

# 普通心理學

黃從仁

# 他誰？

數學 → 物理 → 認知神經科學 → 心理學

{大數據、人工智慧、機器人} x 心理學

# 課涼、甜、廢嗎？

可涼、不承認廢、有點甜但會當人

# 教授安安，給簽嗎？

答應我：期末評鑑時不要一直罵我，好嗎？



# 加簽完後

不要一直跳出去又跳進來好嗎？



# 怎麼評分？

沒有期中考或期末考

只需要繳一份約莫10頁的《超普通心理學》編修報告

1個主題修訂1次為原則，報告每次修訂的What+Why

編修初期可Email 助教 詢問各種問題(含份量是否足夠)

心理學

身體、心靈與文化的整合（第二版）

臺大心理系  
梁庚辰、周泰立  
上編  
策劃



PSYCHOLOGY

身體、心靈與文化的整合  
(第二版)

# 心理學

臺大出版中心



臺大心理系  
梁庚辰、周泰立  
主編  
策劃

「自己的教科書自己寫！」

~胡適

# 為什麼要編修

因為書裡有錯誤和過時的內容

書本內容有被其他書本引用

書本內容會成為聊天機器人的背景知識

編修可利用ChatGPT或Gemini幫忙確認尋找錯誤

&lt; 全部

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## 因材施壓：找到讓你提升能力的解壓方程式 - 第 69 頁

陳偉滔 · 2020

**這本書中有相符結果 – 第 69 頁**

... 心理特徵及質素，會影響個人定要求的高低、能力的提升速度，與感受到挑戰而造成的壓力。2 大家可以嘗試完成以下這份按照「超普通心理學/健康」設計出來的問卷，大約估計自己屬於 A 型或 B 型性格。70 因材施「壓」性格壓力問卷。

目 預覽[books.google.com.tw › books · 轉為繁體網頁](#)

## 超速學習: 我這樣做，一個月學會素描，一年學會四種語言，完成MIT四年課程 (Ultralearning: Master ...)

史考特·楊 · 2020

**這本書中有相符結果**

... 《超普通心理學》一書中解釋，捷思法是：「人們在日常生活中自然地傾向應用，且通常會得到正確答案的思考捷徑。然而，卻未必會有正確的推論結果。」培養直覺先深掘，再累。

目 預覽其他版本

NT

**You**

人類有哪些基本情緒？



### 超普通心理學

根據我的知識來源，人類的基本情緒分為正向、負面和中性情緒。正向情緒包括像是高興，而負面情緒則包含傷心、噁心、害怕、生氣等。此外，還有中性情緒如驚訝。這些基本情緒在全世界不同文化中都有類似的表現。除此之外，還有高階或混合情緒，這些情緒因文化和個體差異而在不同社會中可能有不同的感受。例如，正面的混合情緒可能包括驕傲和感激，負面的則可能包括羞恥。



NT

**You**

愛到最後一定會生恨嗎？



### 超普通心理學

愛情並不一定會發展成恨。愛與恨之間的關係複雜，並非每一段愛情最終都會轉變為恨。在某些情況下，愛情可能因為各種原因而結束，但這不意味著愛必然會轉化為恨。事實上，心理治療中有時會涉及幫助人們處理愛與恨的衝突，這顯示了兩者之間可以是獨立且需要分別處理的情感。



NT

**You**

Amy Cuddy的Power Pose研究發現是可複製的嗎？有沒有什麼問題？

**ChatGPT**

Amy Cuddy的Power Pose研究引起了廣泛的關注和討論，特別是在她的TED演講之後。這項研究主張，採取所謂的“力量姿勢”（例如，雙手叉腰站立，被稱為“超人姿勢”）可以在生理上增加睾酮水平，降低皮質醇水平，從而提升人的自信心和風險承擔能力。然而，這項研究及其結論在學術界引起了一些爭議，主要集中在可重複性和效度上。

## 可複製性問題

- 重複性研究的挑戰**：隨著時間的推移，其他研究者嘗試重複Cuddy等人的實驗結果，但並非所有研究都能夠重複原始研究的發現。一些後續研究未能顯示出採取力量姿勢對於生理指標或行為結果有顯著影響。
- 統計力和樣本大小**：一些批評指出，原始研究的樣本大小相對較小，這可能導致統計上的偶然發現，而不足以推廣至更廣泛的人群。
- 出版偏見**：學術界存在著正面結果更容易被出版的趨勢，這可能導致對於無法重複該發現的研究給予較少的關注。

## 研究的防衛與回應

Amy Cuddy及其同事對於這些批評提出了回應，堅稱力量姿勢的效果是真實且有價值的。Cuddy在公開場合和後續的著作中繼續支持力量姿勢的概念，並提出這種簡單的身體語言變化可以對人們的自信心和表現有正面影響。

## 結論

雖然Amy Cuddy的Power Pose研究在公眾和學術界引起了廣泛的討論，但關於其效果的科學共識仍然是混合的。這反映出心理學和社會科學研究中一個更廣泛的問題，即研究結果的可重複性。雖然力量姿勢的積極效果可能對某些人有效，但科學社區仍在探索這些發現的普遍性和機制。因此，對於這些結果，持開放但謹慎的態度是明智的。



NT

You



carney-et-al-2010-power-posing-brief-...  
PDF

附件的研究推論過程有沒有什麼問題？有什麼潛在的混淆因子嗎？用正體中文回應。



ChatGPT

研究中探討了高權力姿勢對於個體的生理和心理影響，發現採取高權力姿勢的參與者相較於低權力姿勢的參與者，展現了睾酮水平上升、皮質醇水平下降，以及風險承擔能力和權力感增強的變化。然而，這項研究的推論過程可能存在問題，例如樣本大小、參與者的心理預期（如安慰劑效應），以及實驗操作的可重複性等。潛在的混淆因子可能包括參與者的個人背景、情緒狀態在實驗前後的自然變化，以及社會性刻板印象等，這些因素都可能影響研究結果的解釋。



在所有 TED talk 中名列第二受歡迎的影片《Your body language may shape who you are》[\[77\]](#)[\[78\]](#)中更是表明，他們將 42 人帶入實驗室做了個實驗，他們對受試者聲稱實驗目的為心電圖電極的擺放位置是否影響數據收集。實驗裡先讓受試者朝試管裡吐口口水，再擺出有權勢的姿態，如雙手放頭後兩腳伸直、雙手張開靠桌身體著站著微微趨前等姿勢，或無力的姿態如雙手抱肚子或站或坐，保持這些姿勢兩分鐘後詢問：「現在你覺得自己多有力量？」受試者接著會有一個博奕的機會，然後再取一次唾液樣本。結果發現到本次實驗中用賭博來衡量的風險承擔能力，擺出有權勢姿勢的人有 86% 會選擇賭博；而擺低權勢姿態的人只有 60% 選擇會賭。將採樣的口水分析後發現，從受試者踏進實驗室的那一刻起，擺出高權勢姿態的人睪固酮會上升 20%、腎上腺皮質醇下降 25%；擺低權勢姿態的人則是睪固酮下降了 10%、腎上腺皮質醇上升 15%。其中睪固酮代表著支配性，而腎上腺皮質素又名「壓力賀爾蒙」，在壓力環境下扮演重要角色，通常強勢的領袖也擁有大量的睪固酮與較低的腎上腺皮質醇。

這樣的實驗結果暗示著透過僅僅兩分鐘的姿勢改變，將造成個人生理與心理上預期接下來的困境挑戰並作出心理、生理及行為上的改變。這或許可以應用在面試、公開演說、風險投資等狀況下增加自我信心及表現，即使一個人因實力不足或在群體間地位低落而感到無力時，或許也能透過這種方式先建立起自信的外殼，漸漸提升表現直到成功為止。

## 反對方 [編輯]

Eva Ranehill et al. 在 2015 年嘗試重複前述 Dana Carney et al. 的實驗，並把實驗人數拉高至 200 人，且遵照原始實驗方法，除了一些差異：如將擺每個姿勢的時間提升到 3 分鐘、在實驗前簡述實驗將調查姿勢是否影響荷爾蒙濃度與行為等。實驗結果發現受試者回報其高權勢感受確實有提升，然而在風險承擔能力、睪固酮濃度與腎上腺皮質醇濃度上卻沒有統計上的差異。作者推測實驗無法複製的原因在於原始實驗的樣本數過少，或者本實驗在實驗前就已經透露出一些實驗的目的[\[79\]](#)。

除此之外，更有數篇發表在 *Comprehensive Results in Social Psychology* 上的論文表示他們也無法成功複製實驗。

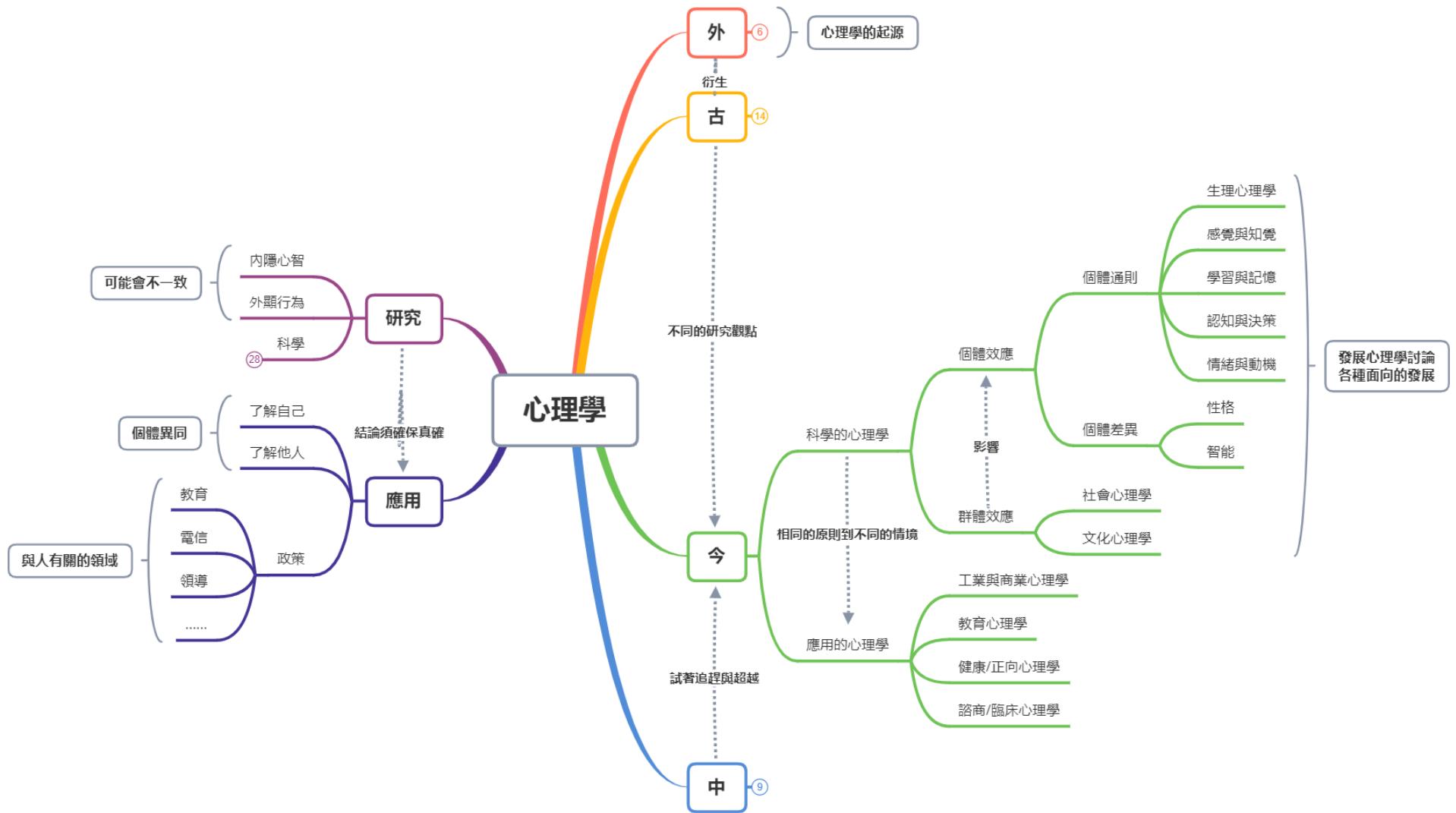


有問題或建議嗎

- ① Start presenting to display the poll results on this slide.

# 當代心理學的定義與範疇

## Science of Mind & Behavior



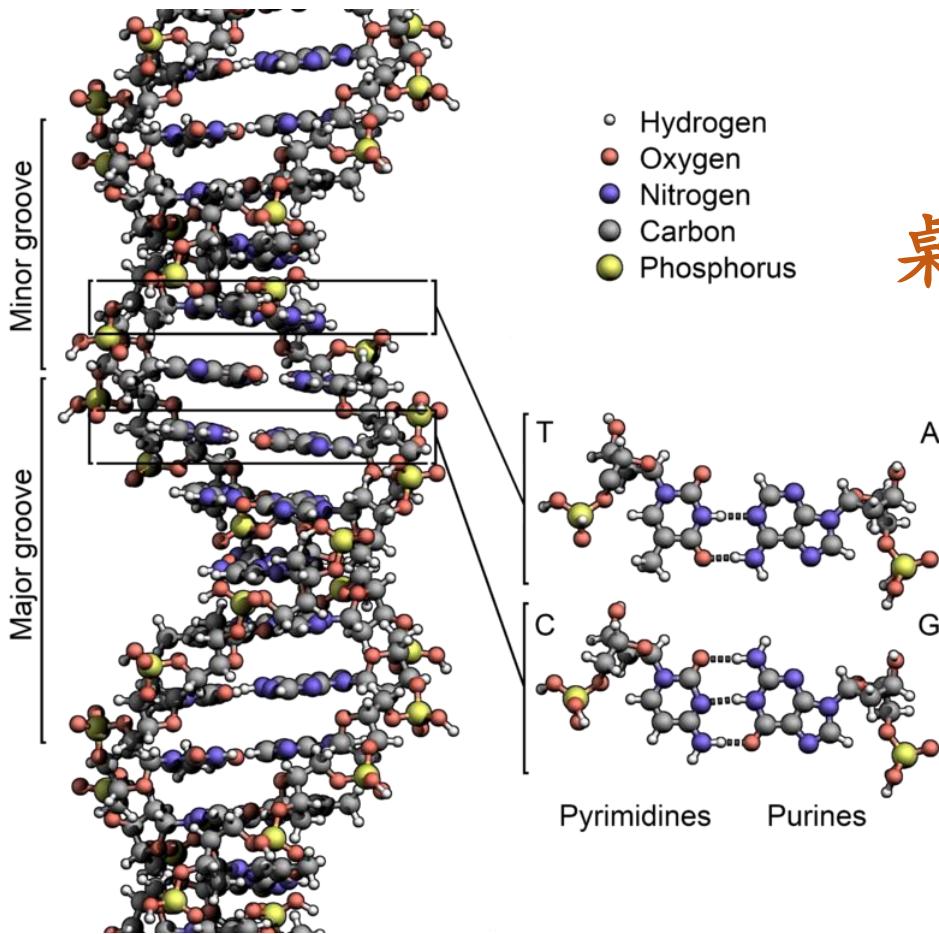
# 古典心理學

起源於德國與美國



# 結構主義 (Structuralism)

化約論：感覺與情感的基礎元素是什麼 (what) ?



