DOCUMENT RESUME

ED 272 802 CG 019 285

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TITLE Development of Cognitive Structures about Alcoholic Beverages among Preschoolers: II.
PUB DATE Aug 86
NOTE 20p.; Paper presented at the Annual Convention of the American Psychological Association (94th, Washington, DC, August 22-26, 1986). For related document, see CG 019 284.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Age Differences; *Alcoholic Beverages; *Cognitive Structures; *Concept Formation; *Drinking; Family Environment; *Identification; Knowledge Level; Parent Influence; *Preschool Children; Preschool Education

ABSTRACT

Little is known about very young children's conception of alcoholic beverages and their uses. A study was conducted to determine whether preschool children's ability to correctly access a cognitive network about alcoholic beverages can be related to differences in family exposure to alcohol. Preschoolers (N=57) between the ages of 2.5 and 6 years were asked to try to identify nine substances first by smell alone and then again with photographs as cues. Three of the substances were beer, wine, and whiskey. Parents completed a Food and Beverage Questionnaire and a demographic questionnaire. The results demonstrated that virtually all of the preschoolers were able to provide accurate verbal labels for substances used primarily by adults that were presented only by smell. Older children performed better on the task than did younger children, although nearly all of the children were successful at correctly identifying at least one of the three alcoholic beverages. Children with heavier drinking parents correctly identified alcoholic beverages by smell more accurately, and with fewer cues, than did children from homes where less drinking occurred. These results demonstrated that the development of cognitive structures for alcohol occurs very early in the child's life. These findings have serious prevention implications and suggest that models of adolescent deviance probably need to take greater account of earlier individual differences in learning and the cognitive consequences that result from such differences. (Author/NB)

Development of Cognitive Structures about Alcoholic Beverages among Preschoolers: II.

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Paper presented at the Annual Meeting of the American Psychological Association, Washington, D.C., August, 1986.

ABSTRACT

Little is currently known about very young children's conceptions of alcoholic beverages and their uses. This research was conducted to determine whether preschool children's ability to correctly access a cognitive network about alcoholic beverages can be related to differences in family exposure to alcohol. Children involved in this study were recruited from 2 preschools. Parents completed a Food and Beverage Questionnaire (which allowed evaluation of their own alcohol consumption patterns and motivations for use) and a Demographic Questionnaire at home, while children's knowledge of alcoholic beverages was assessed using a smelling task game at the school. Children were asked to try to identify 9 substances by first by smell alone and then again with appropriate photographs as cues; three of the substances were beer, wine, and whiskey.

Results demonstrated that virtually all preschool children are able to provide accurate verbal labels for substances used primarily by adults that are presented only by smell. Older children (49-69 months) perform better on the task than younger children (31-48 months), although nearly all of the children were successful at correctly identifying at least 1 of 3 of the alcoholic beverages. Children with heavier drinking parents correctly identified alcoholic beverages by smell more accurately, and with fewer cues, than did children from homes where less

drinking occurred.

These findings demonstrate that the development of cognitive structures for alcohol occurs very early in the child's life. Although the development of cognitive schemas appears to be related to parental consumption and hence to child exposure, the data show that even children from homes where there is little parental consumption of alcoholic beverages are able to successfully identify alcoholic beverages by smell when appropriate cues are provided. The majority of the children tested (82%) were able to recognize alcoholic beverages by smell under these circumstances. The results are related to live experiences and not media exposure. The findings from this study have serious prevention implications and suggest that models of adolescent deviance probably need to take greater account of these earlier individual differences in learning and the cognitive consequences that result from such differences.

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Despite the extensive use of alcohol as the relaxational drug of choice in American culture, and despite the widespread extent of alcohol problems, little is currently known concerning how children learn about alcoholic beverages and drinking behavior, when this learning initially occurs, and where such information is acquired. The problem is especially interesting because it involves the development of a set of social cognitions about a behavioral domain that has the potential for problems at a time when the cognitions that are evolved are not produced by the child's direct experience, but rather are learned through observation.

