行政院國家科學委員會專題研究計畫 成果報告

2006 語言學卓越營：意義與語法
研究成果報告(精簡版)

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計 畫 主 持 人：蘇以文
共 同 主 持 人：賴惠玲、黃居仁、安可思、張顯達、江敏華
計畫參與人員：碩士班研究生-兼任助理：蕭季樺、賴舒伶、陳郁彬

處 理 方 式 ：本計畫可公開查詢

中 華 民 國 96 年 01 月 23 日

第三屆語言學卓越營　心得報告

台灣大學語言所　蘇以文*

邁向國際，推動國內語言學研究與國際學術社群接軌，將國內的語言學研究推向國際舞台，正是 2006 年卓越營的主要目的。近十年來，意義與語法在語言學相關領域的研究，顯現出其角色之重要性，從詞彙、句構到語法的建立，語意詮釋及語境的貢獻均呈現多樣豐富的面貌。

一. 計劃源起

語言學卓越營為國科會協助國內語言學門的學術活動之一，每兩年舉辦一次，目的在培養語言學人才，蓬勃國內語言學界的發展。2002 年卓越營以南島語言為主題，成功地讓國內外南島語言學者齊聚一堂，共同為語言學的學者、學生灌注了多面向且整合完善的知識。2004 年以「語料庫與計算語言學」為主題，讓國內語言學相關研究的學者、學生感受到科技領域知識的震撼，提升了參與者的科學計量層次，更促進國內從事語料庫與計算語言學學者的國際學術合作。

2006 年卓越營由台大語言所主辦，結合台灣語言學會資源協辦。由本人及台灣語言學會理事長暨中研院語言所黃居仁教授、副理事長暨政大英語系賴惠玲教授共同規劃，並由學會祕書長暨中研院江敏華教授、台大語言所張顯達教授、台大語言所安可思教授協助完成。內容規劃以「意義與語法」(Meaning and Grammar)為主題，舉辦一系列的研習活動，對象設定為國內語言學相關領域的學者、學生。邀請的講者結合主辦單位的想法，往三個方向努力，包含語言學學會代表、期刊主編、以及具學術前瞻性的研究機構主持人。

美國語言學學會(LSA)是全球最重要也最有影響力的語言學組織，本卓越營系列活動之一就是邀請現任會長Sally McConnell-Ginet來台就其專長的語境、語意的互動與語法做主題演講，以增進台灣語言學學會與美國語言學學會的交流，期盼提升台灣語言學的研究國際視野。其次，認知科學是興起於 1970 年代末期的一個跨領域之新知識發展，此學門可說是集哲學、心理學、人類學、語言學、人工智慧以及神經科學之大成，利用這

*台大語言所蕭季樺同學擔任此計劃助理，全程參與本活動，多所協助，在此特別致謝。

些學門領域之研究方法及理論基礎，對於人類之知識系統作一實證之探索。以語言學為例，語言學家長期以來以研究語言本身的現象為主，但近年來學者深深體會到語言研究，如果不兼及語言表達的社會、心理及文化因素，就難以把握語言行為的本質，語言學也就無法達到其應有的深度及廣度。Cognitive Linguistics這本期刊即在認知科學研究中享有盛名。本期刊的主編Adele E. Goldberg不但是此領域的主要知名學者，她的研究重點「構式語法」(Construction Grammar)更是語言學界相當重要的研究方向之一，探討語法及語意的互動。她的來訪不但會帶來「構式語法」的最新發展，亦可開拓國內學者的研究在國際重要期刊發表的契機。另外，WordNet語料庫為帶動科技及跨領域的整合研究之基礎架構，本次邀請的講者之一Christiane Fellbaum 正是美國長春藤名校 Princeton University WordNet計畫的負責人，也是Global WordNet Association的會長，藉著他的來訪，可望讓國內WordNet的研究與國際的學術潮流結合，躋身國際多語研究的行列。

上述三個方向是以三位頂尖的國際知名學者來訪為主軸，除了希望開拓國內研究之國際視野之外，更希望能融入台灣研究的創新。國內有多位學者以「構式語法」[1]的相關理論探討台灣的閩南語、客語及國語的各式結構，對檢視「構式語法」的普遍性及周延性有極大的貢獻，不但為台灣的語言之語法、語意注入新的研究面貌，發掘研究議題，更能挑戰、檢視並適度修正以西方語言出發的語法理論之普遍性，極具學術價值。因此，此系列活動的第四場研習，即邀請國內相關研究領域的學者連金發教授、畢永峨教授及賴惠玲教授擔任講座。三位學者研究經驗豐富，成果豐碩，以「構式語法」架構剖析閩、客、國語，更是見解獨到，除了能讓參與的學者、學生從本土語言分析的角度來認識「構式語法」之外，更希望能激盪出他們自己的研究想法，發掘更多有趣且值得探討的研究課題。

前述以「拓展國際視野」及「關懷本土語言」雙軌並進的活動設計，念茲在茲的是台灣語言學學術社群的延續與傳承，在接受了一系列知名學者的知識洗禮後，最後一場活動即是希望驗收參與研習營之學員的學習成果。參加的學員利用上課後的學習成果勾勒出自己的研究議題計畫書，經由國內的學者專家審查及與學員間的互動與腦力激盪，希望發掘值得研究的議題，開發更多的研究之路。

[1] 這裡的「構式語法」是泛稱，包含所有與construction grammars相關的研究。其中，連金發教授討論的構式語法概念偏向Jackendoff的支派，畢永峨教授著重Östman的路線，賴惠玲教授則是偏向Goldberg的Construction Grammar.

綜言之，2006 年卓越營的主要目標為：

1. 訓練參與的學者、學生之語意語法及兩者互動的研究基礎。
2. 建立國內語意、語法研究的相關學者、學生與國際上知名學者之學術對話，促進國內與國際學者的交流。
3. 強化國內研究與國際學術社群之連接，並提昇國內研究之國際能見度。
4. 建立重要研究議題庫，以為國內年輕學者與學生日後研究之參考。

二. 活動摘要

根據上述 2006 卓越營目標，本次卓越營研究課程以五場講習課程串連而成：(1)詞彙網路，(2)語境對語意之影響，(3)構式語法：本土語言的分析，(4)構式語法理論最新發展，(5)學習成果驗收。五場活動分別在不同的時間舉行，全程參與五場講習課程的學員，可獲得結業證書一紙。本系列活動除講座授課外，另安排授課老師與學員互動，討論研究議題。詳細活動內容請見網址: http://corpus.ling.sinica.edu.tw/TSIL2006/home.htm 五場活動內容敘述如下：

<第一場>

講師：**Christiane Fellbaum**，任教於 Princeton University 心理學系，研究領域為詞彙意學、句法學以及計算機語言學。

時間：2006 年 05 月 19 日（星期五）9:30~16:20

地點：中央研究院

主題：詞彙網路—詞彙的意義與結構

講授內容：上午: “Semantic Relations: Design Features of WordNet”

下午: “Constructing WordNetPlus: Reflecting Human “Evocation of Synsest”，並與從事 WordNet 相關研究的師生交流研究心得。

相關聯結: http://wordnet.princeton.edu/

第一場講習於中央研究院舉行，主講者為 WordNet 計畫主持人 Christiane Fellbaum 教授，其內容首先針對 WordNet 之構想與架構做簡短介紹。其計畫目前已經將英文中大部分的動詞依詞意之間的對比與相似性，建構出一套有系統、階層性的語意網絡。進行中的部分包含名詞與形容詞的語意網絡。最後，講者提出心理學的實驗證據來支持 WordNet 網絡結構可以模擬語言知識在人類大腦中的組織。

<第二場>

講師：**Sally McConnell-Ginet**，任教於 Cornell University 語言學系，研究領域為句法學、語意學及社會語言學。

時間：2006 年 07 月 10 日（星期一）9:30~16:20

地點：福華文教會館

主題：語境與語意之互動 (Context-sensitivity in Semantics)

講授內容：上午: “Domain Restriction”

下午: “Comparison Classes”，並與參與之學員互動交流。

第二場講習於台北福華國際文教會館舉行，講者為 Cornell University 語言學教授 Sally McConnell-Ginet，其內容主要探討語意在不同情境中的轉變。以形容詞為例，通常形容詞被用來限定某個名詞的指涉，但是其意義需要放在語境中做調節。例如，同樣一個形容詞 tall 在指涉高樓大廈、孩童或樹時，聽話者對其意義的解讀必然需要不同的高度標準。此外，講者提出一套邏輯形式模型，試圖解釋名詞組指涉的不定性與主題性之間的關聯。

<第三場>

講師： **連金發教授**，任職於清華大學語言所，研究領域為語意學、構詞學、方言學、歷史語言學

畢永峨教授，任職於台灣師範大學英語系，研究領域為認知語言學、語料庫語言學、語用學

賴惠玲教授，任職於政治大學英語系，研究領域為認知語意學、詞彙語意學、隱喻與轉喻

時間：2006 年 07 月 11 日（星期二）9:00~17:00

地點：輔仁大學

主題：構式語法(Construction Grammar)：本土語言之分析

講授內容：上午: 賴惠玲教授 “Construction Grammar: Historical and Intellectual Background”

"Argument Realization in Constructions: Cases from English and Hakka"

下午: 連金發教授 “Construction after Construction: Jackendoffian Approach and Building Constructions in Taiwanese Southern Min”

畢永峨教授 “Constructions in Language Use: Cases from English and Mandarin Chinese”

第三場課程「構式語法—本土語言之分析」於 2006 年 7 月 11 日在輔仁大學百鍊展演中心舉行。本場活動包含四場課程，上午課程由政治大學賴惠玲教授負責講授，先介紹構式語法發展之脈絡，主要涵蓋構式語法理論產生之時代背景、認知面向、跨語言應用之潛力以及以構式語法觀點分析語言之優點等。隨後，賴老師進入主題，探討論元角色在構式(construction)之體現，並且討論英語的內隱客體結構(implicit theme construction)之使用動機、內具性附加狀語(obligatory adjunct)之語用功能以及客語之 LAU 字句、「緊 X 緊 Y」結構、「NP1 V NP2 V 毋 X」等結構之句法與語意特徵。下午第一場課程由清華大學連金發教授講授，首先介紹 Jackendoff 等學者對於構式之看法與分析，接著呈現構式語法在台灣閩南語的應用，包括存在句、感受動詞句式、中間結構、以及其他特例格式。下午第二場課程由台灣師範大學畢永峨教授從英語與漢語的例子，探討語構與語用之關係，說明構式語法除了在句法、語意介面之運用外，亦可應用於互動語境以及語言改變等面向，個案研究呈現了英語的「I think」結構以及漢語的「V 一個 N」結構、「有一點 X」構式以及「是」、「好了」等語詞之語法化現象。四場課程結束後有一段綜合討論時間，開放讓參與的學員與三位老師互動，提出想法與問題與老師以及現場其他學員討論交流。

<第四場>

講師：**Adele E. Goldberg**，任教於 Princeton University，專長為句法學、語意學、心理語言學及認知語言學。

時間：2006 年 8 月 30 號（星期三）9:00~17:00

地點：福華文教會館

主題：構式語法 (Construction Grammar)之理論與發展

講授內容：上午: “Generalization”

下午 “Learning”，並與學者及學員做深度訪談

相關聯結: http://www.constructiongrammar.org/

構式語法近年來受到普遍關注，是因為語言學家漸漸意識到語言中有許多形式和意義的對應，無法用傳統的衍生理論來解釋，稱為「語構」。上午場的演講著重探討的，是語構所代表的認知意義和語用意義。語構的研究來自於傳統語言學的一些不足之處。以往認為論元結構和語法結構有對應性，也就是施事者和受事者通常會對應到語法裡的主詞和受詞。雖然「主詞」和「受詞」的概念因語言的不同而有差異，但是在跨語言中，施事者和受事者在語言的表現上確實傾向於出現在「顯著」或「重要」的語法位置上。語言學家因此提出許多事件和語法對應的學說，並以此作為普遍語法(Universal Grammar)的證據。事實上，這個現象可以用心理學研究來解釋：施事者和受事者在感知的過程中獲得比較多的關注。

然而，在某些句構裡，論元的數目和事件角色的數目並無一致的對應，其關鍵就在於語用因素的加入，特別是 Gricean Maxims 裡的「相關原則」。在情境中最相關的論元，才會表現在語法層次上。有時為了一些語用的因素，例如強調動作本身的習慣性，或是迴避某些不雅的詞語，因此不甚相關的論元，或是情境中對話者可以自行補缺的角色，會在語法上省略，形成了一些傳統理論無法解釋的句構，例如所謂 Implicit Object Construction。每一個語構，都會歸納出一個普遍的結構，也有一些語意上的限制，但是這些限制不見得反應普遍語法的存在，或許用人類認知的共同性，以及對話互動的共同規則，甚至用語構本身的語意和語用特性來解釋，會更為合宜。

下午場的課程則著重在兒童語言習得的實驗研究，試探語構的本質和其形成的過程，並探討心理學實驗如何幫助我們發掘語構的學習過程。語言使用者是如何學習這些語構，又為何需要這些語構？在實驗設計時，所考慮到的一個根本的問題就是：若沒有明確的「教育」過程，語言使用者是不是能靠著接觸一些實例，進而建構出一個歸納式的語構結構。以兒童作為實驗對象，結果發現，語構的學習過程相當的迅速，即使是兒童所講的是英語中不存在的虛擬語構，兒童也可以很快的歸納出所給予的實例之間的類似性，進而將這個語構應用在新的情境之下。此外，若是在不同的情境中，大量使用同一個虛構動詞，兒童使用這個虛擬句構的正確度越高。比照實驗的結果和母親對兒童的實際語料統計，發現母親所說的話中，同一個語構所使用的動詞確實也有不平均分配的狀況出現，意即一個特定的句構中，往往有一個動詞所佔的出現頻率不尋常的高出其他動詞。實驗的設計模擬了句構發展的過程，也證明了句構的存在確實可以用認知或使用的證據證明之。最後必須關注的問題就是：語言的使用者為何要學習這些語構呢？或許實際日常對話中大量的實例刺激使用者歸納出其普遍的語構，除此之外，有一個因素也是可能的答案：學習語構可以幫助我們快速的了解整個句子的意義。換言之，語構的產生可能是因應對話的需要。

構式語法除了援用認知語言學的理論之外，近來更強調語用和對話的因素，希望在解釋人類學習和理解語言的過程中，更貼近真實的樣貌。

〈第五場〉

講師: **黃居仁教授**，任職於中研院語言所，研究領域為句法學、語意學、計算機語言學
安可思教授，任職於台大語言所，研究領域為語意學、心理語言學
張顯達教授，任職於台大語言所，研究領域為心理學、兒童語言學
江敏華教授，任職於中研院語言所，研究領域為方語言言學、歷史語言學
賴惠玲教授，任職於政治大學英語系，研究領域為認知語意學、詞彙語意學、隱喻與轉喻
蘇以文教授，任職於台大語言所，研究領域為句法學、語用學、認知語言學

時間: 2006 年 10 月 14 號（星期六）8:30~17:00
地點: 中研院
主題: 學習成果驗收
講授內容:上午:學員發表研究議題計劃書
下午: 黃居仁教授 “WordNet 發展及運用”
安可思教授 “語料庫的發展”
張顯達教授 “語言習得”
江敏華教授 “語法化”: 以方語為例
賴惠玲教授 “語意研究”: 以方言為例
蘇以文教授 “語用學”

第五場的講習亦安排了全日的研習，為學員與講座教授們的互動，於中研院人文社會科學館舉行。此次研習活動的一大特點，即是請學員繳交研究提案，在第五場的講習中，由主辦單位挑選較優良的提案與其他學員分享，並且由幾位參與的教授們講評。此次參與活動的提案都相當別出心裁，可以見到許多研究開始跳脫傳統的領域分別，而走入跨領域的研究範圍。提案報告中包括了心理語言學和語料庫語言學的介面研究、語意和語用的介面研究、法律語言學、構詞與語意介面研究、語法和語意介面研究、語法和語料庫語言學介面研究、語法與語言教學的研究等新穎的研究走向。我們可以由此看出國內目前的研究趨勢，在在都呈現了國內語言學研究的活力，並且也能夠和國際間跨領域研究的流行趨勢相接軌。此外，這些新的研究也反映出：語言和人類生活是息息相關的，並不像早期的語言學研究一樣，刻意將語言和人類的活動及認知能力做出切割。新的研究趨勢正是將人類心智、社會活動和人類語言行為的互動納入一個整體的處理，並尋求合理的解釋。

三. 綜合回顧

回顧本次卓越營，有 Christiane Fellbaum 教授講授 WordNet 之構想、架構及應用發展；有 Sally McConnell-Ginet 教授探討語意在不同情境中的轉變；有三位台灣的語言學者賴惠玲教授、連金發教授以及畢永峨教授介紹「構式語法」理論以及如何應用於台灣本土語言學的研究；及還有「構式語法」創始者之一 Adele Goldberg 教授，討論了整個理論的架構以及相關的心理實驗。最後，學員繳交研究提案並由參與的教授們擇優數篇發表並講評，給學員與教授的互動機會，這些主題不同的研習活動反應出本卓越營的特點。

學員們的提案都相當別出心裁，可以見到許多研究開始跳脫傳統的領域分別，而走入跨領域的研究範圍。台灣語言學會更提供獎學金鼓勵特優研究提案，獎勵分別由下列三位表現特優的學員獲得：中研院語言所的陳永祥、台灣大學語言所的鍾曉芳、以及政治大學語言所的強舒媺。其他的許多研究提案，都在傳統領域的介面之間找尋發展的方向，顯現出台灣新一代的語言學生不僅能夠和國際的研究趨勢相接軌，更具有學術創作的活力。

共同策劃本次卓越營內容的教授們也都對未來語言學研究發展分別提出其看法。黃居仁教授強調 multiface 的重要性，提醒學員們在紮實學好基礎專長學科之餘，務必要多加涉獵其它相關知識。目前的國際潮流皆是跨領域、跨語言的合作模式，做為一個語言學家，我們的研究應該要與現代生活有關，而非獨立於社會之外，也就是說現在整個社會或是語言學家要面對的問題就是，這是一個多語的社會。既然語言一直就是一個複雜的行為，因此，更需要多方合作方能達到更高的理想成果。

許多學員的提案也涉及了語料庫的研究。對此，安可思教授肯定 corpus-based linguistics 的研究走向。安可思教授認為，不論從哪一個角度分析語言現象，語料庫的分析始終很重要，因為語料庫提供了大量而且多人共享的語言使用資料，對語言研究是相當可靠的根據。即使是心理語言學的研究，語料庫也提供了質量俱佳的語料來源。

語言習得的研究在台灣也相當蓬勃，張顯達老師提到：「如果我們去展望未來，大概語言習得研究裡比較重要的議題是怎樣去思考 production 和 comprehension 之間的關係。」設想一個兩歲多的小孩，他所說的話跟理解之間，是否存在等號的關係呢？在 80 年代 Lise Menn 提出 “Two-lexicon hypothesis”，認為我們在說話及發音的時候有一個辭彙的系統做發音的工作，理解及聽辨的時候有另外一個系統。如果回到語構的概念，就是小孩如何掌握人類的溝通意圖，然後透過意圖連接理解與說話。在未來十年內，這個方向可能會在語言習得的研究中佔很重要的一部份。

