

國立中正大學八十九學年度博士班招生考試試題

系所別(組別)：認知心理組

科目：認知心理學

問答題(每題 10 至 20 分，共計 100 分)

第一至第三題請選擇兩題作答即可，每題 17 分

- 一. 在探討注意力以何者為選擇及分佈的依據時，研究者經常做所謂的「空間為基」(space-based)與「物體為基」(object-based)的區分。請(1)分別描述這兩種看法的基本理念及相關支持證據；(2)試設計一個實驗或研究可以區辨這兩種看法；(3)闡述您個人的看法及理由。
- 二. 在探討物體辨識的問題，研究者主要面對的是如何解決「觀察點恆常性」(viewpoint constancy)的問題。請(1)說明此一問題的基本涵意；(2)有那兩類不同的看法來解決上述的問題，各自看法的支持證據為何；(3)試設計一個實驗或研究可以區辨這兩種看法；(4)闡述您個人的看法及理由。
- 三. 在心理物理 (psychophysics) 的研究中，閾值 (threshold) 為一基本且重要的概念。請分別說明(1)傳統或古典心理物理學對閾值的看法並舉例說明測量的方式；(2)近代信號偵測理論 (theory of signal detection, SDT) 的基本理念，及此理論在哪些層面挑戰了傳統閾值的概念，其替代的看法為何？
- 四. 請(1)試就您所知，列舉 1~2 個具體研究如何以神經顯影技術 (包括正子放射斷層掃描(PET)，功能性核磁共振造影(f-MRI)或事件關連電位(EPRs))來闡述人類認知處理歷程或檢驗相關的認知功能理論 (20 分)；(2)討論可能的相關限制 (包括技術及推論)(10 分)。
- 五. 試就「光強度對認字影響」設計一實驗，並以假想結果討論之 (即寫小篇研究報告)。(36 分)

國立中正大學八十九學年度博士班招生考試試題

系所別(組別)： 臨床心理學 科目：

(第一題34分，二、三題各33分)

一、自從 921 大地震後，災區持續出現居民有易驚嚇、睡不好或吃不好、易怒或煩躁，許多兒童上課不易專心，變得沈默或不聽話，失去親人的居民更常出現止不住的悲傷、沮喪或罪惡感。

目前持續上升的自殺率也被報導。

身為臨床心理學家，你如何思考這個問題？從心理病理學的觀點，請簡述研究與臨床工作的可能方向。

二、請以三或四句的長度解釋或討論下列問題：

1. 比較古典制約與操作性制約
2. 安非他命的效果與機制是什麼？
3. 什麼是格式塔心理學？
4. 中風病人有語言障礙，你如何下假設？
5. 大腦如何控制情緒？

三、無論就生理或精神疾病的健康照護，三級預防都是相當重要的概念。請分別從三級預防之觀點，論述理想上臨床心理學博士之角色定位與功能，請分別就研究、實務、或其他方面加以討論。如果你完成臨床心理學博士學位，你如何規劃你未來之發展方向？

國立中正大學八十九學年度博士班招生考試試題

系所別(組別):

科目: 發展生理學

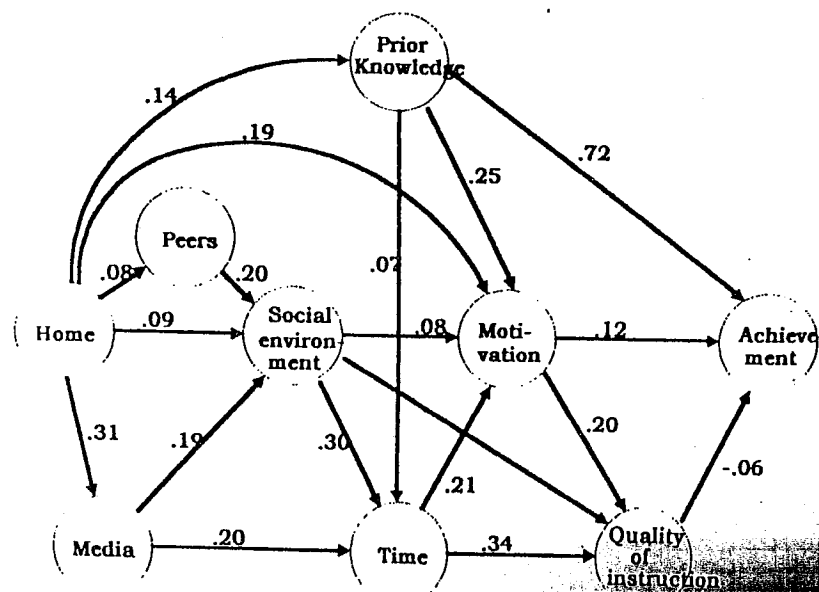
1.