Despite the current theorizing (and much data) which focus upon the adolescent's peer group as the major source of knowledge for such cognitions, several studies have suggested that children learn about alcohol and drinking much earlier. Data from

Scotland (Jahoda & Cramond, 1972) and the U.S. (Gaines, Maisto, Brooks, Shagena, & Dietrich, in press; Penrose, 1978; Spiegler, 1983) show that school-age children have considerable knowledge and well developed attitudes towards drinking. Our own earlier work shows that much of the knowledge of school-age children was even acquired earlier in life; preschool children demonstrate clear knowledge of appropriate beverage use norms (Greenberg, 1985). They know that some beverages are consumed by adults and children, that other beverages (e.g. alcoholic) are consumed by adults, and they are aware of cultural norms for sex differences in consumption of alcoholic beverages. Although these findings demonstrate that young children have already acquired a set of cognitive structures about alcohol consumption and its related social context, they do not establish where such learning might take place. Television is one possible source, the home is another. The purpose of the present study was to determine whether preschool children's learning about alcoholic beverages could be related to their own live personal experiences. Such findings would increasingly build a case for the early development of cognitive structures about alcohol use based upon live experiences.

METHOD

Subjects. Children between the ages of 30 and 72 months from 2 preschools in the mid-Michigan area were recruited for a larger study of the development of children's knowledge of normative food and beverage uses by adults and children. From a larger sample of 131 children, 57 families were recruited for the current study, based upon earlier obtained information on parental drinking patterns. Families were recruited so as to provide a wide dispersion of parent alcohol consumption patterns, ranging from total abstinence to heavy drinking by both parents. All subjects recruited for this sub-study agreed to participate. Table 1 provides information about the sociodemographic characteristics of the families and provides information on the respondent children's age.

Insert Table 1 about here

Parents of child participants had previously completed a Food and Beverage Questionnaire and a Demographic Questionnaire. The first instrument included a set of standard survey questions about current alcoholic beverage consumption that permitted

classification of parental drinking status into 3 mutually exclusive drinking categories: Heavy, Moderate, Light/Abstinent. In addition, the Food and Beverage Questionnaire provided information about parents' motivations for drinking, and also provided a problem drinking measure.

Procedure. Children's knowledge of alcoholic beverages was assessed with a smelling task conducted at the child's preschool, using an individually administered assessment task. Children were asked to play a smelling game. Opaque jars containing 9 different substances (apple juice, beer, cigarette butts, coffee, playdoh, perfume, popcorn, wine, whiskey) were presented (Figure 1). During each presentation the child was told to close his/her eyes and to try to identify what they were smelling. A second trial sequence involved presentation of 9 photographs (4" X 5"; color) that showed the contents of the jars (Figure 2) and children were told that the photographs were

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Insert Figure 1 and 2 about here

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pictures of what was in the jars, and the task was repeated. The examiner was blind to parent drinking status.

RESULTS

Results showed that most of the children could identify substances by smell alone, although older children were more successful than younger children on both non-alcoholic substances and alcoholic beverages (Table 2). For alcoholic beverages,

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Insert Table 2 about here

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children were often able to provide a verbal label that was nearly correct, but not exact. Probing subsequent to the child's response demonstrated that their answer reflected considerable knowledge. Thus for example, a child might smell a jar containing whiskey and call it "beer", and then would respond to the examiner's standardized probes in a way that demonstrated clear understanding (e.g. their father drinks beer, it makes you drunk, children aren't allowed to drink it, etc.). Using exact or approximate criteria as success, 89% of the older children were able to correctly identify either beer, wine, or whiskey, while 76% of the younger children were successful with at least 1 of 3 of these substances. <u>These findings suggest that verbal labels for alcoholic beverages are among the earliest words these children have acquired</u>. No sex differences were present.

