

Children's Understanding of Their Research Rights before and after Debriefing: Informed Assent, Confidentiality, and Stopping Participation

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This study explored children's understanding of their research rights in the context of an investigation of how children cope with peer provocation. Participants were 178 children (97 girls and 81 boys) who had finished the second, fourth, and sixth grades (average ages: 8, 10, and 12, respectively). After children agreed to take part in research on "how kids get along together," as well as after debriefing, their perceptions of free assent, their understanding of what they would be doing and why, their belief in voluntary participation and freedom to withdraw, and their comprehension of confidentiality were assessed. The vast majority of participants gave assent freely and reported no undue pressure from their families or the experimenters to participate. Older children knew before participating in the research what their participation would involve, comprehended confidentiality, and understood the study's purpose after their participation, but second graders were less likely to understand these issues than fourth and sixth graders were. Following debriefing, children's understanding of their research rights was largely unchanged; most children still had difficulty describing the research goals.

INTRODUCTION

Children who participate in developmental research routinely hear explanations of the purpose of the investigation, voluntary participation, their right to withdraw, and confidentiality. The ethical principles for psychologists require that research procedures be clearly explained to children (American Psychological Association, 1992), and researchers are encouraged to seek the assent of children ages 7 and older (Society for Research in Child Development, 1990). In addition to ethical responsibilities, the validity of much of our data depends on children clearly understanding research procedures and their rights as participants (Hughes & Helling, 1991). The primary purpose of this study was to examine children's understanding of their research rights, both before and after debriefing, in the context of an investigation that involved risk of emotional distress and deception.

This study of children's understanding of their research rights was conducted in conjunction with a large, observational investigation of how children respond to peer provocation (hereafter referred to as the primary study, described in full in Underwood, Hurley, Johanson, & Mosley, 1999). In a laboratory play session, participants were provoked in two ways: by losing at a computer game that they were playing for a desirable prize, and by being taunted by a peer confederate about their prowess at the game. This study was guided by our desire to understand more about the broad range of both positive and negative ways that children manage emotional distress in peer interactions. The viability of the study depended on the

creation of a situation that was ecologically valid in that it was provoking for children, which required elements of deception (the other person being an actor and the game being rigged such that the participant would not win) and some risk of emotional distress.

Because we were concerned about conducting the primary study within our ethical responsibility to protect children from harm, several safeguards were put into place. Children gave their own assent. We were very explicit about how children could withdraw from the study if they wished, and promised confidentiality and explained precisely what it meant and who would know about their responses. Actors were trained to confine their provoking comments to particular topics and to refrain from personal, insulting remarks. Children were debriefed thoroughly, and each play session ended with a lengthy, positive interaction between the actor and the participant.

The present study of children's understanding of their research rights was performed because it seemed critical to assess the effectiveness of the assent and debriefing procedures, and also because little previous research has investigated these issues in the context of behavioral research involving risk and deception. It is important to be clear from the outset that in this investigation of children's comprehension of their research rights, we did not describe risks to children for ethical and practical reasons (to be explained in the Method section), nor did we question them extensively about their emotional responses to having been deceived.

What we were able to study was children's understanding of research rights in the context of a study involving emotions and deception, and whether this understanding was affected by the debriefing.

Experts have long debated whether children should be research participants (for a summary, see McCartney & Beauchamp, 1981). Most support the involvement of children as research participants, as long as their assent is obtained and freely given (Ferguson, 1978). Because minor children are not legally capable of entering into a contract and therefore unable to give legal consent, the term assent is used to refer to minor children's agreement to participate in research (for a discussion contrasting assent with consent, see Broome & Stieglitz, 1992). For children to give assent to participate in research, they must understand the voluntary nature of their participation (know they can dissent before and during the procedure), be under no undue pressure to comply (be able to dissent), and understand the benefits and risks of their participation (Leikin, 1993). In addition, informed assent requires that research participants understand the rules under which they will be participating (including confidentiality and their freedom to withdraw participation; Abramovitch, Freedman, Henry, & Van Brunschot, 1995; Abramovitch, Freedman, Thoden, & Nikolich, 1991; Weithorn, 1983). Although some element of coercion is likely always present—even for adults—because researchers are authority figures (Barnett, 1985), it is even more complicated to determine whether children are assenting freely because they have been socialized to fear declining adult requests (Keith-Spiegel, 1976; Koocher, 1987; Powell & Vacha-Haase, 1994).

Arguments about whether children can assent to research participation and understand their research rights have often been guided by philosophical positions about children or comprehensive theories of child development. Thompson (1997) pointed out that whereas much developmental research demonstrates children's competence and resilience, ethical decisions about children's research participation seem influenced by perceptions of children as weak and vulnerable. These decisions must incorporate the sometimes-competing goals of protecting children from harm and advancing developmental science (Hoagwood, Jensen, & Fisher, 1996). Early discussions of children's competence to assent relied too heavily on comprehensive developmental theories such as Piaget's, which imply that the capacity to assent increases and risk of harm decreases with age. Investigators have less often considered specific features of social contexts that might make it easier or more difficult for children to give free and meaningful assent (Alderson, 1992; Tymchuk, 1997). To complicate matters further, Thomp-

son (1990, 1992) has cogently argued that our understanding of children's risk in research can be enlightened by developmental science, which suggests that the likelihood of different types of competence and harm waxes and wanes with development.

