, teasing, and cheating peers (anger-provoking situations created in Hubbard's, 2005/this issue, and Underwood's, 2005/this issue, studies). Adults often discover that children have cheated on an exam or defaced or stolen property (assessment of antisocial behaviors utilized by Hinshaw, 2005/this issue).

The investigative authors of the special section articles go beyond simply demonstrating that their methods meet minimal-risk criteria. They deliberate on whether it is just to systematically expose children to peer maltreatment simply because such things occur in everyday life (Underwood, 2005/this issue). Hinshaw (2005/this issue) worried about the "primacy effect" (p. 266) of guilt or shame experienced by children who engage in antisocial behaviors and whether the experimental paradigm will be misapplied in diagnosis of children with attention deficit hyperactivity disorder (ADHD). Finally Hubbard (2005/this issue) and Underwood worried about the effect on child actors of teaching them to cheat and bully participants and to be the target of the participants' negative responses. As discussed in greater detail later, the greatest risk to children participating in deception research may occur during debriefing when they learn that they have been deceived or tempted into antisocial acts by adults or that their private behaviors have been recorded.

Procedural Safeguards to Minimize Risk

Each of the investigators strove to reduce the possibility of negative participant reactions to the minimal risk procedures. Hubbard (2005/this issue) and Underwood (2005/this issue) embedded 10 min of peer provocation in a lengthy positive play experience for both the child participants and actors. The time taken to ensure this safeguard was in fact much longer than that required to collect the data of interest. The laboratory nature of the anger-provocation studies permitted Hubbard and Underwood to set up monitoring systems to identify behaviors such as cruel teasing, crying, or physical aggression that would be harmful to participants or child actors and the means to terminate the study as soon as any such behaviors were observed. The investigators also permitted parents to observe children from behind a one-way mirror and reminded parents they could withdraw their child at any time. Hinshaw (2005/this issue) safeguarded against violating participants' privacy by demonstrating that videotaping is not necessary to evaluate whether children cheated, stole, or destroyed property.

Parental Permission

As an added child protection, those investigators conducting laboratory studies fully informed parents beforehand of the deceptive nature of the study and the peer provocations and antisocial temptations that would be part of the procedures. Hubbard (2005/this issue) and Underwood (2005/this issue) went further and required informed consent from child actors. Some of the authors also describe their child assent procedures as an ethical safeguard. As discussed in the next section, the ethical value of assent to deception research is questionable.

CAN CHILDREN ASSENT TO DECEPTION RESEARCH?

The moral claims of children on researchers are no different from those of adults. They have the right to assume investigators will communicate with them honestly, do them no harm, treat them fairly, and protect their autonomy and privacy (Fisher, 2003b). The APA Ethics Code (2002) and federal assent guidelines recognize this claim by requiring an increasingly personalized progression of child protections acknowledging assent vulnerabilities while maintaining respect for children as developing persons. First, IRBs decide whether risks and prospective benefits are ethically justified for the general child population to be recruited (APA, 2002, Standard 8.01 Institutional Approval; DHHS, 2001, 45CFR46.111). Second, parents decide whether the risk–benefit balance is appropriate for their children's unique characteristics and experiences. Last, children assent or dissent to participation based on whether the research procedures and purposes, as they understand

them, represent an activity they want to participate in at a given time and place (APA, 2002, Standards 3.10b and 8.02; DHHS, 2001, 45CFR46 4.04-4.08; Fisher, 2003b).

The Assent Paradox

The use of assent procedures in deception research is an example of the moral ambiguity surrounding respect for autonomy inherent in professional ethics codes and federal regulations. Following the Nazi medical science atrocities, the international community no longer trusted scientists to make decisions that would serve the best interests of participants. As articulated in the Nuremberg Code (1946), informed consent of the participant rather than morally responsible decisions by scientists came to be seen as the primary means of protecting participant autonomy and welfare.

Deception research requires a contorted translation of child assent (as it does for consent for deception studies involving adults). During the assent process, the investigator intentionally gives the participant false information about the purpose and nature of the study. Assent for deception research thus distorts the informed-consent process because it leads children to believe they have autonomy to make decisions about the type of experimental procedures they will be exposed to, when in fact they do not.

