

璀璨的星空 —— 美麗的语言世界 (III)

The Brilliant Starry Sky —— The Beautiful World of Language (III)



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ChatGPT 的花椰菜語意天空

詞元生成 (Token Generation)

導航地形 (Navigation Terrain)
Top View

語意地形 (Semantic Terrain)
Front View



Building | 建構

人類智慧既然可以教會 ChatGPT 建立語意地形 (Semantic Terrain)，並藉以理解並生成語言；那麼，我們是否也可以建立一套對應的語言地形 (Linguistic Terrain)，作為英語教與學 (English Teaching and Learning) 的架構，而學會英語呢？

(1) ChatGPT 如何學會語言

How Does ChatGPT Learn Language?

(2) ChatGPT 的花椰菜語意天空

ChatGPT's Cauliflower Semantic Sky

(3) 像 ChatGPT 一樣學英語：理解與生成英語
Learning English Like ChatGPT: Understanding and Generating English

字彙表 (100,000 - 250,000)

Vocabulary Table	
Token-Index Mapping	
Index	Token
0	the
1	dog
2	is
...	...

嵌入矩陣

Embedding Matrix	
Embedding Layer	
Index	Vector
0	[1.05, -0.72, ...]
1	[0.87, 1.35, ...]
2	[0.23, -1.10, ...]
...	...

預訓練後
嵌入矩陣

Embedding Matrix	
Embedding Layer	
Index	Vector
0	[1.6, 2.3, 1.05, 0.7, ...]
1	[0.9, 1.6, 0.85, 1.5, ...]
2	[0.5, 3.6, 0.97, 2.3, ...]
...	...

Attention :

語意方向 (Semantic Direction)

時間流逝 (Passage of Time)



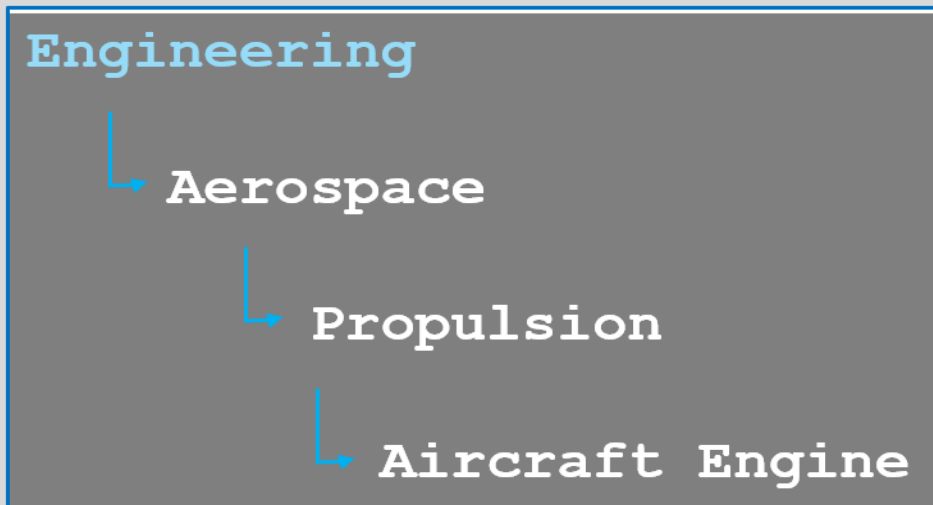
FFN :

語意細化並鞏固 (Semantic Consolidation)



嵌入空間
Embedding Space

預訓練後的嵌入空間 → 分類大詞典



巢狀盆地
nested basins

Aircraft Engine

- Compressor
- Combustor
- Turbine
- Nozzle
- Gearbox

平行盆地
parallel. basins

Turbine

- HPT
- LPT
- Cooling
- Aerodynamics
- Materials

What did the engineer do?

[What] [did] [the] [engineer]
[do] ?

嵌入矩陣

Embedding Matrix

Embedding Layer	
Index	Vector
0	[1.6, 2.3, 1.05, 0.7, ...]
1	[0.9, 1.6, 0.85, 1.5, ...]
2	[0.5, 3.6, 0.97, 2.3, ...]
...	...

The engineer designed the turbine for the aircraft engine.

- [engine.]
- [aircraft]
- [the]
- [for]
- [turbine]
- [the]
- [designed]
- [engineer]
- [The]

• The
Output Probabilities

[do] State

Feed Forward Network (FFN)
(Attractor enhancement /suppression)
Self-Attention
(Semantic direction)

Feed Forward Network (FFN)
(Attractor enhancement /suppression)
Self-Attention
(Semantic direction)

Feed Forward Network (FFN)
(Attractor enhancement /suppression)
Self-Attention
(Semantic direction)