For over a decade now, experts have argued that more empirical research is needed on children's capacity to understand and give their own assent for research participation (Fisher, 1993; Keith-Spiegel, 1983; Stanley, Sieber, & Melton, 1987; Tymchuk, 1997). Some have even gone so far as to argue that the National Institutes of Health should require principal investigators on all child clinical grants to study children's understanding of the research process (Oosterheld, Fogas, & Rutten, 1998). Still, few studies are available, and many focus on whether children can give assent for biomedical treatment. Although research on assent for treatment suggests interesting hypotheses, there is a critical need for studies of what children understand about their participation in behavioral research in which what is at stake involves less bodily harm and more privacy issues and emotional stress (Keith-Spiegel, 1983).

Several previous studies of what children understand about research participation have utilized hypothetical vignettes. In a study of 9-, 14-, 18-, and 21-year-olds' decisions about four treatment vignettes, Weithorn and Campbell (1982) found that adolescents reasoned in ways similar to adults, but 9-year-olds had difficulty understanding and making decisions about treatment information. Lewis (1981) asked children in seventh through twelfth grade to advise peers about decisions concerning consent to treatment and participation in research, and found that with age, youth were more likely to mention risks related to decisions, to recognize that adults could have "vested interests" in some of the choices, and to advise peers to consult other adults. Rau and Fisher (1997) presented fourth, seventh, and tenth graders with a "Research Participants Bill of Rights," and investigated whether participants could recognize which research rights were violated in hypothetical vignettes involving risk-taking behaviors. The results showed that older children were better able to recognize when research rights had been violated, and that a lesson on research rights improved this ability. Although these studies using hypothetical situations have provided useful information about children's reasoning abilities, how children perceive their own participation in actual research might be quite different.

Only a few studies have investigated children's understanding of their rights related to their own research involvement. Studies of assent to treatment research

have shown that groups of 6- to 9-year-olds are capable of asking astute questions about taking part in a trial for an influenza vaccine (Lewis, Lewis, & Ifekwunigwe, 1978), 7- to 12-year-olds are better able to understand concrete aspects of their assent to treatment research for cancer and obesity (such as duration of treatment) than more abstract features (such as the purpose of the research; Susman, Dorn, & Fletcher, 1992), and developmental stage may be less determining of understanding research participation than emotional factors such as anxiety and perceived control (Dorn, Susman, & Fletcher, 1995).

The only available studies of children's assent for their own actual participation in behavioral research have focused on investigations that seem rather benign. Nannis (1991) assessed third- and fifth-grade children's understanding of their research participation after a study of recognition of errors in math problems, and found that older children were better able to understand the purpose of the research. Most participants understood that they had some choice as to whether to participate. Some children were confused about who would benefit from the study, assuming personal benefits and seeming unaware of experimenter benefits. In another study, children ages 5 through 12 were questioned about their understanding of their research participation both after assent but before participating, and after taking part in studies of math and money skills, food preferences, and understanding of economics and money (Abramovitch et al., 1991). Overall, the results indicated that children understood what they were being asked to do in the studies, but few understood the purpose of the investigations. Younger children were less certain that their responses were confidential, and less sure of how to stop their participation if they wished. In a follow-up series of studies with children ages 7 through 12, children were better able to describe the purpose of the research, but less clear about potential risks and benefits (Abramovitch et al., 1995). Children were more likely to stop their participation if the investigator said that she would not be upset.

The primary purpose of this investigation was to assess children's understanding of their research rights related to participation in an investigation of responses to peer provocation, a study that involved elements of risk and deception. By careful questioning of children after giving assent but before participating, and then again after debriefing, we assessed children's understanding of the nature and purpose of the research procedures, voluntary participation and freedom to withdraw, factors influencing voluntary participation, confidentiality, and beliefs about whether parents' or children's preferences should determine research participation.

On the basis of previous research involving more benign methods, we hypothesized that more participants would be able to understand the concrete features such as what they would be asked to do, and fewer would clearly understand the more abstract elements such as the purpose of the research and the meaning of confidentiality. Because our study involved more risk and because we had the benefit of earlier research pointing to aspects of consent that were difficult to understand (Abramovitch et al., 1991, 1995), we made our assent statements as explicit as possible about confidentiality, voluntary participation, and how to stop participation. Therefore, we expected that greater numbers of children might understand these aspects of research participation than in earlier studies. Because gender differences in understanding of research participation had not been evident in other studies, we did not expect them here. In keeping with the results of previous research, we predicted that older children would be better able to understand the purpose of the research, more aware that their participation is voluntary and how to stop, less likely to perceive negative consequences of stopping, better able to understand confidentiality, and more likely to believe that their own assent should determine their research participation.

