Learning Resistance to Temptation Through Observation

Joan E. Grusec, Leon Kuczynski, J. Philippe Rushton, and Zita M. Simutis
University of Toronto, Ontario, Canada

An adult model and 4- to 5-year-old children were tempted to deviate by a “talking table.” On both an immediate and a delayed test, children who had seen the model yield deviated more quickly and for a longer period of time than children in a control group who had not seen a model. Children who had seen the model resist deviated less quickly and worked longer at a boring task. In a second study with 5- to 8-year-olds, the tempting was done by a young woman. On several measures, only resisting models or resisting models who rationalized their behavior were effective, and sometimes only with girls. Children in the yielding model condition were less generous. It was argued that the procedures employed to study the effects of resisting and yielding models are important in determining their relative effectiveness.

Although social-learning theorists have proposed that prosocial models play a role in the development of forms of self-control such as resistance to temptation, the supporting data are not altogether consistent. In the typical study, children are instructed not to deviate and are then exposed to a model who either conforms to or fails to comply with the same prohibition. Generally, models who fail to comply are highly effective: Children who observe them deviate more than children who have simply been instructed not to deviate. In the same studies, however, models conforming to the prohibition are sometimes totally ineffective (e.g., Stein, 1967; Wolf, 1973), sometimes minimally effective (e.g., Rosenkoetter, 1973), or effective on only some dependent measures (e.g., Ross, 1971; Wolf & Cheyne, 1972) in producing increased conformity. In a review in 1970, Hoffman concluded that there was far more evidence that models could undermine the child’s past socialization in impulse control than that they could further the development of impulse control. Subsequent research has done little to change this view. Its acceptance is reflected in a recent article by Dienstbier, Hillman, Lehnoff, Hillman, and Valkenaar (1975). In analyzing the development of moral behavior, they found it unnecessary to attempt an integration of their view with notions of modeling and identification, referring to lack of convincing experimental evidence for a causal link between identification and resistance to temptation.

In one recent study of deviant boys from the lower socioeconomic class, models who conformed, that is, who resisted temptation, were effective in promoting resistance to temptation (Perry, Bussey, & Perry, 1975). The investigators conjectured that models who resisted temptation may have attracted more attention from these boys who are less accustomed to conformity to prohibitions than middle-class subjects of other studies. The salience of the model’s behavior, therefore, may have been an important variable in inducing resistance.
The first study reported here was designed to test this hypothesis. By manipulating expectancies for conformity, we hoped to affect the influence of a resisting model. We reasoned that when children believed the norm to be one of conformity, they would be relatively unaffected by a resisting model who provided little new information about appropriate behavior to guide them. If they were led to believe that nonconformity to a prohibition was the norm, however, a resisting model would provide new information and, therefore, would be more likely to produce a change in behavior. In addition to manipulating expectancies for conformity, we also modified the format of earlier studies in which models and observers were usually asked not to do something interesting (e.g., not to play with attractive toys) and sometimes to engage, as well, in a boring task. Pressure to deviate was thus internal, presumably arising from boredom and the resultant increasing curiosity about the forbidden activity; and attempts to cope with these pressures on the part of a model were not immediately apparent to the observer. In the present study, we made the pressure for deviation, as well as the model's attempts at resolving it, more public in an attempt to facilitate subjects' self-control. We measured both the immediate effects of models yielding to and resisting temptation on children's resistance to temptation and the durability and generalization of the models' effects. Wolf and Cheyne (1972) found that resisting models had an immediate effect on behavior but that this effect did not last, whereas the effect of yielding models persisted for up to 1 month.

Experiment 1

Method

Subjects

Subjects were 25 boys and 23 girls who were 4 and 5 years of age (mean age was 5 years 1 month). Half of the subjects were from a junior kindergarten and half were from a senior kindergarten; both kindergartens were located in a middle-class suburb.

Design

A $2 \times 2 \times 3$ factorial design was employed, with expectancy (yielding or resisting) and modeling (yielding, resisting, or none) as between-subjects factors and time of testing (immediate or delayed) as a within-subject factor. Four boys and four girls of comparable age were assigned to each expectancy and modeling condition except one, which contained five boys and three girls. The experimenter was a young woman. A young man and a young woman were the models; each served as model for half of the boys and half of the girls in each condition. None of the adults was previously known to the children.

