

认知方式与幼儿部分遮挡绘画关系的研究

王贞琳 李文馥 方俊明 郭祖仪

(中科院心理所,100101) (陕西师范大学教科院,710062)

摘要 本研究考察了5—6岁儿童不同认知方式对部分遮挡绘画任务的影响。实验设定不同形式的误导情境,共有两部分组成。研究结果表明:1. 儿童绘画表征水平的发展存在个别差异。2. 在误导情境下,场独立儿童比场依存儿童能保持较稳定的策略选择倾向。3. 画两个相同物体的遮挡要难于画两个不同物体的遮挡。4. 在符号概念编码和空间编码中间存在着一些过渡形态。

关键词: 儿童绘画 部分遮挡 场依存性/独立性 编码过程

1 问题的提出

早期的儿童绘画研究着重探讨儿童是画所知还是画所见的问题,认为年幼儿在绘画中并不考虑对象在眼前的具体形象,绘画中不表现空间关系。即画所知而不是画所见。近年来一些研究^{[1]—[5]}表明,通过降低实验难度、明确指导语、增加学习线索等干预手段,幼儿也可以表现视觉线索。Ingram^[6]等从信息加工的角度提出在儿童绘画的过程中存在有两种编码过程。一是符号概念编码,指根据物体在儿童头脑中已形成的概念再现完整的模型。另一种是视觉具体化的空间编码,指从某一特定的视角观察模型,按照模型呈现出的空间位置关系,如实地再现所看到的具体形象。研究者^[7]指出儿童在解决任务的过程中表现出不同编码策略之间的冲突。在误导情境下冲突更为激烈。所谓误导情境是指同时存在两种编码可能性的情境。克服误导信息的能力有可能存在发展差异和个别差异。

本研究要探讨任务难度不同时,场独立/场依存的认知方式对幼儿部分遮挡绘画的影响。各种绘画类型所体现出的不同的编码策略也是本研究所关心的问题。

2 实验一

2.1 研究目的

为了探讨符号概念编码与视觉具体化的空间编码对儿童绘画的影响以及不同认知方式的儿童在选择编码策略时的个别差异,本实验设计运用了一个两可模型,即可以把两个几何体组合在一起,使其看上去象是一个物体,又可以分别放置,表现出两个物体有遮挡关系。

本实验涉及被试的类型(FID或FD)和陈列方式即绘画情境两个因素,因此是一个两因素混合设计,每个因素有两个水平。其中被试类型(组别)是一个组间因素,绘画情境是一个组内因素。

2.2 实验方法

2.2.1 被试 被试选用两所中等幼儿园大班幼儿(5—6岁)共130名,入园时间大致相同,均未受过绘画专门训练。实验前运用儿童镶嵌图形测验(CEFT)对被试进行筛选^[8]。对130名幼儿进行认知方式的评定,筛选出得分前41名(9分以上,含9分)和后44名(6分以下,含6分)分别做为场独立和场依存的代表组。FID组男19名,女22名,平均年龄5岁11个月,CEFT平均得分11.37分;FD组男27名,女17名,平均年龄5岁7个月,CEFT平均得分4.43分。

2.2.2 实验材料 两个用硬纸卡做的几何体模型。一为黑色立方体,边长7cm,上底面正中开有边长3cm的正方形小孔,一个侧面中下方开有同样大的小孔。这两个面可以拆开以便于插入另一个

“L”型几何体。另一个为红色“L”型几何体,宽 3cm,高 9cm,底边长 7cm。

2.2.3 实验程序 采取个别实验形式。发给幼儿一支铅笔和两张 A4 的白纸。实验中分两种情境: A、“L”型几何体插入立方体,这时整个模型看上去是一个黑色立方体,它的正上方和右下方分别露出一个长 2cm 宽 3cm 红色长方体; B、“L”型几何体放在立方体正后方,从正面视角看,模型与情境 A 极为相似。两种情境下的指导语都是:“请你把从这个方向看到的画下来”。为消除顺序误差,两组被试都是一半以由 A 到 B 的顺序进行,另一半以由 B 到 A 的顺序进行。绘画结果由研究者本人进行编码。