Current Active State
Context-so-far representation

Token Embedding + Positional Embedding
Prompt / Previous Tokens

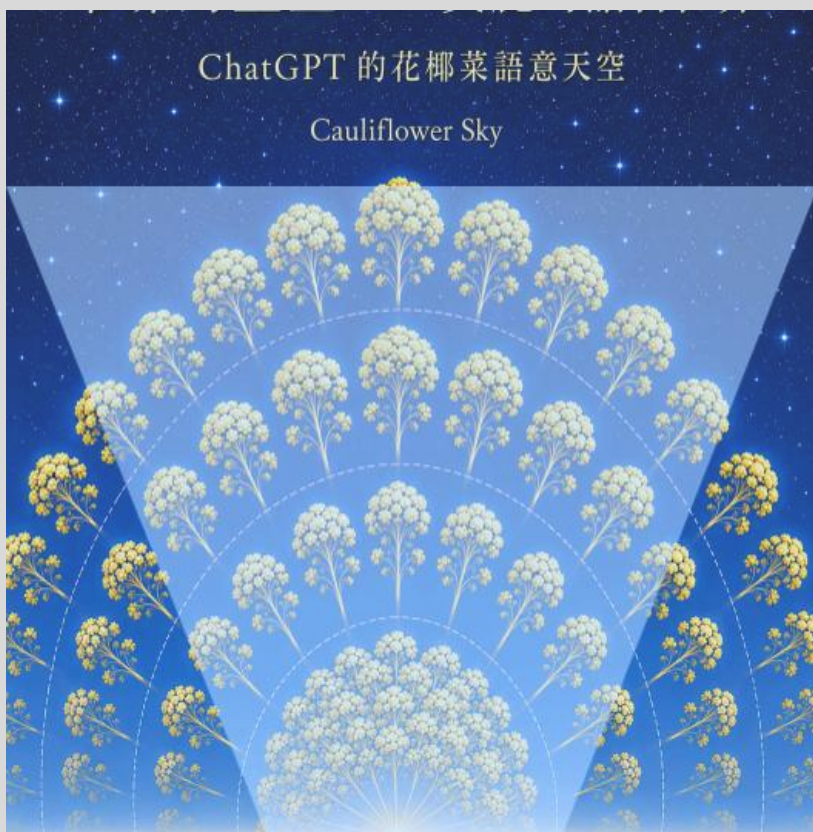
Current Active State



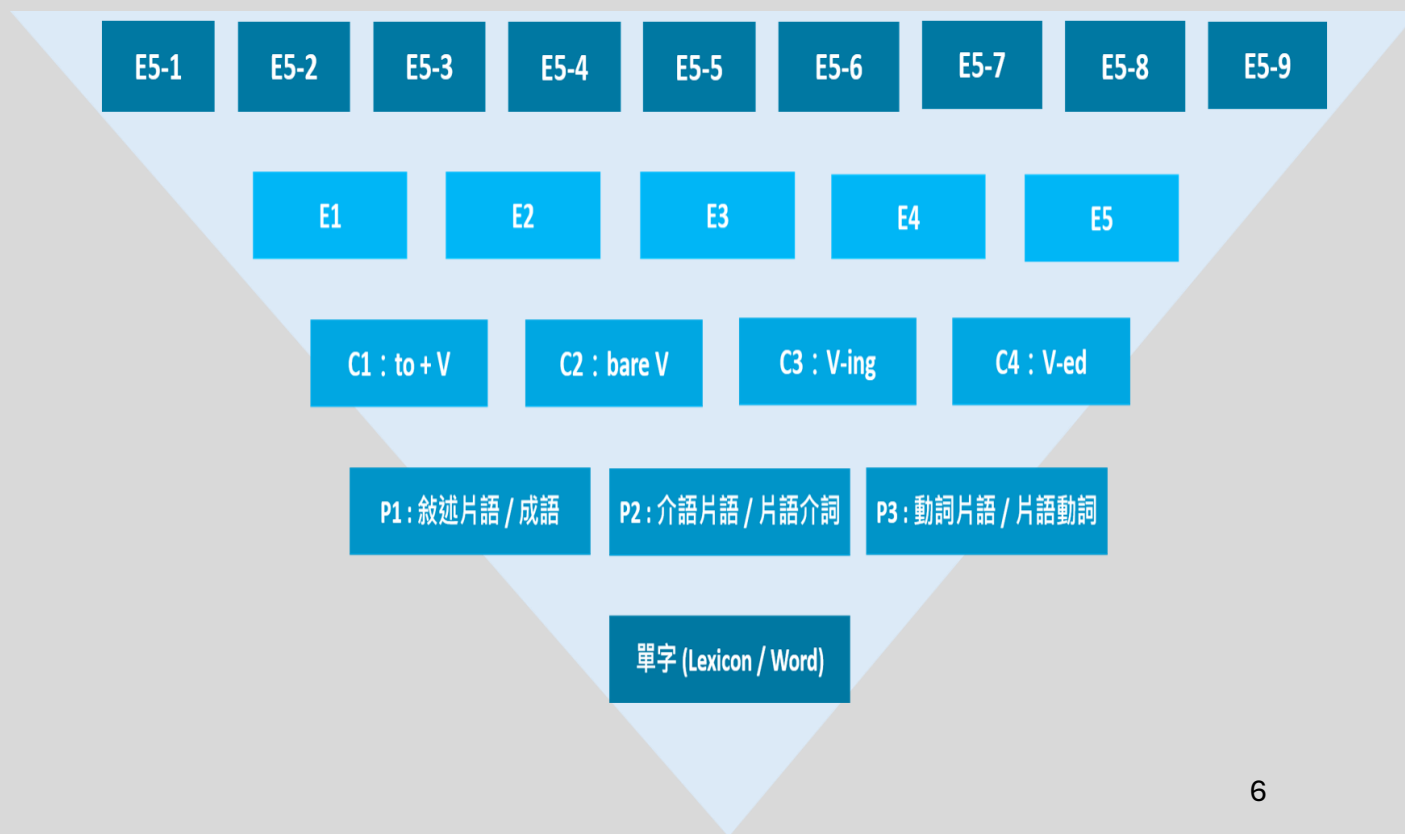
像 ChatGPT 一樣學英語：理解與生成英語

Learning English Like ChatGPT: Understanding and Generating English

璀璨的星空—美麗的語言世界
ChatGPT 的花椰菜語意天空



ROETL 語意天空 (ROETL Semantics Sky)
Revolution of English Teaching and Learning



ChatGPT 的花椰菜語意天空

生成



理解



語意地形

6. Fiona loves listening to her children sing songs (that) they learned at school. (110會考12)

listen(ing) to her children sing songs (that) they learned at school.

her children sing songs (that) they learned at school.

they learned at school.

U-Type
Descent-Ascent

主詞 (名詞)

受詞 (名詞) (名詞/形容詞)

補語

5E: 進化子句

4C: 蛻變片語