Procedure

Children came individually to a research trailer in the school yard. They were asked to help sort a large collection of different-colored cards (approximately 300) into neat, same-colored piles. Before they began, the experimenter introduced them to "Charlie the friendly table," which was located across the room from the work table. Charlie was covered with a bright orange and yellow cloth with pockets on its sides. On his top, in his pockets, and on the floor around the table were attractive toys, for example, a kaleidoscope, a doll house, and a magnetic car set. Hidden underneath the table was a tape-recorder speaker. The child was shown the toys and told that Charlie sometimes even talked. The experimenter and Charlie had a short conversation in which she told Charlie to leave her helpers alone for a change and he replied that she would have to wait and see. The experimenter told the child that Charlie tried to get children to play with his toys. She added, in the resisting-expectancy condition, that they all ignored him and sorted lots of cards. In the yielding-expectancy condition, she added that children all listened to Charlie and played with his toys.

At this point, the model knocked and entered. The experimenter said that she had to leave for a while to see a teacher and seated the child and model with their backs to Charlie. The experimenter said that the model was also there to sort cards. In the two modeling conditions, the experimenter instructed the model to begin sorting cards. After the experimenter's exit, in the modeling conditions, Charlie twice urged the model, who was sorting cards, to leave the silly card sorting and come and play with him. In the resisting condition, the model did not look at Charlie and replied that he or she would like to play but could not because he/she was working; in the yielding condition, the model looked at Charlie and stated that the toys were more fun than sorting cards and went over to play with them—a first time for 30 sec and a second time for 60 sec. In the control condition, the experimenter gave the adult and the child some crayons and paper to draw with until her return. There were no attempts at distraction by Charlie.

After 5 minutes, the experimenter knocked and entered after the model (or adult in the control condition) said "Come in." She told the model that there was a call for him/her and the model left. The child was then asked to sort the cards; again the experimenter left the room. She indicated that she would return in 10 minutes and that she would knock and wait until she was invited to come in.

Temptation phase. Every 1.5 minutes, Charlie attempted to distract the child by suggesting that he or
she play with the toys or perform an activity like jumping up and down on one foot. In Charlie's first distraction, he said either that he was lonely and that no one ever played with him (resisting-expectancy condition) or that he had many friends and that everyone played with him (yielding-expectancy condition). There were five subsequent distractions. The following is an example:

Hey! Listen to me. I've got lots of nice toys over here. Any of my toys is more fun than sorting those cards. You could bounce my ball or read my books or play with anything you want. Forget the cards. Who cares about cards anyway? Enjoy yourself.

The child was observed through a one-way mirror by the experimenter and the model. The latency to first approaching Charlie's table, total duration of deviation throughout the temptation phase, and length of time spent sorting cards were recorded. The two observers agreed about their observations 94% of the time.

**Generalization tests.** The experimenter returned after 10 minutes. She covered Charlie with a sheet and said that she was still talking to the teacher and would be gone for a few more minutes. She placed a paper bag on the table and said there was a toy in it. She told the child that the toy could be played with when she returned but that he/she was not to look at it until then. The experimenter left, taking with her the cards and the box that had contained them. The child was again observed through the one-way mirror. Three minutes later, the experimenter returned (having knocked on the door) and invited the child to play with the toy in the bag (an Etch-a-Sketch). After 4 minutes of play, the child returned to the classroom. The child was asked not to discuss the activities in the trailer with classmates and was thanked for helping. Reports from teachers and children indicated that the request for secrecy was respected.

