DOCUMENT RESUME

ED 291 045   CG 020 577

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TITLE   Salience Effects in the Social Problem-Solving of
              Aggressive and Nonaggressive Boys.
PUB DATE   Aug 87
NOTE   18p.; Paper presented at the Annual Convention of the
              American Psychological Association (95th, New York,
              NY, August 28-September 1, 1987). For a related
              paper, see CG 020 576.
PUB TYPE   Reports - Research/Technical (143) --
              Speeches/Conference Papers (150)

EDRS PRICE   MF01/PC01 Plus Postage.
DESCRIPTORS   *Aggression; Behavior Patterns; *Behavior Problems;
              Cognitive Style; Comparative Analysis; Intermediate
              Grades; *Males; Preadolescents; *Problem Solving;
              Social Cognition; *Social Problems
IDENTIFIERS   Problem Solving Measure for Conflict; *Salience;
              Salience Effects

ABSTRACT
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children generate fewer alternative solutions to social problems than
do nonaggressive children, research has found consistent deficiencies
in the qualitative kinds of solutions that aggressive children
produce. This study assessed salience effects on the abilities of
aggressive and nonaggressive boys from the fourth, fifth, and sixth
grades to generate alternative solutions to social problems.
Twenty-one aggressive and 15 nonaggressive boys were randomly
assigned to two conditions, the Open-Middle or the Multiple-Choice
condition. The dependent measure was the Problem Solving Measure for
Conflict (Lochman & Lampron, 1986), which consisted of six means-ends
stories. In the Open-Middle condition, subjects responded to the
means-ends stories in the usual spontaneous manner, and produced
patterns of solutions similar to prior results with aggressive and
nonaggressive boys. When the Multiple-Choice condition was compared
to the Open-Middle condition, aggressive subjects produced a
significantly different pattern of response choices, with more verbal
assertion and help-seeking solutions and fewer direct action choices.
However, while the aggressive and nonaggressive boys no longer
differed in rates of direct action solutions in the multiple-choice
condition, the two groups still had a significantly different pattern
of verbal assertion and help-seeking solutions. Aggressive and
nonaggressive boys' response choice patterns appear to be highly
affected by the social cognitive process of salience. (Author/ABL)

Salience Effects in the Social

Problem-Solving of Aggressive and Nonaggressive Boys

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Running head: Salience Effects

Abstract

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problems. Twenty-one aggressive and 15 nonaggressive boys were

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Salience Effects in the Social

Problem-Solving of Aggressive and Nonaggressive Boys

While evidence is mixed about whether aggressive children generate
fewer alternative solutions to social problems than do nonaggressive
children (Lampron, 1984), research has found consistent deficiencies in
the qualitative kinds of solutions that aggressive children produce.
As expected, aggressive children and children with negative peer social
status have been found to think of more aggressive solutions to problem
situations (Asarnow & Callan, 1985; Deluty, 1985; Richard & Dodge, 1982)
than do nonaggressive children. When other specific types of solutions
have been examined, aggressive children have also been found to generate
fewer verbal assertion and more nonverbal direct action solutions than
do nonaggressive children (Deluty, 1985; Lochman & Lampron, 1986).

Research can now address whether these deficiencies are due to a
true lack of ability to recognize and choose the same pattern of
alternatives as nonaggressive children, or to a characteristic style of
retrieving known strategies from memory. These two explanations for
the deficiencies are depicted schematically in Figure 1. The latter
explanation is related to research on salience effects within social
cognition processes. Salience effects indicate that ideas that have
recently and frequently been activated, and/or ideas that have high
value to the individual, come to awareness more easily than ideas that
have not been activated (Fiske & Taylor, 1984). These salience, or
primacy, effects may explain why aggressive children generate a different

pattern of problem-solving solutions. Extending these processes to children, Rubin and Krasnor (1986) have described in their social information-processing model how children cognitively retrieve strategies for solving problems by bringing these strategies into their "working space" or short term memory from stored memory bins. These strategies can either be enacted in an automatic manner, similar to salience effects, or in a conscious, deliberate manner.