3P: 基本片語

單字

動詞

is / Look

形容詞

at the picture

副詞

milk

ROETL 語意天空

Look at the picture.

E5-1

E5-2

E5-3

E5-4

E5-5

E5-6

E5-7

E5-8

E5-9

E1

E2

E3

E4

E5

C1 : to + V

C2 : bare V

C3 : V-ing

C4 : V-ed

P1 : 敘述片語 / 成語

P2 : 介語片語 / 片語介詞

P3 : 動詞片語 / 片語動詞

語言地形
Linguistic Terrain

單字 (Lexicon / Word)

五顏六色英語句子結構分析法

The 5-Block, 6-Color Framework for English Sentence Analysis

句子組成 – Parts of Sentences

S-1	S	Vi	Birds fly. The sun rises.		
S-2	S	Vi	SC	She is a teacher. She is beautiful.	
S1	S	Vt	O	Mindy likes badminton.	
S2	S	Vt	O	OC	That made him <u>a great man</u> . The movie made her <u>happy</u> .
S3	S	Vt	IO	DO	He gave her a gift.

主詞
Subject, S
(名詞)

動詞
(In)Transitive
verb, Vt, Vi

受詞
Object, O
(名詞)

主・受詞補語
Subject Complement, SC
Object Complement, OC
(名詞・形容詞)