本分卷子有兩部份 (A 和 B), 請分開答案紙作答。

Part A

1. 由下面這一幅因果模式 (Dochy, Segers and Buehl, 1999), 說明對成就有影響的因素及因素間的關係。(25分)

Dochy, Segers, & Buehl



2. Gleason 和 Schauble (2000) 以 Vygostky 的 Zone of Proximal Development 理論, 設計情境讓父母幫助孩子解船速問題。結果如下: Consistent with the claim that parents were not more knowledgeable about this problem than their children, parents and children began the task with approximately equivalently accurate beliefs (parents, $M=4.8$, $SD=1.00$; children, $M=4.5$, $SD=1.7$) Table 1 summarizes belief change for both children and adults by indicating how many individuals held each of several possible beliefs about the feature in the problem at the initial theory interview and then at the final theory interview. Parents scores increased significantly (from $M=4.8$, $SD=1.00$ to $M=6.1$, $SD=0.96$) from the initial to the final interview. $t(19)=4.47$, $p<.001$. In contrast, the children did not improve; their score shifted only from 4.5 ($SD=1.70$) to 4.9 ($SD=1.83$). Gleason 和 Schauble 在實驗過程中觀察到父母會做許多事, 包括記錄資料、推論、自己操作等。你怎麼解釋這結果? 請扣住 Vygostky 的理論來說明。(25分)

TABLE 1
Comparison of Children's and Parents' Initial and Final Theories

Feature	Children ^a		Parents ^a	
	Initial	Final	Initial	Final
Boat size				
Small to large	<u>14</u>	<u>14</u>	<u>16</u>	<u>20</u>
Large to small	2	1	1	0
Noncausal	3	4	2	0
Do not know	1	1	1	0
Boat shape				
Diamond is fastest	<u>10</u>	<u>17</u>	<u>18</u>	<u>20</u>
Other shape is fastest	3	1	2	0
Noncausal	6	1	0	0
Do not know	1	1	0	0
Depth of canal				
Deep to shallow	<u>12</u>	<u>11</u>	<u>5</u>	<u>14</u>
Shallow to deep	2	2	3	0
Noncausal	6	4	11	5
Do not know	0	3	1	1
Weight				
Interaction/weight	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Light to heavy	20	14	17	10
Heavy to light	0	1	2	4
Noncausal	0	2	0	2
Do not know	0	3	1	4

Note. Entries refer to the number of participants reporting each type of theory at initial and final theory assessments. Underlined numbers indicate correct answers.

^an = 20.

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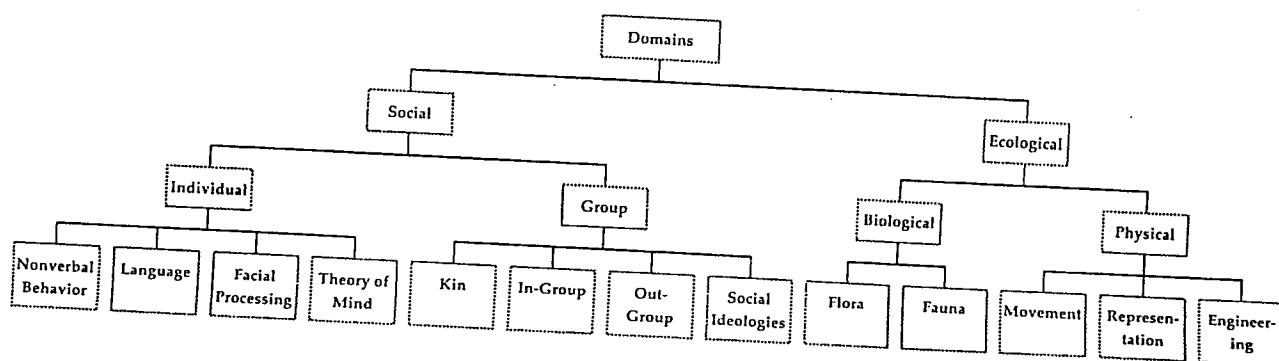
科目: 發展心理學

2.

Part B.