The most novel contribution of this research was that our design provided the opportunity to assess whether children understood the content of the debriefing, and whether debriefing influenced children's understanding of their research rights and their comprehension of the goals of the study. We expended great time and effort in debriefing children clearly and completely. We hypothesized that most children would understand exactly how they had been deceived, but that this might be clear to a greater number of older than younger children. We expected that following debriefing most children would continue to report understanding key elements of their research participation, because these were repeated so explicitly with multiple assurances. We also predicted that because the debriefing statement offered a more detailed and genuine explanation of the goals of the research, more children would be able to understand the purpose of the study following debriefing. Our hope was that this study would add much needed information to the "science of scientific ethics" (Fisher, 1993, p. 3) and the "changing calculus" of developmental changes in risk from research participation (Thompson, 1992, p. 31).

METHOD

This study was conducted in conjunction with research on children's responses to peer provocation

(Underwood et al., 1999). An experimenter unrelated to the primary study asked participants individually about their understanding of the research and their rights as participants: what they would be doing and why, voluntary participation and freedom to withdraw, factors that influenced voluntary participation, confidentiality, and beliefs about research participation in general. Participants responded to questions at two points during the primary research procedures: immediately after giving assent, and after participating and being debriefed.

Participants. Participants were 178 children (97 girls and 81 boys) who had just completed the second ($n = 74$), fourth ($n = 52$), and sixth ($n = 52$) grades. This was a subsample of the 382 participants in the primary investigation. Participants were included in the assent study if an extra research assistant was available, a selection process that depended on scheduling and was quasirandom. Children were excluded from both the primary study and the assent study if they were known to have developmental disabilities, or if they were observed to have extreme difficulty understanding the simple instructions for the assent procedure and the baseline questionnaire (informal, nonprovoking play sessions were conducted with these children). Chi-square analyses showed that the assent sample did not differ from the larger sample in gender or grade composition. The ethnic composition of this sample reflected that of an urban public school system in the northwestern United States: 90% European American, 3.6% African American, 1% Asian American, 2.9% Hispanic, 1.8% Native American, and 7% other. Most participants came from lower- to middle-class families.

To assess whether the subsample that participated in the assent study was representative of the larger sample in terms of their responses to the peer provocation, 21 t tests were conducted to examine differences between the subsample and the larger sample on specific responses to the provoking play session: verbal responses, facial expressions, gestures, and postgame interview responses. No significant differences were found.

Procedure and measures. Parents gave active consent for their children's participation in the primary study by signing a detailed, explicit permission letter that explained the deception, the provoking play session, and potential risks and benefits for participation. In addition, the consent letter specified that "each child will be asked a series of questions in private to assess their feelings about the project . . ." both before and after the debriefing, including "whether they would take part again if they had a chance, and whether they would recommend our project to a good friend." The parental consent letter did not explicitly request par-

ents' permission for children's participation in the assent portion of the study for several reasons. The procedures for the assent study fell well within those for which parents had already given permission. Also, it seemed most important that the procedures involving the provoking play session were clearly conveyed. Explaining these complex procedures resulted in the consent letter being long and detailed, and we were concerned that adding the additional component would have made the letter even more tedious and confusing.

Each child came to the Social Development Laboratory at a local college for a 1-hr session during the summer. Children knew they were coming to play a computer game with an unfamiliar child of the same gender and age. Participants were unaware that the other child was a confederate actor who would provoke them, and that the game was going to be rigged so that they would lose.

Appendix A presents the assent statement read to all participants. The description was designed to explain most elements of the study—experimental procedures, confidentiality, and voluntary participation—in straightforward, developmentally appropriate language. In designing the assent statement, it was necessary to balance our desire to explain the procedures as clearly as possible with our wish not to overwhelm and confuse children with too many details. Following Weithorn's (1983) criteria for meaningful assent, the nature of the procedures ("playing a computer game and being interviewed"), the purpose of the study ("learning more about how children interact when they play games"), and voluntary participation were explained.

We chose not to explain potential risks and benefits to the young participants for several reasons. First, because one of the research aims was to study children's responses to a provoking peer in the most ecologically valid manner possible, informing children that distress was likely or even possible could have been leading and could have undermined the validity of the data. Second, previous research suggests that children in these age groups misunderstand explanations of benefits of research in that they overestimate personal benefits and underestimate benefits to the researchers (Nannis, 1991). Perhaps for some of these same reasons, discussion of risks and benefits is not required by a recently proposed "Research Participants' Bill of Rights," designed specifically for minors (Rau & Fisher, 1997).

Participants were told that they and their parents would each be paid \$5 for their time and effort, and that both would still be paid if the child ceased participating at any point. Children indicated in writing whether they agreed to take part in the study.

After children had agreed to participate in the primary study but before beginning the experimental session, the primary experimenter told both children that another investigator wanted to ask them questions individually, and asked for their verbal permission. We did not ask children to give us written assent for the assent study. Given the complexity of the primary study, the interest of time, and the fact that children had just been led through an involved assent procedure that included explanations of pre- and postsession interviews, another written form seemed unnecessary and overly demanding of the young participants. Four out of 182 participants (2.2%) declined to answer the Post-Assent Questionnaire.