**Results**

**Resistance to Temptation**

There were no differences between boys and girls on any of the measures of resistance to temptation nor between children exposed to either the male or the female models. Thus, the data for these groups were combined. The three measures of deviation are presented in Table 1. For mean latency to deviation, there was a main effect of modeling, with $F(2, 42) = 6.14, p < .01$. Neither the main effects of expectancy and session nor any of the interactions approached statistical significance. Children in the resisting-model condition took longer to deviate than those in the control condition, $t(42) = 2.45, p < .01$, whereas children in the yielding-model condition deviated more quickly than those in the control condition,

<table>
<thead>
<tr>
<th>Measure (in sec)</th>
<th>Resisting expectancy</th>
<th>Yielding expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resisting model</td>
<td>Control</td>
</tr>
<tr>
<td>Latency to play</td>
<td>Immediate</td>
<td>561.88 (5)</td>
</tr>
<tr>
<td></td>
<td>Delayed</td>
<td>562.50 (4)</td>
</tr>
<tr>
<td>Duration of play</td>
<td>Immediate</td>
<td>40.00</td>
</tr>
<tr>
<td></td>
<td>Delayed</td>
<td>45.63</td>
</tr>
<tr>
<td>Time working</td>
<td>Immediate</td>
<td>458.75</td>
</tr>
<tr>
<td></td>
<td>Delayed</td>
<td>420.50</td>
</tr>
<tr>
<td>n looking into bag</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note.* In parentheses is the number of children who did not deviate in each condition. n per group = 8.
Clearly, there was an effect of a resisting model as well as a yielding model, which lasted over a 2- to 4-week period. This occurred independent of any expectation children had about whether or not it was the norm to deviate.

On the mean duration of deviation measure, analysis of variance yielded a significant effect of modeling, $F(2, 42) = 7.23, p < .01$, and a significant Modeling x Session interaction, $F(2, 42) = 3.74, p < .05$. No other effects were statistically significant. Children in the resisting-model condition tended to deviate for a shorter period of time than those in the control condition on the immediate test, $t(42) = 1.97, p < .10$, but they did not differ from the control condition on the delayed test, $t(42) = 1.41$. In the immediate and the delayed tests, children in the yielding-model condition deviated longer than those in the control condition, $t(42) = 2.12, p < .05$, and $t(42) = 4.51, p < .01$. In addition, there was a significant increase from the first test to the retest in duration of deviation for children in the yielding-model condition, $t(42) = 2.81, p < .01$. There was no change in duration of deviation for children in the resisting-model condition.

Analysis of the time children spent sorting cards indicated a main effect of modeling, $F(2, 42) = 9.36, p < .01$. None of the other main effects or interactions was significant. Children in the resisting-model condition spent more time sorting cards than those in the control conditions, $t(42) = 3.61, p < .01$. There was no difference between the yielding-model condition and the control condition ($t < 1$).

These measures of deviation lend support to the position that resisting models can be as influential in modifying behavior as are yielding models. Although the expectancy manipulation did not have the predicted effect, the way in which we, in contrast to previous studies, made temptation as well as the model's resistance public may have been important in the model's facilitating children's efforts at self-control. Perhaps verbalizations provided them with statements that they could use to guide their own behavior. The importance of such statements is exemplified in the work of people like Patterson and Mischel (1975).

**Generalization Test**

Fewer children looked into the forbidden bag in the resisting-model condition compared to the control condition (see Table 1: Fisher's $p = .058$). There was no difference between the yielding-model condition and the control condition. The fact that the only children in the yielding-model condition who looked into the bag were those who had been told that most children resisted playing with Charlie indicates that children did respond to the expectancy manipulation, albeit not in the way we had predicted. Comparison of the number of children in the yielding-model condition who looked into the bag when they had been given a norm of resisting temptation ($n = 5$) and children who had been given a norm of yielding to temptation ($n = 0$), gave a Fisher $p$ of .013.

**Experiment 2**

Although a resisting model was quite effective in increasing resistance to temptation in the first experiment, the new paradigm we employed caused us some uneasiness. In real life, tables do not talk. (Our young subjects were fascinated with Charlie and never questioned his remarkable abilities.) In Experiment 2, we replaced Charlie with a live person who tried to lure our models and subjects from a boring task to play with her interesting toys. In addition to considering the effects of resisting and yielding models, we had half of the models in each group provide a reason for their behavior. Liebert, Hanratty, and Hill (1969) reported that observers adhere more to a model's standards of self-reward as cognitive structuring increases. We assumed that the addition of reasoning to the model's behavior would make the behavior more effective by giving children more justification for and more information about the appropriateness of imitation. The inclusion of cognitive structuring in the situation would also facilitate conformity by providing material for self-instruction and by reducing reactance (see, e.g., Walters & Grusec, 1977).