這幾年來方言研究也受到相當的矚目，卓越營的第三場研習課程即安排了本地語言的個案研究及討論。江敏華教授認為，卓越營舉辦的目的就是希望能激發新的議題。意義及

語法的研究，如果能結合歷史或語言類型的觀點，一定會帶來相當的啟發性。比如說，從事親屬語言的語法比較時，我們常常會發現一個功能詞或是語法結構在不同的親屬語言當中，會有不同的功能和意義。此時，若以構式語法來解釋，這些不同的語意可能是由功能詞和格式中的其他成分互動而產生的，語言研究的工作除了要能夠闡述某一個語言內部的現象，更應該要能夠解釋其親屬語言中類似的語法現象。如果從歷史語言學的觀點來看，親屬語言有一個歷史發展的過程：甲語言的現象可能是乙語言的前身，或是相反。同時關照這兩種不同的觀點，我們就可以從歷時的「語法化」和共時的「構式語法」中得到啟發，找出二者應該如何區隔或相容，進而整合成更具有解釋力的論述的方法。因此，意義和語法的研究，如果能夠結合歷史語言學、語言類型比較，甚至整合構式語法、語法化、及語料庫這些不同的解釋觀點，必定能激發出更多的議題和方向。

賴惠玲教授則談到目前方言研究的兩種主要觀點：一派是從形式(formalism)出發，而另一派則會強調方言的獨特性。前者看到的是親屬語言或方言之間的『共相』，所以會認為如果某種理論可以解釋漢語，那客語閩語中的類似現象應該也可以解釋。而後者看到的是親屬語言或方言的『殊相』。然而，平衡這兩種似乎極端的說法，我們應該充分利用不同的學理理論，用更紮實的基本功來處理語言，才能找出更精確的解釋，不但可以描述漢語與其親屬語言之間的語法關係，甚至可以進而反思這些理論的周延性和普遍性。

本人亦在本次卓越營的最後，重申大家的研究呈現了國內語言學活力，不只跨領域而且結合不同研究的界面，也就是說，研究句法外，要兼談句法與語意的介面研究，或者句法、語意跟語用的互動。我也與在場學員分享多年來的研究心得，即語用學在語言學研究中的重要性，無論是哲學家或是語言學家長久以來都有此共識。Wittgenstein 在 1964 的作品 *Philosophical Investigation* 中表示：「The meaning of a word is its use in the language。」而類似的概念 Fillmore 也曾經提過。語用學大師 Leech 的 *Pragmatics* 是一本相當經典的著作，書中詳述語用學在語言研究的定位。我也提醒年輕學者勿陷入「權威」之迷思，「只有勇於挑戰質問，你的問題才會得到解答，才能有新發現。」如果真理只有一個的話，那麼我們不管是從哪一個角度切入，我們希望看到的是那個真相，所以研究議題的創新也許不如方法及切入點的創新那麼值得期待。

四. 展望與期許

本次卓越營得以順利舉行，特別感謝國科會以及台灣語言學會的幫助，提供了國內語言學界年輕學子一個難得的學習機會。語言學研究正走向一個跨領域的趨勢，以不同次領域的介面為研究主流。這次卓越營的講師陣容正是這樣的呈現，整體課程極為多元，由詞庫、語法、語意、走向語用。參與的講師與議題皆與國際潮流接軌: Christiane Fellbaum

是國際知名的電腦語言學家，所開創的 WordNet 激發許多國家相繼建立屬於自己語言的語意網語料庫; Sally McConnell-Ginet 是現今美國語言學會會長，其研究指出未來語言學分析的重點，也就是「情境」對語意和語法研究的影響; Adele E. Goldberg 是構式語法的知名專家，著作等身，她 2006 年最近出版的新書 *Constructions at work: the nature of generalization in language* 中，更將句法、語意、語用及心理語言學等領域成功地結合。身為領導先驅的指標性人物，這些講師的研究精彩豐碩，未來的發展值得繼續關注。而事實上，參與本次卓越營的主持群教授們，早已投入這些議題的研究有相當的時日，顯示了台灣學界與國際脈動的緊密結合。

對學員而言，這次卓越營採取的新模式— 由五場研習營串連而成，豐富而有系統，從安排的場次及內容看來，脈絡清晰可見。許多學員反應，五場主題相連、長時間延續的研習營帶領他們主動且深入地學習。與前兩屆密集兩週式的課程相較之下，本次課程設計更有彈性，使學員有充分的時間回味咀嚼每位大師級講師的授課。另外，這些講師的風采也讓學員印象深刻，他們的智慧、親切、幽默為學員提供了良好的學習典範。

這次的卓越營為台灣的語言學研究注入了新的活水，同時也象徵著台灣語言學新一代活力研究的開始。我們期待這次活動所帶來的不僅僅是五場研習活動的知識饗宴，更期待這樣的系列活動可以啟發語言學研究的新觀點。我們希望學員在收獲充實之餘，更能培養長遠的視野：強化基礎訓練、廣觸多元知識、邁向創新的研究平台。國內語言學門的未來固然靠許多資深及中生代學者的累積，更重要的是新生後輩學子的努力。類似的活動，目的在於提供國內語言學界新的視角，在國際潮流中，注入本土的特色，尋求最具特色且又能引領風騷的切入點。語言學門如果能在這樣的思維及氛圍下蓬勃發展，可大，可長，可久。

課程講議

第一場　**Christiane Fellbaum**　　<詞彙網路—詞彙的意義與結構>

Lectures on Lexical Semantics

Christiane Fellbaum
Princeton University
Taiwan, May 2006

Types of relations

- paradigmatic relations: related terms are substitutable for each other (same POS)
- syntagmatic relations: related terms co-occur in a context (different POS)

ß
Semantic relations
Modeling the lexicon

A (critical) look at WordNet

Are relations real?

Traditional dictionary definitions reflect relations:

an X is a kind/type of (a) Y

an X is a part of (a) Y

X: not Y

etc.

Semantic Relations

- Lexicon: labeling of concepts
- Labeled concepts are salient
- Concepts differ in systematic ways: contrasts and similarities
- Consistent differences = relations

AI/KR

- KR must be economical!
- Humans "know" tens of thousands of concepts
- Knowledge encompasses lexical (word) knowledge and encyclopedic (world) knowledge

AI/KR

Minimal knowledge about concepts:

- X is a kind of Y
- X Ys/people Y X
- X is Y/has property Y

- These types of knowledge are encoded by nouns, verbs, and adjectives, respectively
- WordNet builders focused on these 3 major POS

Linguistic Assumptions

- Lexicon can be mapped as giant matrix
- Rows are sets of synonyms
- Columns are distinct senses of the same word form
- Matrix is sparsely populated

Psycholinguistic Evidence for Relations

- Word association norms (robust!)
- Co-occurrence patterns in text (esp. antonymy)
- Patterns of loss and sparing in aphasia

Focus on Verbs

- Approx. twice as polysemous as nouns
- Interesting class-based behavior
- Relate arguments

Starting WordNet

- Separate wordnets for each POS--a good idea?
- Psycholinguistic evidence is inconclusive
- --association norms show approx. 50% cross-category responses
- --some aphasias (but not all) affect one POS only

Relations

Semantic-conceptual: link entire synsets

Lexical: link single lexemes (esp. antonyms)

Morphological: link single lexemes across POS (run-runner, demonstrate-demonstration, demonstrative, demonstrable,...)

Choosing relations for WordNet

- Choice of encoded relations was guided by -
  --traditional dictionary definitions
  --experimental evidence (Chaffin & Fellbaum)
  --textual co-occurrence patterns like "x's and other y's"

"Manner" as a semantic feature

- Long believed to be a primitive (Wierzbicka, Jackendoff, Levin & Rappaport Hovav, Krifka, et al.)
- Believed to be part of LCS of many verbs
- Believed to affect syntax
- But: never analyzed or explicated!

Experimental evidence for "manner" relation (troponymy)

Four experiments:

(1) When presented with pairs of verbs that experimenters had selected as exemplifying troponyms and asked to formulate the relation, subjects overwhelmingly mentioned "manner/way of"

No further distinctions!

"Manner" in Talmy (1985)

- Claim: virtually all human languages encode motion verbs in one of two patterns:

English, Chinese,..conflate fact of motion and manner; express path in adjuncts (I ran/walked into the room)

Romance, Greek, Semitic,...conflate fact of motion with path; express manner in adjuncts (I entered the room running/walking)

These facts point to the salience of "motion"

(2) Subjects sorted verbs written on cards into pairs based on troponymy

(3) Subjects were given verbs and asked to respond with the first verb that comes to mind: overwhelming response were troponyms

(4) Analogy task: given pairs or verbs related in various ways, create new pairs. Best performance for troponymically related pairs.

But: troponymy is polysemous

Different kinds of semantic elaboration depending of semantic field/domain

Motion verbs elaborate features like
speed (walk-run)
means (truck, bike, train)
medium (fly, swim)

- Communication verbs elaborate features like

--intention (examine, confess, preach)

--medium (fax, e-mail, phone)

Type vs. Role nouns

- Types are stable, roles are dependent on context, indidividual, time
- WordNet(s) should not conflate types and roles but distinguish these two kinds of hyponymy relations!

Evidence for an additional relation

Proposal for an analogical relation in the verb lexicon

- Two distinct types of manner relations:

Manner and purpose/function

Type-role distinction among nouns

Pet, customer, husband, laundry, groceries,..

Current WordNet treatment:

(1) a husky is a kind of dog

(2) a husky is a kind of working dog

What's wrong?

(2) is defeasible, (1) is not:

*This husky is not a dog

This husky is not a working dog

Examples

(1) jog/swim/bike/run...are manners of moving

(2) jog/swim/bike/run..are manners of exercising

(3) lecturing is a manner of talking

(4) lecturing is a manner of teaching

(1) and (3) are necessarily true; (2) and (4) are not

Examples

Similarly, scrub, wipe,..are necessarily manners of touching/manipulating but not necessarily manners of cleaning:

She wiped/scrubbed the table but she didn't clean it

*She wiped/scrubbed the table but she didn't touch it

How to represent the distinction?

- One possibility: two superordinates: one type, one purpose
- Result (undesirable?): tangled hierarchy
- Better: distinguish relations and encode as such
- Result: parallel hierarchies

Just as one recognized huskies as dogs, but not necesssarily as pets, so one recognizes a running/walking/biking event as a moving event, but not necessarily as an exercising event

The "working dog/exercise" component is notionally dependent and does not provide an identity criterion

Characterizing Purpose Verbs

- Cruse cites "expectation" for type/role distinction among nouns
- But: how is expectation characterized? How quantified?

Context is important in building expectation:

My car is in the repair shop, so I biked to work (not exercise)

The boat capsized and they swam to the shore

- Hypernyms with defeasible troponyms (clean, treat, protect, exercise,..) can be called "purpose" or "function" verbs, since they always encode a purpose or goal.

(They are telic!)

Characterizing Purpose Verbs

For some verbs, purpose component is more salient (jog)

Purpose component may be strong in some cultures, not others (are orchids house plants in Brazil?)

Purpose and COS verbs

- Purpose verbs can for middles:

The lawn mower controls easily
Naive customers cheat easily
Old paintings don't protect easily

Difference:
Middles "affect"; COS verbs "change"

Open questions:

- How many purpose verbs are there?
- Where/how are they distributed throughout the lexicon?

Purpose verbs

Select for "telic" adverbs/adverbials:

John exercised with good results
Peter cheated successfully
Mary treated the patient efficaceously

Finding purpose verbs

Look for text patterns in corpora:
befriending, listening *and other ways of* helping
Walking *and other* exercise
..and then spray*ing* withWD-40 *is not* clean*ing*

Purpose verbs and adverbs

- Polysemous adverbs are disambiguated:

- John ran quickly (move? run for President?)
- John ran unsuccessfully

Network is (too) sparsely connected

- Why not encode/find links among ALL synsets?

- Recent work with Boyd-Graber, Osherson, Schapire (2006)

Overcome WN's shortcoming:

- overcome sparseness of connections
- both intra- and intercategorial
- attach weights to arcs
- direct arcs

Add to WordNet

- Cross-POS links (traffic, congested, stop)
- More relations: Holland-tulip, sweater-wool, axe-tree, buy-shop, red-flame,...
- Relations need not be labeled
- Arcs are directed:dollar-green/*green-dollar
- Arcs are weighted

Goal of most Wordnet applications: semantic disambiguation

- Needed: annotated training corpora
- Manual tagging is time-consuming, expensive, and unrealiable
- Fellbaum & Grabowski: overall tagger agreement was 74%; much less for highly polysemous (frequent) words and verbs

Evocation

"How strongly does concept A evoke concept B in people's minds?"

NOT: similarity (pear-apple)
association (dress-button)

Solution (?)

- Augment WordNet with relations among *all* synsets
- Dense network can be exploited to find related/unrelated words and concepts
- Less training data needed
- Algorithms relying on net structure will yield better results

Procedure

Identify 1K "core"synsets
- highly frequent (BNC)
- highly salient
- 500 N, 250 V, 250 Adj

Experiment

- Collected 120K judgments for randomly chosen synsets (subset of 1K)
- Designed interface for ratings
- Wrote rating manual
- Strength of evocation ranged from 0-100
- Five anchor points

Results

- 67% of evocations were rated “zero” (expected)
- High consistency for zero ratings

Human Ratings

- Raters were warned not to use personal, idiosyncratic evocations (dog-grandmother)
- Avoid evocation of word form (rhyme, same initial letter, etc.)
- Raters were tested for consistency with themselves and agreement with others

Comparison with other similarity measures

- Lesk (overlap of words in glosses)
- Paths in WN (verbs, nouns)
- Latent semantic indexing (strings not necessarily senses)

- Lack of correlation of our results with each measure!
- Evocation captures something similarity doesn’t!

Results

- Median correlation on test set for the 24 annotators was .72
- lowest correlation was .64
- Average correlation with themselves: .70

Next task

- Completely fill in net of 1K synsets
- Too much for human ratings
- Machine learning!

Machine Learning

Input features:

- major similarity measures
- context vectors from British National Corpus (tagged for POS; eliminates some polysemy)

Learn evocations

- Apply boosting techniques (Schapire)
- Divide data into 5 categories of evocation strengths (0 is its own category)
- 80% training data, 20% testing
- Results: incorrect assignments ~25%

- More work is ongoing...

第二場　Sally McConnell-Ginet　<語境與語意之互動>

Context-sensitivity of meaning

TSIL Lecture 1:
Domain restriction

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Plan for TSIL tutorials

- Domain restriction
  - Some data
  - Semantics for quantifiers
  - Universe of model as restrictor
  - Ellipsis vs. covert variables
  - Why variables?
  - Location
  - Type
  - Alternatives
- Comparison classes

Domain restriction: Some data

- Suppose someone utters
  everyone is listening
  There seem to be some people whose listening is quite irrelevant.


Domain restriction: Some data

But is an individual's not counting just a matter of 'loose' speaking? Pragmatic?

Consider my uttering *everyone's listening to me* in a full 50-person lecture room in Taipei

Compare 1 non-listener in that lecture room (*pedant*'s objection--this is pragmatic) to 1 (or indeed many) non-listeners in Ithaca, NY (*insane person*'s objection--this is semantic)

Pedantry vs. insanity--we want to stay sane!

Domain restriction: Some data

Examples that are even harder to treat as cases of "non-literality" involve what looks like an "antecedent" for restrictor

– The dinner guests had rhubarb pie for dessert. Everyone developed a rash.

If I was not among the dinner guests, my failure to develop a rash seems not just an ignorable exception but totally irrelevant to the literal truth of the second sentence. That sentence literally says that every one of the dinner guests developed a rash.

Domain restriction: Some data

But just making some property salient is not enough to effect restrictions

– Lisa is a phonologist. I think that every linguist would agree with what she said.

Kratzer 2005 points out that just mentioning *phonologist* will not restrict *linguist* to those who are phonologists--i.e., it does not render the semanticists and syntacticians irrelevant to *every linguist*

Domain restriction: Some data

- It is not that we do not sometimes interpret *every linguist* as if we were restricting linguists to those specializing in the study of sounds
- A:Speech scientists are overly dependent on computers these days. Those speech pathologists in here the other day had no idea how to read IPA transcriptions and the psychologists had never even seen them.
- B:Lisa knows the IPA. Every linguist knows the IPA.

The puzzle is how such restrictions can get established. Topicality?

Domain restriction: Semantics for quantifiers

Model-theoretic semantics assumes a universe of discourse, U, from which we get referential values of expressions in language L.

Suppose U = {a,b,c,d,e}, where a is denoted by the name *Asya*, b by *Benita*, c by *Carlos*, d by *Dan*, and e by *Edith.*

Predicates are assigned subsets of U as their values--e.g., V(smokes) relative to M = {u in U: u smokes}

If Asya, Carlos, and Edith smoke but Benita and Dan do not then V(smokes) = {a,c,e}

Domain restriction: Semantics for quantifiers

Suppose language L contains quantifying expressions like *everyone* or *someone.*

Someone smokes is true iff $U \cap V(smoke) \neq \varnothing$ (false otherwise)

$\exists x(\text{smoke } x)$ [Values of x all in U]

Everyone smokes is true iff $U \subseteq V(smoke)$ (false otherwise)

$\forall x(\text{smoke } x)$ [Values of x all in U]

Domain restriction: Semantics for quantifiers

a. Some genius smokes.
   D A B
b. $\exists x(\text{genius } x \,\&\, \text{smoke } x)$
c. $\lambda Q \exists x(\text{genius } x \,\&\, Qx)$ (smoke)
d. $\lambda Q \exists x(\text{genius } x \,\&\, Qx)$ = possible translation of *some genius*
e. [some genius] = $\{B: [\text{genius}] \cap B \neq \varnothing\}$
f. [some A] = $\{B: A \cap B \neq \varnothing\}$
g. [some] = $\{<A,B>: A \cap B \neq \varnothing\}$

Defined for A, $B \subseteq U$, universe of model M

Domain restriction: Semantics for quantifiers

a. Every genius smokes.
   D A B
b. $\forall x(\text{genius } x \,\&\, \text{smoke } x)$
c. $\lambda Q \exists x(\text{genius } x \rightarrow Qx)$ (smoke)
d. $\lambda Q \exists x(\text{genius } x \rightarrow Qx)$: *every genius*
e. [every genius] = $\{B: [\text{genius}] \cap B = [\text{genius}]\} = \{B: [\text{genius}] \subseteq B\}$
f. [every A] = $\{B: A \subseteq B\}$
g. [every] = $\{<A,B>: A \subseteq B\}$

Defined for A, $B \subseteq U$, the universe of model M

Domain restriction: Universe of model as restrictor

Model-theoretic semantics for quantifiers brings universe as automatic restrictor

Can we get the restrictions we need by using the universe of the model?

Domain restriction: Universe of model as restrictor

We could let Taiwan delimit the universe for the model or draw the boundaries more locally

But consider Westerståhl's 1985 example:

> Sweden is a funny place. Every tennis player looks like Björn Borg, and more men than women watch tennis on TV. But most people really dislike foreign tennis players.