Dodge (1985) has proposed that salience may also mediate another social cognitive process, the attributional biases noted in aggressive children. This bias leads these children to select the most easily accessible attributions at the top of their "memory bin." Investigating this salience effect on attributions, Milich and Dodge (1984) found that aggressive children's bias to overperceive hostile intentions from others disappeared when a multiple-choice format was used for the attribution measure rather than an open-ended one. The effect of salience on social problem-solving has not been carefully examined, although Freedman, Rosenthal, Donahue, Schlundt and McFall (1978) have found that older adolescent delinquents and adolescent nondelinquents produce more competent solutions, using a global rating of competence, under multiple-choice rather than open-ended conditions. Despite these suggestive findings, it has not yet been determined whether salience mediates the deficient pattern of problem-solving solutions of aggressive children. The current study will examine this issue by comparing the effects of open-ended and multiple-choice formats on aggressive boys' selection of different kinds of responses to resolve interpersonal conflicts.

Method

Thirty-six boys were selected from the fourth, fifth and sixth grades of five elementary schools. The sample consisted of 21 boys identified by their teachers as the most aggressive and disruptive boys in their classes, and 15 boys identified by teachers as not having difficulty with aggressive behavior. The sample had an average age of 11 years, 2 months, and the sample consisted of seven black and 29 white students. The Aggressive and Nonaggressive groups were not significantly different on age or racial status, and descriptive data for these subject groups can be found in Table 1.

To determine the behavioral comparability of this sample to our prior research samples, teachers completed the Aggression subscale of the Missouri Children's Behavior Checklist (MCBC: Sines, Pauker, Sines & Owen, 1969) on the boys, and independent observers made blind ratings of the boys' classroom behavior using the Behavior Observation Schedule for Pupils and Teachers (BOSPT: Breyer & Calchera, 1971). The BOSPT provided time-sampled ratings during two 30-minute observations on each subject, and yielded three subscores. Overall interrater agreement on the BOSPT was assessed during 30% of the observations, and was 96.4%. The overall means for the Aggressive groups of 9.0 for the MCBC Aggression Score, 79.7% for BOSPT On Task, 15.6% for BOSPT Passive Off Task, and 4.7% for BOSPT Disruptive-Aggressive Off Task were similar to the scores obtained in our prior problem-solving research with aggressive boys (Lochman & Lampron, 1986), and indicates these these two samples of aggressive boys were behaviorally comparable. The MCBC Aggression scores

for the current sample were one and a half standard deviations above
the mean for MCBC normative male samples, and thus these boys displayed
serious levels of aggressive difficulties.

The design used for this study is shown in Figure 2. Children
within the Aggressive group and children within the Nonaggressive group
were randomly assigned to either the Open-Middle (OM) condition or the
Multiple-Choice (MC) condition. The four cells were not significantly
different in age or racial status when examined in the four kinds of
pair-wise comparisons made in this study. The two Aggressive cells
were also examined for comparability on the behavioral variables. In
comparison to the OM-Aggressive group, the MC-Aggressive group had
significantly higher MCBC Aggression scores, (mean of 10.5 to 7.3),
F (1, 19) = 5.03, $p < .05$, but there were no significant differences
between these two groups on the BOSPT variables.

The dependent measure was the Problem Solving Measure for Conflict
(PSM-C: Lochman & Lampron, 1986), which consisted of six means-ends
stories. The PSM-C assesses social problem-solving skills in peer,
teacher-student, and parent-child conflict situations, with the stories
in each of these interpersonal contexts varying systematically in the
degree of hostile intent displayed by story characters. The PSM-C was
read individually to children by blind research assistants. Since this
study examined salience effects on recall, only the children's initial
solutions to the problem were examined. In the OM (Open-Middle)
condition, which is the manner in which the PSM-C has been previously
used, children were read a problem situation and a conclusion to the

problem, and then they were asked to provide the middle part, or the

solution to the problem. IN the MC (Multiple-Choice) condition, each

story was followed by four types of responses, and the subject was

asked to pick the solution they wished to solve the problem. The four

MC response types were classified into content categories of Verbal

Assertion (VAS), Direct Action (DA), Help-Seeking (HS), and Verbal and

Physical Aggression (AG). To check the validity of the multiple-choice

responses, six blind research assistants had 100% agreement in

classifying the response options into the four content categories. For

the OM condition, subjects' spontaneous responses were coded into these

same four content categories using the existing scoring system (Lochman

& Lampron, 1986). Kappa coefficients between coders were above .80.

Other types of responses that subjects generated in the OM condition

were not analyzed in this study.