In Experiment 1, we had found that the effects of a resisting model generalized to another resistance-to-temptation task. In
this second study, we assessed generalization to more remote examples of prosocial behavior—helping and sharing. Although we were not confident that modeling alone would affect any of these measures, we felt that the addition of a rationale that stressed the importance of doing the right thing might facilitate prosocial behavior generally. Grusec, Saas-Kortsaak, and Simutis (1978) reported that although the effects of modeling do not generalize beyond the training situation, those of moral exhortation (a kind of cognitive structuring) do, presumably because it is easier to generalize from verbalized norms of behavior than from specific examples.

Finally, in an attempt to broaden the range of our findings, we used an older group of children.

Method

Subjects

Subjects were 40 boys and 40 girls who were from 5 to 8 years of age. (Mean age was 7 years 2 months.) Half of the subjects in each group were children attending a summer recreation program; the rest participated in the experiment during the regular school year. Children were from a middle-class suburb.

Design

Eight boys and eight girls who were matched on age were randomly assigned to one of five conditions: resisting model, resisting model with rationale, control, yielding model, yielding model with rationale. The experimenter was a young man, and temptations were given by a young woman named Shelley. The model for children attending the summer playground was a young woman; the model during the school year was a woman in her late 80s. None of the adults was previously known to the children.

Procedure

Children came individually to the research trailer in which they were asked to help sort a large collection of picture game cards into piles of similar pictures. Before they began, the experimenter introduced the children to Shelley, who he said worked for him by cleaning and fixing toys. Shelley was seated behind a table containing a large collection of attractive toys. Throughout the session she cleaned and fixed the toys. The model entered the room and was introduced as someone who was also there to sort cards. The model and Shelley greeted each other as though they had met before. The experimenter then said that he had to leave.

In the modeling conditions, he instructed the model and the child to sort cards and asked them not to play with the toys while he was gone. The model and the child were seated with their backs to Shelley. In the control condition, the experimenter instructed the child to sort cards while the “adult” read her book. The adult had been told that there was nothing for her to do at the moment. The experimenter also stated that the toys were not to be played with in his absence.

In the modeling conditions, Shelley played noisily with the toys, suggesting at the end of 1 min and at the end of 2 min that the model come and play with the toys, since they were so much fun. In the resisting condition, the model said she could not come, adding, in the resisting-rationale condition, that she was there to sort cards and that (after the first temptation) she always tried to do what was right whenever she could or that (after the second temptation) it would not be right for her to play. In the yielding condition, she played with Shelley’s toys for 30 sec each time that Shelley suggested that she should, adding, in the yielding-rationale condition, that she had done enough work and that (after the first temptation) one cannot always do what others want all the time and must sometimes think of one’s self or that (after the second temptation) she deserved a little fun. In the control condition, Shelley said nothing.

At the end of 3 min, Shelley left to get some more toys. A few sec later, the model announced that she had to leave the trailer and suggested that the child keep working until the experimenter returned. After the model’s departure, Shelley returned, carrying an Etch-a-Sketch and a View Master.

Temptation phase. After 30 sec and every 90 sec thereafter for 9 ½ min, Shelley attempted to get the subject to play with her toys. An example of her temptations is as follows: “Hey, look at this Etch-a-Sketch. It’s really a neat toy. What do you think of it? You can try it if you like.”

The child was observed through a one-way mirror and latency to first deviation, duration of deviation over the whole temptation phase, and time spent sorting cards were recorded. The experimenter knocked and entered the room 10 minutes after the temptation phase had begun. At this point, Shelley covered the toys and left.