After participants had agreed to answer the Post-Assent Questionnaire, the primary experimenter took the confederate actor into a hallway and an experimenter not known by the participants to be associated with the primary study (hereafter referred to as the assent investigator) entered the room. The assent investigator appeared to be unconnected to the primary study by being introduced to the participants by the primary experimenter as someone who was doing a different project, and was visible to the participants during the hour session only when asking the participants the assent questionnaires. The assent investigator repeated that she was doing a project separate from the one described by the primary experimenter.

Once alone with the participants, the assent investigator asked for their verbal permission to be asked about their comprehension of the reason and rules of the primary study ("I would like to ask you a few questions about your understanding of the project before you begin. Is that all right with you?"). All participants at this point agreed to answer the Post-Assent

Questionnaire. Participants were told they could stop answering any or all questions by saying they wanted to stop ("But first I want to tell you that you can stop answering questions if you want to stop, and you don't have to answer all the questions"). If participants declined to answer a particular question, the assent investigator moved on to the next question. If a child indicated that they wished to stop the interview, the Post-Assent Questionnaire was ended immediately and they were asked whether they would like to continue with the primary study.

Once the participants agreed to the assent study, they responded to several questions about their research rights. The assent questions addressed children's understanding of the nature and purpose of the study, whether assent was freely given, whether and how they could stop participating, how much they believed the primary experimenter would stop the procedure if asked, and confidentiality (these items appear in Table 1). Many of the questions in the Post-Assent and Post-Debriefing Questionnaires were adapted from Abramovitch et al. (1991). Most of the questions were open ended, but some scaled questions were included to assess the degree to which children understood particular points. An example of a scaled item on the Post-Assent Questionnaire was "How much do you think [primary experimenter's name] will stop the game if asked?" (scored on a 5-point scale, 1 = "not at all" to 5 = "really will stop").

After answering the assent questions, the assent investigator thanked the participant and returned the participant to the primary experimenter. Children then participated in the primary study, which involved their being provoked for 10 min in a play session by losing at a computer game and being taunted

Table 1 Percentages of Participants Who Gave Valid Responses to the Post-Assent Questionnaire

Questions	Overall	Grade			χ^2
		2	4	6	
What will you be doing in the project?	78	69	79	88	(2, $N = 178$) = 6.77, $p < .05$
Why is this project being done?	29	16	40	37	(2, $N = 178$) = 10.53, $p < .01$
Could you have said that you did not want to participate?	90	84	96	94	(2, $N = 178$) = 6.63, $p < .05$
Can you stop being in the project?	92	88	96	92	<i>ns</i>
How can you stop being in the project?	90	85	90	98	(2, $N = 164$) = 5.40, $p = .07$
Can you stop answering questions?	95	89	100	98	(2, $N = 178$) = 8.94, $p < .01$
How can you stop answering questions?	92	88	88	100	(2, $N = 169$) = 6.24, $p < .05$
Do you believe the experimenter will stop the game if asked?	92	84	94	100	(2, $N = 178$) = 11.08, $p < .01$
Is it OK to not answer a question?	96	95	98	96	<i>ns</i>
Do you believe the experimenter will stop asking questions if asked?	95	93	94	98	<i>ns</i>
Who will find out what you do in the project?	83	72	92	90	(2, $N = 176$) = 11.67, $p < .01$

Note: Percentages are numbers of children in each grade who gave a valid response divided by total number of children in that grade who were asked the question.

by the child confederate. Children were carefully observed on the video monitor to make sure that the actor's provoking statements did not become personal or too intense, and that no physical aggression occurred (one play session was terminated because the children seemed close to coming to blows).

After the contest period ended, participants were interviewed about their feelings and reactions to the provoking peer, then were fully debriefed (see Appendix B). The debriefing script forthrightly explained that the game was rigged and that the other child was an actor ("pretending to show off and be rude"). The word "deception" was not used because it seemed overly abstract, particularly for the younger children. The reasons for rigging the game and involving the actor were explained by saying, "We think that being able to get along with other kids is really important. . . . We want to see what all kinds of kids do when they are with someone who is showing off. . . . By doing this we hope that we can find out what kids do that helps them get along with other people." These explanations were an attempt to convey our reasons for the deception in a manner that was clear, not overly detailed or abstract, and developmentally appropriate for the 8- to 12-year-old participants.

After debriefing, the primary experimenter told the participants that the assent investigator, "who had asked them some questions before," would like to ask them a few more questions, and asked the participants if that was all right with them. Three out of 169 (1.8%) participants declined to answer the Post-Debriefing Questionnaire. (Nine participants were not asked the Post-Debriefing Questionnaire for other reasons; either because the participant had stopped the play session

before the contest began or the primary study had run over in length and there was not enough time to ask the participant the Post-Debriefing Questionnaire).