Results

Figure 3 contains the mean rates of the four types of problem

solutions under the two different response formates. With the Multiple-

Choice format both the Aggressive and the Nonaggressive subjects increased

their rates of Verbal Assertion Solutions (31% to 64% for Aggressive

boys; 45% to 86% for Nonaggressive boys), and decreased their rates of

Direct Action solutions (59% to 8%; 42% to 10%). Only the Aggressive

boys had an increase in Help-Seeking solutions in the Multiple-Choice

format (8% to 23%; 8% to 5%). The two response formats did not have a

substantial differential effect on Aggressive solutions (3% to 6%;

6% to 0%).

The results of four sets of pairwise comparisons between cells are presented in Table 2. Three key findings are evident. First, the comparisons between the OM and MC conditions indicate that the Multiple Choice format produces significantly different rates of Verbal Assertion and Direct Action solutions for the whole sample, and tends to affect rates of Help Seeking solutions for Aggressive boys. Second, the hypothesized differences between the Aggressive and Nonaggressive boys on the Open-Middle format were found for Direct Action ($p < .05$) and for Verbal Assertion ($p < .09$), thus replicating the prior Lochman and Lampron (1986) findings. Third, while the difference between Aggressive and Nonaggressive boys on Direct Action solutions disappeared in the Multiple-Choice format, the Aggressive boys still generated fewer Verbal Assertion solutions and more Help-Seeking solutions than Nonaggressive boys on this type of format. To insure that differences between the two Aggressive cells were not due to their different levels of teachers' ratings of aggression, analyses of covariance were subsequently computed between these two cells using the teachers' ratings on the covariate. The results of these covariance analyses were identical to the prior comparisons between these two cells on the PSM-C dependent variables.

Discussion

When aggressive boys were allowed to select response alternatives to social conflicts from a list of response choices, they chose a markedly different pattern of responses than did other aggressive boys who generated their alternative responses spontaneously, without benefit of cues for a range of response. The current results indicate that the

provision of a range of response choices in the multiple-choice format interrupted the salience effects evident in the social problem-solving thinking of aggressive boys. Thus, in the absence of these cues, aggressive boys responded in an automatic way by selecting the responses that were salient, or readily activated for them, and which could be retrieved most readily from memory.

Nonaggressive boys are also affected by the salience effect, but removing the salience effect by using the multiple-choice format leads to differential effects on Verbal Assertion and Direct Action when the Aggressive and Nonaggressive boys are compared. There are sharp decreases in rates of Direct Action solutions for both groups, and the Aggressive and Nonaggressive boys generate very similar, low rates of Direct Action when the salience effect is removed. However, while both groups then increase their rates of Verbal Assertion, the Aggressive boys still do not produce as high a rate of these solutions as do Nonaggressive boys. Instead, the Aggressive boys produce a relatively higher rate of Help Seeking responses. Therefore, the current results elaborate on the specific nature of the social problem-solving deficiencies of aggressive boys. When aggressive boys spontaneously respond to social conflicts, they overly rely on Direct Action solutions that are easily activated from their memory. When this salience effect is removed, aggressive boys do decrease their production of Direct Action solutions, and select higher rates of other solutions in their "memory bin." However, when the salience effect is removed, the aggressive boys still have a distinct pattern of response choices by overly emphasizing Help-Seeking efforts.

These findings have implications both for assessment and for

intervention. Since the two response formats, open-middle and multiple-

choice, produced strikingly different patterns of response choices,

future research must carefully select the type of response format

appropriate for the study's purpose. Open-middle formats are useful

for examining salient automatic responses, while the multiple-choice

format appears to assess deliberate response selection. Results from

different studies using different types of formats are not likely to

produce directly comparable results. Regarding intervention implications,

it appears that social problem-solving interventions for aggressive boys

(e.g., Lochman, Burch, Curry & Lampron, 1984; Lochman & Curry, 1986)

can become more effective by emphasizing ways to make direct action,

help-seeking and aggressive solutions less salient, and to make verbal

assertion responses more salient. The intervention can focus on

maximizing means for improving retrieval of veⅈbally assertive responses

through cues and performance reinforcements, rather than merely attempting

to train aggressive children to generate an array of new solutions to
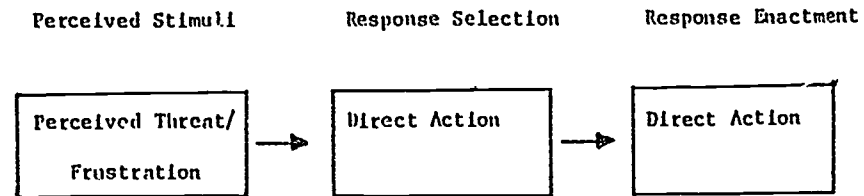
problems.