形容詞(adj)修飾語 Modifiers

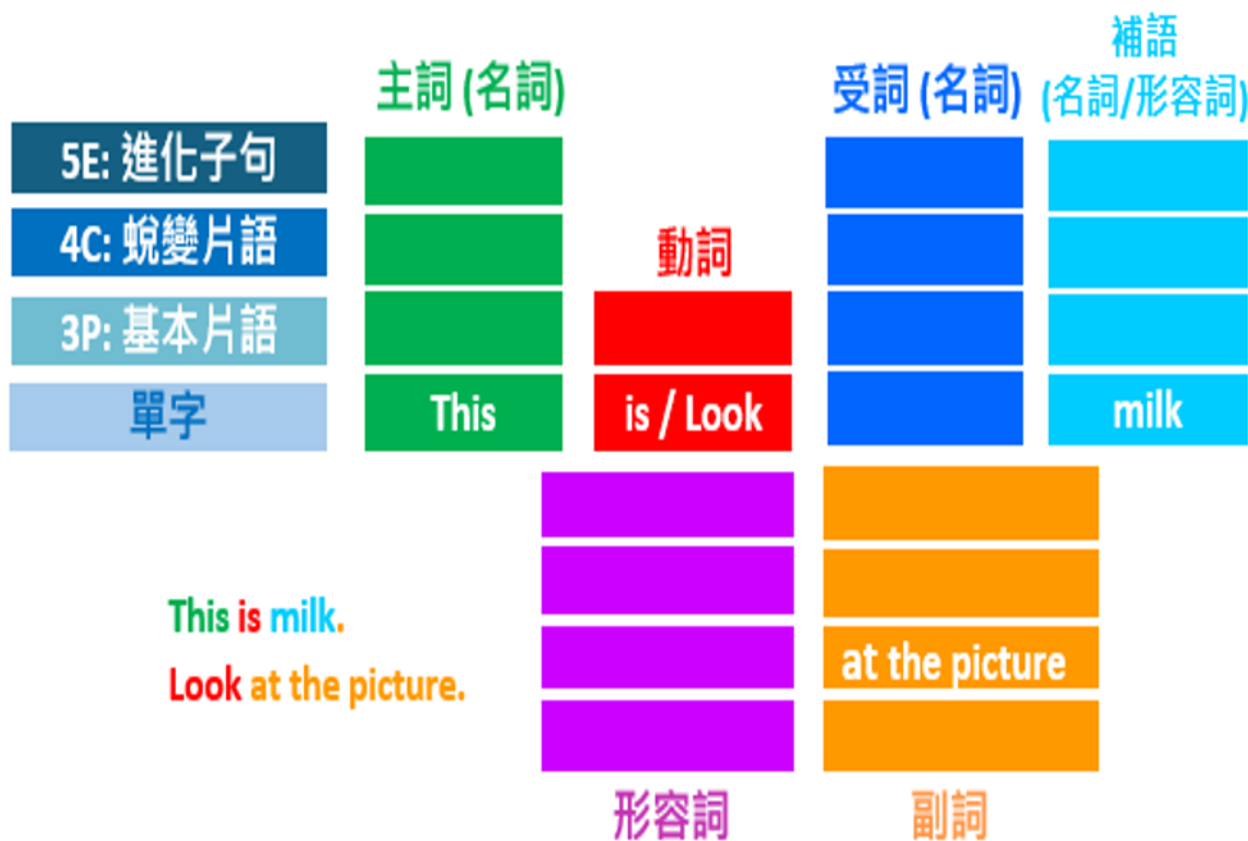
副詞(adv)修飾語 Modifiers

ROETL 語意天空

ROETL Semantic Sky

英語教與學的革新

ROETL — Revolution of English Teaching and Learning



動詞 (Red Block) : 動詞片語 / 片語動詞 -

(1) 12種動詞時態 (2) 8種被動語態 (3) 助動詞 (4) 四種語氣

單字 : (1) Have 動詞 (2) Be 動詞 (3) 狀態動詞 - Stative Verbs

(4) 動作動詞 - Active Verbs

3P: 基礎片語- Base Phrases

P1: 敘述片語 (Descriptive Phrases) 及成語 (Idioms)

P2: 介系詞片語 (Prepositional Phrases) 及片語介詞 (Phrasal Preposition)

P3: 動詞片語 (Verb Phrases) 及片語動詞 (Phrasal Verb)

4C: 蛻變片語- Change into Phrases

C1: 蛻變1- to + V (不定詞)

C2: 蛻變2- Bare V (原形動詞, 不加 to 的不定詞)

C3: 蛻變3- V-ing (現在分詞 / 動名詞)

C4: 蛻變4- V-ed (過去分詞: 第二動詞蛻變為片語或子句中)

5E: 進化子句 - Evolution into Clauses

E1: 進化1- 由關係詞 (Relative Words) 引導子句 (名詞子句與形容詞子句)

E2: 進化2- 關係詞當主詞 (Relative Word as Subject)

E3: 進化3- 關係詞當受詞或補語 (Relative Words as Object / Complement)

E4: 進化4- 關係詞當介系詞的受詞

E5: 進化5- 子句連接 (Clause Connection) 與語篇結構, 含連接詞、標點

像 ChatGPT 一樣學英語：理解與生成英語

Learning English Like ChatGPT: Understanding and Generating English

句子是如何長大的（How a Sentence Grows）：蛻變與進化

蛻變 Change

S1: Chameleons have an ability. 變色龍有一種能力。

S1: Chameleons change color. 變色龍會變色。

變色：變成紫色
變性：變成形容詞片語

C1：動詞蛻變成 to+V：

C1

S1: Chameleons have an ability to change color.

像 ChatGPT 一樣學英語：理解與生成英語

Learning English Like ChatGPT: Understanding and Generating English

句子是如何長大的（How a Sentence Grows）：蛻變與進化

進化 Evolution

S-2: Chameleons are animals. 變色龍是動物。

S1: Animals change color. 動物會變色。

變色：變成紫色
變性：變成形容詞子句

進化 E2: 關係代名詞當主詞

S-2 (S1): Chameleons are animals that change color.

E2

像 ChatGPT 一樣學英語：理解與生成英語

Learning English Like ChatGPT: Understanding and Generating English

U-Type 下降—上升 (U-Type Descent-Ascent)：理解與生成

She watches TV after studying at night.

after studying at night

studying at night

study at night

at night



P1: 敘述片語及成語

P1-1: 敘述片語(Descriptive Phrases) : 不含介詞、動詞

- I can listen to their songs **again and again**. (康軒113上P55)
- You've **been playing** computer games **all evening**. (113會考21)

P1-2: 成語 (Idioms)

- He always **steals others' thunder** while chatting. (114會考23)
- Hearing that **made his heart sing**. (114會考42)

P2: 介系詞片語及片語介系詞

P2-1 : 介系詞片語 (Prepositional Phrases)

- A plane is flying **over the houses**. (114會考1)
- Dinner will be ready **in ten minutes**. (114會考5)

P2-2 : 片語介系詞 (Phrasal Preposition)

- I gave it up **because of** heavy schoolwork. (112會考20)

P3 : 動詞片語與片語動詞

P3-1 : 動詞片語 (Verb Phrases / Chunks)