If the participant agreed to answer the assent investigator's questions, the primary experimenter left the room. The assent investigator entered and again asked the participant to provide verbal permission to be interviewed. All participants agreed to answer the Post-Debriefing Questionnaire, which assessed comprehension of the purpose of the primary study, as well as understanding of confidentiality and beliefs about consequences for stopping the play session (see Table 2 for these questions). As with the Post-Assent Questionnaire, most questions were open ended, but a few scaled items were included to assess the degree to which children believed they could cease participation. Children were asked, "Imagine if you had wanted to stop playing the game. How much would it have been OK with [primary experimenter's name] if you had wanted to stop?" (scored on a 5-point scale, 1 = "not at all OK" to 5 = "really OK") and "Imagine that you had waved at the mirror to let [primary experimenter's name] know that you wanted to stop playing the game. How much do you believe she would have come in and stopped the session?" (scored on a 5-point scale, with 1 = "not at all" to 5 = "really believe"). Last, following Abramovitch et al. (1991), the following hypothetical questions were asked: "Should you be in a project if you didn't like it and your parents did?" and "Should you be in a project if you liked it and your parents didn't?"

Because all of the assent questions were highly structured, responses tended to be brief and to the point. Had children reported any kind of abuse or ne-

Table 2 Percentages of Participants Who Gave Valid Responses to the Post-Debriefing Questionnaire

Questions	Overall	Grade			χ^2
		2	4	6	
Did anything happen in the project you had not expected?	61	45	68	75	(2, $N = 168$) = 12.32, $p < .01$
In your own words, why is this project being done?	55	31	64	78	(2, $N = 168$) = 28.13, $p < .01$
In your own words, what does confidential mean?	37	9	41	69	(2, $N = 167$) = 45.02, $p < .01$
Who do you think will find out about what you said and did in the project here today?	83	69	90	94	(2, $N = 168$) = 15.77, $p < .01$
Will your family or school find out?	88	86	90	88	<i>ns</i>
What would happen if you didn't tell your family or school but they asked the experimenter what you did?	74	60	86	82	(2, $N = 168$) = 12.83, $p < .01$
What would experimenter have done or said if you wanted to stop?	80	79	79	82	<i>ns</i>
Do you think experimenter would have been mad or upset or disappointed if you wanted to stop?	90	92	94	83	<i>ns</i>
Would anything bad have happened if you had decided to stop the game and/or answering questions?	93	92	94	94	<i>ns</i>

Note: Percentages are numbers of children in each grade who gave a valid response divided by total number of children in that grade who were asked the question.

glect in response to our questions, we would have explained our obligation to report the maltreatment, and then notified the Department of Social Services.

After the Post-Debriefing Questionnaire, the assent investigator then thanked the participant for answering the questions and returned the child to the primary experimenter. The participant, confederate child, and primary experimenter finished the session by playing together and having a snack, to show the participant that the confederate child was in fact a friendly person, and to end the play session on a positive note.

Coding of questionnaire responses. Responses were first coded according to the specific content of the response. Because several responses to a question could be considered valid and the ultimate goal was to measure children's capacity to understand issues of voluntariness and confidentiality in general, codes for most questions were collapsed into "valid" and "not valid" codes, according to the information presented to the participants during the assent procedure and debriefing. For example, for the question "Who will find out what you do in the project?", all of the following responses were coded separately but then collapsed into one "valid" response code: "no one," "myself," "the other people here," and "the other child." Tables 1 and 2 present percentages of responses coded as valid, overall and for each age group.

For some questions, it was not possible to determine true or valid answers, for example, whether children would have felt disappointed or as if they had done something wrong had they stopped participating. For clarity, these results are not presented in Tables 1 and 2 (which present valid answers), but are instead presented in the text of the Results section.

Children's responses were coded by research assistants blind to the hypotheses of the study. The coding system was adapted from similar research by Abramovitch et al. (1991), to capture the types of responses likely in this study. Twenty-five percent of the questionnaires were also coded by the first author. The overall κ coefficient was .93 (98% agreement).

RESULTS

For children's verbal responses to open-ended questions, frequency counts and conducted χ^2 analyses were computed. Chi-square analyses showed no significant effects for gender or interactions between gender and grade for verbal responses to the items. Significant effects found for grade are presented in Tables 1 and 2. To examine the effects of grade and gender on children's responses to scaled items, 3 (grade) $\times$ 2 (gender) analyses of variance (ANOVAs)

were conducted. There were no main effects for gender and no interactions between gender and grade; grade effects are reported below.

Children's understanding of their research rights following assent and before participation. Table 1 presents percentages of children giving valid responses to questions asked during the Post-Assent Interview. The great majority of participants understood what the study would involve, that they could decline participation, how to stop taking part, that the primary experimenter would stop the session if asked, and that no one except the research staff would find out about their responses. The only question that most children answered incorrectly concerned the goals of the research. As can be seen in Table 1, for many of these questions, a greater number of older children than younger children gave correct responses, but often these differences were not large. For all questions, most of the invalid answers were "I don't know."

When asked on a scale of 1 to 5 how much participants believed the primary experimenter would stop the session if they wanted to stop (with 1 being "not at all" and 5 being "really will stop"), the means for second, fourth, and sixth graders were 3.73 (between "probably stop" and "will stop"), 4.18 ("will stop"), and 4.35 (between "will stop" and "really will stop"), respectively, with a main effect for grade, $F(2, 166) = 4.58$, $p = .01$. Second graders were significantly less confident that the primary experimenter would stop than fourth or sixth graders, $F(1, 166) = 4.25$, $p < .05$ and $F(1, 166) = 7.99$, $p < .01$, respectively.