Children's Ability to Understand and Their Right To Be Informed About Research Procedures

Baumrind (1979) distinguished between nonintentional deception—in which failure to fully inform cannot be avoided because of the complexity of the information—and intentional deception, which is the withholding of information to obtain participation that the subject might otherwise decline. Creating respectful and compassionate research contexts requires understanding of children's ways of thinking, cognitive and social strengths and weaknesses, life experiences, and practical concerns (Fisher, 2003b).

Although children's assent-relevant cognitive maturity and experiences are not at adult levels, recent empirical studies demonstrate that by 9 years of age, children can express participation preferences based on their understanding of research goals, procedures, risks, and confidentiality; that research produces information; and that their participation can help others. Even younger children understand that participation may be enjoyable, boring, stressful, or hurtful or that it may take them away from something they like to do (Abramovitch, Freedman, Henry, & Van Brunschot, 1995; Abramovitch, Freedman, Thoden, & Nikolich, 1991; Broome, 1999; Nannis, 1991).

The assent paradox extends to the assumption that children feel free to withdraw from unpleasant experimental procedures. As described in the special section articles, all the investigators informed and repeatedly reminded children throughout the studies of their right to withdraw. However, studies suggest that many young children and even young adolescents do not fully understand or believe that research participation is voluntary (Bruzzese & Fisher, 2003; Melton, 1980; Ruck, Abramovitch, & Keating, 1998; Ruck, Keating, Abramovitch, & Koegl, 1998). In this regard, perceived power inequities may present significant obstacles to children's voluntary participation.

Given children's maturing consent competencies, it might be informative to ask whether children, despite parental permission, would agree to participate in the study if they were aware of the true nature of experimental procedures. Would children agree to participate in a study if they knew it would provoke angry feelings, was rigged for them to lose a game, or would expose them to peer harassment? Would they assent to participate if they knew their responses to peer provocation and peer rejection would be recorded or observed, or that they would be tempted to cheat or steal and adults would know if they gave in to these temptations?

Forewarning

Some have suggested that during the consent stage, psychologists using deceptive procedures involving adults forewarn participants that deception might be used and that they may experience some form of the experimental manipulation (Geller, 1982; Sieber, 1982). Although forewarning may address ethical concerns about individuals' actual willingness to participate, it raises methodological issues challenging the scientific validity of data collection. For example, forewarning prospective participants about certain elements of the study could create demand characteristics, cause participant hypothesizing about investigators' true motives, or threaten random sampling by discouraging participation (Resnick & Schwartz, 1973).

One wonders whether the investigators conducting the laboratory deception studies described in this issue could have included some forewarning without jeopardizing scientific controls. For example, during assent children recruited for Hubbard's (2005/this issue) or Underwood's (2005/this issue) studies might have been informed there was a possibility they would lose some of the games or that other children might get carried away with the competition. Hinshaw (2005/this issue) might have mentioned that some children might find the testing situation stressful or frustrating. Given the fact that these minimal risks arise in children's everyday experiences, such forewarning might not have created undue suspicion about research procedures. Future developmental research using deception might include comparative data on the effect of forewarning on decisions to participate and participant reactions to planned procedures.

DEBRIEFING: REMEDY OR RISK?

The APA (2002) Ethics Code requires psychologists to explain any deception that is an integral feature of the design and conduct of the experiment to participants as early as feasible (Standard 8.07c, Deception in Research). During debriefing investigators must explain the nature, results, and conclusions of the research and correct any participant misconceptions of which the researcher is aware (Standard 8.08a, Debriefing).

The special section authors demonstrated sensitivity and respect in the design and implementation of their debriefing procedures. Underwood (2005/this issue) used a "process debriefing" that started with discussion of whether anything seemed strange, slowly introduced information about the child actor, let the children figure out the deception without being specific, and then reminded them that the studies were conducted to help understand how children handle angry feelings when they lose a game to a child who cheats or who is mean. Hubbard's (2005/this issue) and Underwood's debriefings were aimed at building self-esteem and correcting misimpressions. They made thoughtful efforts to explain that the participant lost because the game was rigged, not because he or she was a poor player, and that the child actors were trained to break rules and did not cheat in real life. Plenty of time was left for questions.

Hinshaw (2005/this issue) decided to debrief in small groups rather than individually to decrease individual stigmatization, to avoid having team members answering questions about whether they knew the results of a specific child's assessment session, and to avoid compelling a child to confess or lie. Children were also given the opportunity to speak with an individual counselor.