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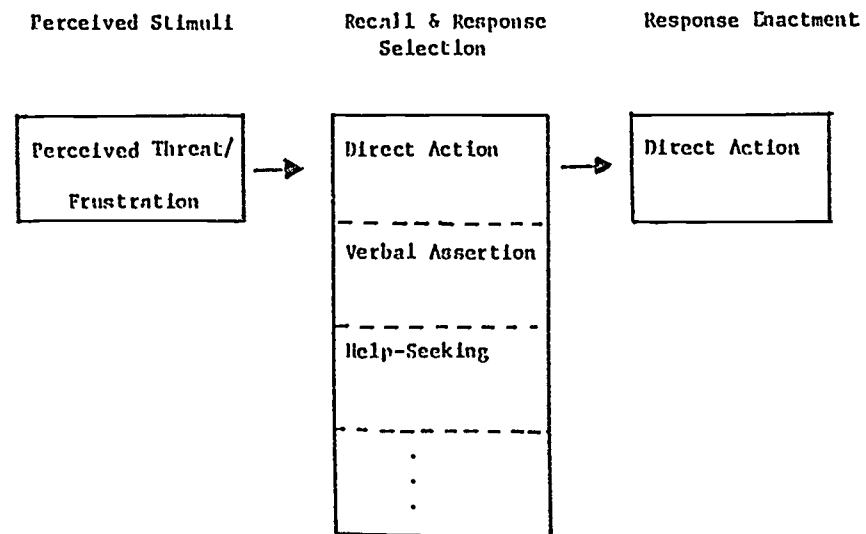Psychology, 52, 915-916.

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Two Types of Problem-Solving Deficiencies

(A) Learned Pattern

| Perceived Stimuli | Response Selection | Response Enactment |

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┌─────────────────┐      ┌──────────────┐      ┌──────────────┐
│ Perceived Threat/│──►   │ Direct Action│──►   │ Direct Action│
│ Frustration      │      │              │      │              │
└─────────────────┘      └──────────────┘      └──────────────┘
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(B) Salience effects in recall strategies

| Perceived Stimuli | Recall & Response Selection | Response Enactment |

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┌─────────────────┐      ┌──────────────────┐      ┌──────────────┐
│ Perceived Threat/│──►   │ Direct Action    │──►   │ Direct Action│
│ Frustration      │      │ ─ ─ ─ ─ ─ ─ ─ ─ ─│      │              │
└─────────────────┘      │ Verbal Assertion │      └──────────────┘
                         │ ─ ─ ─ ─ ─ ─ ─ ─ ─│
                         │ Help-Seeking     │
                         │ ─ ─ ─ ─ ─ ─ ─ ─ ─│
                         │       •          │
                         │       •          │
                         │       •          │
                         └──────────────────┘
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Sample

	Aggressive (N = 21)	Nonaggressive (N = 15)
Age	11 years 5 months	10 years 10 months
Race		
Black	5	2
White	16	13
Teachers' Aggressive Rating	9.0	
Classroom Behavior		
On Task	79.7%	
Passive Off Task	15.6%	
Disruptive Off Task	4.7%	

Design

Type of Child

	Aggressive	Nonaggressive
Oper.- Middle	N = 10	N = 8
Multiple- Choice	N = 11	N = 7

Response Format

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Problem Solution Rates Under Two Response Formats