值得思考的結構問題：

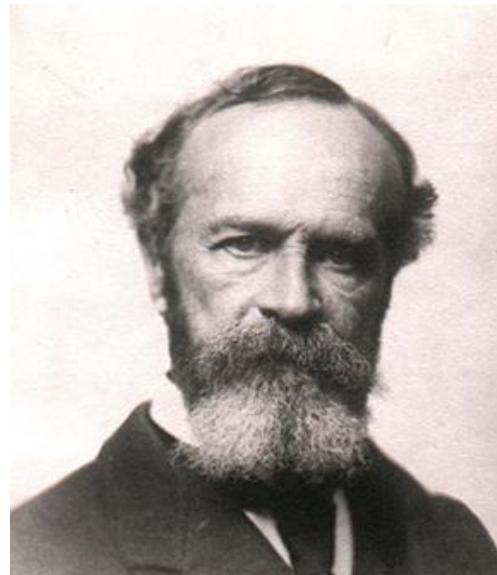
桌子、螞蟻和人有何不同？  
非生物  $\Rightarrow$  生物  $\Rightarrow$  有意識

# 功能/實用主義 (Functionalism)

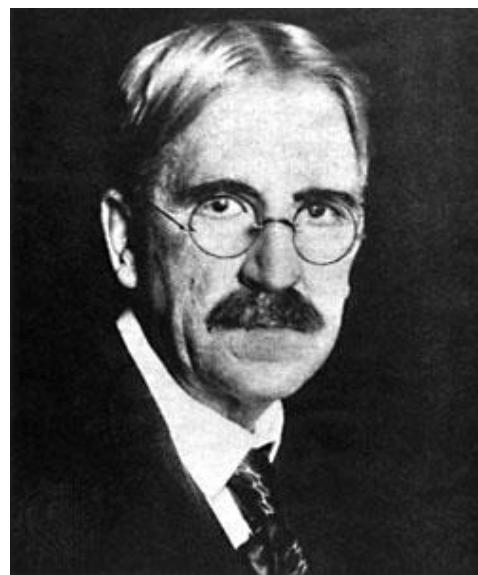
達爾文觀點：心智與行為必有適應環境的功用

著重在心智與行為怎樣 (how) 與為何 (why) 發生

代表人物有美國的James (認知) 和Dewey (教育)

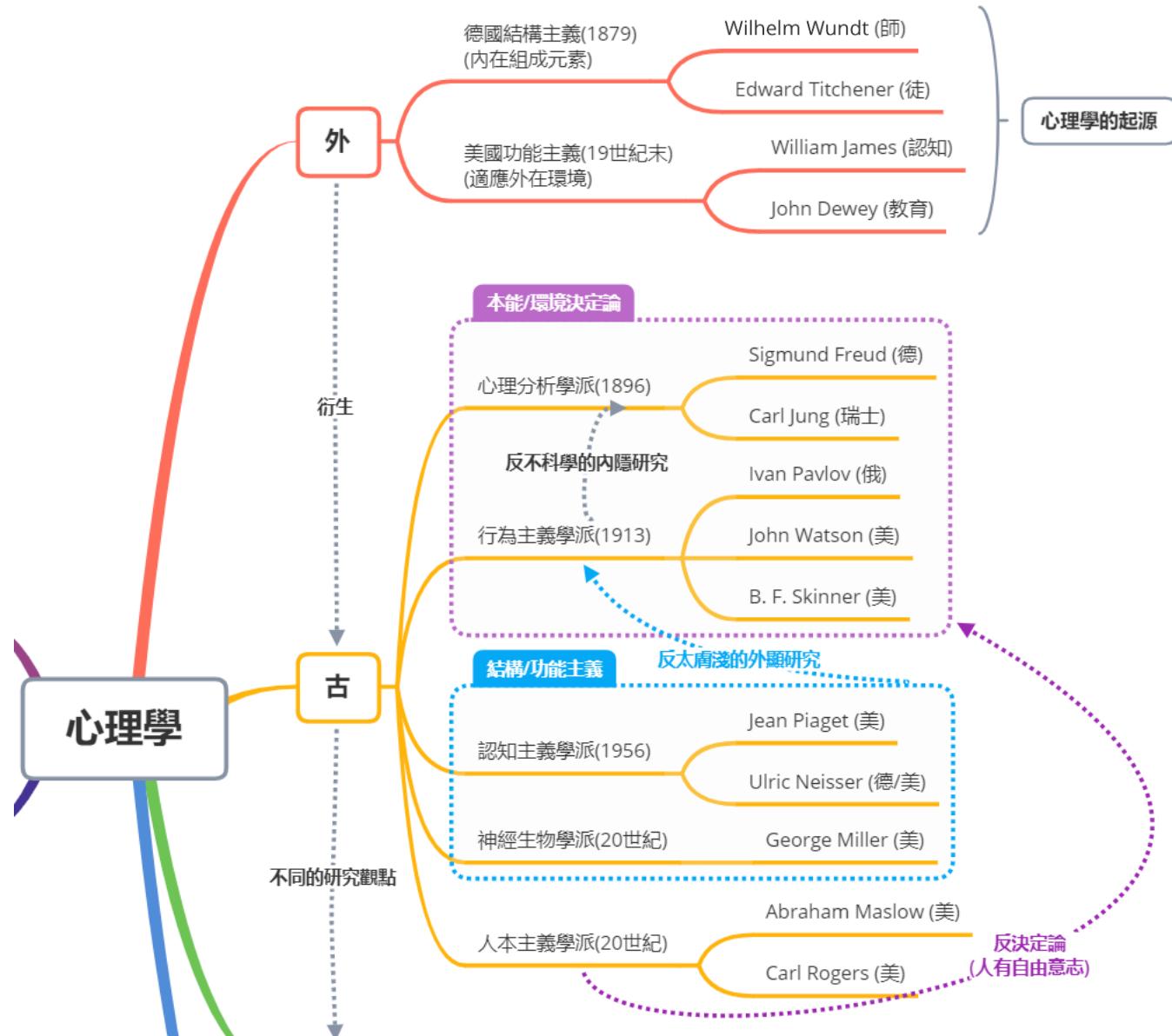


William James



John Dewey

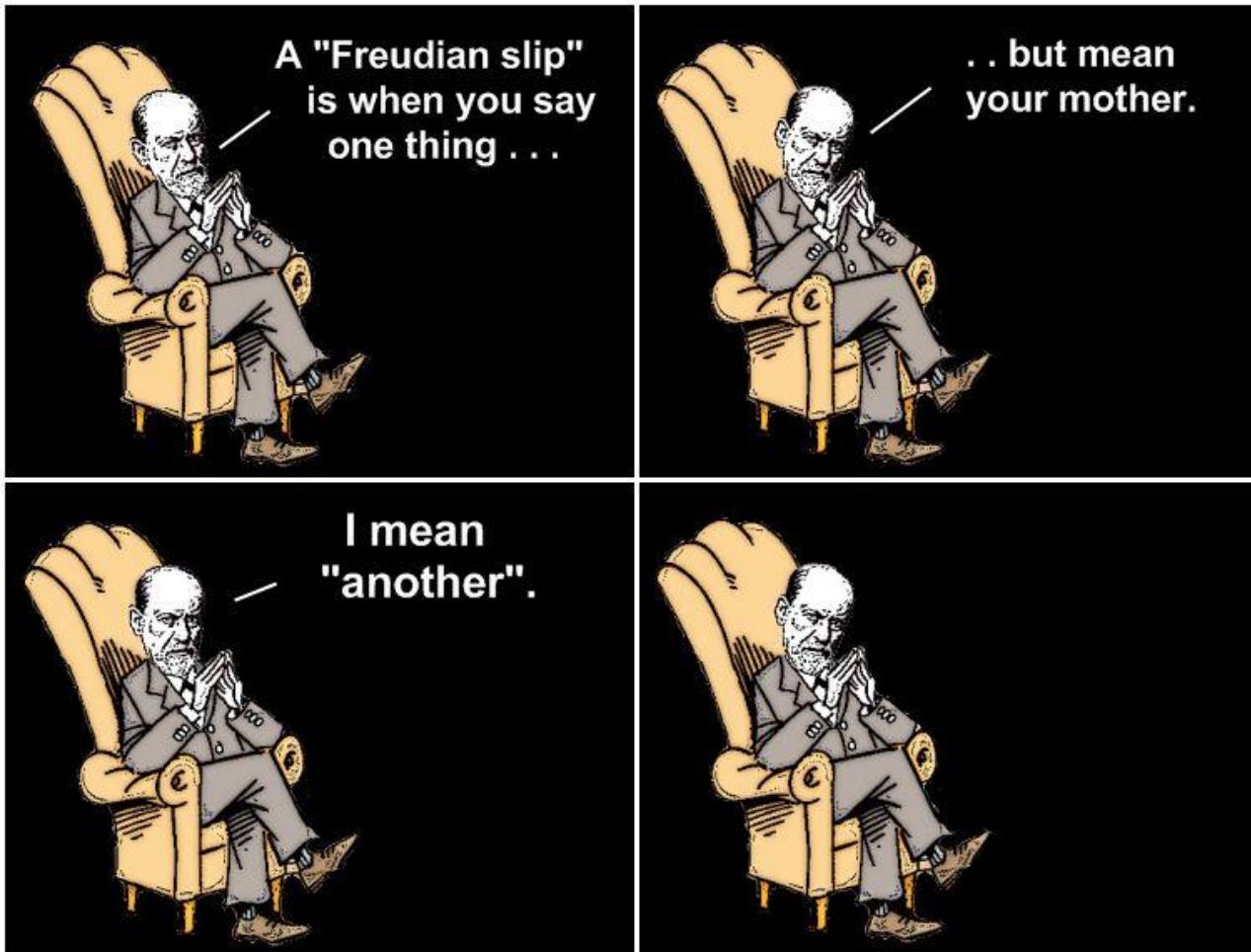
# 心理學的學派 (Schools)



# 心理動力論 (Psychodynamics)

不可否証的理論：

潛意識(本能：生之慾/死之慾)在推動行為



# 行為主義 (Behaviorism)

接近當代科學：量得到的刺激-反應才能夠檢驗和重製

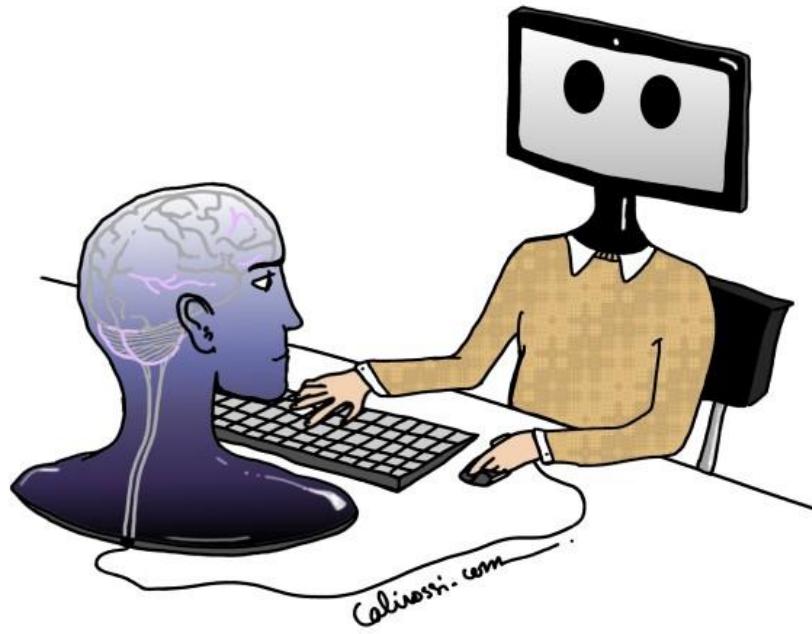


“給我一打健康的小孩，我可以把他們塑造成任何我希望的樣子，可以隨機選擇任何人成為醫師、律師或是乞丐。”