1. (15%) When discussed the evolutionary developmental psychology, Geary (1998) proposed a model of "Domains of Mind" (as in the following figure). In this model, Geary conceptualized constellations as hierarchically organized modules for processing information in the social, biological, and physical worlds. Please present one example for each of the two issues:

- (1) the constellations of cognitive competencies that appear to have been shaped during evolution (Cosmides & Tooby, 1994; Pinker, 1997), and
- (2) the mechanisms that govern the development of the associated competencies and their adaptation to local ecologies (Gelman, 1990; Siegler, 1996).



2. (10%) A research examined the degree to which analytic and holistic models of processing in the way children and adults categorize upright and inverted faces. Children at 7 and 10, and adults were instructed to classify upright and inverted faces into two categories. The construction of the categories allowed participants to categorize the faces either analytically (by focusing on a single attribute) or holistically (in terms of overall similarity). The results are shown in the following figure. Please summarize and discuss the results regarding the pattern changed across ages.

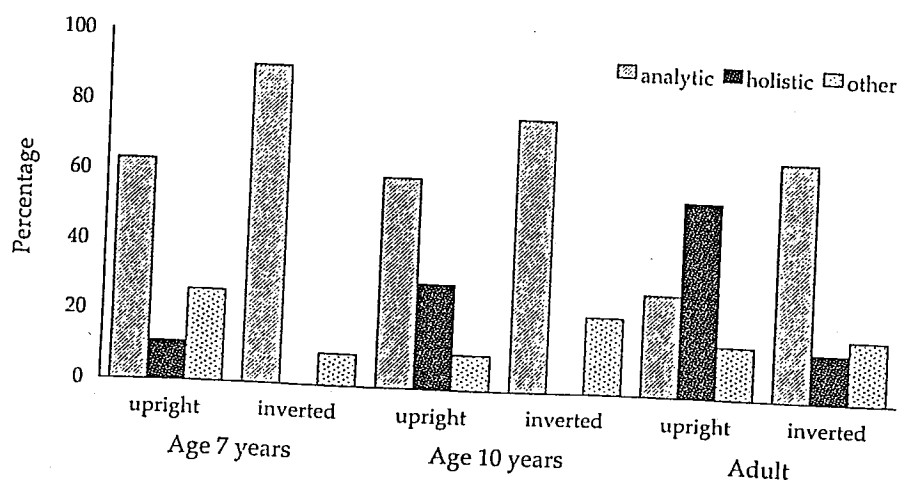
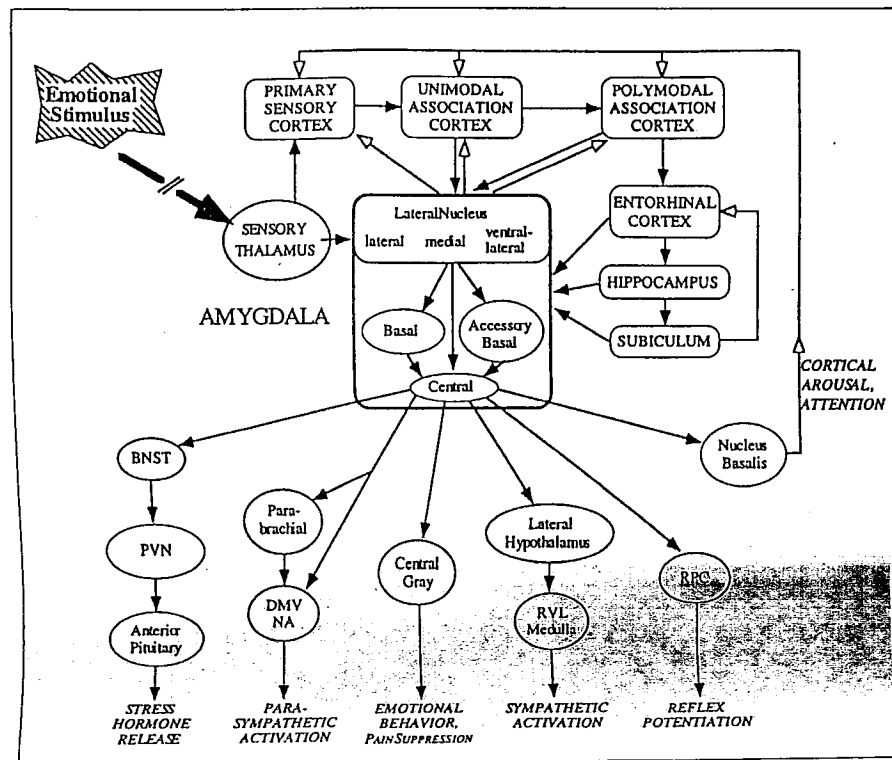


Figure 2 Bar graph showing the percentage of processing modes in the categorization of upright and inverted faces.