- Bob was very quiet at the meeting. He didn't **say a word**. (114模1-7)

P3-2 : 片語動詞 (Phrasal Verbs)

- He **was kicked off** the soccer team. (112會考10)
- She **turned out** to be the dancing queen at the party last night. (115模4-13)

C1: to + V (可、想、要、會去做)

- He likes **to play basketball**. To see is to believe.
- I saw her **play badminton**.
- Chameleons have an ability **to change color**.
- That is a hard choice **to make**. (111會考6)
- Build is going to build a new website **to sell guavas**. (115模4-29)
- Alison doesn't like **to be told what to do**. (109會考11)

C2 : Bare V (主動詞與次動詞，幾乎同時發生而形成一個動作)

- Cindy enjoys listening to her dad **read stories to her**. (114會考4)
- He made her **cry**.
- I saw her **play badminton**.

C3: V-ing (進行過程、連續狀態，或經驗敘述)

- **Hearing that** made his heart sing. (114會考42)
- Susan likes **collecting stamps**. (115模4-3)
- Fred practices **speaking English** with a foreigner. (115模4-12)
- He likes **playing basketball**.
- I saw her **playing badminton**. Seeing is believing.

C4: V-ed (次動詞簡化成過去分詞，存在於子句中)

- The book **written by the teacher** is very popular.
- The boy **hurt in the accident** is my classmates.
- He slept with the lights **turned on**.
- I had my hair **cut** yesterday.
- I saw the old trees **blown down** by the wind.

5E : 進化子句 (Change into Clauses)



<https://reedjoe.com> Reed Chang since 2020/12/10

E1 : 關係詞 (Relative Words) 引導名詞子句 / 形容詞子句

名詞子句

- Nobody knows **why he decided to leave**. (113會考4)
- Jill is unhappy **that the park is closed for the parade**. (that子句為unhappy 的語意補語/110會考3)
- Have you decided **how you will celebrate your 30th birthday**? (109會考10)

形容詞子句

- I remember the day **when I first met her**.
- That is the reason **why I left my job**.

E2 : 關係詞當主詞 (Relative as Subject)

- Students **who want to go on the school trip** should ask their parents first. (113會考12)
- The police haven't found the little girl **who was taken away at a supermarket**. (111會考17)
- Chameleons are animals **that change color**.

E3 : 關係詞當受詞或補語 (Object / Complement)

- Duncan spent all his money trying to save the bookstore **(that) his mom left him**. (110會考12)
- Fiona loves listening to her children sing songs **(that) they learned** at school. (110會考11)

E4 : 介系詞 + 關係代名詞 (Preposition + Relative Pronoun)

- This is the house **in which I live**.
- The person **to whom she spoke** is my teacher.

E5 : 子句連接 (Clause Connection) 與語篇結構 · 包含連接詞、標點

E5-1 同位 (Apposition)

- The fact **that he is honest is important**.

E5-2 對等連接 (Coordination) : FANBOYS

- David **looked** out of the balcony window **and saw** a woman **get** in his car **and drive** away. (111會考16)
- Mr. Smith wanted a pet, **so** he went to a pet shop. (114模2-39)

E5-3 倒裝 (Inversion)

- John doesn't know the answer, and **neither does** Joe. (翰林九-114下L2)

E5-4 成對連接 (Correlative Conjunctions)

- I can focus **neither** in the morning, **nor** at night. (翰林九-114下L2)

E5-5 附屬 (Subordination)

- Mozart **wrote** his first music **when** he **was** only six years old. (109會考9)

E5-6 連接副詞 (Conjunctive Adverbs)

- **Finally**, the spirit becomes a child. (115模3-42)

E5-7 虛主詞 (Dummy Subject / Extraposition)

- **It** is hard for trees **to grow** along this beach. (114會考9)
- **It's** great **that** we can buy train tickets over the phone. (109會考8)