In interpreting the last sentence, we would have to shift our universe from Sweden to a wider world--and for *foreign* need both!

Not good

Domain restriction: Ellipsis vs. covert variables

Would it work to say that surface forms are elliptical for Ss containing overt restrictors?

Consider again

> Sweden is a funny place. Every tennis player [in Sweden] looks like Björn Borg, and more men [in Sweden] than women [in Sweden] watch tennis on TV. But most people [in Sweden] really dislike foreign [to Sweden] tennis players.

But why not [from Sweden] or [born in Sweden] or [in that country] or … ? And what about the final restrictor?

Domain restriction: Ellipsis vs. covert variables

Ellipsis raises the question of just what is deleted

A more widely pursued strategy is to posit an unpronounced contextually-sensitive variable somewhere in LF

Questions raised

- Why variable?
- Where is variable located?
- Over what type of entities does it range?

Alternatives

Domain restriction: Why variable?

Can be valued deictically--look at picture, e.g.

Can get value from antecedent--e.g., dinner guests and rhubarb pie story or perhaps Sweden and tennis players

And here are more examples

- In my class this morning, everyone looked sleepy.
- When we arrived in the village, several houses were abandoned.
- A herd of elephants was visible from our vehicle. Many females were nursing their babies.

Domain restriction: Why variable?

Finally, domain restrictors can covary with a quantifying expression--they seem to show binding effects.

Some examples (based on von Fintel)

- In most countries I visit, many tennis players want to be like Monica Seles.
- No class was so bad that no student passed the exam.
- Whenever we have a party, everybody brings something.

Restrictors thus seem a lot like variables.

Domain restriction: Where is variable?

Restrictions affecting quantifying Ds seem plausibly located in the D node

Westerståhl 1985 associates the restrictor with the Det (D) node

Let C be the contextually supplied restrictor set and define $D^C(A,B) = D(C \cap A,B)$

Suppose focus on Taiwanese, then

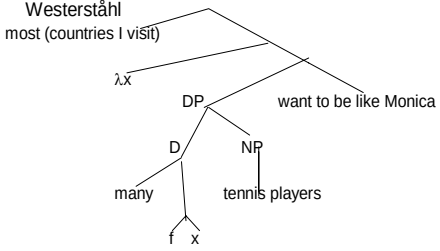
C = {x: Taiwanese x} = [Taiwanese] and

every^C *genius smokes* is True iff

[Taiwanese] $\cap$ [genius] $\subseteq$ [smoke]

Domain restriction: Where is variable?

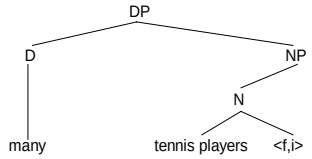
von Fintel 1998 is more explicit about syntax than Westerståhl



Domain restriction: Where is variable?

Stanley and Szabó 2000 argue instead that the restrictor is an index under the N node.

So on their view we would have something like



Domain restriction: Where is variable?

Why might we want to associate the restrictor with the D rather than have it originate with the N or the NP?

Breheny 2003 points out that the restrictor is not in the scope of adjectives like *fake*:

- Every fake philosopher is from Idaho.

If restrictor is Americans, not equivalent to

- Every fake American philosopher is from Idaho.

but to

- Every American fake philosopher is from Idaho.

Domain restriction: Where is variable?

On the other hand, Delia Graff (reported in Stanley 2002) observes that if superlatives combine with NPs before the restrictor provided by D comes into play we do not get the right results. Suppose, e.g., we are talking about New York State geography.

- The highest mountain is under 2000 meters tall.

If we just apply *highest* to *mountain* we get Mount Everest at 8848 meters (29,028 feet) rather than Mount Marcy, 1629 meters (5344 feet) and highest in New York State

Domain restriction: Where is variable?

Stanley acknowledges that there are other ways to handle superlatives (e.g., associate the superlative degree morpheme with the D node) but objects to locating the restrictor element higher than what it restricts, the N or perhaps NP (*fake philosopher*) on grounds of compositionality. Like the standard semantics of quantifiers in propositional logic, which needs access to internal structure of constituents to vary assignment functions, this approach is not strictly compositional.

Domain restriction: Where is variable?

We also have domain restriction where the quantifying expression is not a D but some kind of adverbial:

- If a letter is from a friend, I always answer it.
- When it is hot, Juana often drinks iced mint tea.
- Yu-Ping usually walks to school.

It is by no means clear that restriction works the same way for D-quantifiers and for A-quantifiers but both need eventually to be considered.

Domain restriction: What type is variable?

Variable location is related to variable type

Some suggestions

- Sets of individual entities
- Properties
- Situations
- Complex functors (that may combine arguments of any of the preceding)

Early work (e.g. Westerståhl) assumed sets but encountered problems

Domain restriction: What type is variable?

Moving from individuals to properties helps when restrictor might be imported into intensional context with no *de re* import

- John studied Czech before he went to Prague. It was quite possible nobody would speak English.

Example is due to von Fintel who notes that the intended property relevant for restricting *nobody* is something like *being someone with whom John interacts in Prague* but there is no reason to think the extension of that property is fixed at the time of utterance

Domain restriction: What type is variable?

Situation variables have been proposed for other reasons--e.g., to give location for *it is raining* and similar sentences.

Domain restriction: What type is variable?

But do situations fully determine domain?

- Whenever I go to a dinner party everyone comments on my haircut [von Fintel]
- Everyone is asleep and being monitored by a researcher [Soames]
- Everyone is looking at me

Don't seem to do whole job--last example is prime case where utterance situation might seem relevant but whoever is denoted by *I* is surely part of that situation yet is not included in *everyone*.

Domain restriction: What type is variable?

Perhaps we need more complex types--e.g., functions from situations to individuals

von Fintel suggests some kind of choice function, noting that we might want to consider the so-called "specific indefinite" a case of a singleton set serving as domain

Still have questions, however, on how restrictions established and constraints on the process

Domain restriction: Alternatives?

Apparent binding effects do not force us to posit covert variables (which do not seem to show up though Kratzer argues that situation variables are sometimes pronounced)

Jacobson 2005 argues for applying variable-free semantics to the problem of domain restriction, an approach that bans variables but makes heavy use of type-shifting

And there may be more pragmatic approaches but cannot ignore pedantry vs insanity data!

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Context-sensitivity of meaning

TSIL Lecture 2:
Comparison classes

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Plan for TSIL tutorial

- Domain restriction
- Comparison classes
  - some data
  - head N
  - extensional or intensional
  - 'for a N'
  - measure functions
  - domains revisited

Comparison classes: some data

Most English adjectives occur in both
- prenominal (attributive) position
  - that's a tall tree
  - that's an octagonal building

and
- post-copular (predicate) position
  - that tree is tall.
  - that building is octagonal

For many languages, predicate position (with no copula) is primary

Comparison classes: some data

For most attributive adjectives, there is an entailment from Adj+Nom to Nom as in
- That is an octagonal house ⇒ That is a house
- That is a green dress ⇒ That is a dress
- That is a tall tree ⇒ That is a tree

Such adjectives are called subsective: they truly modify the Nom by picking out a subset of what the Nom denotes

There are a few exceptions
- That is a fake flower/alleged thief …

Comparison classes: some data

For some attributive adjectives, there is a further entailment from Adj+Nom to Nom is Adj as in
- That is an octagonal house ⇒ That house is octagonal
- That is a green dress ⇒That dress is green

Such adjectives are called intersective: they seem to work by intersecting the denotation of the Nom with the Adj denotation, with the Adj+Nom picking out things that satisfy both the Adj and the Nom

Comparison classes: some data

But for many attributive adjectives that do occur in predicate position it seems undefined in isolation whether something satisfies the Adj.
- That is a tall three-year-old.
  ??? That three-year-old is tall.
- That is a large ant.
  ??? That ant is large.
- That is a small elephant.
  ??? That elephant is small.
- Chara is a good pickpocket.
  ??? Chara is good.

Comparison classes: some data

For these adjectives applicability seems relative to some kind of contextually provided standard for assessing ranking of individuals.



Comparison classes: some data

Whether or not *it/that is tall* is true depends not just on height but on such factors as the kind of thing indicated.

Are we speaking of skyscrapers, toddlers, or trees?

One way to approach this is to say that what matters is the relevant comparison class: Ithaca, NY is large if we are speaking of municipalities in rural upstate NY but small if we compare it to cities like NYC or Taipei.

Comparison classes: head N

When a relative adjective occurs prenominally it often seems to be the case that the denotation of the head N provides the relevant comparison class.

- That is a tall building.
- That is a tall toddler.
- That is a tall tree.

It is natural to assume that buildings, toddlers, and trees determine the comparison class of interest, which, following Ludlow 1989, I'll shorten to c-class.

Comparison classes: head N

The c-class is not a new idea:

Suppose that someone says 'That is a good one'. We can then always ask (1) 'Good what--sports car or family car or taxi or example to quote in a logic-book?' … To ask [this] question is to ask for the class within which evaluative comparisons are being made. Let us call it the *class of comparison* [italics added].

R. M. Hare (1952) in *The Language of Morals*

Comparison classes: head N

Ludlow 1989 argued that a null operator could be coindexed with a post-adj N-bar, as in above exs, or in subject position, to give c-class

- That building is tall.
- That toddler is tall.
- That tree is tall.

He contrasted

- That is a large glass of orange juice.
- That is a large glass with orange juice in it.

Claim: *glass of oj* can set c-class but not *glass with oj in it*

Comparison classes: head N

The N-bar is more readily available than the higher nominal to set c-class and there do seem to be constraints on overt linguistic indicators of c-class.

Are these genuinely syntactic constraints or reflexes of more semantic/pragmatic constraints?

For prenominal Adj, does the head N (or N-bar) always set c-class?

Comparison classes: head N

Consider

- She is a tall blonde.
- She is an intelligent woman.

In the first case we probably don't take *blonde*, a hair color, to indicate a c-class for height

In the second case, we might or might not take being a woman (rather than a man) to indicate a c-class for assessing intelligence. That would depend on gender ideologies.

Sometimes focal stress on N tips the balance.

Comparison classes: head N

There are also cases where the head N seems to provide just part of what is needed. An example from Kamp & Partee 1995

- That's a big snowman

If the snow figure in question is built by college students the size standards are far larger than if it is built by a couple of six-year-olds.

Stanley 2004 observes that this does not mean that the nominal is irrelevant but just that it may need supplementation.

Comparison classes: head N

When we speak of *tall woman*, do we have Scandinavian women in mind or Japanese? Are we comparing her to contemporaries or to women of bygone eras? *Woman* is not enough.

Comparison classes: extensional or intensional?

Even assuming we have a c-class--e.g., contemporary Taiwanese women--we still have questions. Suppose an awful chemical accident produces a toxic cloud hovering somewhat above the ground in Taipei, leading to the rapid death of everyone, both women and men, over 1.5 meters (4 feet, 11 inches). Is the c-class now just those surviving shorter women who were lucky enough to be below the poison gases? (McConnell-Ginet 1973)

Comparison classes: extensional or intensional?

We can have particular individuals comprise a c-class

- Compared to Sandy and Joan, Sally is tall.

More usually, however, what we really want is a comparison-relevant property--being a 21st-century Taiwanese woman, being a tree, being a basketball player.

Frequent proposal: to be tall is to be tall relative to others of one's "kind". But most individuals belong to a number of different "kinds" that might be relevant!

Comparison classes: 'for a N'

In English, we have seen that head N does not necessarily determine a c-class. But English has a construction that does unambiguously say something about the intended c-class.

- She is tall for a Taiwanese woman.
- Kim is short for a basketball player.
- That car was expensive for a Honda.

If the N-complement of *for* does not provide a comparison-relevant property, it's odd.

- ???She is tall for a blonde.
- ???He is fat for a linguist.

Comparison classes: 'for a N'

Notice that 'for a N' presupposes that the entity to which it is applied itself has the property contributed by N.

- #That Mercedes is expensive for a Honda.
- #Hillary Clinton is tall for a Taiwanese woman.
- #My cousin Lloyd is old for a dog.

These imply that a Mercedes is (really) a Honda, Hillary Clinton (really) a Taiwanese woman, and my cousin (really) a dog. And the implications remain if we negate or interrogate them--they are presupposed, not simply asserted.

Comparison classes: 'for a N'

Head Ns that (optionally) indicate a c-class for an Adj do not presuppose but assert that the individual to which Adj is applied is an N

- That Mercedes is an expensive Honda.
- Hillary Clinton is a tall Taiwanese woman.
- My cousin Lloyd is an old dog.

Sentences like these are just plain false, and their negations are true. When the relevant c-class is not explicitly indicated, is membership in it asserted or presupposed?

Comparison classes: 'for a N'

Graff 2000 proposes that relative adjectives require more than just comparison to some c-class

- Juana is tall for a Nicaraguan woman

is roughly equivalent on Graff's account to

- Juana's height is significantly more than some norm of heights determined by the property of being a Nicaraguan woman (a "typical" or "average" height achieved by Nicaraguan women in the absence of disease or other disasters)

The real work here is done by *significantly*: what counts as significant depends on interests.

Comparison classes: measure functions

Kennedy 2005 develops Graff's proposal, drawing on his work on relative (and more generally, gradable) adjectives as measure functions that take an entity as argument and return a degree, a point on a scale, a set of degrees totally ordered wrt some dimension. "**adj**(x) abbreviates 'degree on adjective scale that measures the extent of x's 'adj-ness'".

Tall maps entities onto a scale containing abstract degrees of height: 1.5 meters and 4 feet 11 inches measure the same degree.

Comparison classes: measure functions

K's inventory of semantic types

- e entities
- d degrees
- g (gradable) measure function
- t truth values

A measure function, g, is thus of type <e,d>. But consider sentences like

- Huang Chu-Ren is tall.
- Yushan (Jade Mountain) is tall.

These seem to require that *tall* be type <e,t> as, e.g., *taller than Andrew* or *very tall* are.

Comparison classes: measure functions

Kennedy reports that in Mandarin one would probably not say

- Huang Chu-Ren gao
- Yushan gao

to convey what the two English sentences about the man and the mountain conveyed. Instead one might say

- Huang Chu-Ren hen gao
- Yushan hen gao

English differs from Mandarin in that what K calls the pos morpheme is unpronounced.

Comparison classes: measure functions

So the English sentences are really

- Huang Chu-Ren is pos tall.
- Yushan (Jade Mountain) is pos tall.

where pos is a silent degree morpheme that converts a measure function into a property.

Roughly,

$||[_{deg}\text{pos}]|| = \lambda g \lambda x.g(x) \geq \mathbf{s}(g)$

Applying pos to measure function *tall* yields the property of being tall to a degree at least as great as **s**, the contextually determined standard of "significant" tallness.

Comparison classes: domains revisited

What happened to c-classes? As K puts it, "there is no reason to assume that comparison classes have any representational status at all: *comparison class* is merely a descriptive label for whatever property [class, kind] is used to compute the standard of comparison." (21)

What about the *for*-phrase modifiers, which seem to force comparison restricted to something like a c-class indicated by the complement of *for?*

Comparison classes: domains revisited

K's proposal is that what the *for*-phrase does is restrict the domain of the relative adjective--i.e. of the measure function that adjective denotes.

The phrase *tall for a Taiwanese woman* denotes a measure function whose domain is Taiwanese women but whose values are the same degrees assigned by the unmodified *tall*. K speaks as if we have a different function but that is wrong: we just have a subset of our original function.

Comparison classes: domains revisited

The *for*-phrase (which may have an empty complement for *for*) only restricts the domain of the measure function. In so doing, however, it has a substantial impact on what standard **s** can be delivered. The standard **s** must be one that might in the context be suitable for assessing whether or not individuals in that domain possess a "significant" degree of whatever is being measured.

Can c-class determination of domains illumine other cases of domain restriction? Perhaps.

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〈構式語法(Construction Grammar)：本土語言之分析〉

Construction Grammar: Historical and Intellectual Background

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Four general requirements on Construction Grammar

- proposed by Fillmore and his students and colleagues at the University of California at Berkeley in the early 1980s)
  - It should be a generative grammar and thus formalizable
  - It should integrate different domains or 'components' of grammar (phonology, morphology, syntax, semantics, pragmatics)
  - It should be a grammar with universal impact
  - It should be consistent with what we know about cognition and social interaction

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Four general requirements on Construction Grammar (cont')

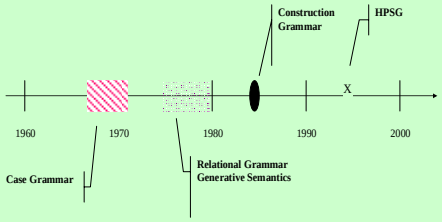
- Construction Grammar is taken as a model in which we can describe, analyze, and generate all the linguistic constructs of a language, incorporating both the 'core' and the 'periphery' in a single grammatical system.
- The relationship between form and meaning is taken as basic and inherent in any grammatical description.

Preamble

- The denotation of the term 'construction' has become quite unclear and fuzzy.
  - traditional and general sense: "structure"
  - linguistic objects: "idiom" or "formulaic phrase"
  - concrete expressions: "phrases", "sentences", or 'patterns"

A brief history of Construction Grammar

- Figure 1 A brief history of Construction Grammar



A brief history of Construction Grammar

- late 1960~early 1970s: Case Grammar—case-role based approach (Fillmore 1968)
- late 1970s:
  - Relational Grammar (Perlmutter & Postal 1977, Keenan and Comrie 1977)
  - Generative Semantics (Gestalt Grammar) (Lakoff 1977)
    - A particular sentence type as a whole.
    - Subject and Object constituting complex patterns, or "gestalts".
    - Grammar as an inventory of templates ("network representations")
    - Linguistic gestalts being at once holistic and analyzable

A brief history of Construction Grammar (cont')

- Goldberg's (1995) Constructions: one of the main recent studies to embody this cognitively oriented approach to the notion of construction
- Goldberg's (2006) Constructions at Work: one of the latest studies to relate language to other areas of cognition, including processing, language acquisition, etc.

A brief history of Construction Grammar (cont')

- mid 1980s: developmental source of Construction Grammar (Fillmore & Kay)
- mid 1990s:
  - Construction Grammar vs. HPSG (Head-Driven Phrase Structure Grammar) (Kay and Sag)
    - similarities between Construction Grammar and HPSG
      - monotonic, declarative, constraint-based model
      - Attribute-Value Matrices fro specifying characteristic features of linguistic expressions
      - elaborate inheritance networks for capturing relationships between constructions

The cognitive dimension

- Q: What does Construction Grammar have to do with cognition? → Answer: Everything!
- Unfortunately, the cognitive dimension of Construction Grammar has been somewhat neglected.
- If Construction Grammar can retain its formalisms for handling morphosyntax, while at the same time including appropriate accounts of semantics and the interfaces between phonology, morphosyntax, semantics, and pragmatics, then it is clearly a viable alternative as a cognitive model of language.