— John Watson

# 認知主義 (Cognitivism)

類電腦科學：探討資訊取得、處理、儲存的過程



認知革命幾乎擴及到心理學所有領域，包括：  
知覺、動機、情緒、臨床心理學、性格與社會心理學等

# 人本主義 (Humanism)

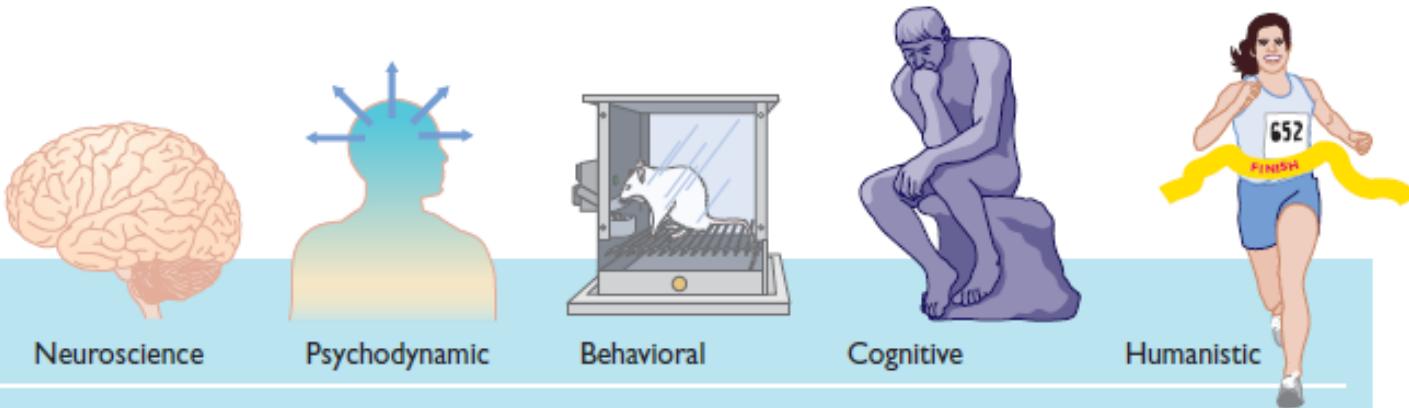
心態：人可以控制自己的行為來追求自我實現



可算是走在蠻前面的正向心理學

# 心理學的研究取向

當代研究仍受到之前的思想流派重大影響



Issue	Neuroscience	Psychodynamic	Behavioral	Cognitive	Humanistic
Nature (heredity) vs. nurture (environment)	Nature (heredity)	Nature (heredity)	Nurture (environment)	Both	Nurture (environment)
Conscious vs. unconscious determinants of behavior	Unconscious	Unconscious	Conscious	Both	Conscious
Observable behavior vs. internal mental processes	Internal emphasis	Internal emphasis	Observable emphasis	Internal emphasis	Internal emphasis
Free will vs. determinism	Determinism	Determinism	Determinism	Free will	Free will
Individual differences vs. universal principles	Universal emphasis	Universal emphasis	Both	Individual emphasis	Individual emphasis

我們將在“心理異常的治療”章節中詳細介紹

# 心理學史之為什麼

整體來說：歷史的必然+文人相輕 →兜了一圈

先著重內隱心智的探討

結構論：用內省法來觀察自己的心智

心理動力論：探討自己與他人的潛意識



再著重外顯行為的探討

功能論反結構論：應觀察他人的行為來推論其心智

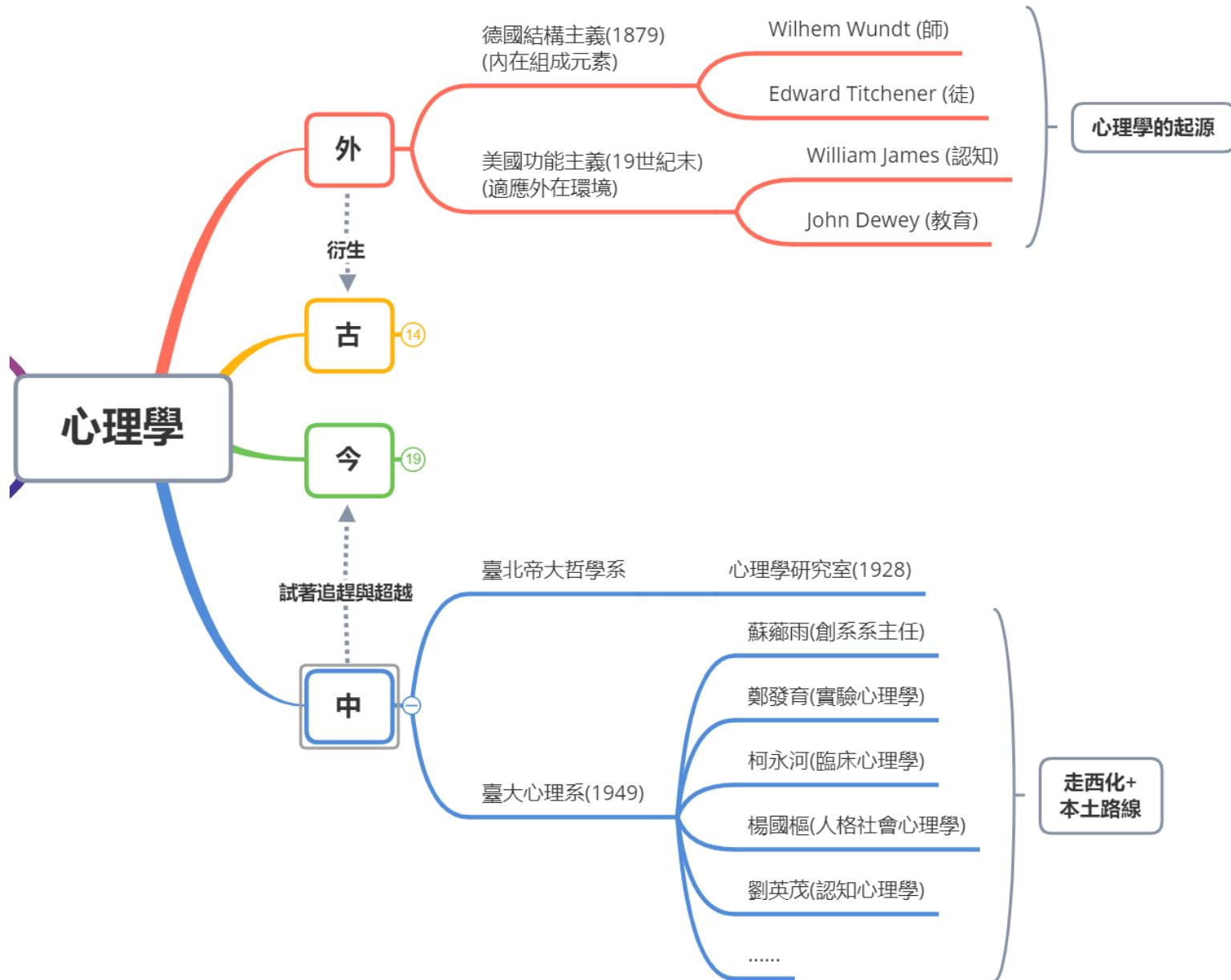
行為論反結構論：只需在乎行為不需在乎心智

又著重內隱心智的探討

認知論反行為論：行為背後有資訊處理的心智歷程

人本論反行為/心動論：人類特有自由意志與正向價值

# 本土心理學與(跨)文化心理學



# 華人本土心理學之父：楊國樞



# 本土心理學的研究議題

- 忍與受苦經驗
- 親子關係與孝道
- 婆媳關係與婚姻適應
- 升學主義與學校文化
- 威權領導與部屬情緒
- 家人情感與互動
- 儒家關係主義(人情/面子)
- ...



# 行為受到文化的影响

猶太人



中國人



# 文化差異變成西方主流研究方向

BEHAVIORAL AND BRAIN SCIENCES (2010) 33, 61–135  
doi:10.1017/S0140525X0999152X

## The weirdest people in the world?

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**Abstract:** Behavioral scientists routinely publish broad claims about human psychology and behavior in the world's top journals based on samples drawn entirely from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies. Researchers – often implicitly – assume that either there is little variation across human populations, or that these “standard subjects” are as representative of the species as any other population. Are these assumptions justified? Here, our review of the comparative database from across the behavioral sciences suggests both that there is substantial variability in experimental results across populations and that WEIRD subjects are particularly unusual compared with the rest of the species – frequent outliers. The domains reviewed include visual perception, fairness, cooperation, spatial reasoning, categorization and inferential induction, moral reasoning, reasoning styles, self-concepts and related motivations, and the heritability of IQ. The findings suggest that members of WEIRD societies, including young children, are among the least representative populations one could find for generalizing about humans. Many of these findings involve domains that are associated with fundamental aspects of psychology, motivation, and behavior – hence, there are no obvious *a priori* grounds for claiming that a particular behavioral phenomenon is universal based on sampling from a single subpopulation. Overall, these empirical patterns suggest that we need to be less cavalier in addressing questions of *human* nature on the basis of data drawn from this particularly thin, and rather unusual, slice of humanity. We close by proposing ways to structurally re-organize the behavioral sciences to best tackle these challenges.

**Keywords:** behavioral economics; cross-cultural research; cultural psychology; culture; evolutionary psychology; experiments; external validity; generalizability; human universals; population variability

### 1. Introduction

In the tropical forests of New Guinea, the Etoro believe that for a boy to achieve manhood he must ingest the semen of his elders. This is accomplished through ritualized rites of passage that require young male initiates to fellate a senior member (Herdt 1984/1993; Kelley 1980). In contrast, the nearby Kaluli maintain that male initiation is only properly done by ritually delivering the semen through the initiate's anus, *not* his mouth. The Etoro revile these Kahli practices, finding them disgusting. To become a man in these societies, and eventually take a wife, every boy undergoes these initiations. Such *boy-inseminating* practices, which are enmeshed in rich systems of meaning and imbued with local cultural values, were not uncommon among the traditional societies of Melanesia and Aboriginal Australia (Herdt 1984/1993), as well as in Ancient Greece and Tokugawa Japan.

Such in-depth studies of seemingly “exotic” societies, historically the province of anthropology, are crucial for understanding human behavioral and psychological variation. However, this target article is not about these peoples. It is about a truly unusual group: people from

Western, Educated, Industrialized, Rich, and Democratic (WEIRD)<sup>1</sup> societies. In particular, it is about the Western, and more specifically American, undergraduates who form the bulk of the database in the experimental branches of psychology, cognitive science, and economics, as well as allied fields (hereafter collectively labeled the “behavioral sciences”). Given that scientific knowledge about human psychology is largely based on findings from this subpopulation, we ask just how representative are these typical subjects in light of the available comparative database. How justified are researchers in assuming a species-level generality for their findings? Here, we review the evidence regarding how WEIRD people compare with other populations.

We pursued this question by constructing an empirical review of studies involving large-scale comparative experimentation on important psychological or behavioral variables. Although such larger-scale studies are highly informative, they are rather rare, especially when compared to the frequency of species-generalizing claims. When such comparative projects were absent, we relied on large assemblies of studies comparing two or three populations, and, when available, on meta-analyses.

Vol 466 | July 2010

nature

## OPINION

### Most people are not WEIRD

To understand human psychology, behavioural scientists must stop doing most of their experiments on Westerners, argue Joseph Henrich, Steven J. Heine and Ara Norenzayan.

Much research on human behaviour and psychology assumes that everyone shares most fundamental cognitive and affective processes, and that findings from one population apply across the board. A growing body of evidence suggests that this is not the case.

Experimental findings from several disciplines indicate considerable variation among human populations in diverse domains, such as visual perception, analytic reasoning, fairness, cooperation, memory and the heritability of IQ<sup>1,2</sup>. This is in line with what anthropologists have long suggested: that people from Western, educated, industrialized, rich and democratic (WEIRD) societies – and particularly American undergraduates – are some of the most psychologically unusual people on Earth.<sup>3</sup>

So the fact that the vast majority of studies use WEIRD participants presents a challenge to the understanding of human psychology and behaviour. A 2008 survey of the top psychology journals found that 96% of subjects were from Western industrialized countries – which house just 12% of the world's population<sup>4</sup>. Strange, then, that research articles routinely assume that their results are broadly representative, rarely adding even a cautionary footnote on how far their findings can generalize.

The evidence that basic cognitive and motivational processes vary across populations has become increasingly difficult to ignore. For example, many studies have shown that Americans, Canadians and western Europeans rely on analytical reasoning strategies – which separate objects from their contexts and rely on rules to explain and predict behaviour – substantially more than non-Westerners. Research also indicates that Americans use analytical thinking more than, say, Europeans. By contrast, Asians tend to reason holistically, for example by considering people's behaviour in terms of their situation<sup>5</sup>. Yet many long-standing theories of how humans perceive, categorize and remember emphasize the centrality of analytical thought.

It is a similar story with social behaviour related to fairness and equality. Here, researchers often use one-shot economic experiments such as the ultimatum game, in which a player

decides how much of a fixed amount to offer a second player, who can then accept or reject this proposal. If the second player rejects it, neither player gets anything. Participants from industrialized societies tend to divide the money equally, and reject low offers. People from non-industrialized societies behave differently, especially in the smallest-scale non-market societies such as foragers in Africa and horticulturalists in South America, where people are neither inclined to make equal offers nor to punish those who make low offers<sup>6</sup>.



Recent developments in evolutionary biology, neuroscience and related fields suggest that these differences stem from the way in which populations have adapted to diverse culturally constructed environments. Amazonian groups, such as the Piraha, whose languages do not include numerals above three, are worse at distinguishing large quantities digitally than groups using extensive counting systems, but are similar in their ability to approximate quantities. This suggests the kind of counting system people grow up with can influence how they think about integers<sup>7</sup>.

#### Costly generalizations

Using study participants from one unusual population could have important practical consequences. For example, economists have been developing theories of decision-making incorporating insights from psychology and social science – such as how to set wages – and examining how these might translate into policy<sup>8</sup>. Researchers and policy-makers should recognize that populations vary considerably in the extent to which they display certain biases, patterns and preferences in economic decisions, such as those related to optimism<sup>9</sup>. Such differences can, for example,

affect the way that experienced investors make decisions about the stock market<sup>10</sup>.

We offer four suggestions to help put theories of human behaviour and psychology on a firmer empirical footing. First, editors and reviewers should push researchers to support any generalizations with evidence. Second, granting agencies, reviewers and editors should give researchers credit for comparing diverse and inconvenient subject pools. Third, granting agencies should prioritize cross-disciplinary, cross-cultural research. Fourth, researchers

must strive to evaluate how their findings apply to other populations. There are several low-cost ways to approach this in the short term: one is to select a few judiciously chosen populations that provide a ‘tough test’ of universality in some domain, such as societies with limited counting systems for testing theories about numerical cognition<sup>11</sup>.