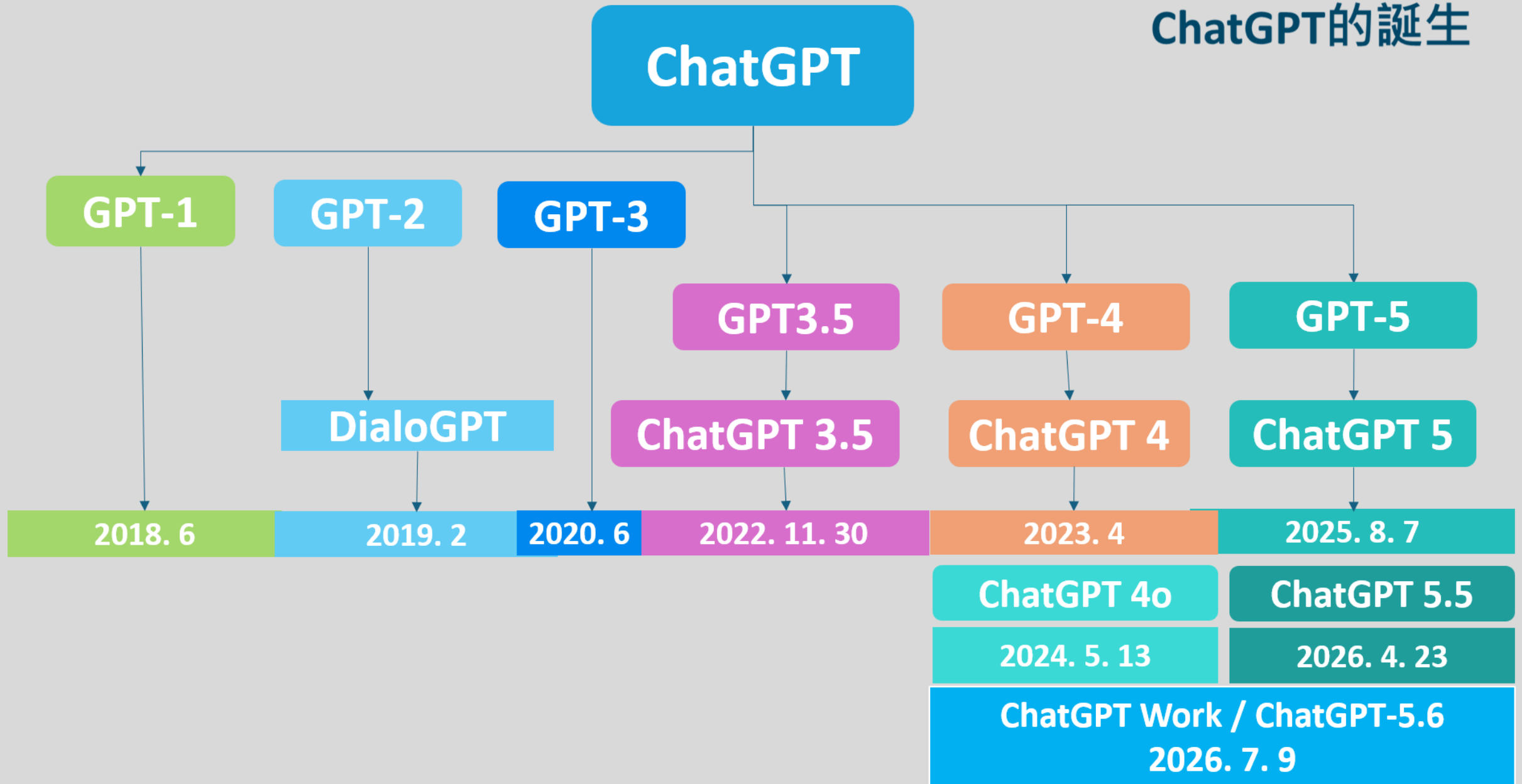
E5-8 虛受詞 (Dummy Object)

- I find **it** hard **to study** English.

E5-9 標點 (以 6. 補充說明為例)

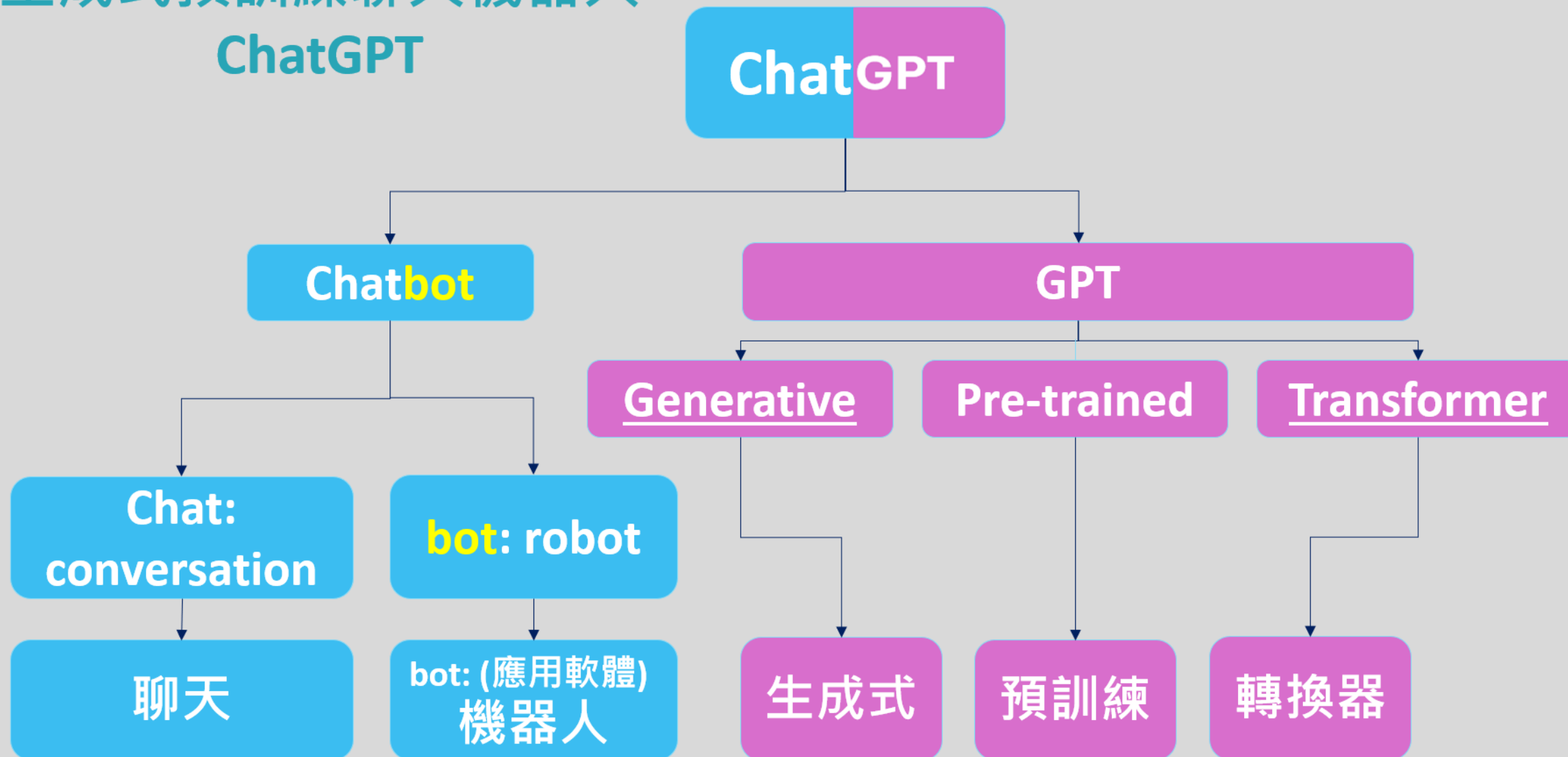
- Even a small act, **like saying something nice**, can make their day. (114模2-13)