The Debriefing Paradox

The paradox of debriefing is that the information conveyed may create psychosocial harms greater than the deceptive procedures themselves. Several inadvertent developmental risks might have emerged from the debriefing described in the special section articles. First, informing children they have been deceived by the investigator creates a risk of fostering skepticism and distrust of adults, especially in the socially vulnerable children recruited for these studies. Hinshaw (2005/this issue) discussed this risk in relation to studies purposefully tempting children to commit antisocial acts within the context of a camp setting designed to build children's social competence and self-esteem.

A second risk is that on learning of experimental deceit in the anger-provocation paradigms, children might feel used by adults they were taught to trust. Previous research indicates that being used as a "guinea pig" was of major concern to adolescents and parents who were asked for their views on the ethics of adolescent risk research (Fisher & Wallace, 2000). Third, participants may not believe the de-

briefing. Children in the Hubbard (2005/this issue) and Underwood (2005/this issue) studies, when informed that the game was rigged to have them lose, might conclude that their wins were similarly fabricated, thus defeating the purpose of the lengthy positive play period provided by the investigators. Children with ADHD who found they could not answer test questions might continue to believe their academic skills had not improved. Ross, Lepper, and Hubbard (1975) found that high school students who experienced induced failure in a deception study persisted in erroneously believing they had been responsible for the failure, even after debriefing.

Fourth, despite disclaimers from the investigators, given immature recursive thinking skills, participants and actors in the anger-provocation study, as well as children who engaged in antisocial behaviors in the temptation and peer aggression studies, may take away the impression that adults will excuse or not interfere with cheating, stealing, or bullying if it is in the adults' best interest to observe these behaviors. Finally, debriefing may inflict painful self-insight (Baumrind, 1964) regarding a participant's tendencies toward anger, withdrawal, or antisocial behaviors, information they are not psychologically prepared to handle.

Evaluating the efficacy of debriefing. The authors of the special section articles were exemplary in their efforts to evaluate the efficacy of ethical safeguards. They gave parents and children questionnaires, considered referral options, or examined response rates to further requests for research participation. The truthfulness of children's reactions to being deceived is, however, difficult to measure. As Underwood (2005/this issue) reports, children intentionally minimize emotional reactions in self-reports (Underwood & Bjornstad, 2001). Moreover, because parents permitted children in these studies to be deceived, participants may see complaining about the deception following debriefing as conflicting with their parents' decision.

Scholars have questioned the adequacy of self-report data following the experience of being deceived, suggesting that cognitive dissonance, distrust of the investigator, masochistic obedience, deferential compliance, and embarrassment, among other mechanisms, may reduce honest responding on the part of the participant (Baumrind, 1985; Fisher & Fyrberg, 1994; Rubin, 1985; C. P. Smith, 1981). Research with adults on the efficacy of debriefing procedures has produced equivocal results. Some studies involving adults indicate that a majority of participants experience no harm from participation in deceptive research following debriefing (Holmes, 1976; Milgram, 1964; S. S. Smith & Richardson, 1983). Other studies find self-reports of harm and increased suspiciousness (Fillenbaum, 1966; Ring, Wallston, & Corey, 1970; S. S. Smith & Richardson, 1983).

The precarious value of self-report data following debriefing for deception studies is suggested in the responses of college students evaluating three published deception studies (Fisher & Fyrberg, 1994). Young adults in the Fisher and Fyrberg study thought debriefing revelations would create participant embarrassment or annoyance with the investigator. Many responded that they would not communicate their true feelings to the investigator during debriefing out of fear of being further embarrassed, anger at the deception, or confusion about whether the debriefing itself was still part of the study.

A Goodness-of-Fit Ethic for Children's Debriefing

The APA (2002) Ethics Code permits delaying or withholding debriefing when there is adequate scientific or humane justification for doing so (Standards 8.08b and c, Debriefing). The small body of research on adults suggests that the moral justification for debriefing may be misguided. Moreover, it is counterintuitive to assume that after being told by a strange adult that they have been lied to, provoked into anger, or tempted into antisocial behaviors, children will nevertheless believe the investigator is now telling the truth or feel free to share feelings of embarrassment or anger in response to the debriefing.

A common misconception of the ethical value of debriefing is that it provides an opportunity for the investigator to obtain "deferred" or "retroactive" consent. Debriefing cannot erase earlier deceptions, violations of autonomy rights, or observation of what a participant viewed as private acts (Fisher et al., 1996; Office for Protection from Research Risks, 1993). The aim of debriefing is to provide participants with information about the true goals and nature of the study, to correct any misconceptions about the research and their own abilities, and to alleviate any experimentally induced harm.