A crucial longer-term goal is to establish a set of principles that researchers can use to distinguish variable from universal aspects of psychology. Establishing such principles will remain difficult until behavioural scientists develop interdisciplinary, international research networks for long-term studies on diverse populations using an array of methods, from experimental techniques and ethnography to brain-imaging and biomarkers.

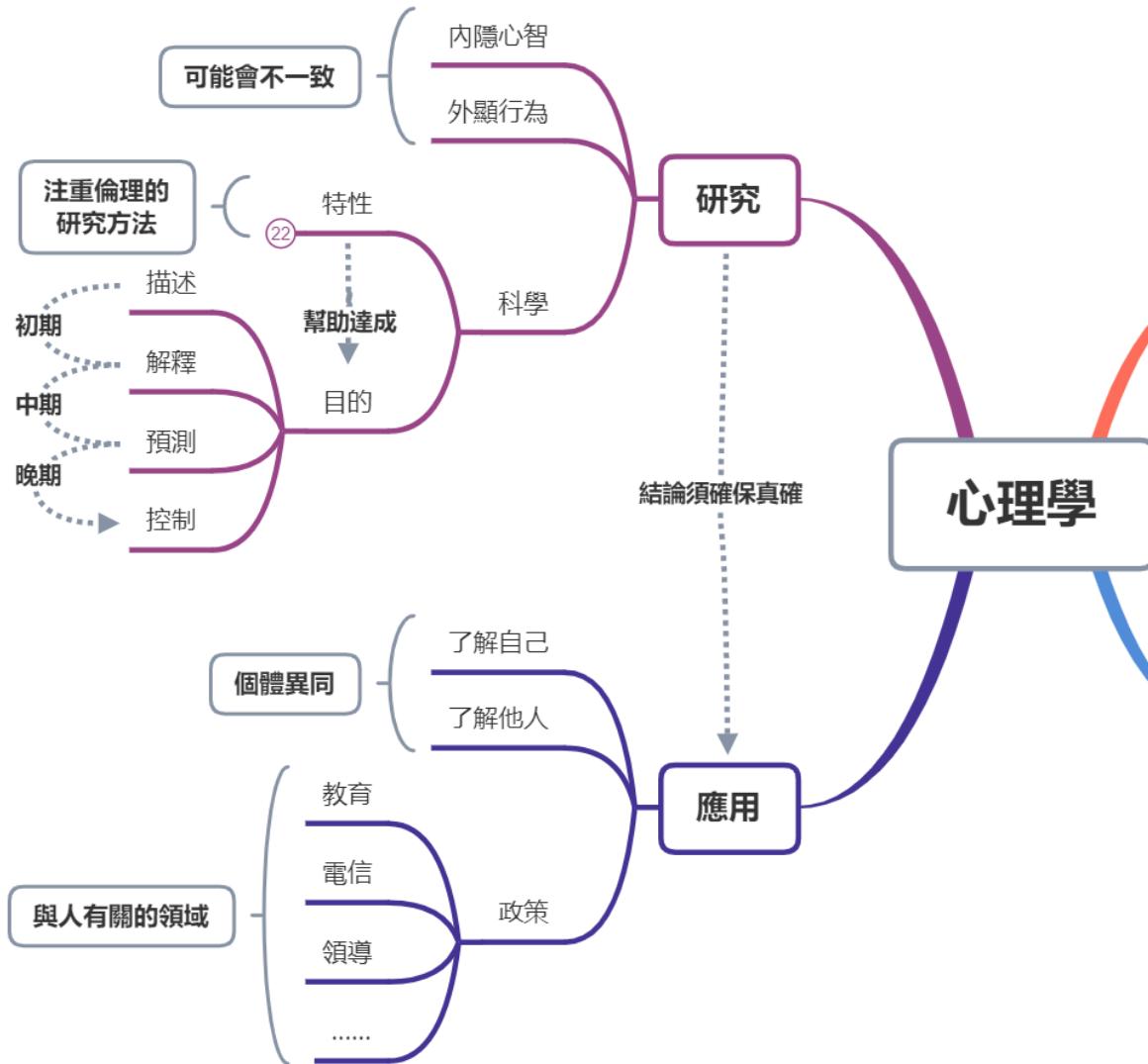
Recognizing the full extent of human diversity does not mean giving up on the quest to understand human nature. To the contrary, this recognition illuminates a journey into human nature that is more exciting, more complex, and ultimately more consequential than has previously been suspected ■

**Joseph Henrich, Steven J. Heine and Ara Norenzayan** are in the Department of Psychology, University of British Columbia, Vancouver, British Columbia V6T 1Z4, Canada. Joseph Henrich is also in the Department of Economics. e-mail: joseph.henrich@gmail.com

1. Henrich, J., Heine, S. J. & Norenzayan, A. *Behav. Brain Sci.* doi:10.1017/S0140525X0999152X (2010).
2. Henrich, J., Heine, S. J. & Norenzayan, A. *Behav. Brain Sci.* doi:10.1017/S0140525X10000725 (2010).
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6. Ji, L.-J., Zhang, Z. Y. & Guo, T. Y. *J. Behav. Decis. Making* **21**, 399–413 (2008).