●——● = AGGRESSIVE
□--□ = NONAGGRESSIVE

% of Verbal Assertion Solutions

% of Help Seeking Solutions

% of Direct Action Solutions

% of Aggressive Solutions

FORMAT

OPEN—MIDDLE   MULTIPLE—CHOICE

O—M   M—C

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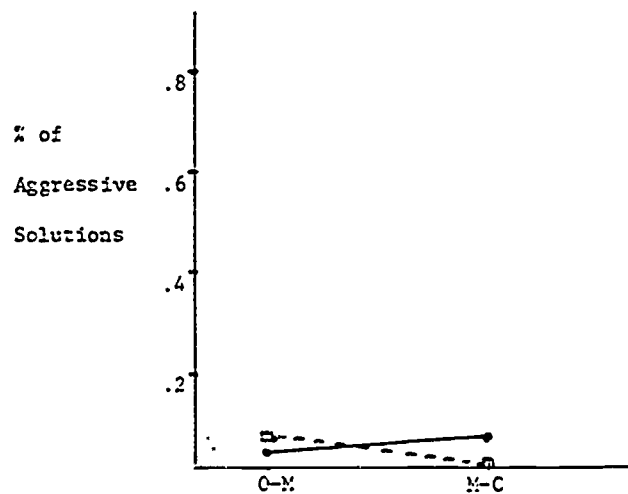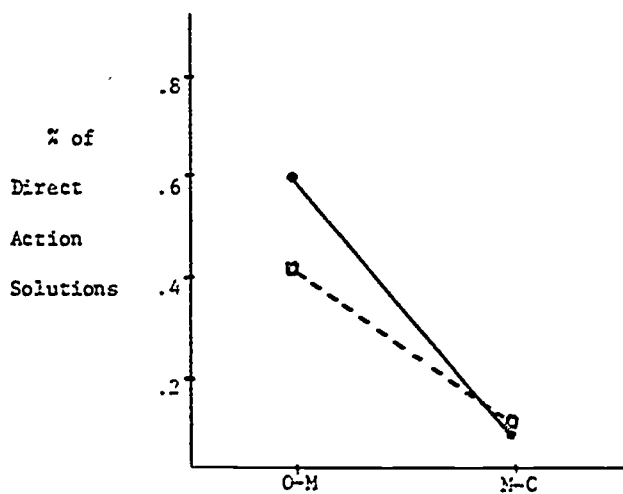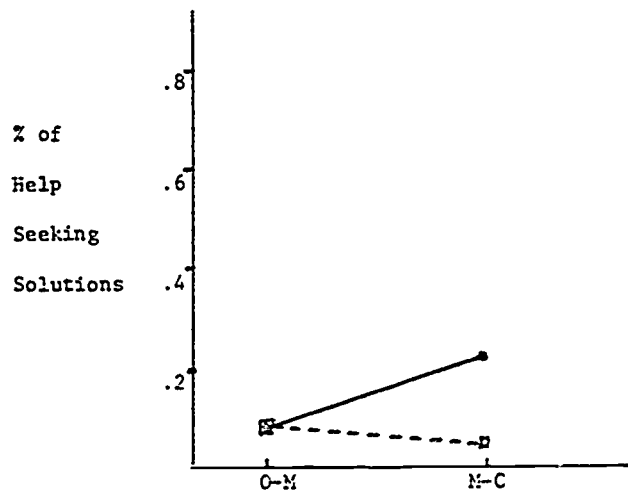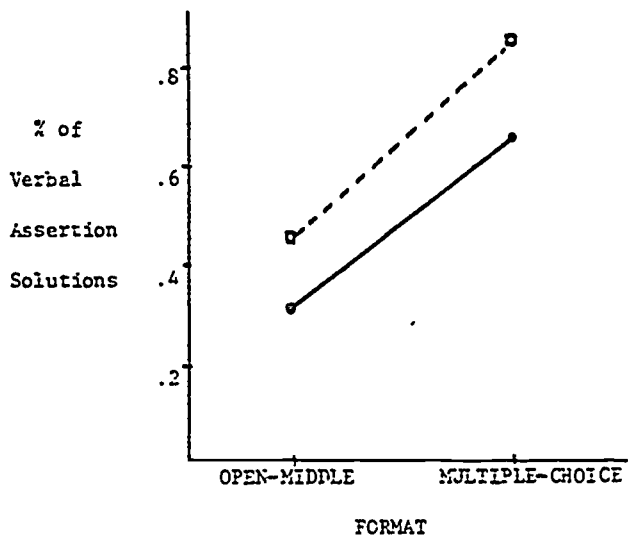
Mann-Whitney U Comparisons between Types of Children and

between Types of Format

Aggressive vs Nonaggressive Comparisons

PSM-C Solution	Open-Middle	Multiple-Choice
VAS	+	*
DA	*	NS
HS	NS	*
AG	NS	NS

Open-Middle vs Multiple-Choice Comparisons

PSM-C Solution	Aggressive	Nonaggressive
VAS	*	**
DA	**	**
HS	+	NS
AG	NS	NS

+ p< .10

* p< .05

** p< .01

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