A brief history of Construction Grammar (cont')

- differences between Construction Grammar and HPSG
  - HPSG: computational model; syntactic processes
  - Construction Grammar: semantics and cognition
  - Frame Semantics: a semantic 'sister theory' of Construction Grammar
    - » a model of the 'semantics of understanding'
    - » 'interpretive frames'
    - » elaboration on the relationship between form and meaning
    - » Fillmore's FrameNet project

Cross-language and universal potential of Construction Grammar

- A more complicated issue connected to the cognitive grounding of a grammatical model is the extent to which it may serve as a universal model of language.
- How Construction Grammar can be a universal theory of grammar, given its fundamental emphasis on seeing language, or at least grammar, as consisting of ready-made 'recipes' or formulas, rather than being made up of nouns, verbs, prepositions, etc.?

Cross-language and universal potential of Construction Grammar (cont')

- For a long time, Construction Grammar was accused of being devised for English grammar. However, over the years, a number of scholars have taken Construction Grammar beyond English and shown its usefulness and power in the description, analysis, and explanation of diverse linguistic phenomena in a variety of languages.
  - Czech (Fried 2004)
  - Japanese (Fujii 2004)
  - French (Lambrecht 2004)
  - Taiwanese Southern Min (Lien 2005)
  - Hakka (Lai 2003)
  - Mandarin (Biq 2002, 2004)

Further issues

- What is the relationship of Construction Grammar to other cognitive linguistic theories?
- Does Construction Grammar have cross-linguistic applicability and potential for serving as a universal theory of grammar?
- How much of language is left outside of constructions?

Cross-language and universal potential of Construction Grammar (cont')

- Cross-language generalizations are captured by the architecture of the representation system and by the sharing (a grammatical system sharing and a cognitive sharing) of abstract constructions across languages. (Kay & Fillmore 1999: 1)

Advantages of the Construction Grammar

- Implausible verb senses are avoided.
- Circularity is avoided.
- Semantic parsimony is maintained.
- Compositionality is preserved.
- Supportive evidence from sentence processing
- Supportive evidence from child language acquisition

Construction after Construction: Jackendoffian Approach and Building Constructions in Taiwanese Southern Min

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Constructions defined (Goldberg 2003): Constructions are form-meaning pairings.

4) Constructions are understood to be learned on the basis of the input and general cognitive mechanisms, and are expected to vary cross linguistically.

5) Cross-linguistic generalizations are explained by appeal to general cognitive constraints together with the functions of the constructions involved.

6) Language-specific generalizations across constructions are captured via inheritance networks much like those that have long been posited to capture our non-linguistic knowledge.

7) The totality of our knowledge of language is captured by a network of constructions: a "construct-i-con."

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Constructions: what they are

- Constructions are stored pairings of form and function, including morphemes or words, idioms, partially lexically filled and fully general linguistic patterns.

Constructions defined (Goldberg 2003): Constructions are form-meaning pairings.

- Tenets of constructional approaches:
  1) All levels of description are understood to involve form—function pairings, including morphemes or words, idioms, partially lexically filled and fully abstract phrasal patterns.
  2) An emphasis is placed on subtle aspects of the way we conceive of events and states of affairs.
  3) A "what you see is what you get" approach to syntactic form is adopted.

Examples of constructions, varying in size and complexity

Word	e.g., *Avocado, anaconda, and*
Complex word	e.g., *Daredevil, shoo-in*
Idiom (filled)	e.g., *Going great guns*
Idiom (partially filled)	e.g., *Jog* <someone's> *memory*
Covariational Conditional construction [11]	The Xer the Yer (e.g., *The more you think about it, the less you understand*)
Ditransitive (double object) construction	Subj [V Obj1 Obj2] (e.g., *He gave her a Coke; He baked her a muffin.*)
Passive	Subj aux VPpp (PP_{by}) (e.g., *The armadillo was hit by a car*)

Some basic concepts

- Lexical storage versus On-line construction
- Listeme (lexical items) vs. Word (Jackendoff (2002: 152-154)

Listeme: an item stored in the lexicon (viz., long-term memory)

Word as a grammatical element: syntactic word (an X0 or lexical category), phonological word defined in terms of segmental and prosodic constraint, and lexeme 實詞 (as opposed to 'function word' 虛詞)

Parallel Architecture (Jackendoff 2002: 107-151) (cont.)

- Inheritance (Jackendoff 2002)
  - Inherence hierarchies and default
  - Lexical redundancy
  - Redundancy seems to cost less.
- The problem of acquisition (Culicover 1999, Culicover & Jackendoff 2005)
  - CAL (Conservative Attentive Learner)
  - Positive evidence

Some basic concepts (cont.)

- Listemes may be larger or smaller than grammatical words.
- Not all grammatical words are listemes.
- There are complex listemes that contain no phonological materials.
- Language features a collection of listemes which lead to what is dubbed construction (Jurafsky 1996).
- Constructions are not epiphenomena of general principles of rules

Noncanonical utterance types (Jackendoff 2005, Jackendoff & Pinker 2005)

a. PP with NP
e.g., Off with his head! Into the trunk with you!

b. How about X?
e.g., How about a cup of tea?

c. NP +acc Pred?
e.g., What, me worry? Him in an accident? John drunk?

(Akmajian 1984)

Parallel Architecture (Jackendoff 2002: 107-151)

- **Tripartite theory:**
  - Phonological structure (PS) , syntactic structure (SS), and conceptual structure (CS)
  - A set of interface rules: PS-SS interface rules, SS-CS interface rules, and PS-CS interface rules
  - Ex: The sun dried the towel.
    PS: dry: monosyllabic word consisting of three segments
    SS: the syntactic frame [___ NP]
    CS: X CAUSED Y to BECOME dry
  - PS-CS interface: two zero morphemes (01 and 02) in PS corresponds to CAUSE and BECOME in CS. Cf 太陽曬乾了毛巾, but not *太陽乾了毛巾, in Mandarin

Noncanonical utterance types (Jackendoff 2005, Jackendoff & Pinker 2005) (cont.)

d. NP and S
e.g., One more beer and I'm leaving, One more step and I shoot.

e. The more … the more
e.g., The more I read, the less I understand.

f. N-P-N construction
e.g., Face to face
(a face-to-face confrontation, we stood face to face).
e.g., House by house
(a house-by-house inspection; we looked house by house for spies) .

Vp Constructions in which V does not license complements

- **A Class of Constructional Idioms (Jackendoff 2002: 173-190)**

a. He sang/drank/laughed his head off.
- ([vp v NP PRT] (V his head off = 'V excessively')
- Stop Crying Your Heart Out
- (V pro's heart out = 'V excessively')
- Cf. eat one's heart out 'feel bitter anguish, grief, worry'

b. Bill joked/laughed his way out of the restaurant
- [vp v NP pp](V his way PP = 'go up while/by V-ing')

Differences between a word and rules are not clear-cut and show continuum.

a. VP idiom – no variable
e.g., kick the bucket

b. VP idioms with variable
e.g., 'take NP to task', V pro's head off

c. VP structure with more variables
e.g., V (NP) (PP)

Vp Constructions in which V does not license complements (cont.)

c. Sara slept/drank/sang/laughed the whole afternoon away
- [vp v np PRT]: (V NP [time period] away, 'spend NP V-ing'

d. The trolley rumbled around the corner
- (V PP = 'go PP, motion inducing V-ing sound')

Construction after construction (Jackendoff forthcoming)

a. The relation between the lexicon and rules of grammar is a continuum.

b. Language is built up out of construction.

c. Syntactic structure is predictable on the basis of meaning relations.

Vp Constructions in which V does not license complements (cont.)

e. Mike drank the pub dry, Wilma watered the tulips flat, Clyde cooked the pot black
- (V NP AP , 'cause NP to become AP by V-ing ((with) it)'

f. I'm (all) coffeed out, I'm Edward G. Robinsoned out.
- [ap V/N] + -d [prt out]]
- 'worn from too much V-ing/too much N'

The Construction: NPN: (1) Adjunct only, and (2) adjunct or NP

(1) Adjunct only

(1a) hand in hand, hand in glove, arm in arm, tongue in cheek, hand over hand, hand over fist, hand over heels, one on one, side by side, limb by limb

The Construction: NPN:
(1) Adjunct only, and (2) adjunct or NP

(1b) N to N

(1bx) *succession*: [ITEM] to [ITEM] (search) N to N

(1by) *juxtaposition N* to *N* (face to face, cheek to cheek, toe to toe, hand to hand)

(1bz) *N1* to *N2*: *transition* (N1 to N2: side to side, hand to mouth), *prenominal only* (N1 (to) N2)

Kinds of idioms
(Fillmore et al 1988, Croft & Cruse 2004) (cont.)

B. Idiomatically combining expressions vs. idiomatic phrases

- The former is an idiom in which parts of the idiomatic meaning can be put in correspondence with parts of the literal meaning, as in 'answer the door' or 'spill the beans'. By contrast, for the idiomatic phrases no such correspondence can be established, as in 'kick the bucket'.

The Construction: NPN:
(1) Adjunct only, and (2) adjunct or NP (cont.)

(1c) *N* by *N*: *succession* (N by N), *dimension* (MP1 by MP2)

(1d) *N* for *N*: *comparison* (N for N), *exchange* word for word (N for N, Num1 for Num2)

(2) Adjunct or NP

(2a) *N* after *N*

(2b) *N* (up) on *N*: quantity (Q1 (s) upon Q2(s)) and succession (N (up)on N)

Kinds of idioms
(Fillmore et al 1988, Croft & Cruse 2004) (cont.)

C. Grammatical vs. extragrammatical idioms

- Grammatical idioms obey the rules of grammar, as in 'kick the bucket, spill the beans'. Extragrammatical idioms do not obey rules of grammar, as in 'by and large, no can do'.

Kinds of idioms
(Fillmore et al 1988, Croft & Cruse 2004)

A. Encoding idioms vs. decoding idioms

- Encoding idioms are the idioms for which meaning cannot be predicted, as in 'kick the bucket, pull a fast one'
- Decoding idioms are idioms for which meaning can be predicted, as in 'answer the door, wide awake, bright red'

Kinds of idioms
(Fillmore et al 1988, Croft & Cruse 2004) (cont.)

D. Substantive vs. schematic (formal) idioms

- Substantive idioms are lexically filled, as in 'it takes one to know one'.
- Formal idioms are lexically open, as in 'blow X's nose' and 'X let alone Y'.

Kinds of idioms (Fillmore et al 1988, Croft & Cruse 2004) (cont.)

E. Idioms with pragmatic point vs. idioms without pragmatic point

- Idioms with pragmatic points express pragmatic functions, as in 'see you later, good morning', Idioms without pragmatic points are pragmatically neutral, as in 'by and large'.

The Incredulity response construction (Akmajian 1984, Lambrecht 1990, Taylor 2002: 568-570)

(3) sentence adverbs like 'unfortunately' can not appear
(4) the constraint against topicalization.
(5) Subject and predicate constitute separate phonological phrase

- **Semantic aspects:**
  - The ungrounded situation carries old information. The possibility of this situation being true is dismissed as absurd.

Taxonomy of Idioms Croft and Cruse (2003: 236)

	Lexically	syntactically	semantically
a. Unfamiliar pieces unfamiliarly arranged	irregular	irregular	irregular
b. Familiar pieces unfamiliarly arranged	regular	irregular	irregular
c. Familiar pieces familiarly arranged	regular	regular	irregular
d. Regular syntactic expressions	regular	regular	regular

a. Kith and kin, the X-er the Y-er
b. All of sudden, nth cousin m times removed
c. Pull some one's leg, is the Pope a Catholic?

The *What's X doing Y* construction (Kay and Fillmore 1999, Taylor 2002: 571)

A. Dear God waiter, what is this fly doing in my soup?

B. Well sir I'm not a swimmer myself, but it looks like the back stroke.

The Incredulity response construction (Akmajian 1984, Lambrecht 1990, Taylor 2002: 568-570)

- (What?!) Him write a novel! (You must be joking)
- What?! Me worry?!
- My boss give me a raise?!

- **Formal aspects**

(1) the unaccusative case of the subject
(2) the lack of a tense feature

The *What's X doing Y* construction (cont.) (Kay and Fillmore 1999, Taylor 2002: 571)

B' I think it's trying to swim to dry land.
- The customer tries to get across the following message:
- There is a fly in my soup. The situation is contrary to my expectation. Please give me an explanation.
- *What*, *doing* and *be* are constants in the construction. X and Y are variables. X is a referential nominal and Y is an adjunct which characterizes the situation in which Y is involved.
- Other examples: What are you doing lying on the floor? What are the flags doing at half mast?

Kinds of idioms
(Fillmore et al 1988, Croft & Cruse 2004) (cont.)

E. Idioms with pragmatic point vs. idioms without pragmatic point

- Idioms with pragmatic points express pragmatic functions, as in 'see you later, good morning', Idioms without pragmatic points are pragmatically neutral, as in 'by and large'.

The Incredulity response construction
(Akmajian 1984, Lambrecht 1990, Taylor 2002: 568-570)

(3) sentence adverbs like 'unfortunately' can not appear
(4) the constraint against topicalization.
(5) Subject and predicate constitute separate phonological phrase

- **Semantic aspects:**
  - The ungrounded situation carries old information. The possibility of this situation being true is dismissed as absurd.

Taxonomy of Idioms
Croft and Cruse (2003: 236)

	Lexically	syntactically	semantically
a. Unfamiliar pieces unfamiliarly arranged	irregular	irregular	irregular
b. Familiar pieces unfamiliarly arranged	regular	irregular	irregular
c. Familiar pieces familiarly arranged	regular	regular	irregular
d. Regular syntactic expressions	regular	regular	regular

a. Kith and kin, the X-er the Y-er
b. All of sudden, nth cousin m times removed
c. Pull some one's leg, is the Pope a Catholic?

The *What's X doing Y* construction
(Kay and Fillmore 1999, Taylor 2002: 571)

A. Dear God waiter, what is this fly doing in my soup?

B. Well sir I'm not a swimmer myself, but it looks like the back stroke.

The Incredulity response construction
(Akmajian 1984, Lambrecht 1990, Taylor 2002: 568-570)

- (What?!) Him write a novel! (You must be joking)
- What?! Me worry?!
- My boss give me a raise?!

- **Formal aspects**

(1) the unaccusative case of the subject
(2) the lack of a tense feature

The *What's X doing Y* construction (cont.)
(Kay and Fillmore 1999, Taylor 2002: 571)

B' I think it's trying to swim to dry land.
- The customer tries to get across the following message:
- There is a fly in my soup. The situation is contrary to my expectation. Please give me an explanation.
- *What*, *doing* and *be* are constants in the construction. X and Y are variables. X is a referential nominal and Y is an adjunct which characterizes the situation in which Y is involved.
- Other examples: What are you doing lying on the floor? What are the flags doing at half mast?

The *One more X and Y/X(imperative) and Y* construction

(Culicover and Jackendoff 1997, 2005: 473-499, Taylor 2002: 571)

a. One more beer and I'll be off. One more botch-up like that and you're fired.

b. Come one step closer and I'll shoot. Botch this up ad you're fired.
(cf. Publish or perish 不出版就完蛋)

- The conjunction *and* is usually used to conjoin two expressions of equivalent status, but here it conjoins a nominal and a clause, or a clause in imperative mood and a clause in an indicative mood.
- Such a construction has the character of a conditional. Event Y ensures if Event X obtains.

The *X–er the Y-er* construction

(Culicover and Jackendoff 1999, 2005: 500-529, Taylor 2002: 571)

- The more the merrier; the fewer the better; the bigger they come the further they fall
  - The general meaning is 'more/less of Y correlates with more/less of Z'.
  - X introduces each of the correlated phrases, but it bears little resemblance to the definite determiner. The construction lacks a main verb. The construction shows affinities to other verbless expressions such as *Out of the frying pan into the fire, Easy come easy go,* and *Penny wise but pound foolish.*

The *let alone* construction

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

E.g.

- Max won't eat *shrimp*, let alone *squid;* Max won't *touch the shrimp*, let alone *clean the soup.*
- You couldn't get a poor man to wash your car for two dollars, let alone a rich man to wax your truck for one dollar.

- The *let alone* construction involves syntactic, semantic and in some cases pragmatic properties that cannot be predicted from the general rules of the language.

The *let alone* construction (cont.)

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

- *Let alone* can be construed as a coordinate conjunction that conjoins a variety of like constituents. It looks like the conjunction *and,* but they are not the same in every respect.

1. a. Max won't eat *shrimp*, let alone *squid.*
   b. We'll need shrimp and squid.

2. a. Shrimp Moishe won't eat, let alone squid
   b. *Shrimp Moise won't eat and squid.

The *let alone* construction (cont.)

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

- The *let alone* construction is a focus construction, hence its characteristic prosody (indicated by italicized elements).

3. a. He doesn't get up for *Lunch*, let alone *breakfast.*
   b. He doesn't get up for *Lunch*, much less *breakfast.*
   c. She didn't eat *a bite,* never mind *a whole meal.*

The *let alone* construction (cont.)

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

- The *let alone* construction is similar to the *not P but Q* construction, as in (4a), and the *respectively* construction, as in (4b), but in other respects the *let alone* construction differs from both of these construction.

4. a. Ivan sent not an album but a book, and not to Anna on her anniversary but to Boris on his birthday.
   b. Fred and Louise hated their shrimp and squid respectively.

The *let alone* construction (cont.)

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

- *Let alone* is a negative polarity term, not unlike *any*, but it can also be used in other positive contexts.

5. a. He didn't reach *Denver*, let alone *Chicago*.
   b. He didn't reach any major city.

6 a. I am too tired *to get up*, let alone *go running with you*.
   b. I am too tired to do any chores.

7 a. You've got enough material there for a whole *semester*, let alone a *week*.
   b. * You've got enough material for any semester.

There-constructions (cont.)

Lakoff (1987, Croft and Cruse 2003: 240-241)

f. Delivery: Here is your pizza, piping hot.

g. Paragon: Now there was a real ballplayer.

h. Exasperation: There goes Harry again, making a fool of himself.

i. Narrative focus: There I was in the middle of the jungle.

j. New Enterprise: Here I go, off to Africa.

k. Presentational: There on that hill will be built by the alumni of this university.

The *let alone* construction (cont.)

(Fillmore et al 1988, Croft and Cruse 2003: 237-240)

- The interpretation of *let alone* construction involves a scalar model, which ranks proposition on a scale — for example, the scale of distastefulness of eating seafood of the cost. The propositions in the two conjuncts must be from the same scalar model, as exemplified by *Max not eat shrimp* and *Max not eat squid*. *Max not eat shrimp* in Max won't eat *shrimp*, let alone *squid*, is more informative than *Max not eat squid*. There is a specific pragmatic context in which the utterance of *let alone* construction is felicitous. In terms of pragmatic constraint, the weaker (the less informative) proposition (viz., the proposition carried by the second conjunct) is at issue.

There-constructions (cont.)

Lakoff (1987, Croft and Cruse 2003: 240-241)

♣**Existential *there*-construction**

a. Central: There is a fox in the garden.

b. Strange [event]: there's a man been shot.

c. Ontological: There is Santa Clause.

d. Presentational: Suddenly there burst into the room an SS officer holding a machine gun.

There-constructions

Lakoff (1987, Croft and Cruse 2003: 240-241)

♣**Deictic *there*-construction**

a. Central: There's Harry with the red jacket on.

b. Perceptual: There goes the bell now!

c. Discourse: There's a nice point to bring up in class.

d. Existence: There goes out last hope.

e. Activity Start: There goes Harry, meditating again.