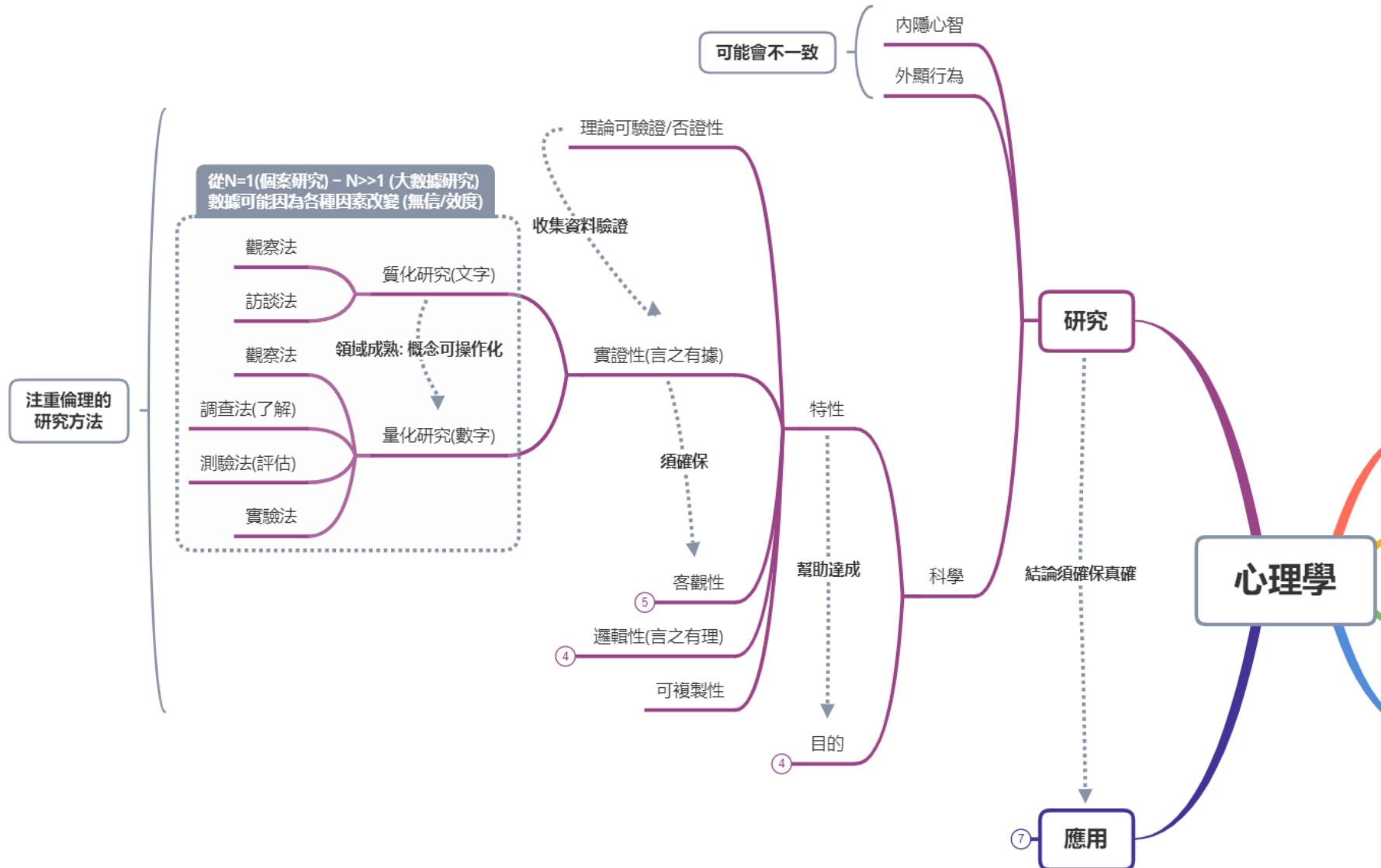
# 心理學的進程

已從描述/解釋慢慢進展到預測/控制



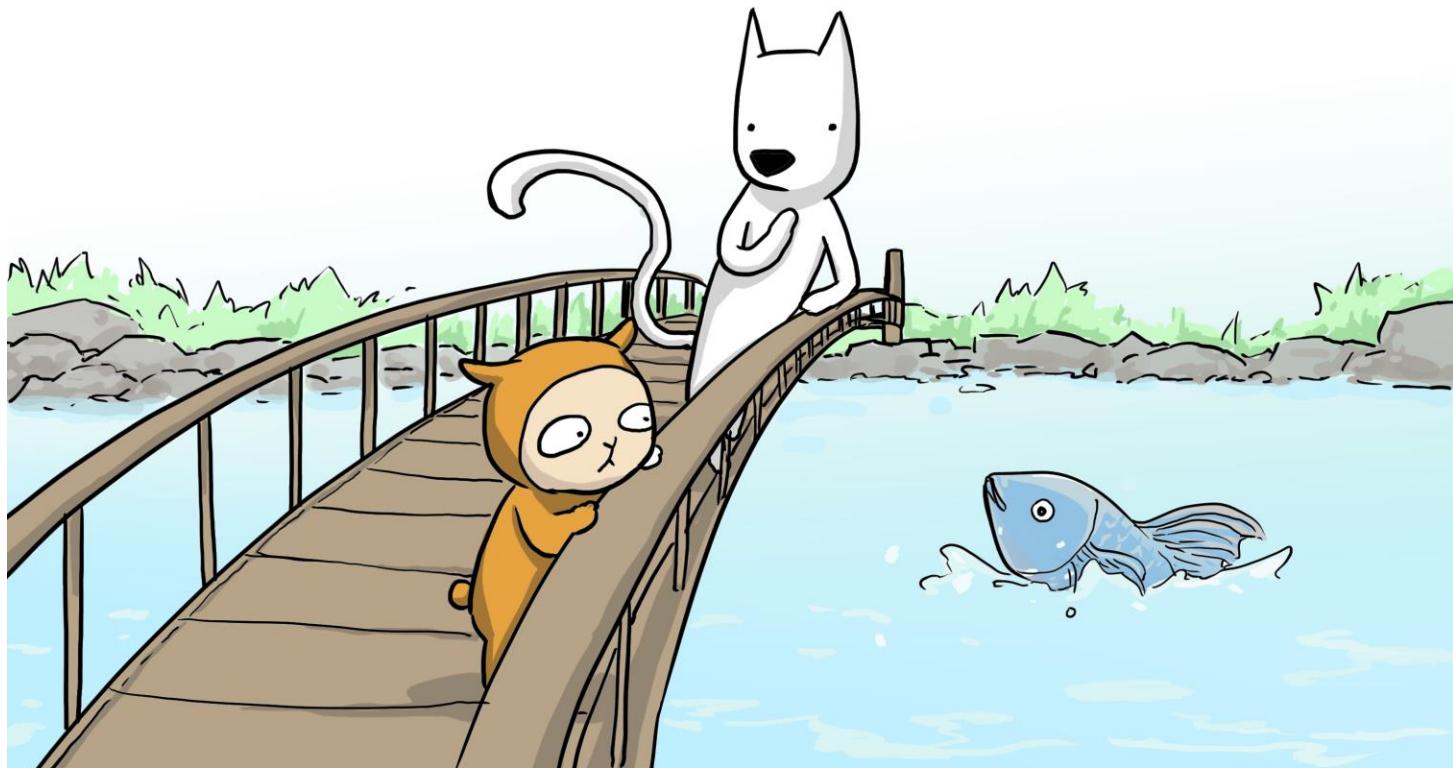
# 心理學的質化/量化研究方法

如：聽說不丹人比較快樂？為什麼？



# 量化研究第一步：操作型定義

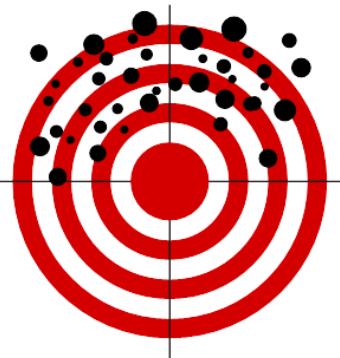
把概念（如快樂）轉化成可量測的變項



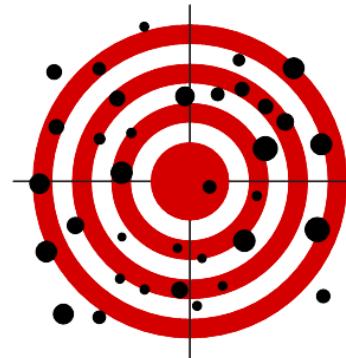
我們要怎麼知道魚快不快樂？

# 量化量測的信度和效度

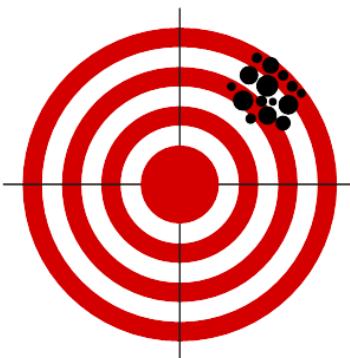
所有研究法都有潛在的信度與效度問題



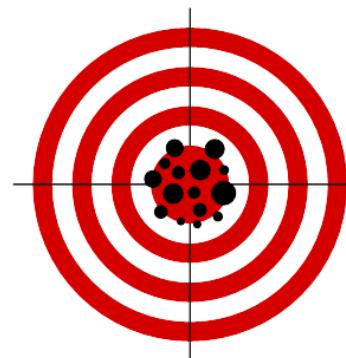
Unreliable & Unvalid



Unreliable, But Valid



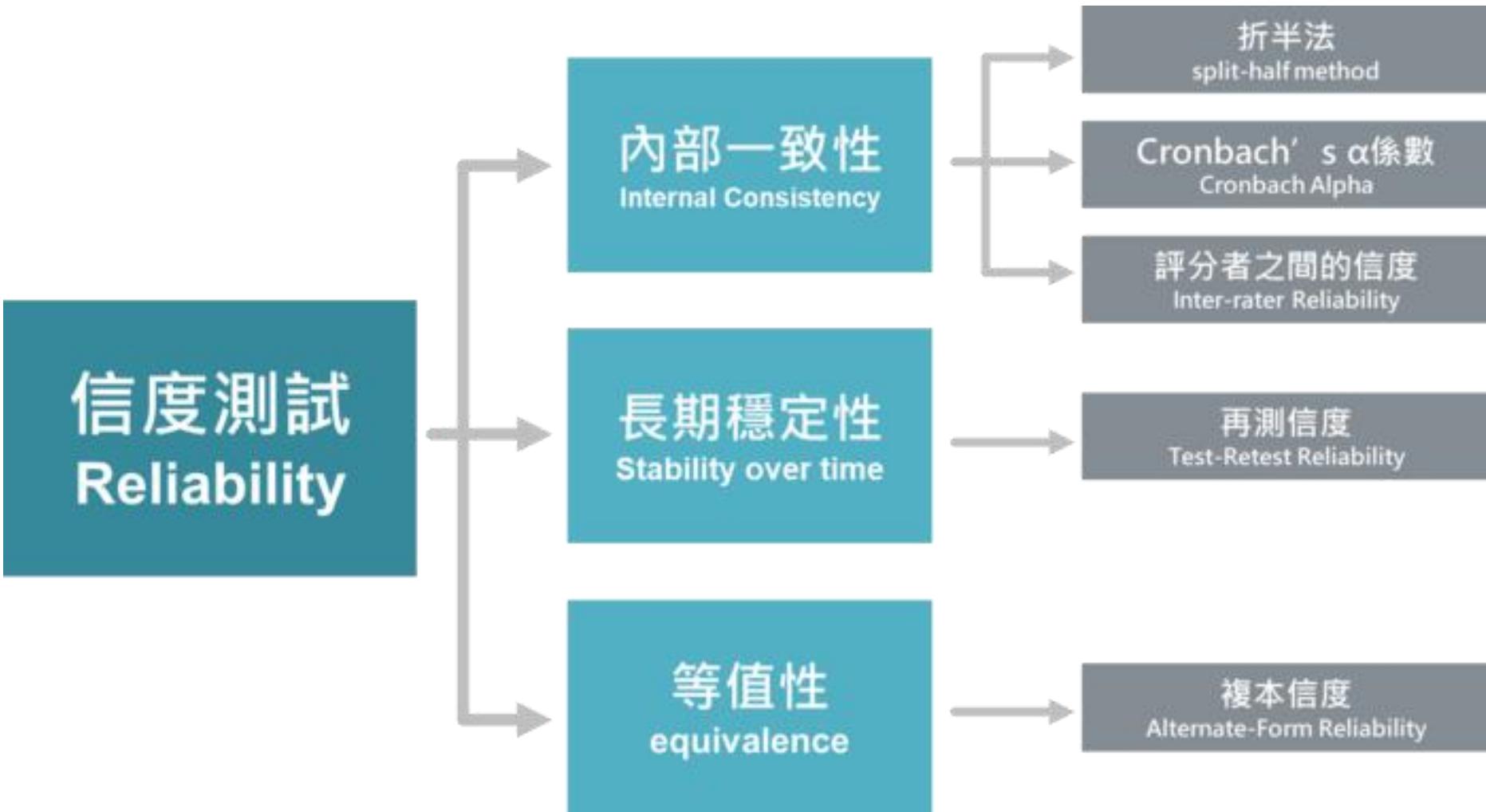
Reliable, Not Valid



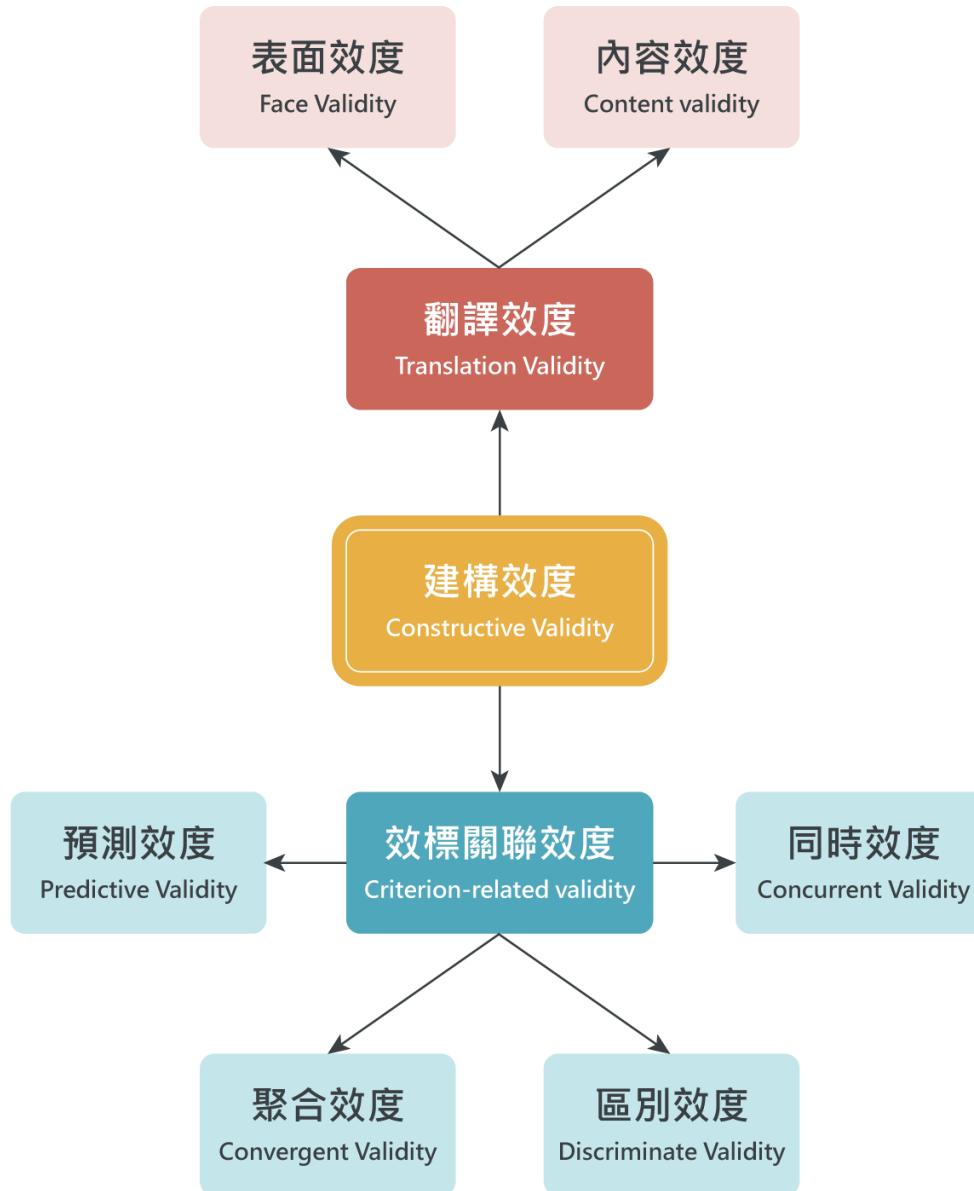
Both Reliable & Valid

信度問題：體重機上每次的數字不同  
效(笑?)度問題：量體重來估計智商

# 信度的種類

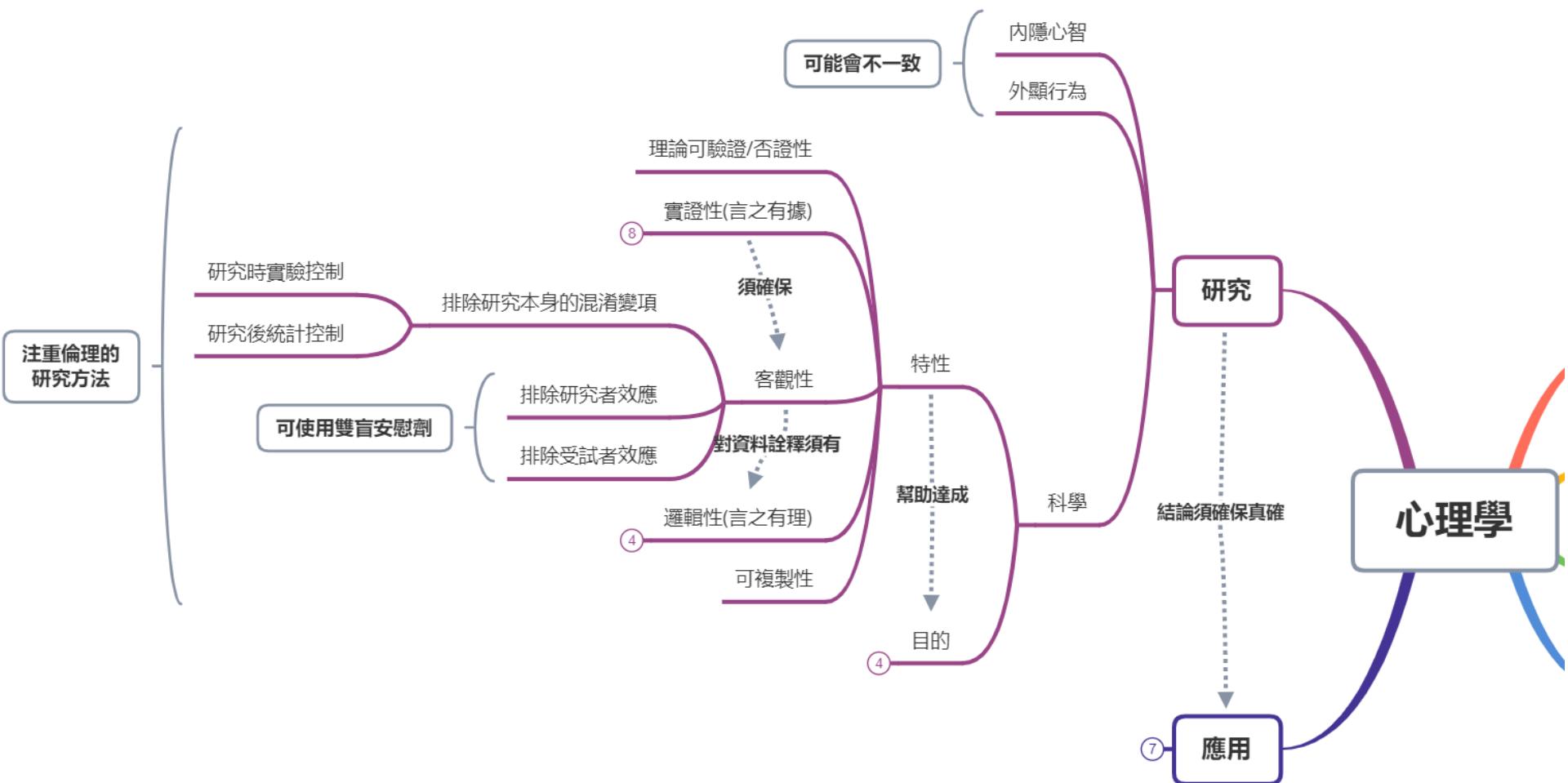


# 效度的種類



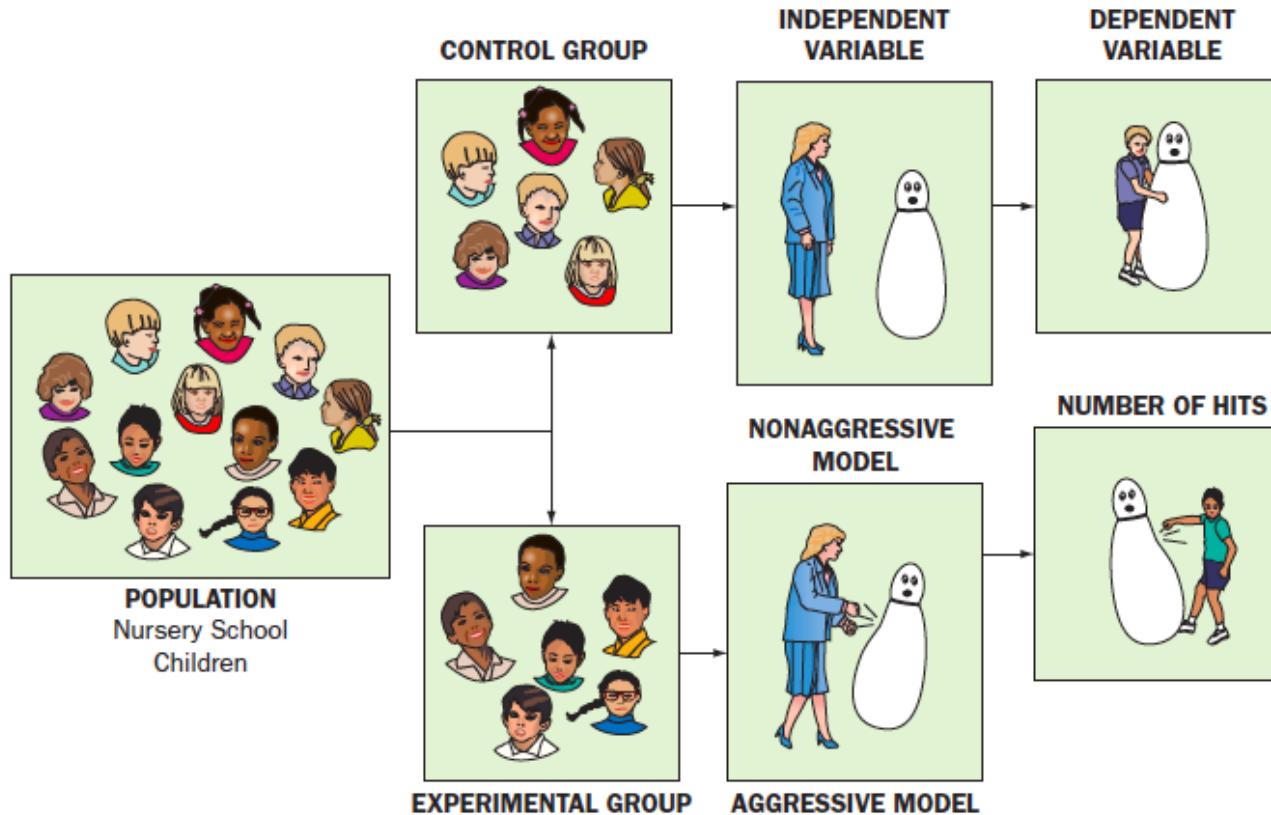
# 心理學資料結果的客觀性

這裡指主觀/人為因素不影響數據本身  
但數據的詮釋免不了有主觀性



# 研究混淆因素 (1/2)

現象：暴力老師導致暴力學生



未控制的因素可能會與實驗條件共變造成結果