Generalization tests. First, the experimenter allowed the child to play with a miniature pinball machine for a few minutes. Then, the experimenter accidentally dropped a box containing an assortment of small items (pencils, bottle caps, etc.). He slowly picked up each item and noted whether or not the child helped him. Second, the experimenter gave the child 12 pencils of 12 different colors together with a bag in which to place them as a reward for helping out with the card sorting. He added that he was collecting pencils to give to poor children and suggested that the child could share some of his pencils with the poor children if he/she wished. There was a large donation box in the corner that was covered except for a small slot in the top. The experimenter said that the child could put some pencils into the box if he/she wished to and then place the rest in the bag. He then walked to the other side of the room and turned his back, supposedly to fill out a list. Number
of pencils, their color, and the length of time it took to donate them were recorded from behind the one-way mirror. The child was thanked for his help and asked not to discuss the session.

Results

Resistance to Temptation

The mean latency to play with Shelley's toys, the mean duration of deviation, and the mean time spent sorting cards are presented for each group in Table 2. Scores for these measures were subjected to a square root transformation because of heterogeneity of variance. Analysis of variance of the latency scores yielded a significant treatment effect only, $F(4, 70) = 5.21, p < .001$. There was no main effect of sex and no Sex x Treatment interaction. Subsequent tests showed that children in the resisting model plus rationale group took longer to deviate than children in the control group, $t(70) = 2.72, p < .01$. None of the other groups differed significantly from the control group, with $t$s ranging from 1.23 to .88.

Analysis of variance of the duration of deviation scores yielded a significant effect of treatment, $F(4, 70) = 5.06, p < .01$, and a significant Treatment x Sex interaction, $F(4, 70) = 2.88, p < .05$. Girls in both the resisting model and the resisting model plus rationale group deviated for a shorter period of time than girls in the control condition, $t(70) = 2.29, p < .05$, and $t(70) = 2.47, p < .05$. For girls, there was no difference between the yielding model or yielding model plus rationale conditions and the control condition, with $t$s = .21 and 1.40, respectively. For boys, none of the comparisons with the control condition reached statistical significance. Analysis of the working data (time spent sorting cards) yielded results parallel to those of the duration of deviation data—thus, this measure is not discussed further.

The results for the resisting model were not consistent. It took the addition of a rationale to make the model effective on the latency measure, and only girls were affected by the model on the duration of deviation and working measures. The reasons for the presence of sex effects in this second study and not in the first study are not immediately evident. The fact that the distracting agents in the two studies were of different sexes might possibly be relevant here. What is noteworthy about the results of Experiment 2, however, is that the yielding model with or without a rationale, had no effect on the behavior of either boys or girls. Were this the first study to have been made of the effects of yielding and resisting models on conformity, we might have concluded that resisting models are at least effective on occasion in promoting self-control but that yielding models are quite ineffective in breaking down prior socialization experiences.

Generalization Tests

Data from the two generalization tests are presented in Table 3. There was no difference in the pattern of helping between

<table>
<thead>
<tr>
<th>Measure (in sec)</th>
<th>Resisting model</th>
<th>Resisting model plus rationale</th>
<th>Control</th>
<th>Yielding model</th>
<th>Yielding model plus rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latency to deviate</td>
<td>288.25</td>
<td>399.50</td>
<td>198.13</td>
<td>123.38</td>
<td>146.06</td>
</tr>
<tr>
<td>Duration of deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>108.63 (4)</td>
<td>105.00 (5)</td>
<td>324.13 (1)</td>
<td>319.75 (0)</td>
<td>471.13 (0)</td>
</tr>
<tr>
<td>Boys</td>
<td>404.75 (1)</td>
<td>201.25 (3)</td>
<td>298.50 (1)</td>
<td>503.50 (0)</td>
<td>347.00 (2)</td>
</tr>
<tr>
<td>Time sorting cards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>391.38</td>
<td>402.38</td>
<td>184.50</td>
<td>209.88</td>
<td>67.13</td>
</tr>
<tr>
<td>Boys</td>
<td>97.63</td>
<td>316.25</td>
<td>179.88</td>
<td>50.00</td>
<td>203.25</td>
</tr>
</tbody>
</table>