Children's understanding of their research rights after participation and debriefing. Table 2 presents children's responses to questions posed after the debriefing. Most participants accurately reported that they had been deceived by the game being rigged or the other child being an actor, although a greater number of older than younger children did so. The overall pattern of responses suggests that following the debriefing, most children continued to comprehend their right to cease taking part, and the limits of confidentiality. There was some evidence that fewer younger children understood these limits than did older children.

Children's understanding of two features of their research participation continued to be limited after debriefing. Few could explain the meaning of confidentiality; although a greater number of older than younger participants could accurately define the term. Incorrect responses included "do their kids do it," "I think it means sure," "I forgot," "never heard of that word until today," "friendship," "being nice," "sad," and "keep out, don't watch it" (each mentioned just once, by different participants). Also, just over half of the participants could correctly explain the goals of the study;

again, a greater number of older than younger children could recount the research goals.

When participants were asked after participating in the primary study how much they believed the primary experimenter would have stopped the session if the participant had indicated they wanted to stop, the mean was 4.62 on a scale of 1 to 5 (between “will stop” and “really will stop”), with no effect for grade. When children were asked to rate whether it would have been all right with the primary experimenter if they had wanted to stop, the mean was 4.56 on a scale of 1 to 5 (between “pretty OK” and “really OK”), with no effect for grade.

Approximately 68% of children indicated that they would not feel as if they had done something wrong if they had stopped playing the game or answering questions (15% said “yes,” 4% said “maybe,” 2% said “I don’t know,” and 1% declined to answer the question). When asked if they would feel disappointed with themselves for stopping, 60% said “no,” 17% said “yes,” 9% said “maybe,” 2% said “don’t know,” and 1% declined to answer the question. For both of these questions, there were no grade effects; and in both cases, 10% of participants were not asked these questions either because they actually had stopped the session or because interview time had run out.

After debriefing, when participants were asked if they felt they should be in a project if they did not like it and their parents did, 8% of children said “yes, they should be in such a project”; 76% of children said “no, they should not be in such a project”; 3% said “maybe”; 6% said “they didn’t know”; 6% were not asked; and 1% declined to answer. When participants were asked if they should be in a project if they liked it and their parents did not, 46% of children said “yes, they should be in a project if they liked it but their parents did not”; 28% of children said “no, they should not be in such a project”; 9% said “maybe”; 10% said “they didn’t know”; and 7% did not respond. There was no effect for grade for either question.

Relation between understanding research rights and responses to peer provocation. Last, we explored whether participants’ understanding of the research procedures, confidentiality, and voluntary participation was related to observed and self-reported responses to the peer provocation. *T* tests were conducted to see whether participants who gave valid and invalid answers to the Post-Assent Questionnaire—which demonstrated their knowledge of their rights prior to the provoking play session—differed in terms of their verbal responses, facial expressions, gestures, and postgame interview responses. Of the 66 *t* tests conducted, only two showed significant differences. These indicated that children who seemed not to under-

stand the research procedures were more likely than those who did understand to talk about the specifics of the game $F(1, 175) = 8.0, p < .01, M_s = .12$ and $.07$, respectively, and to use positive body language, $F(1, 175) = 6.04, p < .05, M_s = .95$ and $.40$, respectively.

DISCUSSION

Overall, many of the results of this study replicated the results of previous studies of children’s understanding of their participation in research. Most of these findings suggest that the assent and debriefing procedures were at least moderately effective in explaining research rights to children, even for this complicated study that involved risk and deception.

The most important new contribution of the present study was that it assessed children’s understanding of the debriefing, and whether debriefing influenced their understanding of their research rights. The results showed that most children in the older age groups understood the content of the debriefing, that is, how exactly they had been deceived. Just under half of the second graders could accurately report this information, however. This suggests that investigators would be wise to consider the developmental level of participants when weighing the advantages and disadvantages of debriefing (Thompson, 1990). If younger children do not understand the information, debriefing them could do more harm than good.

We were encouraged that debriefing seemed not to shake children’s faith in the other promises that had been made with regard to their participation. Adults worry that deceiving children will undermine their overall trust in researchers and perhaps even adults in general. Children’s responses to our questions indicated that at least their understanding of their research rights seemed not to have been undermined by the deception and the debriefing.

We were disheartened that so few participants were able to understand the purpose of the primary study, both before and after debriefing. Children’s poor understanding immediately following assent may have been due to the fact that the explanation of purpose, that is, “We are interested in learning more about how kids your age interact when they play games,” was vague. In the clarity of hindsight, we realized that some children simply may not have known what “interact” means. However, many children, especially the younger children, still misunderstood after the debriefing, even though the debriefing statement was much more clear and direct about the research goals (i.e., “We wanted to see what all sorts of different kids do when they are with someone who is showing off.”). The fact that some children’s misunderstanding persisted may

have been due to the complexity of the debriefing; they may have been focusing on the unexpected news that they did not really lose and that the other person was an actor. These results confirm earlier studies showing that children have difficulty understanding the purpose of research (Abramovitch et al., 1991; Nannis, 1991), that the more abstract features of research are more difficult to comprehend (Susman et al., 1992), and that children might need to be systematically taught why research is done (Hughes & Helling, 1991).