Parental alcohol use patterns were significantly related to child alcohol identification patterns. Using standard Quantity-Frequency-Variability (Q-F-V) criteria based on information from both parents (Cahalan et al. 1969), families were divided into three mutually exclusive drinking groups: heavy (N=23), moderate (N=15), or light/abstainers (N=19). Assignments were made on the basis of combined parental consumption.

On the first smell trial, without pictures present, children from homes with heavy parental drinking were more often successful at exact identification of alcoholic beverages than were children from homes with moderate or light parental drinking. However, across both trials of the smell task with the help of picture cues on the second trial, and counting exact or approximate identification as correct, nearly all of the children performed exceptionally well on the task. Eighty-two percent of all children tested were successful either on trial 1 or 2, using these exact or approximate criteria for success (Figure 3).

Insert Figure 3 about here

In other words, with usually culturally available cues, family differences in exposure appear to be less important in making the

identification.

DISCUSSION

These findings are compelling evidence that most young preschool children already have a well developed cognitive schema for different common substances - including a schema concerning the properties of, and appropriate uses for alcoholic beverages. One difference related to the child's ability to correctly utilize such a schema about alcohol is whether or not they live in a home where there is heavy or light parental consumption. Children from homes where there is heavy consumtion performed better on the task. They made more exact identifications and were more successful during trial 1 with no photographs present. When criteria for success are relaxed and supplemental cues are provided, nearly all of the children were successful at identification of either beer, wine, or whiskey. These findings parallel earlier results with this task utilizing preschool children with alcoholic fathers and contrasting their performance on this task to matched neighborhood controls (Noll & Zucker, 1983). Children with alcoholic fathers performed significantly better on trial 1, while all of the children performed well across both trials.

Our findings are related to live experiences, most probably in the home, and are not a result of media exposure. Ability to identify a substance by smell, and knowledge about what the smell relates to, is not a media effect. These data expand on our earlier findings in this area and again demonstrate that considerable learning about drinking and alcoholic beverages occurs early in life. Models of adolescent deviance probably need to take greater account of these earlier individual differences in learning; the findings also have potential prevention implications.

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Table 1

Sociodemographic Characteristics of Respondent Families

Age of Respondent Children (in months)	
$\bar{x}$ =	49.6
S.D. =	11.0
Range =	31 - 69
Family Social Prestige[1]	
$\bar{x}$ =	48.6
S.D. =	19.6
Race (in percent)	
Caucasian	79
Black	9
Hispanic	11
Asian	2
Religion (in percent)	
Protestant	49
Roman Catholic	26
Jewish	4
Other	7
No Preference	14

[1]Duncan TSE12 Socioeconomic Index, Featherman and Stevens, 1980

Figure 1. Smell Task, Trial 1 (no photographs present).