Building Constructions in Taiwanese Southern Min

1. Existential Constructions

a. 台灣閩南語的存在句:
動詞固有意義和動相、格式的互動

b. 台灣閩南語存在句的類型:

- "有"字句
「NP處所+V+NP客體」檳榔樹邊有一條水圳
- "是"字句
「NP處所+V是+NP客體」頭前是一個曝粟仔的埕合菜園仔

1. Existential Constructions (cont.)

- 動態存在句

「NP處所+V+著+NP客體/施事」(共通語)

(4a) 牆上掛著一幅畫。(靜態) (NP客體)

(4b) 天上飛著鳥。 (動態) (NP施事+客體)

(5a) 壁頂掛一幅畫。(靜態)

(5b) *天頂飛鳥仔。 (動態)

(5c) 天頂有鳥仔佇飛。(動態)

其他類動詞的存在句

一元動詞		
	例句	格式
1a	樹仔骹倒一個儂	處所+動詞+名詞
1b	有一個儂倒佇樹仔骹	有+名詞+動詞+處所
1c	有一個儂佇樹仔骹倒咧	有+名詞+處所+動詞+咧
1d	樹仔骹有一個儂倒咧	處所+有+名詞+動詞+咧
三元動詞		
	例句	格式
2a	桌仔頂囥一盆花	處所+動詞+名詞
2b	有一盆花囥佇桌仔頂	有+名詞+動詞+處所
2c	?有一盆花佇桌仔頂囥咧	有+名詞+處所+動詞+咧
2d	?桌仔頂有一盆花囥咧	處所+有+名詞+動詞+咧

2. Psych-Verb Constructions

- **閩南戲文荔鏡記感受動詞及其句式的探索**

2. (甲) 感受者主語句- 感受者主語句是以下列的格式表示:
『感受者』+ _____ + 『感受對象』

2.1. (甲A) 帶感受對象的感受者主語句

2.1.1. (甲A1) 『感受者』+ 『單音節感受動詞』+ 『感受對象』
e.g., 啞娘, 都牢伊愛恁錢　爹媽惜仔如惜金　我做乜不痛伊

2.1.2. (甲A2)『感受者』+『雙音節感受動詞』+ 『感受對象』
e.g., 怨切身命　煩惱乜事

其他類動詞的存在句

二元動詞		
	例句	格式
3a	壁頂畫兩隻兔仔	處所+動詞+名詞
3b	*有兩隻兔仔畫佇壁頂	有+名詞+動詞+處所
3c	*有兩隻兔仔佇壁頂畫咧	有+名詞+處所+動詞+咧
3d	*壁頂有兩隻兔仔畫咧	處所+有+名詞+動詞+咧

2. Psych-Verb Constructions (cont.)

2.1.3. (甲A3) 『感受者』+ 『感受動詞』+ 『子句補語感受對象』
e.g., 我畏無物通乞你食

2.1.4. (甲A4) 『感受者』+ 『感受動詞』+『感受對象』+ 『表原因的子句補語』
e.g., 嫌仔婿生得怯世

2.1.5. (甲A5) 『感受者』+「著」 + 『感受對象/施事』+「割吊」/「割」
e.g., 冥日著伊割吊

2. Psych-Verb Constructions (cont.)

2.2. (甲B)不帶感受對象的感受者主語句
這類格式不帶充當賓語的感受對象，表示如下:
『感受者』+ _____ + 0

2.2.1. (甲B1) 『感受者』+ 「受」+ (『感受對象』) +『表感情狀態的名詞』
e.g., 又知陳三一身受氣 小人受盡娘仔你氣

2.2.2. (甲B2) 『感受者』+ 「著」+ 「驚」
e.g.,心神把定莫著驚
2.2.3. (甲B3) 『感受者』+ (「心(內)」) +『感受動詞』
e.g., 思量低頭獨自驚 阮只心內驚驚 半驚半歡喜 跤腳行來心驚惶
我心即歡喜

2. Psych-Verb Constructions (cont.)

3.1.2. (乙A2)『感受對象』+ 「合/中/稱」+『感受者』+ 「意/心意」
e.g., 你只話說正合我意 仔婿不中我意
3.1.3.(乙A3)『感受對象/施事』+ 「割吊」/「割」+ 『感受者』+ (「心/心腸」)
e.g., 割吊人心

3.2. (乙B) 不帶感受者的感受對象主語句
3.2.1. (乙B1)『感受對象』+ 『帶『隱性使動動詞』的感受動詞』+ 0
e.g., 「驚儂」scary/frightening 「氣儂」、「惱儂」、「迷儂」、「悶儂」exasperating, annoying, enticing, boring
3.2.2. (乙B2) 『感受對象』+『感受動詞』+ 0
e.g., 你專卜阻乞伊無意思 免得我冥日費心情

2. Psych-Verb Constructions (cont.)

3. (乙) 感受對象主語句
『感受對象』+ _____ + 『感受者』

3.1. (乙A) 帶感受者的感受對象主語句
3.1.1. (乙A1) 帶固有感受動詞的感受對象主語句

(乙A1a)『感受對象』+ 『使動動詞』 +『感受者』+ 『感受動詞』
e.g., 乞我驚一頓

(乙A1b)『感受對象』+ 『使動動詞』 +『感受者』+ (「心」) +『感受動詞』
e.g., 猿啼鳥叫拽人心悲

2. Psych-Verb Constructions (cont.)

- **甲式和乙式的轉換關係**

a. (甲B3) 『感受者』+ (「心(內)」) +『感受動詞』
e.g., 思量低頭獨自驚

b. (乙A1a) 『感受對象』+ 『使動動詞』 +『感受者』 + 『感受動詞』
e.g., 乞我驚一頓

(乙A1b) 『感受對象』+ 『使動動詞』 +『感受者』 + (「心」)+『感受動詞』
e.g., 猿啼鳥叫拽人心悲

2. Psych-Verb Constructions (cont.)

(乙A1c)『感受對象』+ 『複合使動動詞』 +『感受者』+ (「心」) +『感受動詞』
e.g., 引惹人心痠

(乙A1d) 『感受對象』+『複合使動動詞』+(『感受者』)+ 『表感情的名詞』
e.g., 惹動伊心情

(乙A1e) 『感受對象』+ 『帶『隱性使動動詞』的感受動詞』 +『感受者』
e.g., 你三更半冥做鬼驚人 <比較 (乙A1b),>

3. Depictive Constructions

- Depictives in Taiwanese Southern Min

	X-V-Y-ADJ	Types
1	Mary made her teacher angry. 阿蘭仔惹?因老師受氣	Causative
2	The fisherman found the cliff quite steep. 掠魚的發現溪坎真崎	Small clause
3	Joan saw Mike sleepy. 阿香仔看見萬仔愛瞌愛睏.	Perception Verb
4	Tom often eats the oyster raw. 阿明仔定定生食蠔仔	Depictive
5	The blacksmith hammered the hoe flat. 拍鐵的共鋤頭摃扁•去	Resultative

3. Depictive Constructions (cont.)

- Depictives in Taiwanese Southern Min

	Depictives in TSM
	Subject-hosted Depictives
	Nsub-$V_{adjunct}$-V-N_{obj},
6a	He was frying rice **naked.**
6b	伊**褪剝揭**佇炒飯 While he was naked, he was frying rice.
6c	伊佇炒飯的時陣**褪剝揭** When he was frying rice, he was naked.

3. Depictive Constructions (cont.)

- Depictives in Taiwanese Southern Min

	Resultatives
	Object-hosted Resultatives
	NP_1- V-XP-NP_2
9a	阿明槓破花杆 'Mike broke the vase'
9b	囡仔車倒牛奶 'The baby spilt the milk'

3. Depictive Constructions (cont.)

- Depictives in Taiwanese Southern Min

	Object-hosted Depictives	
	Languages	**Construction Types**
	TSM1	NP_1- XP-V-NP_2
7a		伊生食蠔仔
	TSM2	NP_1- V-XP-NP_2
7b		伊食生蠔仔
	English	NP_1- V-NP_2-XP
7c		He eats the oyster raw.

3. Depictive Constructions (cont.)

- Depictives in Taiwanese Southern Min

	Special Constructions
	***Na*^{2} 若 X *Na*^{2}若 Y**
10a	若飲咖啡若會 while drink coffee while discuss 'talk over coffee'
10b	若眛交睡若看電視 'nod while watching T.V'

3. Depictive Constructions (cont.)

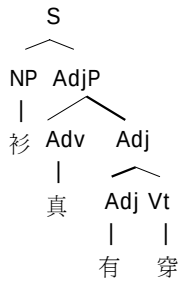
- Depictives in Taiwanese Southern Min

	Resultatives
	Subject-hosted Resultatives
	NP_1- V-NP_2-XP
8a	阿蘭仔飲酒醉矣 'Lisa became drunk by drinking'
8b	咱食飯飽則來去散步 'Let's finish eating and then take a walk'

4. Middle Constructions

- **Middles in Taiwanese Southern Min: Interface of Lexical Meaning and Event Structure**

Hierarchical Structure for Middles



- A pluractional middle also involves the feature of non-veridicality
- Pluractional middles are dispositionals. Dispositionals are subject-oriented and can be construed as attributing a dispositional property to the subject in question.
- They also involve an element of modality, modality involving the notion of possible world and subjectivity (Stein & Wright 1995).

2. Pluractional Middles in TSM Defined

- Pluractional Middles in TSM result from a valency-reducing operation in which *u7* 有 as the generalization (GEN) operator or its negative counterpart *bo5* 無 triggers a change of two-place predicate to one-place predicate.
- The internal argument becomes the subject of the sentence while the external argument is suppressed.

3.Previous Works on Pluractional Middles in TSM

- Chen (1934), Li (1950), Zhang (1983), Yang (1991), Zhou (1991), Li (1996)

- (1) a. Chit4 niann2 siann1 khah4 u7
- chhing7.
- 此領衫較有穿.
- 'The clothes are more durable'
- b. Chit4 pang1 bi2 put4-chi2 u7 chiah4
- 此幫米不止有食.
- 'The rice harvested this season
- produces lots of helpings'

- The implicit argument bearing the semantic agentive role is not realized syntactically. The implicit argument bearing the semantic agentive role is not realized syntactically. The suppressed agent in middles can be taken as a covert form of free choice (ANY for short). ANY is licensed by the GEN operator *u7* 有 generic operator.

- (5) a. Kim1-kue1 chin1 u7 khng3.
- 金瓜真有囤
- 'Pumpkins keep well'.
- b. Chit4 ching2 tang1-hun2 khah4
- u7 chu2
- 這種冬粉較有煮
- 'Green bean noodles when cooked
- produce a lot of serving'
- c. Lian2-bu7 siong7 bo5 khng3
- 蓮霧上無囤
- 'Wax apples are most difficult to
- stay fresh'

- (7) a. Kha2 khi2 po3 ia2 u7 chhing7
- 卡其布野有頌
- 'khaki cloth is quite durable'
- b. Lik7 te5 pi2 ang5 te5 khah4 bo5 phau3
- 綠茶比紅茶較無泡
- 'Green tea can be infused less repeatedly than black tea'

- (14) d. Only monosyllabic verbs are acceptable for the former, whereas both monosyllabic and disyllabic words can be accommodated for the latter, as in *Gin2-a2 ho2 io1 chhi7* 囡仔好育飼 'The kid is easy to take care of'.
- (14) e. The former involves a whole set of events converted to a generic reading, whereas the latter may be a single event.

6. Evaluative Middles

- Points of difference between pluractional middles and evaluative middles
- (14) a. In spite of the shared dispositional feature ascribed to the subject, the former is characterizable by the backgrounded unbounded pluractionality, whereas the latter can be construed as semantic properties based on evaluation.

- (14) f.
- *Ho2* 好 or *phainn2* 歹 in the latter can be further preceded by *u7* 有, whereas *u7* 有 or *bo5* 無 in the former can only be preceded by adverbs of degree.

- (14) b. The latter is more productive than the former, as in *ho2-khuann3* 好看 'pretty', *ho2-thiann1* 好聽 'pleasant', *ho2-chiah8* 好食 'delicious', *ho2-sia2* 好寫 'easy to write', etc.
- (14) c. The former in its positive form corresponds to *nai4* 耐 + V, *jing1* 經 + V or *jin1* 禁 + V in Mandarin, whereas the latter corresponds to *hao3* 好 + V / *nan2* 難 + V in Mandarin.

5. Liah8 力 Constructions

- The Dual Function of *Liah8*力 (<搦) in Li Jing Ji

Type 1	liah8 力 + NP + V
(1a)	力 + NP + bare Vt 力媒婆打 'beat the matchmaker'
(1b)	力 + NP + Vt + Phase C 力佛前香燭點起 'lit the candles before the Buddha',
(1c)	力 + NP + Vt + Resultative C 力鏡打破 'break the mirror'
(1d)	力 + NP1 + compound V (VV), 力繡? 整理 'put the embroidered box in order'.

5. Liah8 力 Constructions (cont.)

- The Dual Function of *Liah8*力 (<搦) in Li Jing Ji

Type 2	*Liah8* 力 + NP1 + V +(X)+ NP2
(2a)	Double-object construction 力 + NP1 + V +(X)+ NP2) 力孑嫁乞林大 'marry me (viz., your daughter) to Lin Da',
(2b)	Transfer construction 力+ NP1 + V +(X)+ NP2 力繡毬摔著呂蒙正 'hit Lyu Mengcheng with an embroidered ball',
(2c)	Characterizing construction 力 + NP1 + 爲/做+ NP2 力伊有心做無心 'take his enthusiasm as indifference'

6. Sui generis constructions (特列格式)(cont.)

e.g., 張小姐x共記者放粉鳥y （張小姐對記者爽約）

♣**成語義**：（爽約；X對 Y. 不遵守諾言）（不涉及客體移動）

作爲 複雜詞或詞組性詞

「放粉鳥」帶兩個論元： X，Y

論旨角色： 施事，受事

♣**句義**：施事對受事不遵守諾言

♣**句法限制**：記者與張小姐放粉鳥 vs

*粉鳥與張小姐放與記者

*記者與張小姐放許隻粉鳥

6. Sui generis constructions (特列格式)

台灣閩南語固定語式試論

- **成語中名詞所扮演的角色**

	字面意義	成語意義
「放粉鳥」	釋放鴿子	爽約
「粉鳥」	有指稱性	無指稱性
「粉鳥」	可帶限定詞	不可帶限定詞
量詞	個體量詞	動量詞
句法限制	「粉鳥」可充當主語	「粉鳥」不可充當主語

1 伊放一隻粉鳥出來（他放一隻鴿子出來）

2. 阿仁別共因同學放過一擺粉鳥（小仁曾經放過他同學一次鴿子）

6. Sui generis constructions (特列格式)(cont.)

- **格式和現成語的區別**

鑑定條件	格式 constructions	現成語 patterns of coining
滋生力	有	沒有
預則力	可	不可

6. Sui generis constructions (特列格式) (cont.)

- 從論元結構、語義角色、句義入手可以建構出成語的字面義和成語義區別所在。

e.g., 益仔x佇放粉鳥y (阿益在釋放鴿子)

♣**字面義**：（釋放鴿子）（涉及客體移動）

「放」 帶兩個論元：X，Y

論旨角色： 施事 ， 客體

♣**句義**：施事使客體從束縛的狀態中解脫出來

♣**句法限制**：(許隻)粉鳥與益仔放去啊

6. Sui generis constructions (特列格式)(cont.)

- **格式甲： '無半' + 類別詞 + 名詞**

- '無半'的語意：強調沒有某種特定的東西，一無所有，爲成語義
- '無半'的語意的建構：非組合性
- 整個構造的語意的建構：組合性
- 常項（不變的成分）：無半
- 變項（可變的成分）：任何能帶類別詞的名詞

e.g., 無半仙錢 「一個子兒都沒有」 「半分錢都沒有」
無半滴水 「一滴水都沒有」 「半滴水都沒有」
無半絲風 「一點風都沒有」 「半點風都沒有」
無半粒汗 「一滴汗都沒有」 「半滴汗都沒有」

6. Sui generis constructions (特列格式)(cont.)

d. **格式乙: '斷半' + 類別詞 + 名詞**

- '斷半'的語意: 強調沒有某種特定的東西，一無所有，成語義
- '斷半'的語意的建構: 非組合性
- 整個構造的語意的建構: 組合性
- 不變的成分: 斷半
- 可變的成分: 任何能帶類別詞的名詞

e.g., 斷半仙錢「一個子兒都沒有」 「半分錢都沒有」
斷半滴水 「一滴水都沒有」 「半滴水都沒有」
斷半絲風 「一點風都沒有」 「半點風都沒有」
斷半粒汗「一滴汗都沒有」「半滴汗都沒有」

6. Sui generis constructions (特列格式)(cont.)

- **現成語 (patterns of coining) (Kay 2005)**
  形容詞+ '甲若' kah4 na2 +名詞+咧 leh

本體	形容詞	喻詞	喻體	句尾助詞
變項	變項	常項	變項	常項
一枝喙	利	甲若	刀	咧
腹肚	膨	甲若	雞規	咧
腹肚	圓 inn5	甲若	球	咧
阿雪仔	水 sui2	甲若	花/西施	咧
灶骹	亂	甲若	糞掃堆	咧
伊	橫	甲若	牛	咧
伊	慢	甲若	牛車	咧
伊講話	緊	甲若	機關砲	咧
阿益仔	瘦 san2	甲若	竹篙//猴	咧

Constructions in Language Use: Cases from English and Mandarin Chinese

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Outline

- A. From Construction Grammar (CxG) to Construction Discourse
- B. Constructional schema in interaction
- C. Constructions and language change
- D. Case Studies

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- Couper-Kuhlen, Elizabeth, & Sandra A. Thompson. 2005. A linguistic practice for retracting overstatements: Concessive repair. In A. Hakulinen & M. Selting (eds.), *Syntax and Lexis in Conversation*, 257-288. Amsterdam: Benjamins.
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A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005)

- *Mother drowned baby*.
  - acceptable as headline
  - but a peripheral construct not licensed by any of the core English constructions
  (cf. *A mother drowned a baby*.)

📖 '…context matters greatly when we are faced not only with linguistic acceptability judgments, but also with respect to making judgments of grammaticality.' (Östman 2005: 123)

A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005) (Cont.)

📖'…as presently conceived, the patterns that may exist for combining sentences into larger structures ("paragraphs" or whatever) are not being included in the set of grammatical constructions.'

(Fillmore & Kay 1993: 1.10)

A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005) (Cont.)

- **The recipe pattern (as DP)**

Heading
- name of product-to-be
- cultural information

Ingredients
- list of ingredients
- specific amounts
- temperature
- amount of final product (e.g. 'serves four')

Instructions
- sequentially ordered
- directive mode
- alternative paths

A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005) (Cont.)

📖'In the areas of pragmatics, register, and discourse, Construction Grammar has so far not established any rigid notion of what belongs where. In fact, it is not even clear that all practitioners of Construction Grammar are in favor of taking Construction Grammar beyond the sentence.