Part B-2

3. (15%) The neural pathways of conditional fear are proposed by LeDoux (1994; 1996) are shown in the figure. Please explain the role of amygdala in the neural organization of the fear system.



4. (10%) Please indicate all the statements that are correct according to the following report about brain development.
- (A) How a brain develops depends on the genes you are born with.
 - (B) How a brain develops hinges on a complex interplay between the genes you are born with and the experiences you have.
 - (C) Early experiences have a decisive impact on the architecture of the brain, and on the nature and extent of adult capacities.
 - (D) A toddler's brain is much less active than the brain of a college student.
 - (E) Brain development is non-linear; there are prime-times for acquiring different kinds of knowledge and skills.
 - (F) Brain development is linear; the brain's capacity to learn and change grows steadily as an infant progresses toward adulthood.
 - (G) By the time children reach age three, their brains are twice as active as those of adults. Activity levels drop during adolescence.
 - (H) A secure relationship with a primary caregiver creates a favorable context for early development and learning.

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4

Following Children Through the Decades

Neurobiologists tell us that the experiences children have in the first years of life affect their abilities and behaviors throughout childhood and into adulthood. The evidence they produce is impressive. But do real children in real families develop in the ways that brain scientists predict? Do insecure attachments or adverse environmental conditions actually show up, years later, as learning disabilities, emotional distress, or behavior problems? To know for sure, one would have to study a large number of children, beginning before birth and continuing over at least two decades.

That is precisely what Byron Egeland, L. Alan Sroufe and their colleagues at the University of Minnesota have done. Since 1975, they have conducted a long-term study of high-risk families. Known as the Minnesota Parent-Child Project, the research project began with 267 women in the last trimester of their first pregnancies whose incomes placed them below the poverty line; two decades later, 180 children were still participating in the study. Over the years, the research team carried out frequent and varied assessments of both mothers and children, separately and together, and documented the contexts in which they lived. The assessments have included objective psychological tests, interviews, questionnaires, and observations of child behavior and mother-child interactions.

The researchers did not directly study the children's brain development. Rather, they collected detailed and comprehensive information about each child's adaptation. The study was very comprehensive, covering all major aspects of development—social, cognitive, and emotional. They looked at children's temperaments, made detailed assessments of IQ and other developmental milestones, and assessed children's language development. They also observed and assessed each child's context—including both life stresses and the ongoing social support available to them and their families.

Data collection was especially concentrated in the first two years, focusing most intensely on early attachments. The researchers paid particular attention to children's relationships with their primary caregivers, based on their conviction that children's experiences are most often filtered through those relationships.

For 180 children (and their mothers) who remained in the study through age 20, the researchers found that:

- The kinds of attachments children have formed with their primary caregivers at one year of age predict teacher ratings, behavior problems, and quality of relationships with peers in preschool. Early attachments also predict the social competency of ten- and eleven-year-olds in a summer camp setting.
- Children gain a great deal from interactions with peers over the years. Infants who experience warm, responsive caregiving are, later in life, more empathetic with peers. When they are responded to early in life, they learn something basic about what it means to be connected with other people.
- Children's development is adversely affected by numerous environmental conditions associated with poverty. The negative effects of poverty are cumulative and increase with age.
- Abuse, neglect, and trauma in the early years have a long-term, adverse effect on children's development.
- Early caregiving that is sensitive and emotionally responsive can indeed buffer the effects of high-risk environments (including maternal stress). This is especially true for boys. It can promote positive change for children who have experienced poverty and abuse, and can interrupt the transmission of abusive patterns from one generation to the next.
- By studying the early experiences of high-risk young children (from 12 to 42 months)—especially the quality of their primary attachments and the level of environmental supports—it is possible to predict children's later school achievement. The correlation was fairly strong in the first and third grades, and even stronger in the sixth grade and at age 16.
- Several factors contribute to resilience—the capacity for positive outcomes despite challenging or threatening circumstances. These factors include: emotionally responsive caregiving; early competence; a well organized home environment; well developed intellectual and language capabilities; and a low overall level of risk. The best ways to divert children from maladaptive pathways are to reduce the level of stress they experience and provide support to the family.