2.3 结果及分析

分析本实验的绘画结果,可以把所有被试的画分为四类。一是能够表现遮挡关系,隐去被挡住部分的轮廓线。二是透明画法,轮廓线相互重合,使前面的物体看上去象是透明的一样。

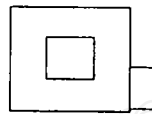


图 1 实验一的特殊画法

三是一种特殊画法(见图 1),这种画法是儿童画移动视点特征的表现,被试为了更明确地表示上方露出部分的位置,采取了由上而下的视点,把露出的小方块画在正方体的顶面之内;四是完全不能表现遮挡关系,画成两个水平排列或垂直排列的完整物体。第二种类型和第三种类型都已经表现了对物体的空间位置关系的理解,加之第三种类型并不是发展中的普遍类型,因而把这两种类型合并成为过渡类型。类型一打 3 分,类型二、三打 2 分,类型四打 1 分。

表 1 两可模型遮挡绘画方差分析

变异源	自由度	均方	F 值	P
组别	1	11.27	18.47	.000***
情境	1	1.79	7.95	.006**
组别×情境	1	1.39	6.17	.015*

* $P < 0.05$ ** $P < 0.01$ *** $P < 0.001$ (下同)

对实验 1 的数据进行方差分析,组别的效应是显著的,FID 幼儿比 FD 幼儿的画中更多地表现出部分遮挡的关系。而 FD 组幼儿则更多地根据模型在其头脑中形成的概念,画出两个完整的形状。组内因素“绘画情境”也有显著作用,分离的模型比整合的模型更难于引发遮挡关系,可能是因为分离的模型包含了更多的误导信息。这两个因素的交互作用也显著。简单效应检验表明,FID 组在两组情境下表现没有差异。这可能是因为 FID 组在两种情境下已经都掌握了视觉编码的方式。而 FD 组在两种情景下差异显著,表明 FD 组被试更容易受情境的支配,当模型陈列物误导信息增强时倾向于采用序列具体化的表征方式。

表 2 情境的简单效应检验

变异源	自由度	均方	F 值	P
FID(情境)	1	.01	.05	.817
FD(情境)	1	3.28	14.57	.000***

3 实验二

3.1 研究目的

本实验目的在于考察模型为两个独立物体时被试的绘画表现。模型分别为两个形状相同的物体和两个形状不同的物体。

3.2 实验方法

3.2.1 被试 同实验一。

3.2.2 实验材料 两个直径 8cm 的球,一红一黑。一个黑色圆柱体,高 10cm,底面半径 2.5cm,一个红色立方体,边长 6cm。

3.2.3 实验程序 采取个别实验形式。发给幼儿一支铅笔和两张 A4 的白纸。实验中分两种情境:A、黑球放在红球右后方,被遮挡的部分占黑球直径的一半;B、圆柱体放在立方体右后方,被遮挡的部分占圆柱体直径的一半。指导语都是:“请你把从这个方向看到的画下来”。两组被试都是一半由 A 到 B 顺序进行,另一半由 B 到 A 顺序进行。绘画结果由研究者本人进行编码。

3.3 结果及分析

实验二中被试的几种典型画法见图 2。类型一能够表现遮挡。类型二的“透明”形式表明儿童已经觉察到两个物体的空间位置关系,但还不能隐去轮廓线。类型三“线条重合(相切)”所表现的模型仍是序列具体化,但反映出对空间关系的初步理解。类型四“分离”则不能表现两个物体间的空间关系。本实验中给类型一打 4 分,类型二 3 分,类型三 2 分,类型四 1 分。