Successful debriefing for deception studies requires that (a) participants believe the investigator when informed of the deception, (b) debriefing does not in and of itself lead to psychological discomfort, and (c) the experimenter is aware of any negative reactions so that he or she may successfully desensitize the participant (APA, 1973; Mills, 1976; Sieber, 1983b). These are not easy goals to meet. As the adult literature suggests, participants may not believe an investigator who has just revealed he or she has lied to them; they may experience shame, anger, or disbelief when debriefed about the deception and their own behaviors; and they may not be willing to reveal their emotional reactions to the debriefing investigator they hold responsible for these reactions.

Children's understanding of deception. In developmental deception protocols, ethical decisions to reveal information about the deception during debriefing can draw on a goodness-of-fit approach to evaluate whether debriefing is developmentally fitted to the participant's cognitive, moral, and social develop-

mental level (Fisher, 2003b). Developmentally fitted debriefing procedures that take into account children's theory of mind (Hala, Chandler, & Fritz, 1991) can promote children's maturing autonomy, trust in adults, and self esteem.

When considering debriefing as an ethical step for deception research, developmental scientists need to consider whether children in the age group they are studying have the recursive thinking skills to understand the deception. Research indicates that children as young as 3 years of age act deceptively and have a primitive understanding of the difference between truth telling and lying (Chandler, Fritz, & Hala, 1989; Lewis, Stanger, & Sullivan, 1989; Siegal & Peterson, 1996; Talwar, Lee, Bala, & Lindsay, 2002). However, young children are not able to distinguish between pretending and lying or false beliefs and lying (Berthoud-Papandropoulou & Kilcher, 2003; Hala, Chandler, & Fritz, 1001; Ruffman, Olson, Ash, & Keenan, 1993; Taylor, Lussier, & Maring, 2003). Research also suggests that during the middle-school years, children do not incorporate intentionality as a defining feature of the concept of deceit (Wimmer, Gruber, & Perner, 1985). As a consequence, young children may not understand the experimental purpose of the deception and, if debriefed, might simply conclude that researchers are adults who lie. Data collected by the investigators also raise questions of children's comprehension of debriefing. For example, Underwood (2005/this issue) found that full debriefing did not change children's beliefs about their research participation, suggesting that they did not truly understand the deception.

Eliminating misconceptions without discussing the deception. Goodman and Tobey (1994) applied a creative approach to ensuring that preschool children's experimentally induced misperceptions were remediated without exposing participants to the sense of betrayal or confusion that might have arisen if the investigators had informed them about the deception. The investigators sought to collect forensically relevant analog data for child-abuse investigations by investigating whether misleading suggestions could lead preschoolers to erroneously report adult misbehavior. Two weeks after participating in a laboratory play session, children returned to the lab. With parental permission, half were introduced to a "police officer" who told them that the adult who had supervised their play 2 weeks before might have done some bad things and that he needed the children's help to find out what happened. All children were then interviewed about the play session.

Because previous literature suggested that 4-year-olds would not understand if told about the deception, Goodman and Tobey (1994) took steps to alleviate any negative reactions to the research. First, children were told that the police officer had made a mistake and that the playgroup teacher had not done anything wrong. Next, children were shown a videotape of the first playgroup, where they could see that nothing bad had happened and that they had had an enjoyable time. A week later the researchers called the parents to check for any negative reactions.

A SCIENTIFIC ETHIC OF RESPONSIBILITY AND CARE

Ethical decisions are difficult to write about. To do so requires self-reflection and the courage to analyze and reveal one's values (Fisher & Tryon, 1990). The authors in this special section have graciously and bravely shared with us their decisions and concerns about the conduct of deception research involving children. In doing so they have significantly contributed to the continuous evolution of ethics-in-science decision making. The ethical procedures they describe are models for best practices for developmental researchers considering deceptive methods. The ethical concerns they voice reflect the ethical paradoxes inherent in deception research. Their evaluation of the efficacy of the ethical procedures they selected represents developmental science at its best. The special section articles illustrate the dialectical process necessary to ensure that the scientific enterprise works in reciprocal relation with moral values to continuously inform and transform a scientific ethic of responsibility and care.

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