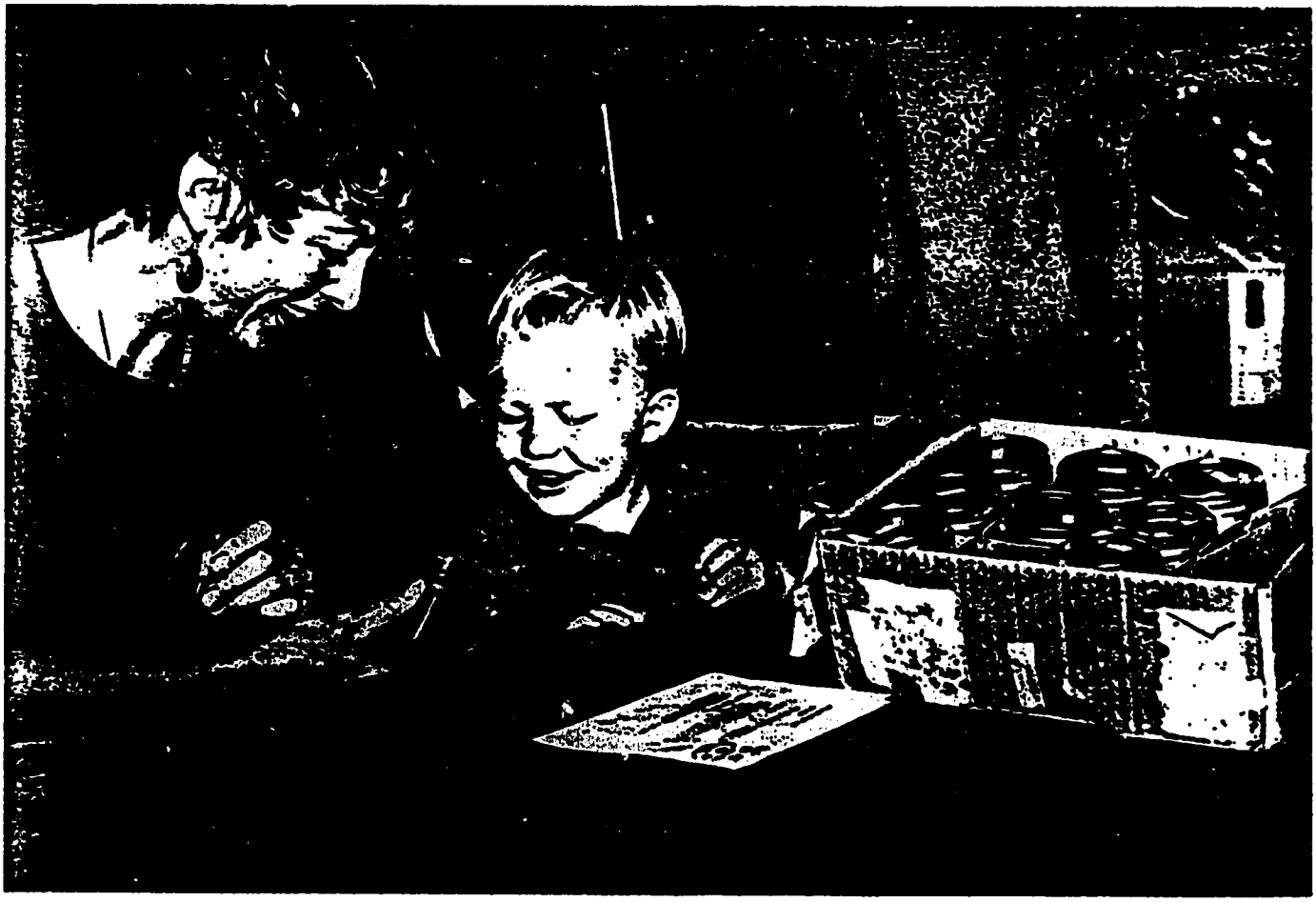


Figure 2. Smell Task, Trial 2 (Photographs present).

Table 2

Age Differences in the Successful Identification of Substances by Smell (N=57).

	Age of Child	
	31-48 Months N=29	49-69 Months N=28
Alcoholic Beverages[1]		
Beer	28[2]	43*
Wine	7	29*
Whiskey	10	29
Optimal Performance[3] (Any exact or approximate identification)	76	89
Non-Alcoholic Substances[1]		
Apple Juice	35	54
Cigarettes	31	54
Coffee	55	79
Perfume	41	79**
Playdoh	69	89
Popcorn	59	93**