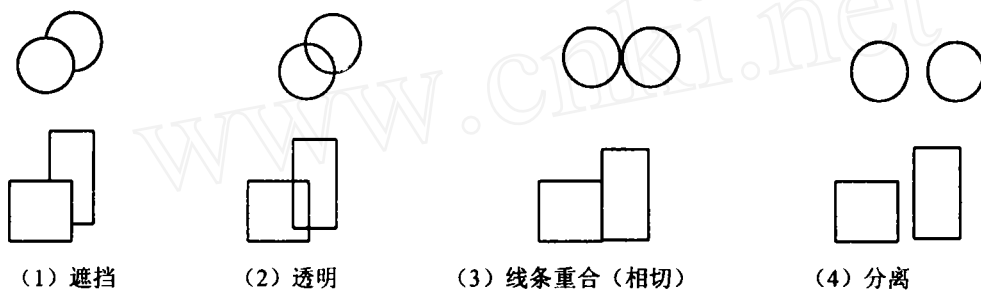


图 2 实验二的典型画法

对实验 2 的数据进行方差分析,组别的效应是显著的,表明 FID 幼儿比 FD 幼儿更倾向于采用视觉具体化的空间编码进行表征,更多地表现出两个物体的遮挡。情境的效应也显著,表明画两个相同物体的遮挡要难于画不同物体的遮挡。FID 幼儿在两种情境下都比 FD 幼儿更多地采用视觉具体化的空间编码。组别和情境的交互作用不显著。也就是说两组被试在情境之间的变化趋势是一致的。实验结果证实画两个相同的物体要比画两个不同的物体更难于表现遮挡关系。这可能是因为在画两个相同的物体时,儿童往往把这两个物体编码为一组,因而也就画成一组相同的完整形状。而画两个不同的物体,就不会发生这种编码,被试只好反复观察模型的样子,因此促成了被试利用空间编码形式进行表征。

表 3 两个物体遮挡绘画的方差分析

变异源	自由度	均方	F 值	P
组别	1	28.59	14.45	.000***
情境	1	13.59	14.99	.000***
组别×情境	1	.25	.28	.598

4 讨论

本研究着重探讨的是编码形式在幼儿绘画中表现出的个别差异。实验一采用两可模型,模型本身体现出矛盾的信息。儿童在绘画表征过程中体验着较大的认知冲突。如果不考虑模型的三维立体因素,情境 A 和情境 B 从正面看上去是一样的。但是情境 B 中增加了空间位置关系因素,比情境 A 更难于引发视觉具体化的空间编码。不同认知方式的儿童绘画表征也不同。FID 幼儿能够摆脱误导信息的干扰,采取前后一致的表征策略,而 FD 幼儿则更容易受情境的支配,不能坚持一致的表征策略。这一实验结果验证了策略选择时的个别差异,场独立的幼儿比场依存的幼儿更易于采用视觉具体化的空间编码进行表征,表现出物体之间的遮挡关系。

实验二考查的是两个物体的遮挡关系。当两个物体形状一样时,幼儿采取组群编码的形式,画出两个同样形状的完整轮廓。而两个形状不同的物体表现出更大的对比关系,不可能采用组群编码的策略,因而更容易画出遮挡绘画。FID 幼儿在两个物体的遮挡中表现出明显的优势。

绘画的表征水平的发展是从量的积累逐渐过渡到质的飞跃的。中间存在一些过渡形式。前人^[7]把这些过渡形式称为“错误类型”(Error Pattern)。我们认为称为“错误”是不合适的。这些过渡形式反映了编码方式的发展,是发展过程中的必然阶段。两种编码方式的发展是逐步进行的。即使是同一个体内部也存在两种编码方式的演变发展。实验一中的特殊画法既包含了视觉具体化的空间编码(画出了遮挡关系),又包含了符号概念编码。实验二的两个物体的遮挡绘画中出现了几种类型。其一是画成两个分离的轮廓。这种情形中不包含关于空间关系的信息。其二是画成线条重合或两圆外切的形式。由于表现出线条的重合,也反应出一定的空间位置关系。第三种过渡类型与其他研究者^[7]的划分一致,即“透明”。“透明”策略的选择可能是由于幼儿还没有掌握“消除轮廓线”的绘画方法。但这种绘画表现已显示出对空间关系的理解。线条重合(相切)与透明策略均包含着空间信息的编码,但仍然都是序列具体化的表征方式。这两种过渡形态表明同一个体在表征空间关系时也存在两种编码形式的竞争。可见儿童绘画的发展不是以“全或无”的方式进行的,而是渐进的。同一个体内部也存在着不同发展阶段的特征。

5 结论

5.1 儿童绘画表征水平的发展存在个别差异。FID 儿童比 FD 儿童更容易摆脱情境的误导,按照模型呈现的视觉形象进行表征。而 FD 儿童则倾向于画出完整的物体特征以反映物体在其头脑中形成的概念。

5.2 当两个模型空间关系不同而视觉信息极为相似时,不同认知方式的儿童绘画表征不同。FID 被试能够采取前后一致的表征策略按视觉线索来表现,而 FD 被试则更容易受情境的支配,当模型误导信息增强时倾向于采用序列具体化的表征方式。

5.3 画两个相同物体的部分遮挡要难于画两个不同物体的遮挡。儿童倾向于把两个形状相似的物体编码为一组,画成两个相同的完整形状,不相似的一组物体不会发生这种编码。FID 儿童表现出明显的优势。