ChatGPT的誕生



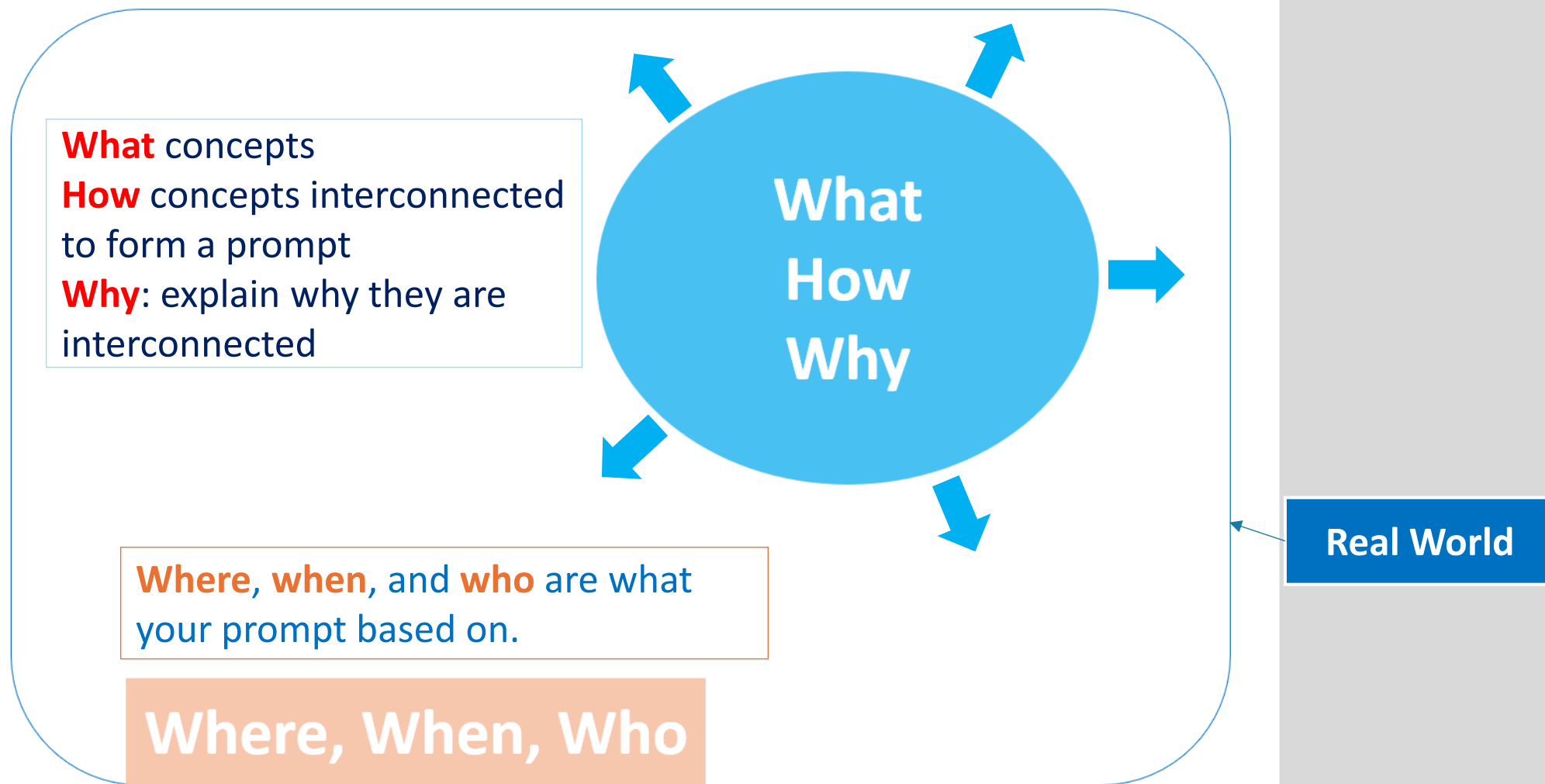
基於GPT的 生成式預訓練聊天機器人 ChatGPT

ChatGPT的誕生

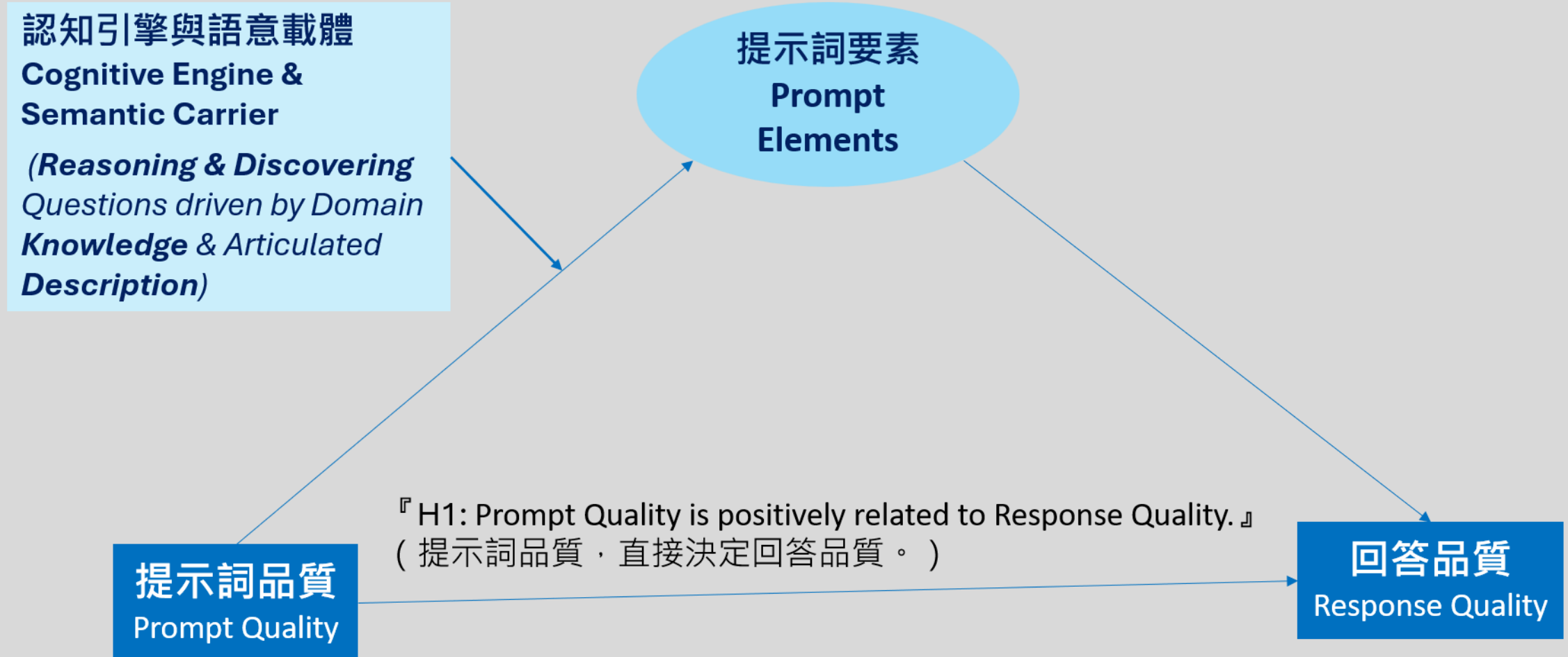


提示詞要素

Prompt Elements



提示架構 Prompting Architecture



品酩 • 鎮守之釀

Brew of the Defender

ChatGPT是這樣翻譯的

Elixir of Vigilance



黃仁勳的商業新敘事：他把晶片包裝成「Token 生產線」。他告訴企業主：「你買我的 Blackwell 或 Vera Rubin，不是在買算力，而是在買一台每秒能幫你產出幾百萬個『高價值數位資產（Tokens）』的超級印刷機。產出速度越快（Efficiency），你的服務成本就越低，利潤就越高。」

- 黃仁勳主題演講全程直播！

NVIDIA CEO Jensen Huang's Keynote-揭曉驅動新一代AI的突破性技術進展，2026.6.1

- AI時代不可或缺的三大能力，黃仁勳分別點出「判斷力(judgement)、創造力(creativity)、以及說故事能力(storytelling)」2026.5.27

如企業拿AI當裁員藉口 黃仁勳:這樣的CEO不負責 2026.5.27

Thank You