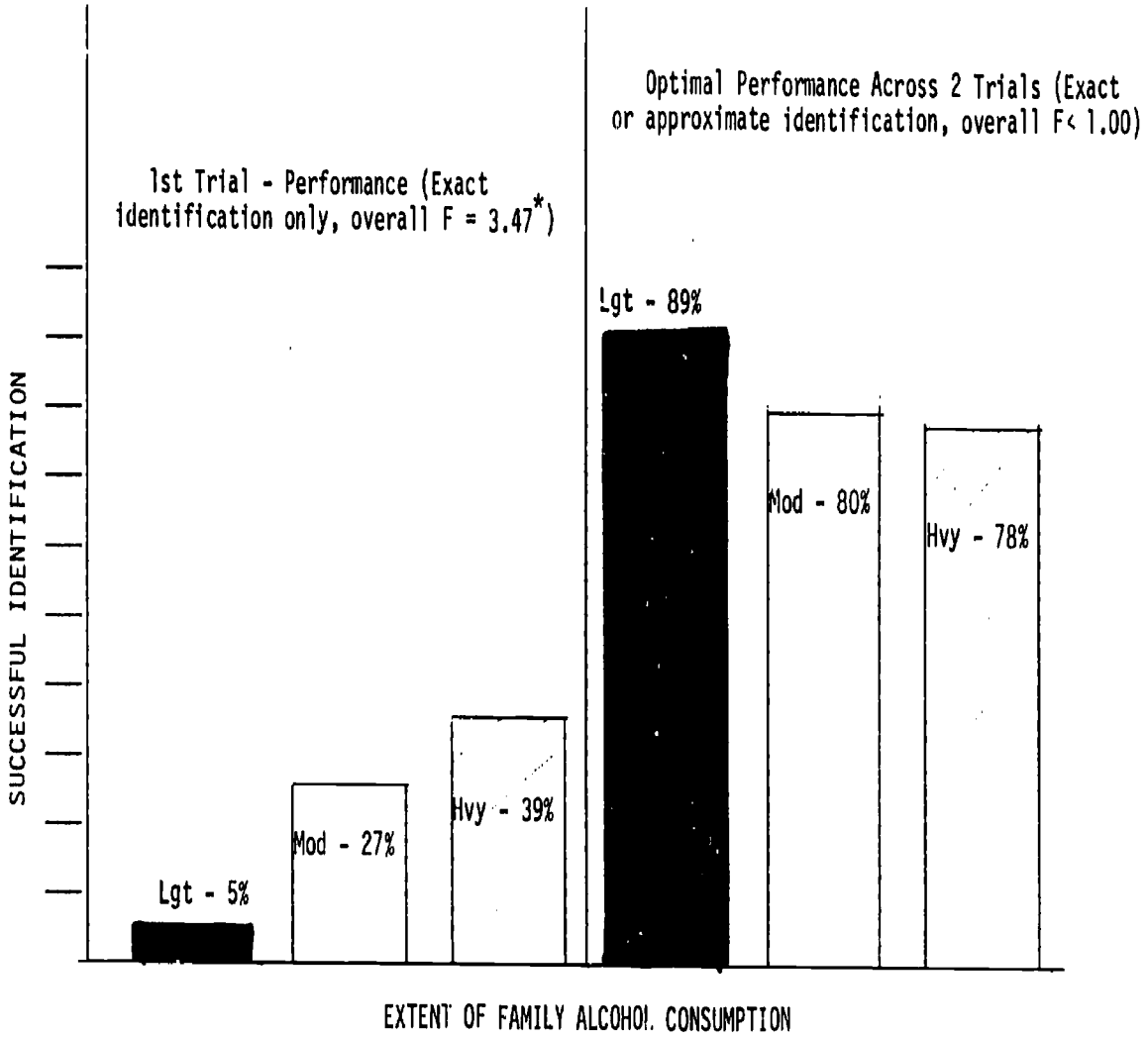
[1]Exact identification only.

[2]Percent of children who named substance correctly.

[3]Optimal performance: Success on Trial 1 or 2, labeling alcoholic beverage as another alcoholic beverage scored as correct (e.g. calling "whiskey" beer).

*$p < .05$ **$p < .01$ (t - tests).

Figure 3. Children's Ability to Identify Alcoholic Beverages Using Smell. Heavy vs. Moderate vs. Light Drinking Families.



*p < .05