Note. In parentheses is the number of children who did not deviate in each condition. $n$ per group = 8.
Table 3
Number of Children Helping, Number of Pencils Shared, and Latency and Quality of Sharing in Each Condition in Experiment 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Resisting model</th>
<th>Resisting model plus rationale</th>
<th>Control</th>
<th>Yielding model</th>
<th>Yielding model plus rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helping</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Pencils shared</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>2.87</td>
<td>2.69</td>
<td>3.94</td>
<td>1.44</td>
<td>2.37</td>
</tr>
<tr>
<td>Latency (sec)</td>
<td>35.12</td>
<td>76.87</td>
<td>64.19</td>
<td>109.44</td>
<td>78.69</td>
</tr>
<tr>
<td>Quality</td>
<td>16.88</td>
<td>15.56</td>
<td>22.31</td>
<td>6.69</td>
<td>15.25</td>
</tr>
</tbody>
</table>

Note. n per group = 10.

boys and girls. Fewer children in the yielding-model condition helped pick up items that had been dropped than in the yielding model plus rationale condition, $\chi^2(1) = 4.99$, $p < .05$. There were no significant differences between any of the other conditions; thus, neither of the yielding conditions differed from either of the resisting conditions. There were no effects of treatment or sex on number of pencils shared. There was, however, a suggestive main effect of treatment on latency to place pencils in the donation box, $F(4, 70) = 2.58$, $p < .05$, with a tendency for children in the yielding-model condition (but not the yielding model plus rationale condition) to take longer than children in the control condition to finish sharing their pencils, $t(70) = 1.91$, $p < .07$. Observation of the children who shared with longer latencies suggested to us that they were sorting through their pencils and donating those of less desirable color. To test this, we asked 13 boys and 13 girls between the ages of 6 and 10 to rank order the 12 pencils according to color preferences. We were then able to assign a mean preference score to each color, with higher scores reflecting more preferred colors. In this way, we calculated for each subject a number that reflected the quality of donation (see Table 3). Analysis of these data indicated that the quality of donation was higher in the control condition than in the yielding-model condition, $t(70) = 2.38$, $p < .05$.

General Discussion

These two studies provide evidence that there are conditions under which models who resist temptation are no less effective and sometimes (as in Experiment 2) more effective than yielding models. When we consider the results together with those of a recent study by Bussey and Perry (1977), it is evident that any rejection of modeling as an important mechanism in the development of moral behavior is premature. Clearly, the relation between situational conditions and relative effectiveness of resisting and yielding models must be explicated. Our attempt in Experiment 1 to manipulate resistance to temptation by providing children with different expectations about how frequently others obeyed prohibitions was unsuccessful. We have suggested, however, that the greater externalization of conflict in these two studies than in previous studies may provide children with more information about techniques for controlling their own behavior. It is also possible that the public behavior of the resisting model served to focus children's attention on the sorting task. (Note, for example, that in Experiment 1, observation of a resisting model increased the amount of time spent working, whereas this measure was unaffected by observation of the yielding model.) Grim, Kohlberg, and White (1968) have suggested that resistance to temptation is facilitated by how well a child is able to attend to a task and ignore temptation.

A resisting model was not successful in increasing resistance to temptation on all measures. The addition of a rationale was necessary in Experiment 2 to increase latency to deviation. Cheyne and Walters (1970) suggested that older children may be more deviant than younger ones when ra-
tionales are not provided for conformity. Since the children we tested in Experiment 2 were older than those of Experiment 1, it may have been this age difference that accounted for the decreased effectiveness of the resisting model. In this respect, then, age may interact with modeling, with younger children more likely to emulate resisting models than older ones, at least on some measures of deviation.

Previous studies have shown little concern with the generalized effects of modeling of resistance and yielding to temptation. From Experiment 1, it seems that the effects of resisting (but not yielding) models may generalize to other resistance-to-temptation situations. From the second study, we see that exposure to yielding models makes children somewhat more reluctant to share, as well as changes the quality of their sharing. Note, however, that this held true only for children who did not hear a rationale for yielding—children in the yielding model plus rationale group did not differ in their sharing from those in the control group. At this point, we can only conclude that models who yield to or resist temptation have, under certain conditions, some effects beyond the specific behavior that they model. The specific nature of these effects requires further clarification.

References


Received May 1, 1978