5.4 在两种编码形式中间存在一些发展的过渡形态。同一个体内部也存在两种编码方式的竞争。

6 参考文献

- 1 Cox M V. One object behind another: Young children's use of array-specific or viewspecific representations. In: N. H. Freeman, M. V. Cox (Eds.), *Visual Order*. Cambridge; Cambridge Univ. Press. 1985; 188-201
- 2 Light P, Foot T. Partial occlusion in young children's drawing. *Journal of Experimental Child Psychology*, 1986; 41: 38-48
- 3 Barret M D, Beaumont A V, Jennett MS. Some children do sometimes do what they have been told to do: Task demands and verbal instructions in children's drawings. In: N. H. Freeman, M. V. Cox (Eds.) *Visual Order*. Cambridge; Cambridge Univ. Press. 1985; 176-187
- 4 Davis A M. Contextual Sensitivity in young children's drawings. *Journal of Experimental Child Psychology*, 1983; 35: 478-486
- 5 Davis A. Conflict between canonicity and array-specificity in young children's drawings. *British Journal of developmental psychology*, 1985; 3: 363-372
- 6 Ingram N A. Three into two won't go. In: N. H. H. Freeman, M. V. Cox (Eds.), *Visual Order*. Cambridge; Cambridge Univ. Press. 1985
- 7 Morra S, Angi A, Tomas L. Planning, encoding, and overcoming conflict in Partial occlusion drawing: A Neo-piaget Model and an experimental analysis. *Journal of Experimental Child Psychology*, 1996; 61: 276-301
- 8 张厚粲等编. 认知方式. 北京师范大学出版社, 1988; 281-291

ENGLISH ABSTRACTS

SOME IMPORTANT PROBLEMS IN CURRENT PSYCHOLINGUISTICS

Chen Yongming, Yang Lixia

(Institute of Psychology, Chinese Academy of Sciences)

Sentence processing and text processing are two main sub-fields in psycholinguistics. There are some important problems about these fields in current psycholinguistic research, such as the probability and constraints in sentence processing, representation and memory of text, modular theory and suppression mechanism. The theories and some recent researches on these problems were explained in this article. The future research directions were also analyzed.

Key Words: psycholinguistics, sentence processing, text processing, modular theory, suppression mechanism.

THE RELATIONSHIP AMONG THE FAMILY PSYCHOLOGICAL ENVIRONMENT, PARENTS' REARING METHOD OF CHILDREN WITH LEARNING DISABILITIES AND THEIR SOCIAL DEVELOPMENT

Yu Guolian

(Institute of Developmental Psychology, Beijing Normal University)

429 subjects were selected from 2308 children aged 10 - 15. The results indicated that normal children's family psychological environment and parents' rearing method were greatly superior to children with learning disabilities. These family factors were closely related to the social communication, self-concept and social behavior of children with learning disabilities. It indicated that family psychological environment and parents' rearing method had important effect on the social development of children with learning disabilities.

Key Words: learning disabilities, family psychological environment, parents-rearing, social development.

THE AMPLITUDE AND WAVELENGTH OF SCR AS FUNCTIONS MARKING FAMILY FEELING EFFECTS

Le Jinghong

(Department of Psychology, East China Normal University)

The effects of family feeling of three kinds of family appellations on the deception detection of 12 suspects were examined. Psychophysiological measures,

the amplitude and wavelength of SCR, were evaluated as marking functions of effects of family feeling. SCR response scores were significantly high in ANOVA, in which scores on "mother" were higher than those on other appellations. This research indicated two sensitive indexes of SCR and separated some characteristic signals for response to the family feeling.

Key Words: family feeling, mother, amplitude and wavelength of SCR, emotion effect, experiment state of man-made.

A RESEARCH ON THE CORRELATION OF TEMPORAL LOCUS, TEMPORAL DURATION AND TEMPORAL SUCCESSION INFORMATION PROCESSING

Wang Zhenyong, Huang Xiting

(Department of Psychology, Southwest China Normal University)

The study was composed of two experiments, each employing respectively the retrospective paradigms and prospective paradigms to explore the correlation of three kinds of information processing, namely, temporal locus, temporal duration and temporal succession. The results showed that, with the increase of attention participation, the same temporal process, temporal duration estimate and temporal succession judgement tended to change from negative correlation to positive correlation; the temporal duration estimate might be positively correlated to the dispersal of temporal locus; with the increase of attention participation, temporal succession judgement and the dispersal of temporal locus tended to change from negative correlation to positive correlation.