However, a move beyond the sentence is not at odds with the original motivations for devising the CxG model.' (Östman 2005: 125)

A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005) (Cont.)

- *Mother drowned baby*.

- Three possible DP (discourse patterns) in which the sentence could be felicitously uttered or written:

(a) headline

(b) family conversation

(c) interlanguage

A. From Construction Grammar (CxG) to Construction Discourse (based on Östman 2005) (Cont.)

- Much of discourse is conventionalized.
- Discourse patterns as conventional constructions.

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005)

- A two-part constructional schema to retract overstatements/exaggerations – concessive repair:

(Overstatement)

(a) Concession

(b) Revised statement

- A constructional format emerging from interactional needs of a routinized rhetorical practice – displaying rationality and accomplishing 'being accountable'.

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005) (Cont.)

- Schematic form of the Concessive Repair practice

Overstatement	I can switch off
(a) Concession	well not really switch off
(b) Revised description	but you know relax

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005)(Cont.)

- **Projectability**
  - As a construction, Concessive Repair is so well-entrenched that -- the concession (the first component) projects roughly what the second component will be
  - Thus, the revised statement (the second component) can be left implicit or co-produced.

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005) (Cont.)

- **Scalarity**:
  - A scale constructed on semantic or ad hoc pragmatic terms, with overstatement being the stronger term and the revised statement the weaker term.
    e.g., <switch off (stronger), relax (weaker)>
    ordered on 'is _ more inattentive _ than'
  - By appealing to such a scale, the speaker can deny the validity of a stronger term, while at the same time asserting that of a weaker term, and the essence of an original affirmative or negative claim can be preserved.

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005)(Cont.)

10	→		Nan:	[Oh : : : [º ↓ h*ell n] *o. º ↓
11	→		Emm:	ºNothinº
12	→			(0.3)
13	⇒	a	Nan:	.t Oh I've gotta lot'v (0.2) frie:nds, =
14	⇒	b	Emm:	=But n[othin' you're] dating.
15	→		Nan:	[But n o:]

Overstatement	Oh hell no
	(*Implied* → I have no boyfriends)
(a) Concession	I've got a lot of friends
(b) Revised description	but nothing you're dating

B. Constructional schema in interaction (based on Couper-Kuhlen & Thompson 2005) (Cont.)

- **Construction-like:**
  - some aspects are fixed -- bipartiteness, polarity, contrastivity
  - the lexical realization of the scalar relationship -- while constrained by the relation -- is relatively free
  - common, recurrent interactional practice sedimented or 'grammaticized' into lexico-grammatical pattern

C. Constructions and language change

- **Language use, repetition, frequency**
  - Constructions: conventionalized speech patterns frequently occurring in daily (spoken) language use (e.g., Bybee & Hopper 2001).

C. Constructions and language change (Cont.)

- Structured and cognitively represented in a highly skewed fashion.
  - lexically constrained "chunks" with autonomous cognitive status -- often with specific interactional functions (e.g., Fillmore et al. 1988; Kay & Fillmore 1999)
  - phonological reduction
  - semantic extension/reinterpretation
  - structural reanalysis (Hopper & Traugott 1993; Traugott 2003)

D. Case Studies (Cont.)

Chinese:

(1) 'V + 一 + 個 + N' (based on Biq 2002, 2004a)

- '一 + 個 + N' vs. '數 + 量 + 名'
- frequency effect – lexically skewed
- Cf. Tao Liang 2002 -- phonological reduction in spoken Beijing Mandarin
- '(一) + 個 + N' – saliency of N as discourse participant

D. Case Studies

English:

(1) *be going to* vs. be V-ing to (Hopper & Traugott 1993)

D. Case Studies (Cont.)

- **'V + 一 + 個 + N'**
  - smaller construction in larger construction family of related sub-constructions
- **'V + 一 + 個 + ZERO'**
  e.g., 親一個! 香一個! 笑一個! 抱一個!
- **'ZERO + 一 + 個 + NEG-SV'**
  e.g., 一個不小心! 一個不留神!
- **'V + 個 + Comp'**
  e.g., 嚇個半死, 哭個夠, 說個不停, 講個沒完, 查個水落石出, 殺個片甲不留
- **'V + 個 + N'**
  e.g., 喝個水, 開個刀, 洗個澡, 吃個牛排, 看個朋友, 找個時間, 簽個大家樂, 舉個例子
- **cf. 'V + 名-/動- 量 + N'**
  e.g., 抽根煙, 看場電影

D. Case Studies (Cont.)

(2) *I think* vs. other *that*-complements (Thompson & Mulac 1991a,b)

- Most tokens of Complement-Taking Predicates (CTPs) are the highly frequent *think, feel, know, see, guess, say, show, believe, find.*
- *I think* is the most frequent CTP-phrase.
- *I think* has grammaticized as a separate "chunk".
  - phonologically reduced
  - used in non-CTP positions
  - used to express epistemic stance
- CTPs and their subjects are stored and retrieved as schematic epistemic/evidential/evaluative prefabs.
  (see Thompson 2002, Tao 2003, and Huang 2003 for further research on similar topics in English and Chinese)

D. Case Studies (Cont.)

(2) "是"的進一步語法化: 由虛詞到詞內成分 (based on董秀芳 2004)

- The fully generalized notion of construction
- The syntax-lexicon continuum (Croft 2005: 275):

Construction Type	*Traditional Name*	*Examples*
Complex & (mostly) schematic	syntax	[SUBJ be-TNS VERB-en by OBL]
Complex & (mostly) substantive	idiom	[kick-TNS the bucket]
Complex but bound	**morphology**	**[NOUN-s], [VERB-TNS]**
Atomic & schematic	syntactic category	[DEM], [ADJ]
Atomic & substantive	word/lexicon	[this], [green]

D. Case Studies (Cont.)

- 附在連詞和副詞後的**是**正在變成一個"詞內成分" (明清到現代)
  - 無論是, 不管是, 好像是, 甚至是 -- 是輕讀
  e.g., 無論是他去哪裡，我都要跟著去。
  如果是他們都不能來，我們的會就要推遲一天了
  首先是要把工作做好，然後再考慮其他問題
  一雙俊眼，水汪汪的剪水橫波，好像是淚珠欲落 (清張春帆九尾龜第六十六回)
- 源頭是"判斷詞"或"焦點標記"的**是**
  e.g., 如果他是個好人，就不會做這種事了 (表判斷)
  如果他是做錯了，你就批評他 (表強調)
  不管是明天去還是後天去，現在都要做準備了 (表選擇的連詞)
- "是"從指代詞變爲判斷詞，又從判斷詞變爲焦點標記是語法化
- 從判斷詞變爲詞內成分是進一步語法化

D. Case Studies (Cont.)

(3) 'Clausal Subj + 好了' (based on Biq 2004b)

- 還在進行或剛剛開始的語法化與詞匯化
- a recommendatory construction to express the speaker's commitment (endorsement) to what is said in the clausal subject – outstanding frequency in spoken Mandarin but not in written Chinese

e.g., 你們吃完你們先過去好了。

那我乾脆以後寫4就這樣子寫好了。

那我明天再打給他好了。

不然我把外面的窗戶關起來好了。

我覺得還是去一下好了。

這種我看由你來講好了。

D. Case Studies (Cont.)

- 漢字頑強的表意性以及一個漢字一個音節整齊對應的結構特點使得漢語中詞綴的確定存在著不少困難。
- 西方語言學文獻中把由語法詞到詞綴的變化稱爲型態化 (morphologization) 。
- 漢語中類似的變化則是變爲一個不可分析的詞內成分，因此我們把這種變化歸爲"詞匯化" (lexicalization) 。

  (cf. Chui 2000 -- Morphologization of the degree adverb HEN – e.g., 很能接受, 很少會跟女孩子講那麼久)
- 更寬泛的詞匯化，指由"非詞單位"變爲詞。
- X是是從"實詞性短語"變爲詞。

D. Case Studies (Cont.)

- the grammatical main predicate does not contribute to the propositional but rather the epistemic part of the "message" of the whole utterance
- reminiscent of the *I think* type of epistemic phrases

📖'the type of grammaticization in which a governing or head element is reanalyzed as a governed or dependent element' (Thompson & Mulac 1991: 323)

D. Case Studies (Cont.)

- 從句法位置上看，判斷詞出現於主語之後。
- 若主語常省略，判斷詞就處於句首或接近句首的位置，就容易與位於句首的連詞相連接。
- 與連詞的經常共現 -- 爲是向連詞的貼附創造了條件。
- 在複句結構中，後一個分句一般是語意的重點所在 (cf. Bybee 2002) 。
- "無論X, 都Y"， "都Y"是重點, "無論X" 部分的語意地位降低。
- 處於非語意重心地位的語段中最容易發生句法成分間邊界失落 (boundary loss) 的變化，其中的成分彼此之間的關係容易模糊化。

D. Case Studies (Cont.)

- the main predicate (stative verb plus sentence final perfective marker) turning into something close to an epistemic adverb expressing stance
- **de-categorialization**
  - major lexical categories (e.g., noun and verb) shift towards secondary categories (e.g., preposition and adverb)

D. Case Studies (Cont.)

- stabilized constructional units
- the evaluative senses are not entirely tied to *hao* but rather to the *hao* construction as a whole
- Isn't it, then, reasonable to postulate that in our mental grammar, these routinized collocates are actually not subsumed under the lexical entry of *hao*, but rather have acquired the status of a processing unit on their own?

D. Case Studies (Cont.)

- 一點 都/也 沒/不 X
  - 形義固定的例子
  - Sub-construction of (連)一M 都/也 沒/不X
    e.g., 一個 都/也 沒/不X，一本 都/也 沒/不X
  - 表達主觀的強烈否定

D. Case Studies (Cont.)

(4) 有(一)點X

- 不定量詞點所參與的句式
- **(V)SV(一)點**
  - 便宜一點，那個收音機關小聲一點
- **有(一)點X**
  - 有點天分，有點累，有點像女孩子， 有點像說服或洗腦，就是有一點無所事事的感覺吧，有點不想賺了，有一點還是會有那種毛毛的感覺吧
- **V (一)點N**
  - 花一點錢，炒點青菜，帶了一點點心來，懂一點日文
- **一點 都/也 沒/不 X**
  - 一點也不累

D. Case Studies (Cont.)

- "有(一)點X"
  - 在口語及書面語兩種語料中，X不再限於名詞，原來對詞類的限制漸漸崩解
  - 標準的名詞(有點天分)
  - 單一的形容詞(有點累)
  - 分類性動詞 "像..." 詞組 (有點像女孩子, 有點像說服或洗腦)
  - 有名詞片語的"外殼"但實際是謂語成分(就是有一點無所事事的感覺吧)
  - 純粹的謂語成分(有點不想賺了)
  - 在口語中，更可以接上小句(有一點還是會有那種毛毛的感覺吧)
  - X爲名詞成分的例子在20%到25%之間

D. Case Studies (Cont.)

- 不定量詞點所參與的句式在口語語料中的分佈

(V)SV(一)點	120	45%
有(一)點X	**91**	**34%**
V (一)點N	39	15%
一點 都/也 沒/不 X	**15**	**6%**
總數	265	100%

D. Case Studies (Cont.)

- 很多例子都帶有說話人對所談論對象的主觀評價，這些評價常常是負面的，或是表達惋惜。

  e.g., 有點沮喪，有點失常，有點後悔，
  有點太不實際了吧，有點可惜

D. Case Studies (Cont.)

- 仍然有許多例子不是表達負面的主觀評價，只是表達說話人在做評價時的一種委婉含蓄的態度。

  e.g., 有一點甜甜的

D. Case Studies (Cont.)

Summary:

- Constructions and Discourse/Interaction
- Constructions and language change
  - Constructions, grammaticalization, lexicalization, and characteristics of Chinese grammar

D. Case Studies (Cont.)

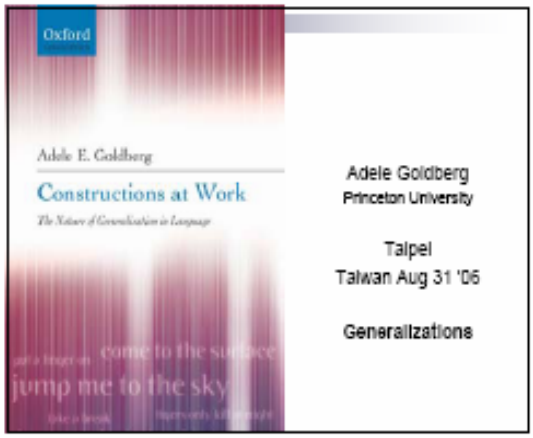
使用負面意義詞	40	44%
從上下文得知爲負面評價	13	14%
非負面(中性或正面)評價	38	42%
總數	91	100%

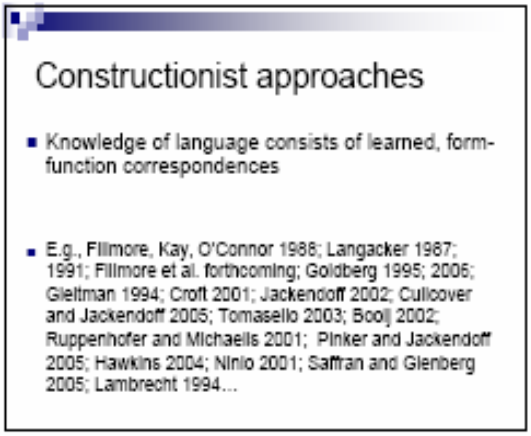
- 已經發展出傾向與負面意義詞結合或表達負面評價的趨勢 (44% + 14% = 58%)
- 過半，但不是大多數，可以說是一個正在進行中的辭彙化過程

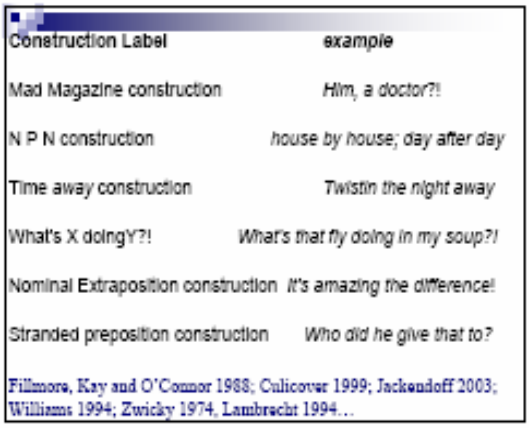
D. Case Studies (Cont.)

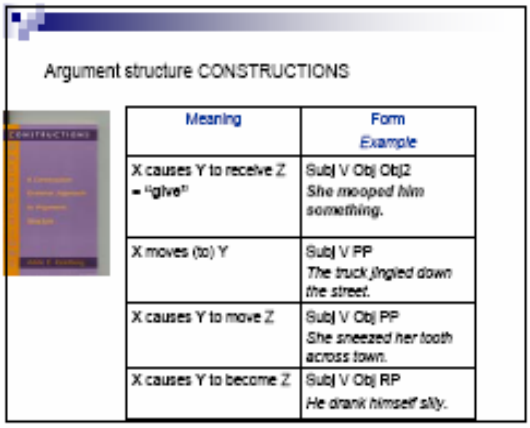
- 正在進行中的詞彙化的斷代剖面
  - 表(客觀)微量事物(如有一點事情)
  - 表(客觀)微量狀態(如眼睛有點發亮)
  - 表主觀而中性的評價(如有點甜甜的)
  - 表主觀而負面的評價(如有點太不實際了吧)，
- 典型的語法化過程
  - 從客觀到主觀，從事物到狀態，從(主觀)中性到(主觀)負面
- 過程中的各個層面的用法都有，這個過程是正在進行的
  - 形式及語意都呈現連續統 (continuum)，是進行中語法化的特徵 (Hopper & Traugott, 1993)

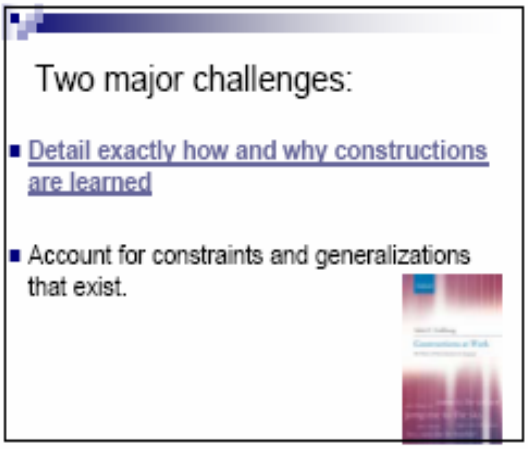
第四場　Adele E. Goldberg　　<構式語法 (Construction Grammar)之理論與發展>

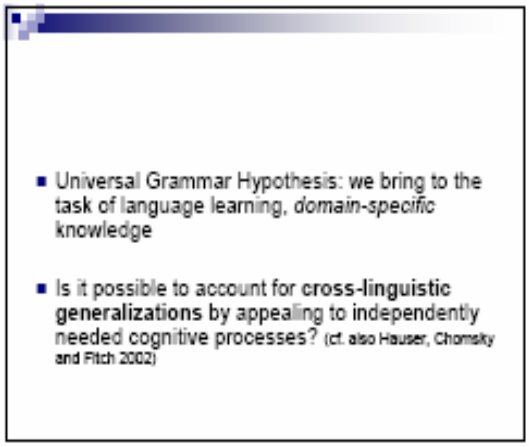












- Proposed universals related to ARGUMENT STRUCTURE

Proposed Cross-Linguistic Universals

E.g., Dowty (1991):

- if there's a subject and an object, and
- if there's an ACTOR and an UNDERGOER then
  - ACTOR -> subject;
  - UNDERGOER -> object,

except when they're linked the **opposite way**, in certain (syntactically ergative) languages.

- Dowty: relatively weak claim
- Oversimplified account of ergativity
  - Yidiny is syntactically ergative with nominals; syntactically accusative with pronouns (Dixon 1979)
- Also, what counts as "subject" "object" differs cross-linguistically (Fried 1993; Morris 1997; Croft 2001; Bardal 2005)

Reformulation of Dowty's generalization:

Actors and undergoers tend to be expressed in prominent slots

- **"conceptual accessibility" of actors** (Bock and Warren 1985; Bock, Loebel and Morley 1992; Tenfel and Felski 1996; Keil 1979).
- **undergoers/endpoints are also salient and closely attended to** (Robertson and Suci 1980; Woodward 1998, 1999; Csibra et al. 1999; Gergely et al 1995; Jovanovic et al. to appear; Landau 2008; Regier 2008)

Actors are salient

--Visual attention tends to be centered on the actor in an event (Robertson and Suci, 1980).

--Agent bias (*chase* vs *flee*) (Fisher *et al.* 1994)

--9 month olds: attribute intentional behavior to even inanimate objects (Csibra *et al.* 1999)

--16 month olds: distinguish intentional vs accidental actions (Carpenter *et al.*1998).

Undergoers are salient

--easier to discriminate between events that have distinct endpoints than distinct onsets (Regier and Zheng 2003)

-- 6 month olds attend more to changes of state than to changes of motion without corresponding state-change (Woodward 1998; 1999)

--subjects use a wider range of more specific verbs to describe endpoint-focused actions than onset-focused actions (Landau, 2003).