# 研究混淆因素 (2/2)

現象：暴力老師導致暴力學生

志同道合的分組：剛好男同學組比較暴力

排除方式：隨機分派來移除沒考慮到的共變因子

受試者間設計：剛好平均年齡大的組別比較暴力

排除方式：改用匹配法分派受試者

或改用受試者內設計排除掉個體差異  
(即同一個受試者進行兩個實驗條件)

受試者內設計：實驗後期剛好比較不耐煩所以暴力

排除方式：實驗條件要時間次序上要隨機

# 實驗者的期待效應

馬也會算術？

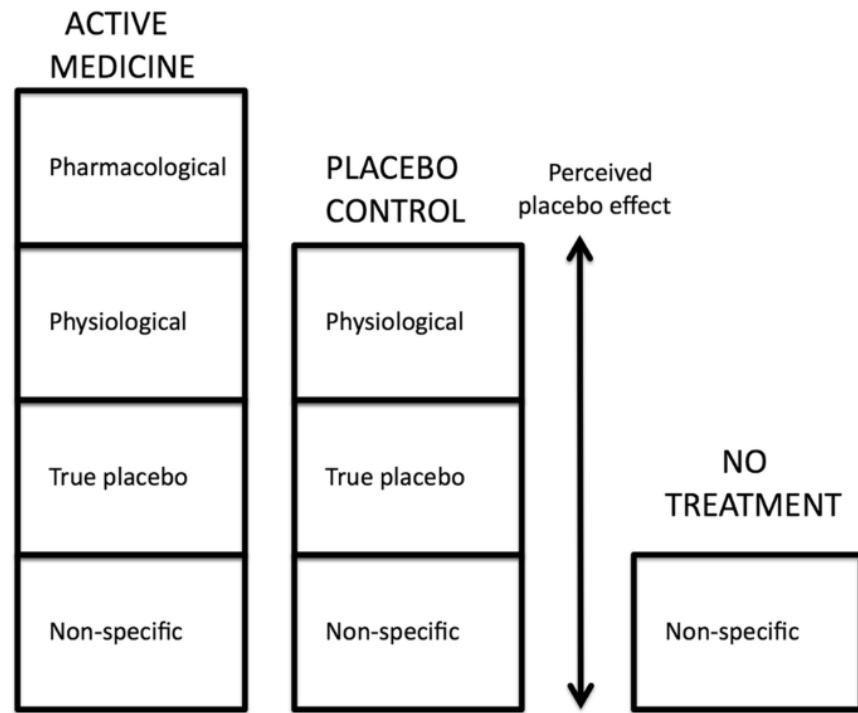


排除方式：使用雙盲 (double-blind) 實驗

實驗者與受試者都不知道現在進行的是何種實驗條件

# 受試者的安慰劑效應

心理影響生理的例子(生理也會影響心理如老化)

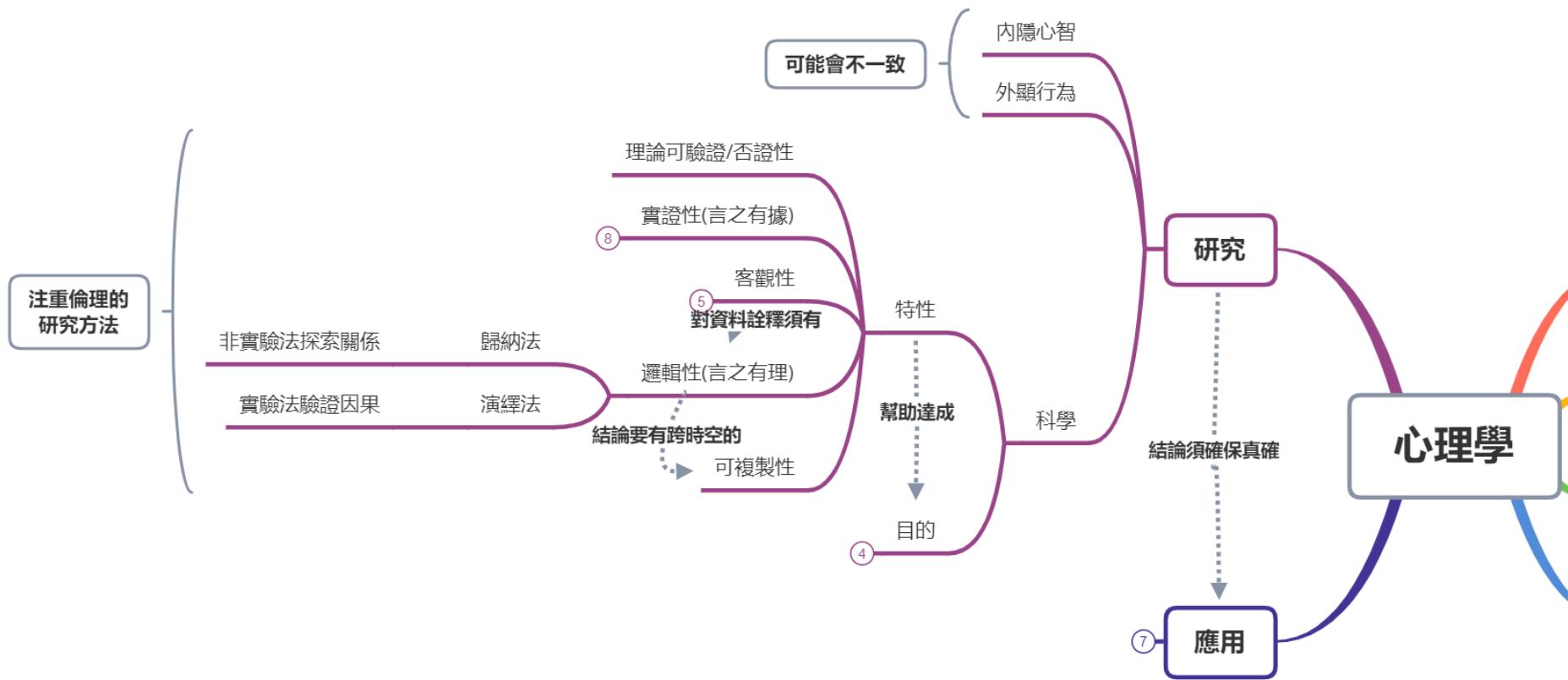


排除方式:引入類似實驗條件的Placebo Control

如不止比較吃真藥與不吃藥，還要比較吃真藥與吃假藥

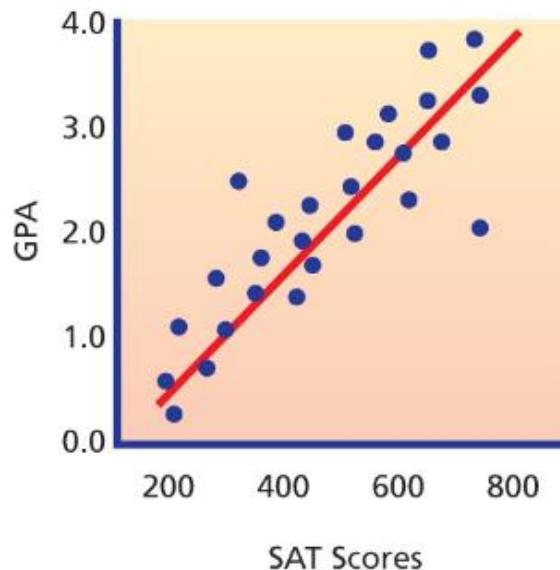
# 研究方法的邏輯

$P(\text{操弄沒影響}) \rightarrow Q(\text{依變項不會看到差異})$   
 $\sim Q(\text{有看到差異}) \rightarrow \sim P(\text{操弄有影響})$

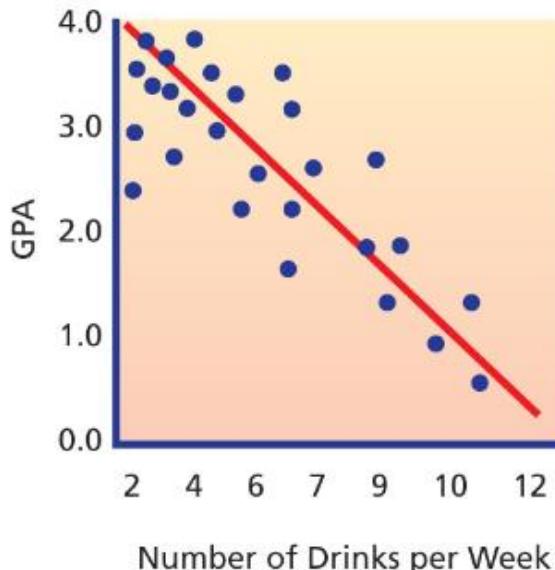


# 相關法

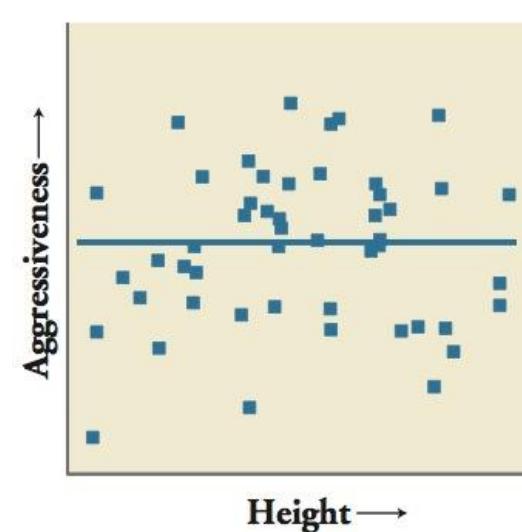
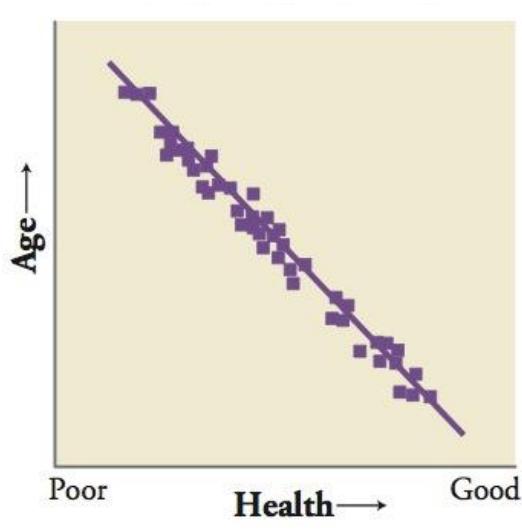
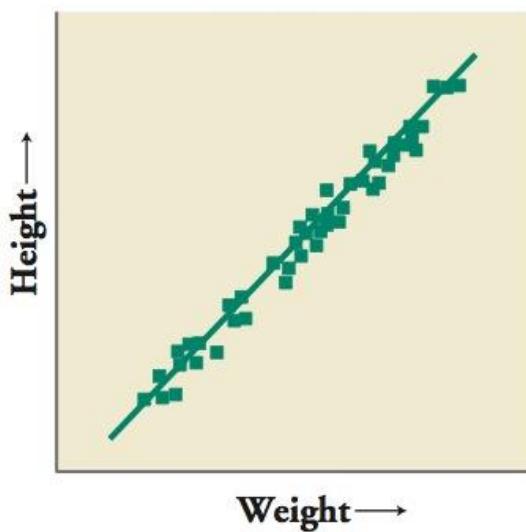
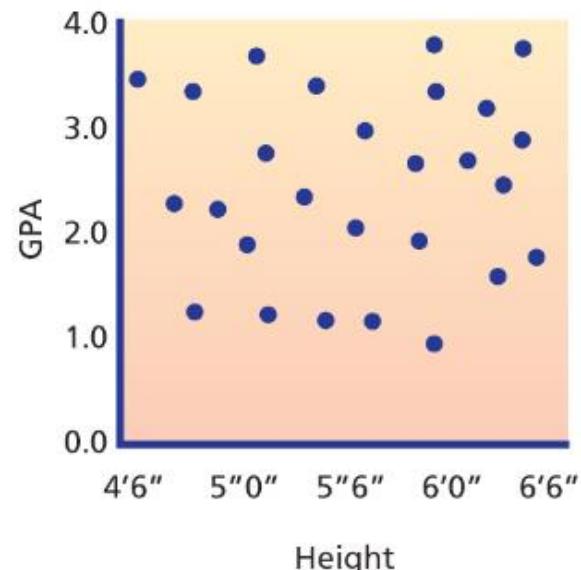
(A) Positive Correlation