Key Words: temporal information, temporal locus, temporal duration, temporal succession, sequence markers.

EXPERIMENTAL RESEARCHES ON THE MERE EXPOSURE EFFECT

Guo Liping, Yang Zhiliang

(Department of Psychology, East China Normal University)

By means of oracle bone inscriptions as the stimuli the experiment confirmed the existence of the mere exposure effect. Applications of the result to the study of the relationship between emotion, memory and perception were discussed.

Key Words: mere exposure effect, preference, recognition.

THE RELATIONSHIP BETWEEN COGNI-

TIVE STYLE AND CHILDREN'S PARTIALOCCLUSION DRAWINGS

Wang Zhenlin, Li Wenfu

(Institute of Psychology, Chinese Academy of Sciences)

Fang Junming, Guo Zuyi

(Shanxi Normal University)

130 young children aged 5-6 participated in this study. Two experiments were made to study the different processes of the partial occlusion drawings of participants of different styles. The results showed that there were individual differences in the children's partial occlusion drawings; the field-independent children could keep view-specific in the misleading situation. It was more difficult to draw two identical partial occlusion objects than two different ones; there were some transforming patterns in partial occlusion drawings.

Key Words: children's drawing, partial occlusion, fielddependence/independence, coding process.

RESEARCHES ON THE PERFORMANCES IN SHORT-TERM MEMORIES OF CHILDREN WITH GOOD AND POOR SCHOOL ACHIEVEMENTS

Xu Fen, Jiang Feng

(Department of Psychology, Hangzhou University)

There were three types of memory tasks in the study, i. e. picture tasks, number tasks, and word tasks. 100 primary school first-, third-, and fifth-graders were asked to memorize 12 target stimuli each time, and then they were asked to recognize these stimuli from 24 stimuli. Half of the children were pupils with good school performance and the other half with poor school performance. The main results showed: 1) There were no differences between the two groups in picture tasks; but significant differences were found in the other two tasks. 2) Children with poor school performance recognized better in number and word tasks (excepting picture tasks) after they were trained to use the strategies; but the other group of children failed to do so.

Key Words: good/poor school performance, short-term memory, prompting.

THE ATTITUDE CHANGE IN THE PUBLIC AWARENESS OF THE CONSERVATION OF THE TIGER

Zhang Endie

(Department of Biology, East China Normal University)

Cui Lijuan

(Department of Psychology, East China Normal University)

Several groups of audiences in Shanghai were examined on their current awareness of tiger conserva-

tion in order to evaluate the success of "Reducing Tiger Products in China", a public awareness project conducted by WCS Asia Conservation Communication Program. The results of the survey showed that after certain publicity and education, the awareness of tiger conservation among middle school and university students has been significantly raised. On the other hand, because of the influence of traditional culture, most of the Chinese people still believe in the medical efficacy of tiger bones, and they will still try to use the tiger-based products if needed, in spite of the fairly good recognition of the endangered status of the remaining wild tigers and the knowledge of wildlife laws. As a result, it's necessary to continue the publicity and education to gradually change people's perception of the medical value of tiger products and their attitude towards the use of them.

Key Words: awareness on conservation of the tiger, attitude change.

EXPERIMENTAL RESEARCHES ON THE PSYCHOLOGICAL MECHANISMS OF MENTAL ABACUS CALCULATION

Gao Min

((Special Education Research Center, Shanghai Academy of Educational Sciences)

Shen Hong

(Department of Special Education, Illinois University, U. S. A)

After reviewing the recent experimental researches on the psychological mechanisms of mental abacus calculation (MCA), the article pointed out that the researches on MAC, mainly through the comparison of experts and novices, focused on the effects of the training of MAC on the span of memory, the transfer of memory, modes of processing and the functions of the brain, so as to verify the existence of the image of mental abacus, but they neglected the developmental process of the expertise of MAC.

Key Words: mental abacus calculation, expert-novice, image of mental abacus.

A STUDY OF THE RELATIONSHIP AMONG THE SCHEMATICAL AWARENESS, STRATEGICAL OPERATION OF SCHEME AND SCHEMATICAL BEHAVIOR IN TEXT READING OF SCHOOL CHILDREN

Zhang Xiangkui

(Psychology Department, Northeast Normal University)

Guan Wenxin

(Songyuan Educational College)

Wang Jinfeng, Zhang Shudong

(Psychology Department, Northeast Normal University)