Most children in this study could not explain the meaning of confidentiality in the abstract, even after debriefing. Although this fits with findings from earlier studies (Susman et al., 1992), it is discouraging because children in this research heard at least three explicit, brief explanations of this term. Perhaps children were confused because all of these explanations were so short that they could have been easily missed, and all included phrases such as "secret" and "top secret" that may have invoked thoughts of spy games and proceedings more illicit than anything that was going on in the lab.

In actuality, most participants had a solid understanding of what confidentiality meant in the context of this research. Both before and after participating, most children could accurately name who would and would not find out what they did in the study. More of the present study's participants understood this issue than in earlier research (Abramovitch et al., 1991), perhaps because the assent and debriefing statements were more explicit on these points.

With regard to children's understanding of the fine points of confidentiality, there were some worrisome age differences. Both before and after participation, about 30% of second graders gave incorrect responses as to who would find out, and 40% believed that the primary experimenter would divulge responses to the family or school if explicitly asked. These numbers seemed surprising given that children had been told in clear and specific terms both during the assent and debriefing processes of the primary study that the experimenters would not disclose any information regarding what participants said and did, even if asked. It is important that younger children understand confidentiality and believe it will be held for them so that they are without undue stress during participation. Additionally, if the majority of younger children do not believe confidentiality will be held for them, then the validity of their responses is in jeopardy.

Why is it so difficult to convince children of confidentiality? One reason may be that children rarely have this right in almost any other context. Children have much experience in viewing adult rights as primary, and with adults freely sharing information about them

regardless of their own wishes. Children may even view confidentiality violations as adults trying to protect and even take care of them, as teachers and parents often do when communicating about successes and challenges at school. For all of these reasons, overcoming children's inexperience with confidentiality may require more than explicit statements and promises.

All of these results must be interpreted in light of the following methodological limitations. First, children may have detected the relation between the primary and the assent studies and may have been telling investigators what they thought the investigators wanted to hear rather than disclosing their personal beliefs.

Second, the questions that the children were asked were limited. For example, we did not explain or assess children's understanding of the risks and benefits of their participation in this study, because deception was involved, and also because we feared that such explanations would have been confusing and the additional detail may have undermined children's understanding of their rights to stop and to confidentiality. In future research, it will be important to test children's comprehension of risks and benefits for participation in behavioral research. It would also be interesting to assess children's responses to being asked for their own written assent, a procedure that likely seemed quite unusual to them.

Third, and perhaps most importantly, given that these child participants were fully debriefed, it could have been fruitful to examine in more detail their understanding of the deception and their reactions to the induction of emotional distress. The debriefing was generally perceived as good news rather than as "inflicted insight" (Baumrind, 1976, as cited in Keith-Spiegel, 1983). One reason that the debriefing in the present study was received positively may have been that although we stated explicitly that we rigged the game and arranged for a provoking actor, we chose not to use such words as "lie" and "deceive," because these seemed to be harsher ways of conveying what happened. Also, we did not question children about the emotional distress that may have been induced by the play session procedure, for several reasons. First, many children remained remarkably cool, calm, and collected in the face of the peer provocation (Underwood et al., 1999). Had we probingly questioned children about distress, we feared that we could have confused those who were relatively unperturbed, and even led them to believe that they had somehow responded wrongly to the situation. Second, for children who had become visibly upset, it seemed insensitive to ask them once again to reflect on their distress (remember that all children were interviewed in private about their responses to the play session immediately following the provocation, but before the debriefing).

Third, the Post-Debriefing Questionnaire came at the end of a long, complicated play session. We faced serious time constraints, partially because these children were fairly young and had been sitting for a long time already, but mostly because we were strongly motivated to save time for the positive playtime following the experiment. We realize that these choices may have compromised our ability to assess fully the impact of the debriefing and the emotional distress related to the provoking play session. Future investigators should devise clever methods for more detailed examination of children's understanding of debriefing and risky research, without inflicting insight that could be unnecessarily harmful.

Despite these limitations, we believe the results of the present study add to those of earlier studies in suggesting that school-aged children are capable of understanding many of their research rights, even in a complicated investigation involving risk and deception. The present study included a large sample of children who took part in research for which the stakes were high that children understood their rights, especially their right to withdraw. Children were questioned carefully immediately after assent and debriefing procedures by an investigator who made every effort to present herself as someone unaffiliated with the primary study, to increase the likelihood that children would confide their true beliefs.