(B) Negative Correlation



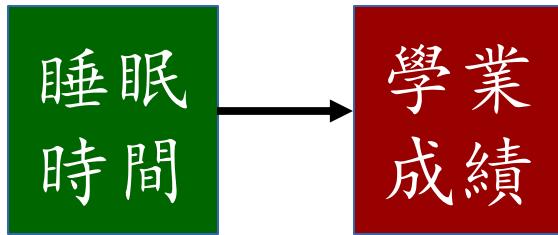
(C) No Correlation



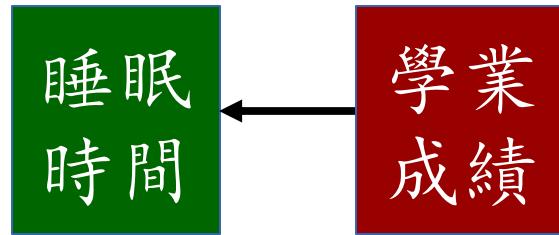
# 醫藥新聞最常見的錯誤：相關非因果

現象：睡眠時間和學業成績有正相關

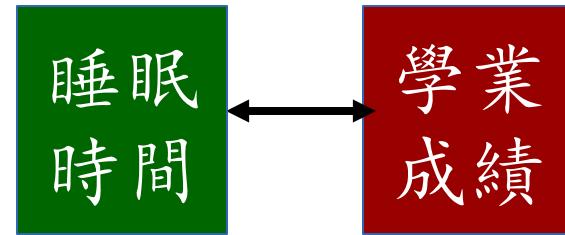
Case 1:



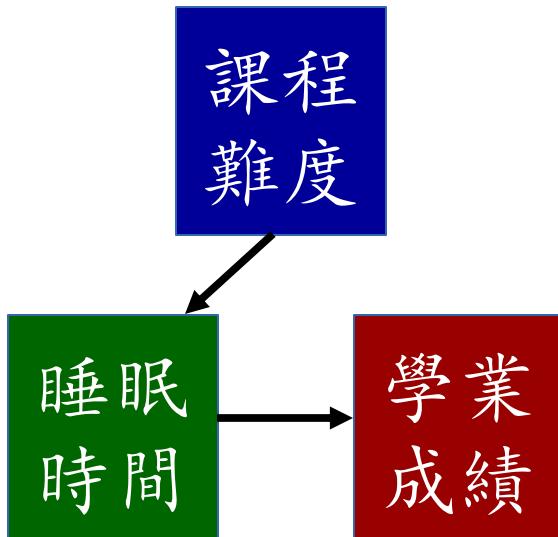
Case 2:



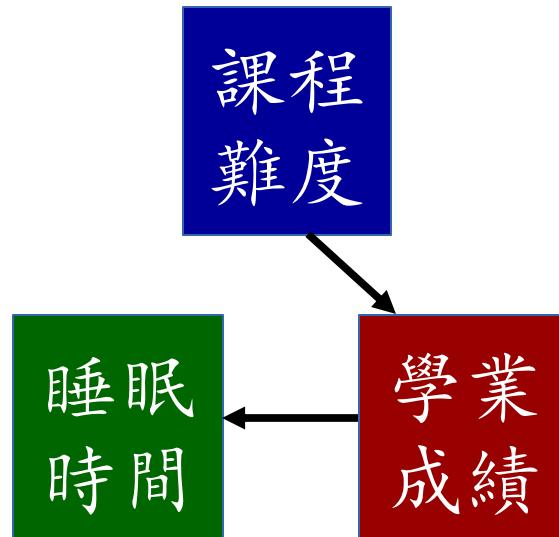
Case 3:



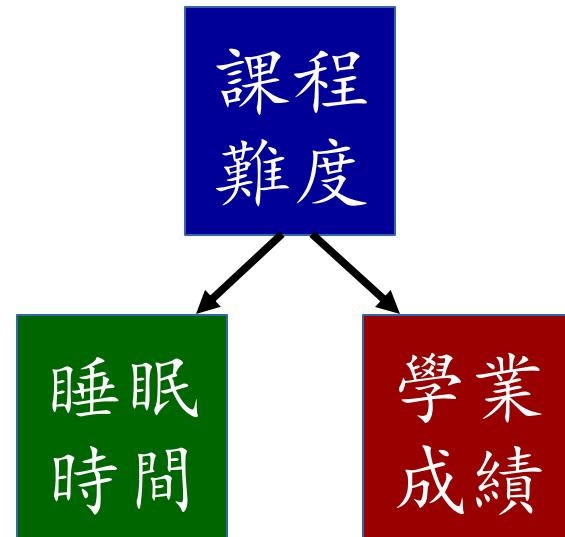
Case 4:



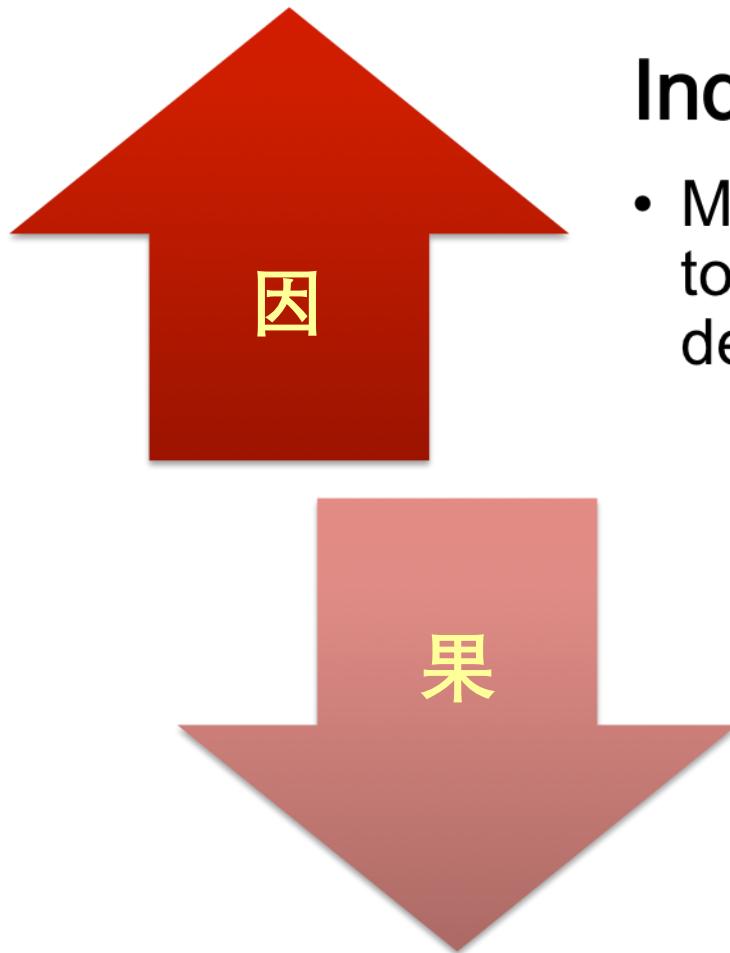
Case 5:



Case 6:



# 實驗法幫忙建立因果



## Independent variable

- Manipulated by researcher to determine its effects on dependent variable

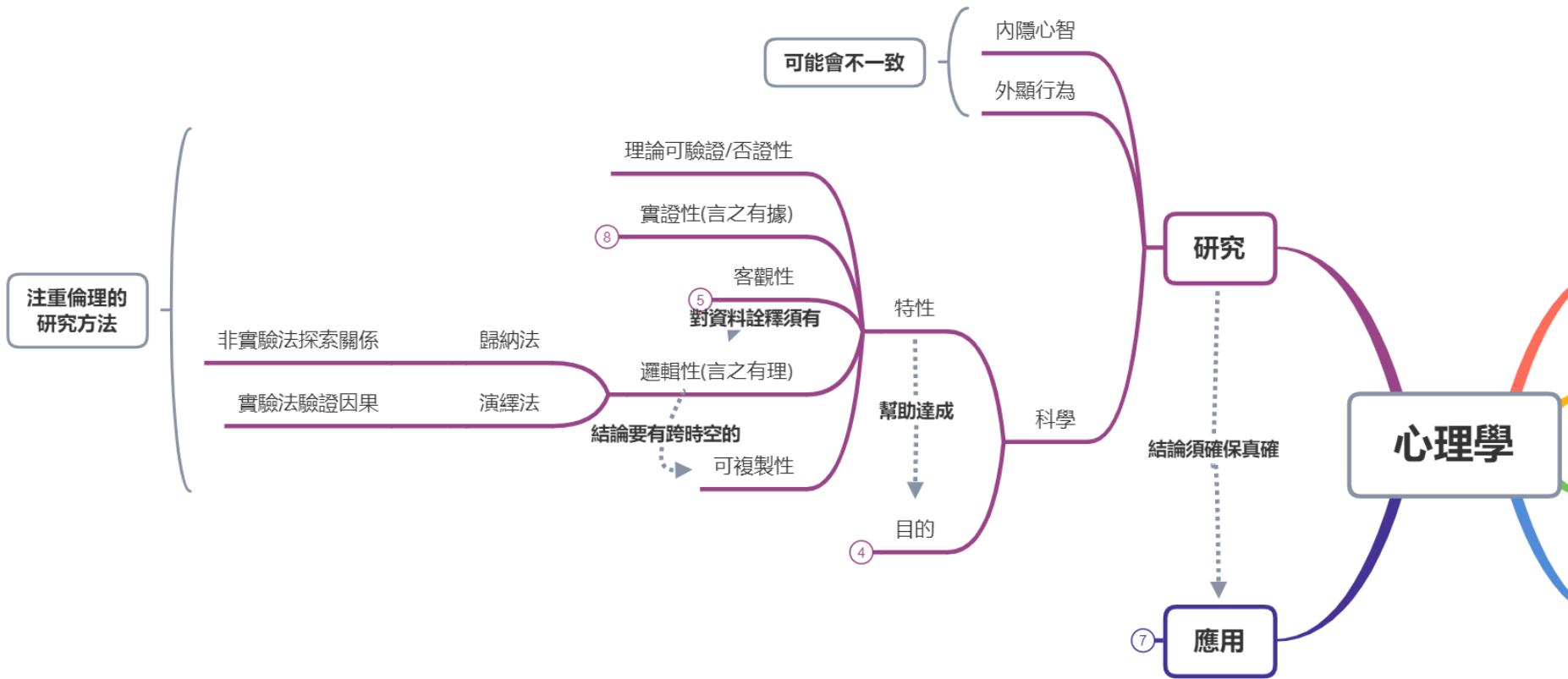


## Dependent variable

- Shows outcome of experiment by revealing effects of independent variable

# 研究結論的(不)可複製性

有些結論可能不是"真的"



# 研究結論的(不)可複製性

科學界近期的"複製危機"

Speaking of Science

No, science's reproducibility problem is not limited to psychology

The Washington Post  
*Democracy Dies in Darkness*

POLITICS & POLICY

## In Medicine, the Science Has Stopped Working

By PASCAL-EMMANUEL GOBRY | November 15, 2017 4:25 PM



## Can Reproducibility in Chemical Research be Fixed?

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### The replication crisis has engulfed economics

November 3, 2015 11:31am AEDT

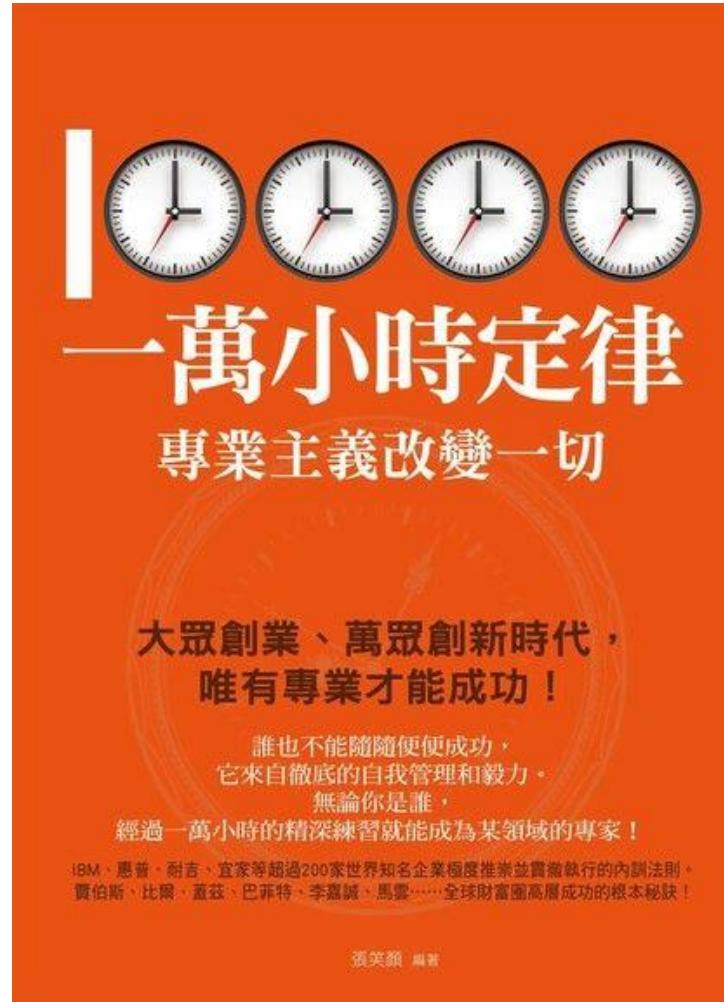
FROM SLATE, NEW AMERICA, AND ASU

## Cancer Research Is Broken

There's a replication crisis in biomedicine—and no one even knows how deep it runs.