--Eng and Fr speakers are more likely to mention goal-directed paths of motion than atelic paths when describing video clips (Pourcel, 2004).

Reformulation of Dowty's generalization:

Actors and undergoers tend to be expressed in prominent slots

---

Tendency is explained by the fact that we attend to actors and undergoers.

Particular constructions allow for exceptions (e.g., passive)

Another example, taken as evidence for Universal Grammar :

# of arguments expressed
=
# of semantic arguments

The isomorphic mapping principle

(Lidz, Gleitman and Gleitman 2003)

Examples of general tendency in English

# of arguments expressed = # of semantic arguments

Meaning	Form
X moves (to) Y	Subj V PP X Y
X causes Y to move Z	Subj V Obj PP X Y Z
X causes Y to become Z	Subj V Obj RP X Y Z
X causes Y to receive Z	Subj V Obj Obj2 X Y Z

- Grice (1975): Maxim of Quantity: Say as much, and only as much, as is needed for the communicative goal.

: Pragmatic assumption in all kinds of linguistic and non-linguistic communicative acts.

(cf. also Paul 1889; Zipf 1935; Horn 1984)

Pragmatic Mapping Generalizations

(Goldberg, 2004, *Cognition*)

A) The arguments that are expressed are interpreted to be ***relevant*** to the message being conveyed.

B) Any semantic arguments in the event being conveyed that are ***relevant*** and ***non-recoverable*** from context ***must be overtly indicated.***

…Pragmatic generalization

- Expressed → Relevant
- Relevant & Non-recoverable → Identifiable

Pragmatic generalizations say nothing about arguments that are recoverable or irrelevant.

In fact, languages and constructions within languages treat these arguments variably…

Recoverable arguments are typically omitted cross-linguistically

Chinese

A: gei3
give
*** [I] give [you] [some peach]*** **(Mok and Bryant 2006)**

Korean, Chinese, Japanese, Hindi, Hungarian, Kannada, Laos…

- Particular constructions allow for recoverable and/or irrelevant arguments to be omitted, even in English:

	# arguments expressed	# semantic arguments
Short Passives *(e.g., Pat was killed)*	1	2: (Pat, Pat's killer)
The deprofiled object construction *(e.g., The tiger killed again)*	1	2: (the tiger, the tiger's prey)

- Pragmatic Mapping principle also allows for arguments to be identified without appearing as an overt complement:

	# arguments expressed	# semantic arguments
Semantic "incorporation" constructions *(e.g., Pat buttered the toast)*	2	3: (Pat, the toast, butter/spread)

ENGLISH (intrans)	ÉWÉ (transitive)
run	fu_V "$course_{NP}$"
swim	fu_V "$water_{NP}$"
blow	$blow_V$ "air_{NP}"

Essegbey 1999, to appear

Lao (Ameka to appear): At most two arguments per verb.

- So Isomorphic Mapping principle does not hold, but Pragmatic Mapping generalizations do.

. . .Proposed universals of argument structure

- Dowty's linking generalizations
  - explained by attentional properties of humans
- *Tendency* for # of args to equal # of complements
  - explained by general Gricean pragmatics

Other proposed language universals regarding argument structure

- Argument per Subevent Principle
  - General cognitive motivation for tendency

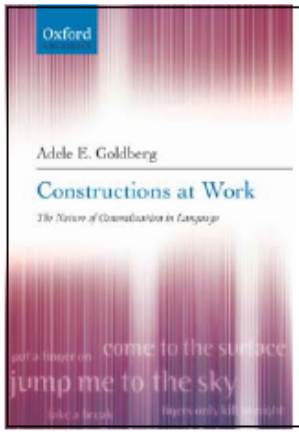
- What about more complicated syntactic generalizations?
  - Subj-Aux inversion
  - Island constraints
  - Distributional facts about resultatives, ditransitives
  - Inclusive interpretation of "or" within conditionals

Accounting for constraints and generalizations:

- Generalizations do not logically require recourse to UG.
- They may stem from:
  - general cognitive (e.g., attentional) facts
  - pragmatic (e.g., Gricean) facts,
  - or may follow from semantic/pragmatic facts about the constructions involved.

Constructionist approach
Two major challenges:

- Detail exactly *how* and why constructions are learned
  - Constructions ("linking rules") can be learned quickly
  - Skewed input (what children actually receive) facilitates construction-learning
  - (Constructions are good predictors of sentence-meaning)
  - (Indirect negative evidence)
  - (Memory for language)



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Learning

Learning

Is it possible to *learn* new constructions without explicit training or feedback?

Rules linking, e.g., agent to subject are "near-universal in their essential aspects and therefore may not be learned at all" (Pinker 1989: 248)

"there is sufficient cross-linguistic similarity in these linking rules to get the learning procedure started..." (Naigles, Gleitman and Gleitman 1993)

Preferential looking paradigm has been used to argue that the linking rules are in place as young as 20-30 months, the implication being that they are not learned (Marcus 2006; Gertner and Fisher 2006)

Learning a novel construction:

- Experiments designed to test whether a novel construction can be generalized without explicit instruction.

(Casenhiser and Goldberg, *Developmental Science*. 2005)

- Form: Subj Obj V-o
- Meaning: theme APPEARS in location

Example:

- "The frog the chair moopo-ed."
- Video: the frog appears on the chair.

***Training condition*:** witnessed 16 instances of novel construction with 5 novel verbs (4-4-4-2-2)

Control condition: watched same 16 video clips without sound

- training

Test: forced choice

- Determine which scene a sentence corresponds to:

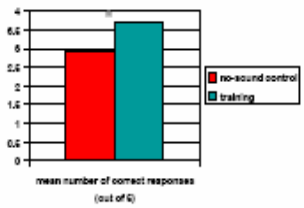
Scene #1: scene of appearance

Scene #2: matched foil scene

- Test1 Test2
  - Novel instances of the new construction
    - (involve NEW novel verbs; NEW scenes)

Comparison of two conditions (mean age 6;4, n=34)

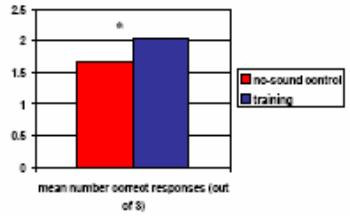
(Casenhiser & Goldberg 2005, Dev. Science)



Children were able to learn novel construction with 3 minutes of training

- Learning is not likely an effect of preexisting knowledge:
  - Novel construction violates a proposed universal
    - Locative phrase -> oblique (PP in English)
  - Construction relating "appearance" meaning to unusual verb position is unattested.

Morphology is not necessary (mean age 6;3; N=48)
(Casenhiser & Goldberg 2005)



Parallel results when novel transitives are interspersed at test without morphological cue

Is it possible to encourage the formation of an abstract construction?

- Generalization from instances is not automatic: it requires that one instance "remind" the learner of another instance.
- It also requires that the learner "notice" shared or related attributes.

(cf. Allen and Brooks 1991; Goldstone 1994 ; Markman & Gentner 1993; Ross et al. 1990; Resorla and Furrow 1977; Ross 1987)

"Category bootstrapping by similarity" (Goldstone 1994)

- Shared concrete similarities across exemplars should serve to remind the learner of a previous instance.
- The learner is then more likely to notice abstract shared attributes, thus encouraging abstract category formation.

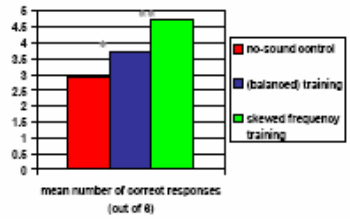
- Include more items that share (relevant) concrete similarity:
  - Greater number of items that share the same nonsense verb.

***skewed frequency training* condition**: 8-2-2-2-2
***(Balanced) training* condition**: 4-4-4-2-2
***Control*:** watched video without sound

Controlled for overall token/type frequency:
Total # of scenes: 16
Type frequency (number of novel verbs): 5

All three conditions watched exactly the same video

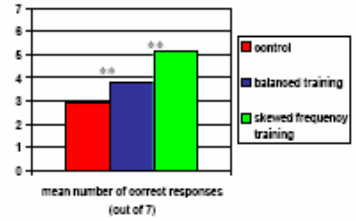
Results for all three conditions (mean age 6;4, n=51)
Casenhiser & Goldberg, 2005, *Dev. Science*



The existence of a single high frequency exemplar facilitates the learning of the novel construction

Similar results for adults (n = 81)

(Goldberg, Casenhiser and Sethuraman 2004, *Cog. Ling.*)

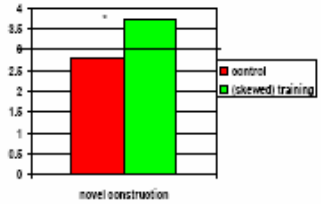


- Comparison with kids

- Younger kids?

Accuracy on novel construction

(mean age 4;5, N=24)



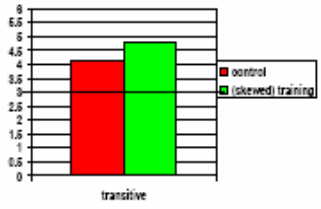
Four year olds are also able to learn novel construction with 3 minutes of training

- Can novel construction be distinguished from the transitive construction?
  - Novel instances of the new construction
    - (Involve NEW novel verbs; new scenes)
  - Novel instances of familiar transitive construction
    - (also involve new novel verbs; new scenes)

Important to test to know that subjects are attending to the form of the novel construction.

Distinguishing novel construction from transitive construction

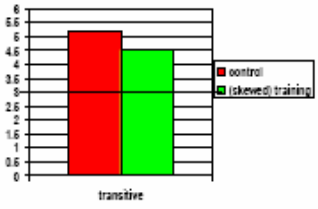
(mean age 4;5, N=24)



Four year olds were able to distinguish the novel construction from transitives

Adults distinguish novel construction from new instances of transitives as well

(undergrads, N=36)



Possible issue with no-sound control condition used in previous experiments

- We know language can focus attention and encourage generalization…
- Could it be that children are able to assign the novel meaning to the novel pattern at test just because they heard *some* language during training?

- If children hear:
  - *The sky the sun*
- Will it prime them for the meaning of "appearance" so that they choose appearance clips at test more often than chance?

Additional control conditions:

2 NPs during training phase:

The sun the sky

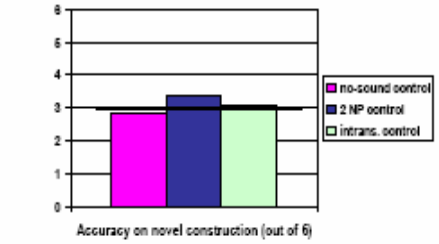
The table the bug

Familiar intransitive construction during training phase:

The sun fegs in the sky

Control conditions (54 undergrads)

(Goldberg, White, Casenhiser, to appear, *New Ideas in Psychology*)



- **Comparison to chance:**
  - None of control conditions differ from chance
    (t(17)= -.48, p =.64) (t(17)=1.13, p=.27) (t(17)=.34, p= .73)
- Also none are significantly different from others.

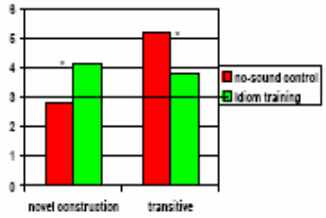
Many open questions remain….

- Just how detailed and how robust is knowledge of the novel construction?
- The role of type frequency

New "idiom" training condition (adults): all instances in training involve single nonse verb

(undergraduates)

(N=38)



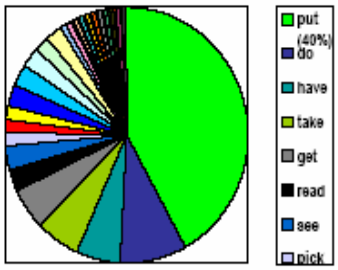
Adults were able to generalize beyond the single instance type at test, and were able to identify both novel construction and transitives above chance, but performance on transitives suffered relative to the controls.

Relevance to actual input children receive?

Verb tokens in mother's utterances

Subj V Obj PP
(She *Ved* it on the table)

- Percentage of tokens of various verbs in the caused motion construction:
- why



One verb often does account for the lion's share of tokens

Construction	Corpus data	Total # of verb types
Subj V Oblique	39% *go* (136/353) (Bates et al. 1988 corpus)	39 verbs
Subj V Obj Oblique	39% *put* (101/259) (Bates et al. 1988 corpus)	43 verbs
Subj V Obj Obj2 Recall *moop*	44% (226/517) Switchboard (Bresnan and Nikitina to appear)	13 verbs > 13 verbs
Subj V Scomp	40% *think* (Kidd et al. to appear)	8 verbs

Summary

- Contrary to nativist position, constructions *can* be learned and learned **quickly.**
- Increased shared concrete similarity—more exemplars with same novel verb in training—leads to better accuracy at test.
- Actual input children receive is tailor-made in just this way.

Two major challenges:

- Detail exactly *how and* ***why*** constructions are learned
- Account for constraints and generalizations that exist.

…Why constructions are learned

- Skewed input with high proportion of instances with shared words encourages category formation.
- Constructions are primed in production
- Also, constructions are good predictors of overall sentence meaning
  - Sorting task: Bencini & Goldberg
    - (*Journal of Memory and Language* 2000)
  - Corpus analysis: Goldberg, Casenhiser, Sethuraman
    - (*Journal of Child Language*, 2005)

- Indirect negative evidence
- Memory for language

Two major challenges:

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Accounting for constraints and generalizations:

- Generalizations do not logically require recourse to UG.
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- Detail exactly *how* and why constructions are learned
  - Constructions ("linking rules") can be learned quickly
  - Skewed input (what children actually receive) facilitates construction-learning
  - Constructions are good predictors of sentence-meaning
  - Indirect negative evidence
  - Memory for language

演講主題之書目

- **Context-sensitivity in Semantics, Lecture 1: Domain Restriction**

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Lecture: Construction Grammar: Historical and Intellectual Background

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附錄 1　研究提案之主題

本次卓越營所提交之研究報告，內容與本卓越營主軸相符，其中又以構式語法為大宗。國際學者致力於這方面研究的能量極為快速，具前瞻性，前景值得期待。

1. WordNet

-- Computing Cut-Off Points for Distributional Data
-- Parsimonious Polysemy: A Cognitive Pragmatic Study on *In*
-- Metaphors in Natural Corpus
-- 以語言資源輔助特定領域內容檢索之研究
-- 現代漢語名詞性接尾詞探討
-- 中英文雙語知識本體詞網與信息組合之應用—以華語文詞彙教學為例

2. Logical Semantics

-- Quantifier Domain Restriction

3. Gender and Society (Sociolinguistics)

-- On Inform-consent Doctrine from the Inform Consent
-- Gender and Compliment Behavior: A Case Study on Taiwan College Students

4. Construction Grammar

-- The Iterative Event Construction “V-Lai-V-Khi” in Taiwanese: A Constructional Approach
-- Interaction of Modality and Negation in Implicit Comparative Constructions: A Family of NP1 V NP2 m5（毋）X Constructions in Hakka
-- Verbs of Removal in Hakka: Integration of Verbs and Constructions
-- The Polysemy of Mandarin *Hai* Revisited
-- Language of Emotion in Mandarin Discourse: A Constructional Approach
-- Hakka X tet4 Constructions: A Constructionist Approach
-- The Mental Computation in Mandarin Classifier *Ge*
-- A Cross-linguistic Study on English and Chinese Verbs of Cognition
-- The family of verbs of putting in Hakka: Frames and constructions
--由「耍」字探其動詞詞組結構及賓語語意類型
-- 構式語法與語意在小學國語造句上的實際應用與省思
-- 從構式語法談辭典語意劃分

附錄 2　得獎學員之研究提案報告

鍾曉芳
Siaw-Fong Chung

Title: Computing Cut-Off Points for
Distributional Data

Abstract

Many lexical resources tend to provide a list of distributional data in descending order indicating the top number (e.g., frequency, Mutual Information, saliency values, etc.). This can be seen in the saliency listing of Sketch Engine (Kilgarriff and Tugwell, 2001) and the collocation list of Mutual Information values in the Academia Sinica Corpus of Mandarin Chinese (Chen et al., 1996). These lists of figures do not give much information regarding which of the top words are significantly different from the bottom words or where the cut-off point lies between the significant and insignificant lists. This paper proposes three computational approaches to computing the cut-off points for distributional data. The findings of this proposal will not only contribute to the building of lexical resources but will also contribute to empirical data such as corpora analyses which often arrange lexical items in descending order without specifying which of the top few are the most important ones. In addition, this proposal also suggests modification to the present lexical resources such as Sinica Corpus, the Sketch Engine and WordNet so that the arrangement of descending distributional data can also suggest cut-off points for the top significant ranks.

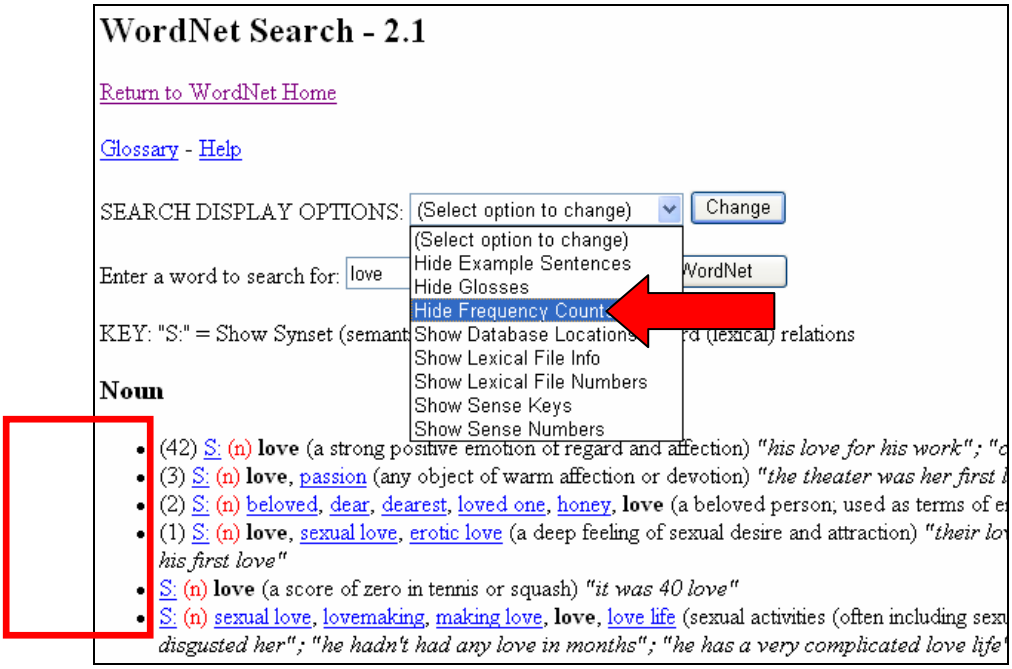
1.0 Introduction

Many lexical resources tend to provide a list of distributional data in descending order indicating the top number (e.g., frequency, Mutual Information, saliency values, etc.). This can be seen in the saliency listing of Sketch Engine (Kilgarriff and Tugwell, 2001) and the collocation list of Mutual Information values in the Academia Sinica Corpus of Mandarin Chinese (Chen et al., 1996). These lists of figures do not give much information regarding which of the top words are significantly different from the bottom words or where the cut-off point lies between the significant and insignificant lists. This paper proposes three computational approaches to computing the cut-off points for distributional data. The findings of this proposal will not only contribute to the building of lexical resources but will also contribute to empirical data such as corpora analyses which often arrange lexical items in

descending order without specifying which of the top few are the most important ones. In addition, this proposal also suggests modification to the present lexical resources such as Sinica Corpus, the Sketch Engine and WordNet so that the arrangement of descending distributional data can also suggest cut-off points for the top significant ranks.

