國立清華大學 臺灣語言研究與教學研究所

106 學年第一學期 語言運作理論專題 課程大綱

● 課程簡述

本課程旨在讓學生探索語言運作的歷程，包含詞彙意義的提取、歧義的排除、推論等。課程中將介紹語言運作理論的模型，並輔以事件相關腦電位的實證研究，培養學生利用此工具研究語言細部運作歷程的能力。

● 課程說明

本學期的課程分為兩大部分：一部分是介紹與語言運作相關的兩個腦波成分 N400 和 P600；另一部分是以不同向度切入探討語言運作的歷程，此部分包含詞彙書寫型式的運作、語句聽覺理解的運作、語意的促發作用、語意理解的運作、語言行為辨認的運作、注意力的缺失、語法的運作等七個主題，其中語法的運作為本學期探討的重點。這七個主題需要有語言學背景才能順暢地參與討論，因此有興趣修習本課程的同學，需要先修過本所的課程語言學通論(一)和(二)。

本學期這門課以事件相關腦電位 (event-related potentials)為研究工具，建議有興趣修習本課程的同學，暑假先參加竹師教育學院 8 月份的腦電波工作坊，課程網址為：https://goo.gl/0DvIWk，以備妥事件相關腦電位的基礎知識。

● 指定用書

Manning, C. D., Schütze, H. (1999). Foundations of statistical natural language processing. Cambridge, MA: MIT Press. ISBN: 0262133601.

● 每週上課前必須讀完的文章

(課程中將於該週上課時進行隨堂測驗，以檢視閱讀成效)

Part I.

(1) Interpretation of N400

Week 1:

Kutas, M., Federmeier, K. D. (2011). Thirty Years and Counting: Finding Meaning in the N400 Component of the Event-Related Brain Potential (ERP). Annual Review of Psychology, 62: 621-648.

Week 2:

Brown, C., Hagoort, P. (1993). The processing nature of the N400 – evidence from masked priming. Journal of Cognitive Neuroscience, 5 (1), 34-44.

Week 3:

Lau, E. F., Phillips, C., Poeppel, D. (2008). A cortical network for semantics: (de)constructing the N400. Nature Reviews Neuroscience, 9 (12): 920-933.

Week 4:

van Berkum, J. J. A., Hagoort, P., Brown, C. M. (1998). Semantic integration in sentences and discourse: Evidence from the N400. Journal of Cognitive Neuroscience, 11 (6), 657-671.

Week 5:

Fjaellingsdal, T. G., Ruigendijk, E., Scherbaum, S. (2016). The N400 effect during speaker-switch-towards a conversational approach of measuring neural correlates of languages. Frontiers in Psychology, 7, 1854.

(2) Interpretation of P600

Week 6:

Kaan, E., Harris, A., Gibson, E. (2000). The P600 as an index of syntactic integration difficulty. Language and Cognitive Processes, 15 (2): 159-201.

Part II.

(1) Processing of Comprehension

Week 7:

Kutas, M., Federmeier, K. D. (2000). Electrophysiology reveals semantic memory use in language comprehension. Trends in Cognitive Sciences, 4 (12): 463-470.

(2) Auditory Sentence Processing

Week 8:

Friederici, A. D. (2002). Towards a neural basis of auditory sentence processing. Trends in Cognitive Sciences, 6 (2): 78-84.

(3) Semantic Priming

Week 9:

Holcomb, P. J. (1993). Semantic priming and stimulus degradation – implications for the role of the N400 in language processing. Psychophysiology, 30 (1), 47-61.

(4) Processing of printed words

Week 10:

Bentin, S., Mouchetant-Rostaing, Y., Giard, M. H. (1999). ERP manifestations of processing printed words at different psycholinguistic levels: Time course and scalp distribution. Journal of Cognitive Neuroscience, 11 (3), 235-260.

(5) Speech Act Recognition

Week 11:

Gisladottir, R. S., Chwilla, D. J., Levinson, S. C. (2015). Conversation Electrified: ERP Correlates of Speech Act Recognition in Underspecified Utterances. Plos One, 10 (3), e0120068.

(6) Attention deficits

Week 12:

Perry, R. J., Hodges, J. R. (1999). Attention and executive deficits in Alzheimer's disease - A critical review. Brain, 122 (3): 383-404.

Part III.

Syntactically Based Sentence Processing

Week 13:

Neville, H., Nicol, J. L., Barss, A. (1991). Syntactically based sentence processing classes – evidence from event-related brain potentials. Journal of Cognitive Neuroscience, 3 (2), 151-165.

Week 14:

Kuperberg, G. R. (2006). Neural mechanisms of language comprehension: Challenges to syntax. Brain Research, 1146, SI: 23-49.

Week 15:

Patel, A. D., Gibson, E., Ratner, J. (1998). Processing syntactic relations in language and music: An event-related potential study. Journal of Cognitive Neuroscience, 10 (6), 717-733.

Week 16:

Hahne, A., Friederici, A. D. (1999). Electrophysiological evidence for two steps in syntactic analysis: Early automatic and late controlled processes. Journal of Cognitive Neuroscience, 11 (2), 194-205.

Week 17:

Feiederici, A. D. (1995). The time-course of syntactic activation during language processing – a model-based on neuropsychological and neurophysiological data. Brain and Language, 50 (3), 259-281.

● 教學方式

每週課程的進行分為三部分：

第一部分由授課教師介紹該週主題，

第二部分由教師與修課 (含旁聽) 同學共同討論此主題所延伸的問題，

第三部分由同學回應本週主題與本週課前閱讀的文章相應之處，

最後由授課教師做總結。

● 教學進度

Weekly topics:

1. Introduction
2. Collocations
3. Concordance
4. Probability theory (1)
5. Probability theory (2)
6. Information theory (1)
7. Information theory (2)
8. Parts of Speech

9. Phrase Structures
10. Review
11. Inferences
12. Word disambiguation
13. Lexical acquisition
14. Markov models
15. Parsing (1)
16. Parsing (2)
17. Clustering
18. Review

● 成績考核

* 每週課前閱讀研究文獻一篇 (30%)
* 參與討論 (20%)
* 期末報告 (完成一個以 ERP 為研究工具探索某語言運作主題之研究) (50%)