# 範例1：一萬小時定律

Malcolm Gladwell 讓此定律變流行



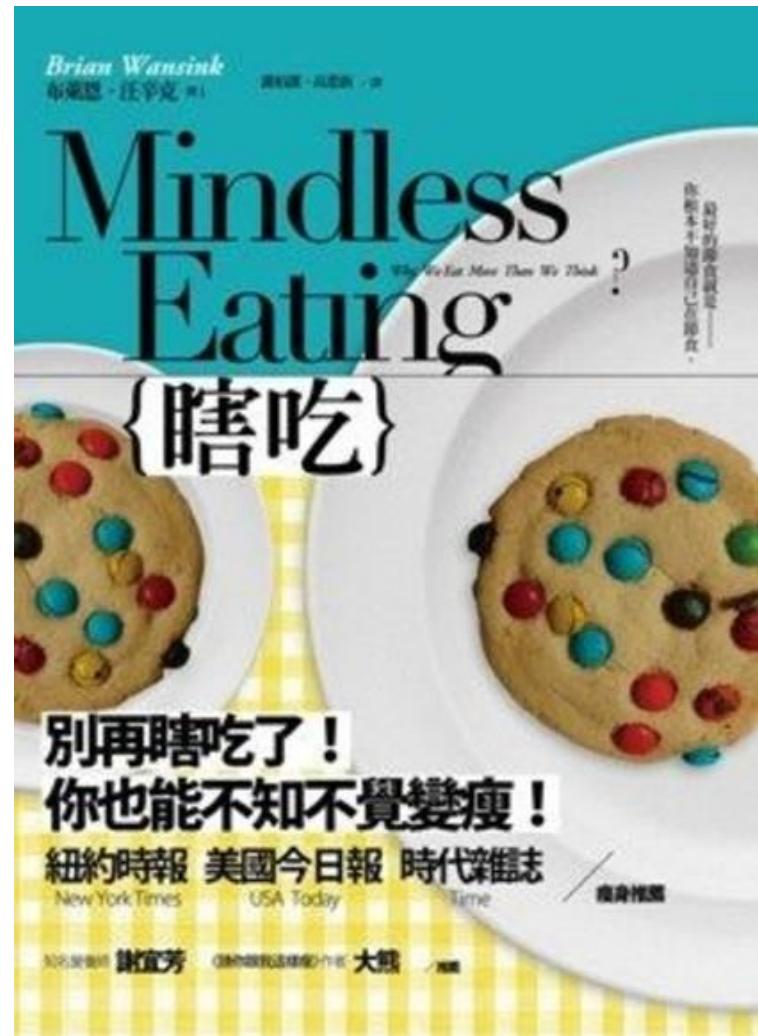
# 範例2：有限的意志力／認知資源

史丹佛心理學博士／講師 Kelly McGonigal



# 範例3：吃的心理學

康乃爾大學的食物心理學教授Brian Wansink

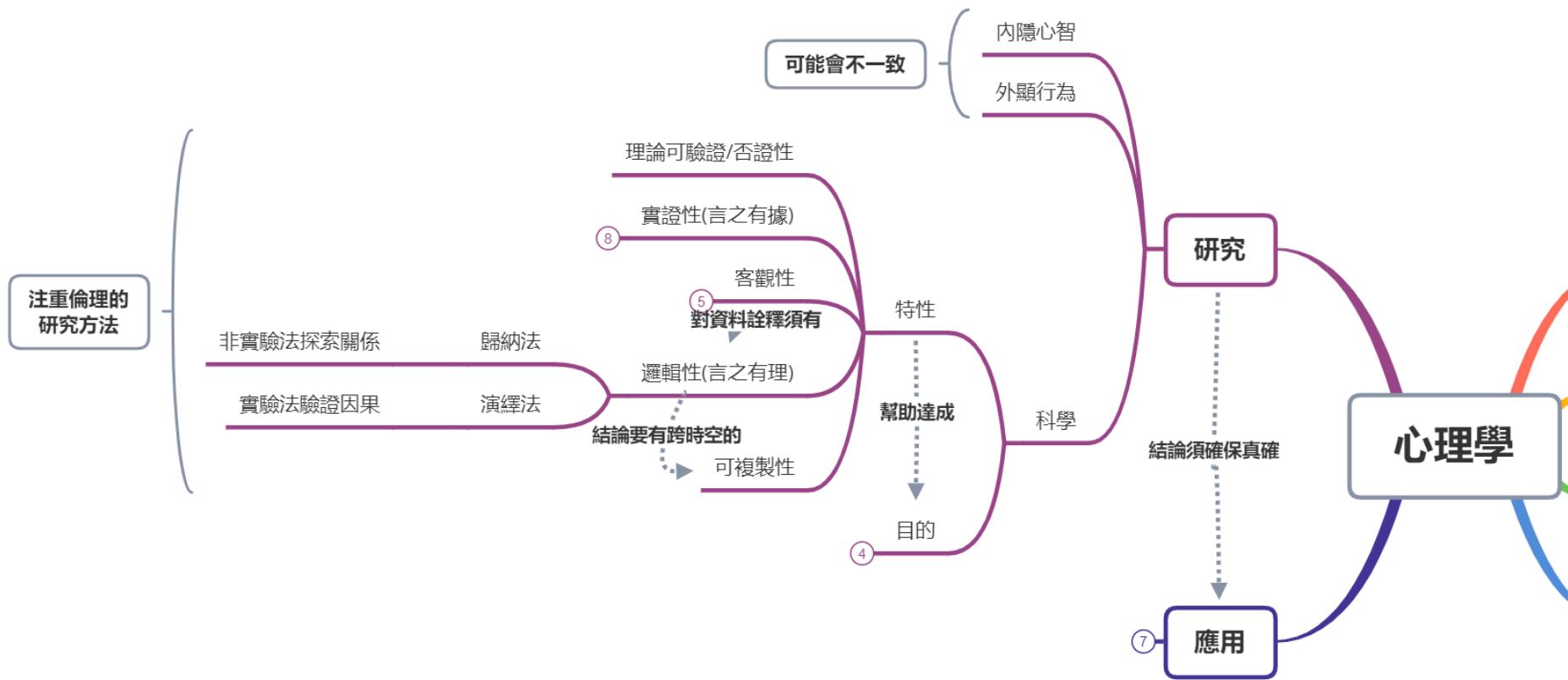


# 為何不可複製？

- 小樣本研究比較容易看到偽陽性
- 因時空背景差異，一效應不是總是必然
- 沒考慮到的混淆變項造成結論錯誤
- 分析方法太多，但彼此間的一致性低
- 發表壓力太大，只好放飛研究倫理

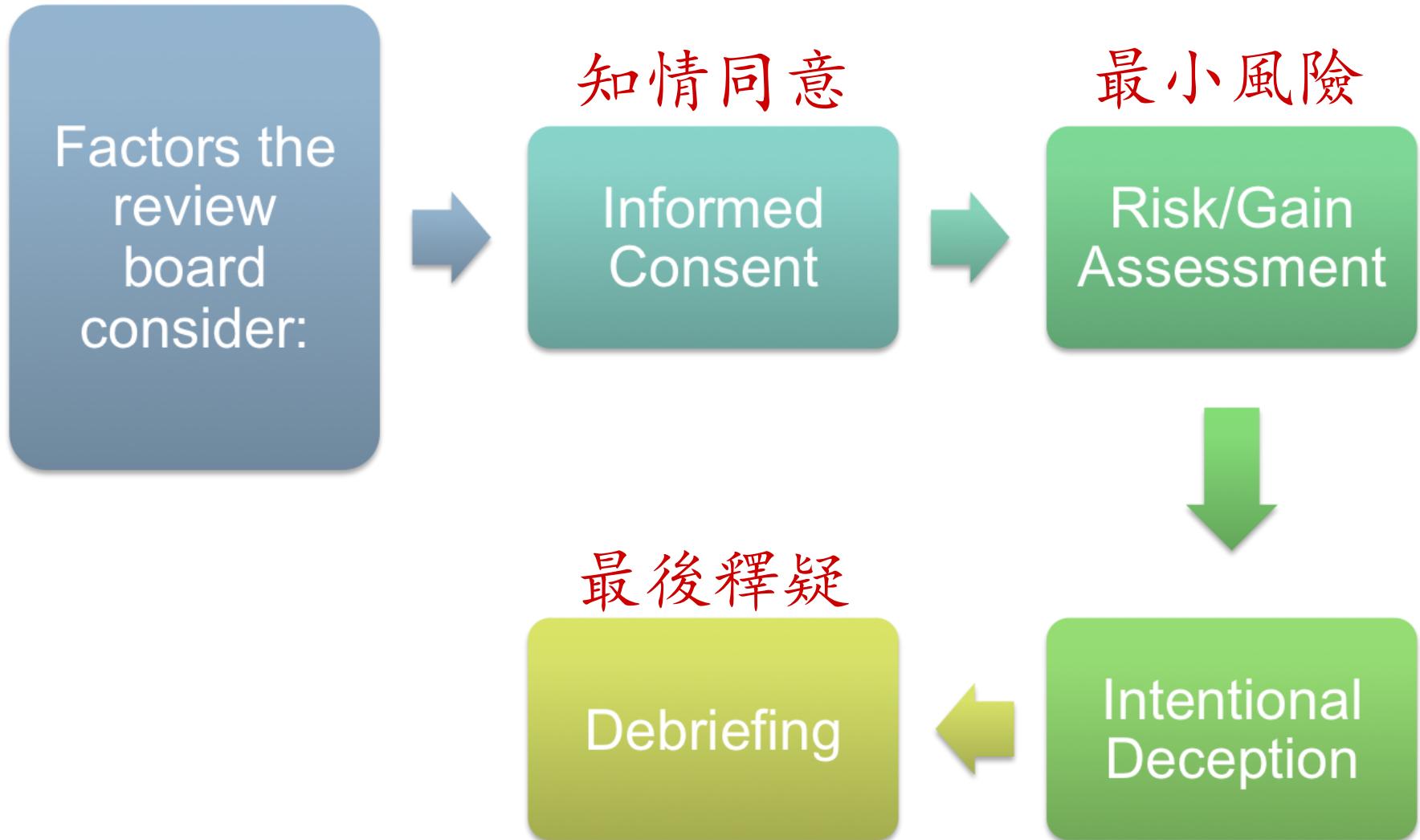
# 研究倫理

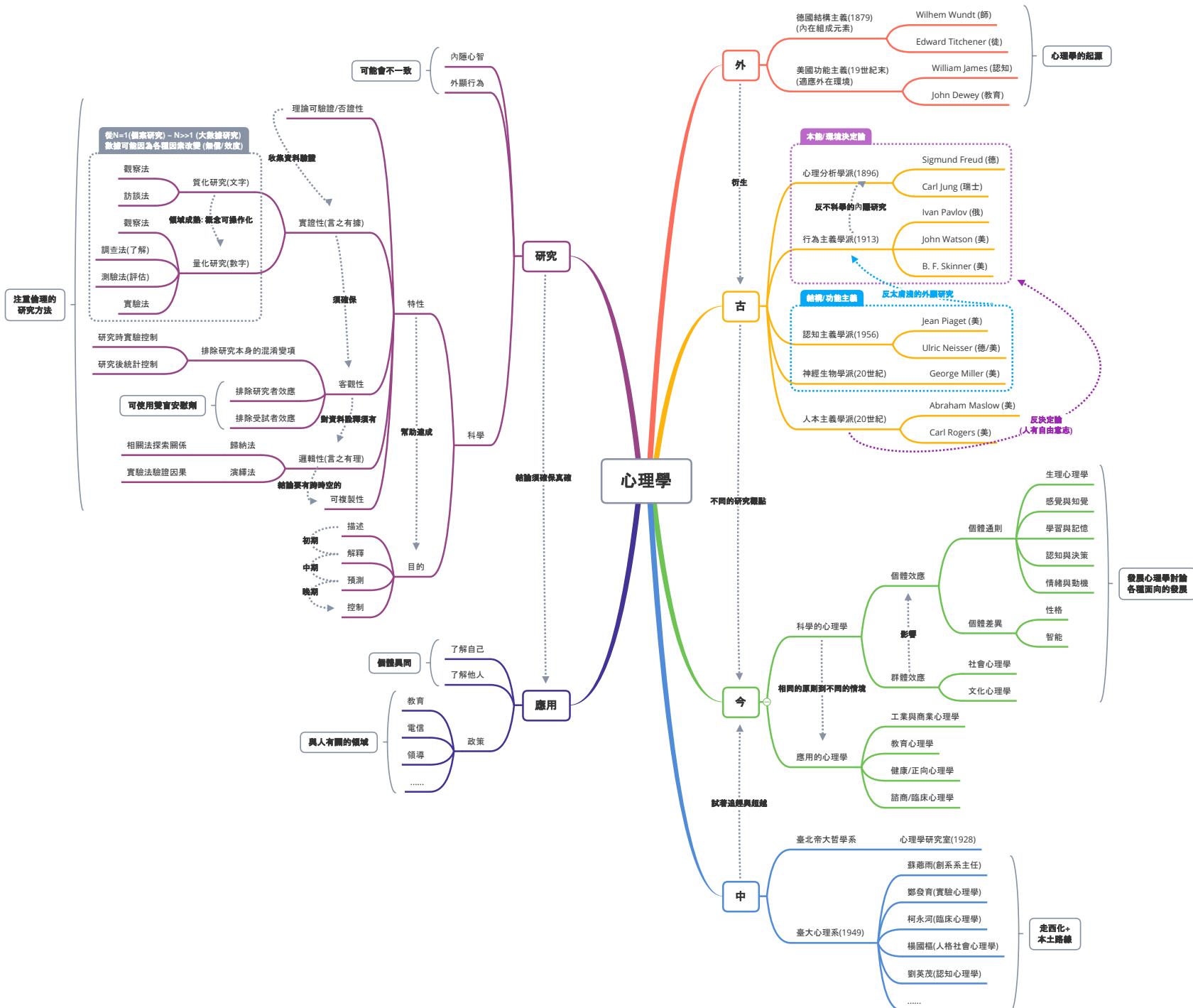
倫理審查把關：最小風險，知情同意，保護隱私



# 人類研究的流程

研究過程隨時可退出





# Game Over