Although this study yielded encouraging results as to the effectiveness of the assent and debriefing procedures, these findings do not speak to the larger and perhaps more important issue of the risks this type of research poses for participants. Here it seems important to note that although children's understanding of their research participation is an important issue in and of itself, children who could accurately describe their research rights did not differ from invalid responders in the distress they showed in response to the peer provocation. No matter how well children can repeat information given to them when assenting to research, it is still important to be extremely careful in conducting these types of studies. The research procedures for the primary study were reviewed by three different university Institutional Review Boards, a large urban school system that receives hundreds of research proposals per year and declines most, an Initial Review Group of the National Institute of Mental Health, and the Office for Protection from Research Risk. Interestingly, in light of the elements of risk and deception involved here, the only suggested change in procedures made by any of these review bodies was to refrain from paying \$5 to 8- and 10-year-olds because this might be coercive. In using this method with over 600 children, not

a single parent or child complained about these research procedures.

Of course, we hope that our efforts to protect children from harm were successful. Still, we acknowledge that the real effects of participating in this research on peer provocation remain unknown. It seems important to assess more fully the impact of taking part in this research—on both actors and participants—not only immediately following the play session, but also after some time has passed.

In future research, investigators should further refine assent and debriefing procedures, especially for younger children, and consider how research contexts can be altered to make free assent more possible (Alderson, 1992; Tymchuk, 1997). It seems important to test further the effectiveness of tools such as Participants' Bill of Rights (Rau & Fisher, 1997), and creative and innovative approaches such as using workbooks or video presentations to explain confidentiality to younger participants. For studies with school-aged children, it might be interesting to test the impact of having a same-age peer explain the research procedures, to see whether free and meaningful assent might be more possible in the absence of adults who can be perceived as authority figures with vested interests in children agreeing. As developmental researchers, our best hope of advancing science while protecting child participants might be to continue to conduct empirical research on the benefits as well as the harms that result from research participation. Lest we operate much as foxes in charge of hen-houses, it might be especially fruitful to conduct these studies when the primary research is not our own and to consult with colleagues even more than the regulatory boards require.

ACKNOWLEDGMENTS

This research was supported by grants MH52110 and MH55992 (a FIRST award) from the National Institute of Mental Health. The authors thank the children who participated, as well as Jennifer Mosley, Chantrelle Johanson, Julie Paquette, Natasha Thornburgh, Marianne Brogan, Catherine McClellan, and Graham Files for their assistance with data collection and coding. They appreciate the thoughtful suggestions of the anonymous reviewers and Dr. Ross Thompson. A portion of this research was presented at the biennial meeting of the Society for Research in Child Development in Washington, DC, 1997.

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APPENDIX A

PARTICIPANTS' ASSENT STATEMENT FOR THE PRIMARY STUDY

"We would like to invite you to take part in a research project. We are interested in learning more about how kids your age interact when they play games. Although your parents have given us permission to ask you about this, you are still free to make your own choice.

"If you agree to be part of our project, we will ask you to play a computer game with another boy/girl your same age. The game is called Light Cycles. We want to have a contest to see who can get the most points playing the game. After the contest is over, we will ask you some questions in private about what you thought about the game. The questions will last about 5 minutes.

"All of your reactions to the game and your answers to the questions will be kept confidential, and confidential means top secret. We will write a code number, not your name, on all questionnaire forms. The questionnaire forms will be stored in a locked cabinet. No one will see your answers to the questions except the 5 people here who help with the project. That means we are not going to show your parents or your teachers at school what you do here today, even if they ask.

"You are free to say no to this project, or to stop at any time. We will always be watching you playing the computer game in the next room from behind what looks like a mirror, but is really a window. If you want to stop during the game, all you have to do is wave at the window and we will end the computer game. If you want to stop answering questions, all you have to do is say 'I'd like to stop,' or 'I don't want to answer that question.' I will not be mad or sad if you decide to stop. So if you decide not to finish the play session, there will be no negative consequences (nothing bad will happen to you) and we will still pay your parents and reward you for your help. If you have any questions about this project, please feel free to speak up, now or anytime."

APPENDIX B

DEBRIEFING SCRIPT FOR THE PRIMARY STUDY

"I want to talk to you for a minute about the game you just played. Did you notice anything funny about the game? When you were picking out a prize, I changed the game so that [actor's name] would win most of the time. So you didn't really lose the game. The reason why we rigged the game so that [actor's name] would win most of the time is because we want to understand what it's like for kids when they don't win. Since the game was rigged, we would like you to have the prize that was supposed to be for the 'winner.' [Give the prize to the participants.]

"Another part of this project is that [actor's name] was helping us with our project. We asked [actor's name] to say and do all of the things that she/he did. [Actor's name] was acting, like people do on television or in the movies. [Actor's name] was pretending to show off and pretending to be rude. In real life, [actor's name] is a nice kid.

"The reason why we changed the game so that [actor's name] would win and why we asked [actor's name] to show off is because we think that being able to get along with other kids is really important. Maybe it's something you think about or are concerned about. We think that there is a lot of showing off that goes on between kids at school and other places. Some kids don't care when someone they are with shows off. Some kids feel hurt, or don't know what to say or do when they are with someone who is showing off. Other kids get very angry and maybe even get into fights because someone else is showing off. We want to see what all sorts of different kids do when they are with someone who is showing off. That's why we asked you and other [grade level] graders to come help us with this project. By doing this, we hope that we can find what kids do that helps them get along well with other people."

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