Lexical resources such as WordNet provide a good reference for taxonomy and thesaurus. WordNet 2.1 (online at http://wordnet.princeton.edu/) provides the search option of display by "high frequency count" (see Figure 1) below. This frequency count is the ordering of the most frequent sense to the least frequent sense (Tengi, 1999) that is computed using a semantic concordance created by Landes, Leacock and Tengi (1999) based on two corpora – the Brown corpus and Stephen Crane's novella entitled *The Red Badge of Courage*.

Figure 1: Search Display Option in WordNet 2.1



Form Figure 1, one can see that the sense frequencies for 'love' are 42, 3, 2 and 1. Usually, most people will say that the first sense is the most prototypical sense and the other senses are considered less prominent. This conclusion is based on the big gap between 42 and the rest of the number. This shows that there is a cut-off point after 42 but this cut-off point is based on intuition. However, for listings that do not have obvious gap between the frequencies, intuition may not help in deciding the cut-off points. Therefore, this proposal suggests that there should be some objective methods to help determine the cut-off points for any kind of

distributional listings which have more number of words than in Figure 1.

Finding this cut-off point is important in linguistics research as most lexical resources, including British National Corpus, Academia Sinica Corpus of Mandarin Chinese and the Sketch Engine, only provide either word lists or collocate lists in descending order. Most people will only look at the top few and ignore the rest. This proposal suggests three ways to find out how many of the top few results are considered significant and which are considered insignificant. These three methods are based on the characteristics of the distributional listings, which usually follow Zipf's law (Zipf, 1932) which says that the most frequent value is most likely to be twice as much as the second most frequent value. The following will first explain the characteristics of the distributional lists.

2.0 Characteristics of Descending Distributional Listings

When a sample size is large enough, the results of a frequency listing is like to be in a distributional pattern. Most frequency list follows the pattern of the Zipf's law, where the top few are usually very high and there will be a sudden drop of number such that in (1).

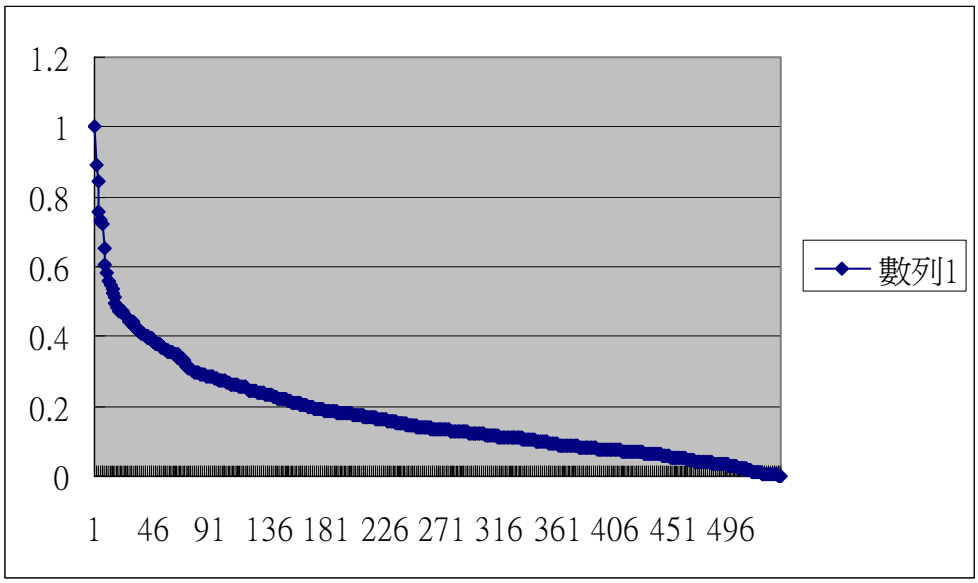
(1) The Collocates for 大拜拜 at the Subject Position in the Sketch Engine

subject	Frequency	Saliency
政治	37	28.94
閉業	3	27.53
體育	12	18.97
年度	6	15.37
桌	2	**12.2**
人物	2	**7.58**
外長	2	6.5
資訊	2	6.1
教育	3	6.02
外交	2	5.6
運動	2	5.34
科技	2	4.27

For example, in the saliency list in (1), there is a sudden drop from 12.2 to 7.58. This relatively huge gap may mean that there is a cut-off point where the significant ones (above 12.2) can be separated from the insignificant ones (below 12.2). The pattern for the list of words in (1) when plotted in graph will be such in Figure 2 below, where the x-axis is the 'Chinese subject' and the y-axis is the 'saliency' (Figure 2 uses the rank of the Chinese word

to represent the Chinese character – rank 1, 2, 3…). All these Chinese words are the collocates of 大拜拜**.**

Figure 2: Pattern of Distributional Data following Zipf's Law



The function for the type of graph in Figure 2 such that in (2), where any point in the graph will be (x, f(x)). x is the rank of Chinese subjects on the x-axis and f(x) is the function to calculate the value on the y-axis.

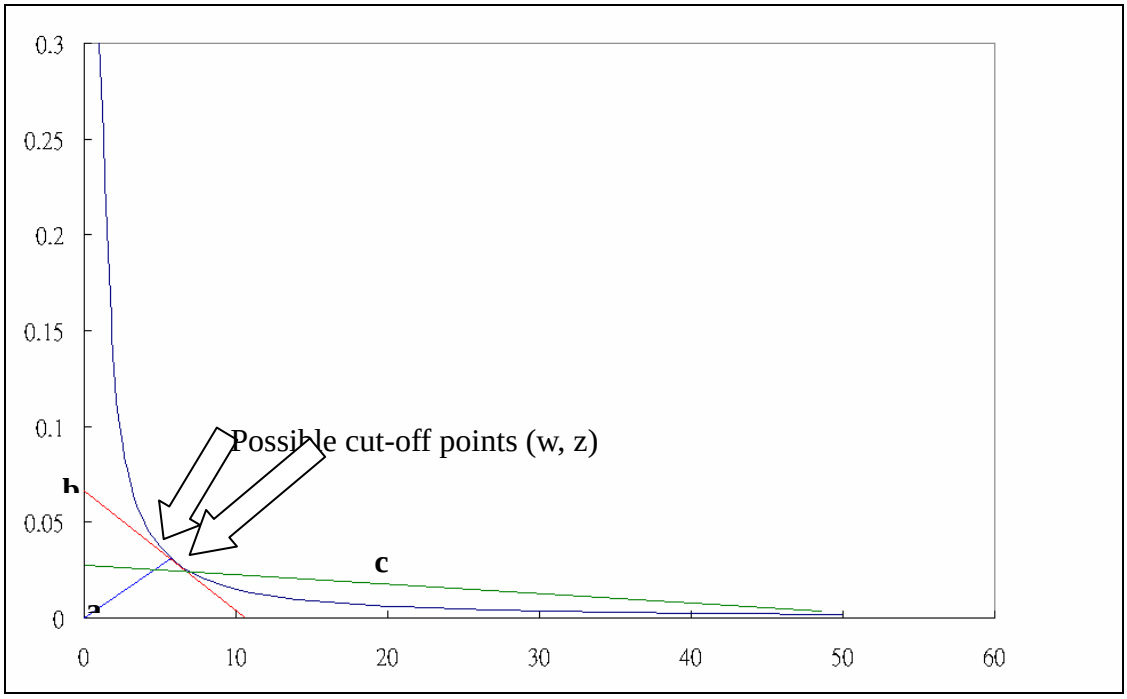
(2) $f(x) = \frac{}{x}$

Using this formula, this paper proposes three ways to find a point that separates any distributional listing into two lists, i.e., significant and insignificant lists. The purpose of doing this is to find out which among the list should be considered significant and which to be insignificant.

3.0 Finding Cut-Off Points

The three methods suggested to find the cut-off points are: (a) calculating shortest distance from the start point (0, 0); finding the most slanted slope between the x-axis and the y-axis; and (c) utilizing a base-line of random occurrences of collocates (Chinese subjects) with 大拜拜. These three methods are represented in Figure 3 where the y-axis shows the saliency values and the x-axis shows the rank of Chinese words according to highest to lowest.

Figure 3: Three Ways to find Cut-off Point



Methods (a) and (b) are based on the assumption that there is a point where the curve changes the most when it goes down the y-axis to the x-axis. Method (c) is experimental-based, and a baseline is needed.

Methods (a) can be answered by calculating the position of (w, z) where it is of shortest distance from (0, 0). This is because when every line departs from the starting point of (0,0), there will be a line that is the shortest distance from the curve. The point where this line touches the curve is the point where the curve changes the most from the y-axis to the x-axis.

Method (b) calculates the most slanted slope between the x-axis and the y-axis. When the slope is most slanted, the possibility is high that the curve changes the most at a certain point (w, z). This is because the higher the curve on the y-axis, the more vertical the slope will be. Moreover, the further the curve moves away from (0, 0) on the x-axis, the more horizontal the slope will be. Therefore, the most slanted slope between the vertical and horizontal will be the possible cut-off point representing where the curve has changed the most.

Method (c) is more complicated. It forms a baseline where all occurrences above the line are considered significant. It is important to note that Figure 3 means the in interaction between Chinese words (the x-axis) and saliency values (the y-axis) while the Chinese words are the collocates of the searched word (大拜拜). Therefore, one possible way to find a case where x and y are accidental is to count the occurrences when 大拜拜 and these collocates are random. The means that the baseline is formed by plotting the saliency value of random co-occurrences of 大拜拜 and each of the collocates in the graph. These random

co-occurrences must exclude those that occur in a grammatical relation shown in (1) above.

To find out this random patterns of 大拜拜 and each of the collocates, the paper proposes to look for the frequency of 大拜拜 and each of the collocates in random five sentences before and after 大拜拜 (but not in a grammatical relation such as modifier, subject, object, etc.). This means that when both these words occur in the same text and they are not in any grammatical relation, their occurrences are likely by chance. Therefore, by plotting co-occurrences that happen by chance, one is able to claim that all saliency values that above the chance level is significant. That means that, in Figure 3, all Chinese words with their saliency values above line (c) are under the significant list, while the rest are under the insignificant list. This third method is experimental-based and should be more precise that the previous two methods. However, this method is also the most complicated where the internal program of the Sketch Engine has to be used in order to calculate the saliency values.

4.0 Conclusion

The above proposes three methods to help linguists to work further with their empirical linguistic data which are of distributional pattern. The reason why this proposal emphasizes finding significant list is because most empirical studies do not know where to stop listing results from listings such as frequency list. Most studies tend to list the top few and the number of the top few depends on the choice of the researchers. If there are criterion-based methods to find out the cut-off points for the frequency lists, subjectivity will be reduced in terms of choosing which top few words to be selected. Furthermore, most lexical resources provide wordlists according to different criteria such as frequency, Mutual Information values, collocation, saliency values, etc. None has suggested which of the top few listed should be looked at. This proposal, therefore, deals with the general problems of these listings and suggests three possible ways to solve the problem. Future work suggests incorporation of these cut-off points in lexical resources such as Sinica Corpus, the English and Chinese Sketch Engine, etc. This proposed idea should have great contribution to computational linguists, researchers needing statistical ways to analyze linguistic data, and researchers who need to run psycholinguistic experiments related to word meaning.

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Interaction of Modality and Negation in Implicit Comparative Constructions: A Family of NP_1 V NP_2 *m5* (毋) X Constructions in Hakka

Abstract

This study, after adopting the constructional approach (as proposed by Goldberg 1995, Jackendoff 1997, Goldberg & Jackendoff 2004, among others), which declares that construction itself should be taken as a meaning-bearing unit, will probe into the syntactic and semantic subtleties of a family of NP_1 V NP_2 *m5* X constructions in Hakka. The covarying relations among NP_1, V, NP_2, and *m5* X will be examined. With a closer scrutiny of modality and negation, mapping of conceptual structure and syntactic structure, and pragmatic implication, this study gives a complete account of the regularities and idiosyncrasies exhibited by the family of Hakka NP_1V NP_2 *m5* X constructions.

Keywords: Hakka, constructional approach, modality, negation, argument structure, conceptual structure, verb decomposition, comparative meaning

One unusual sentence pattern in Hakka attracts our attention to conduct this study. Consider the sentence *A5-yin1 zeu2 a5-ming5 m5 ngiang5* (阿英走阿明毋贏) ‘Ayin cannot run as fast as Aming’. This sentence contains an intransitive verb *zeu2* (走) ‘to run’ which is a one-place predicate taking only one argument (the runner) as its subject. However, in this sentence, the verb *zeu2* is followed by another argument referring to the entity with whom the subject races. This noun phrase in the post-verbal position, instead of being the argument of the preceding one-argument verb, is licensed by the whole construction. The constructional meanings involving the “competing” and “comparative” senses are driven by the interaction of the elements in this schematic construction, including the participants, the action, and the intended result. In addition to the peculiarities mentioned above, dynamic modality concerned with the ability of the subject of the sentence, deontic modality concerned with the permission of the external authority, and the epistemic modality expressing the speaker’s judgment toward the proposition are also displayed by this construction (cf. Palmer 1999, 2001). Because of the presence of the negation marker *m5* (毋), this construction refers to the situation in which the subject is unable to achieve the goal of winning the opponent. It implicates that compared to the post-verbal NP, the subject’s running speed is slower. Such a

modality sense and implicit comparative implication do not come from any single component of the construction but is contributed by the construction holistically. Such an observation is in accord with the tenets of Construction Grammar.

According to Goldberg (2003), constructional approach that emerged in the past 10-15 years allows linguistic observations about form-meaning pairings, known as 'constructions', to be stated directly. It is the constructionists' aim to account for the full range of linguistic phenomena without assuming that a particular subset of the data should appeal to a privileged 'core', which the generative approach believes to be the predicate of the sentence. Instead, the construction-based approach claims that the meaning of the construction is determined by the integration of all the components of the construction holistically (cf. Goldberg (1995), Jackendoff (1997), Goldberg & Jackendoff (2004), among others). Goldberg holds a strong claim that "any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist" (Goldberg 2003: 219). Moreover, the constructionist framework lays special emphasis on the semantics and distribution of particular words, grammatical morphemes, and cross-linguistically unusual phrasal patterns. The covariational conditional construction in English (e.g. *The more you think about it, the less you understand.*) can be taken as an example of an unusual pattern. This construction involves an independent variable (identified by the first phrase) and a dependent variable (identified by the second phrase). It should be noted that the word *the* normally occurs preceding a noun phrase, while in this case, it requires a comparative phrase which is not classified as a noun phrase or clause. The requirement that these two phrases be juxtaposed without conjunction is another non-predictable aspect of the pattern.

Goldberg (2006) states that constructions exist in every language. They are essential to an effective account of both unusual or especially complex patterns and they may be invoked to account for the basic, regular patterns of the language as well. Cross-linguistically, such a constructional view is adopted by many researchers to examine linguistic phenomena. For instance, Goldberg & Jackendoff (2004) propose that a family of related constructions is required to account for the distribution of English resultatives. Many sub-regularities, including argument linking, aspectual structure, and temporal relations, as well as idiosyncrasies are found among these sub-constructions. In addition, assuming the constructional approach, Lai (2003) examines the multiple functions of Hakka LAU constructions, including comitative, goal, source, benefactive, and patient functions. It is claimed that these various senses associated with LAU NP are closely related to the interaction between the components of the LAU construction---including the predicate, the participants of the event, and the aspectual feature. Moreover, Lien (to appear) studies *bong2*

(罔) construction in Taiwanese Southern Min and presents the semantic and pragmatic functions evoked by this construction. It is found that this construction expresses a concessive meaning and gradable semantic properties which can be explicated in terms of a scalar model. An important pragmatic or discourse function as a downtoner used in understatement is carried by this construction as well. In line with these studies, this paper intends to explore the subtleties involved in *a5-yin1 zeu2 a5-ming5 m5 ngiang5* (阿英走阿明毋贏) 'Ayin cannot run as fast as Aming.' construction as well as the sub-constructions involved in this schematic NP_1 V NP_2 *m5* (毋) X construction in Hakka.

In addition to the sentence exemplified above, a family of NP_1 V NP_2 *m5* X constructions in Hakka is found and illustrated by the following examples.

(1) a. 汝挺阿公毋動。

Ng5	*sung2*	*a5-gung1*	*m5*	*tung1.*
You	push	grandfather	NEG	move[2]

'You are too small to push Grandfather to move.'

b. 汝打阿公毋著。

Ng5	*da2*	*a5-gung1*	*m5*	*do2.*
You	hit	grandfather	NEG	PHA

'Grandfather is too tall for you to touch (his head).'

(2) a. 這間屋歇人毋得。

Lia2	*gien5*	*vuk4*	*hiet8*	*ngin5*	*m5*	*det4.*
This	CL	house	live	people	NEG	POT

'This house is too run-down for people to live.'

b. 刀仔剮人毋死。

Do1-e2	*cii5*	*ngin5*	*m5*	*si31.*
Knife-SF	kill	people	NEG	die

'The knife is too dull to stab people to death.'

[2] The data presented in this paper are mainly based on *Si3yen3* Hakka dialect. *The Manual of Taiwan Hakka Tongyong Romanization System* (台灣客語通用拼音使用手冊) proclaimed by Ministry of Education in 2003 is rendered for the data. The tone is marked as follows: 1, rising tone; 2, falling tone; 3, high level tone; 4, short low tone; 5, low level tone; 8, short high tone. The following abbreviations are used for grammatical functions: CL, classifier; NEG, negative marker; PHA, phase marker; POT, potential marker; PERM, permission marker; SF, suffix.

As shown in the examples above, several major sub-constructions are involved. First, the most prototypical sub-construction is shown in (1), in which the argument in the NP_1 position (e.g. you) is an agent performing an action denoted by the V, the NP_2 position is filled with a patient (e.g. Grandfather) that is a potential undergoer of the result of the action. X can be either a resultative predicate (e.g. *tung1* 動 'to move') or a phase marker denoting the achievement of the action (e.g. *do2* 著), and *m5* X indicates either the unfulfillment of the result upon the patient as in (1a) or the agent's inability to achieve the goal as in (1b). The other sub-construction is illustrated in (2). Different from previous cases, the NP_1 position, instead of being an agent, is filled with a location or an instrument, and NP_2 can be either a theme placed in the location as in (2a) or a patient undergoing the effect of the action as in (2b). Moreover, *m5* X, whereby X can be either a predicate or a potential marker, negates NP_1's potentiality to achieve the goal. On top of the syntactic and semantic peculiarities, epistemic modality concerning the speaker's judgment toward the proposition, deontic modality concerned with the permission of external authority or dynamic modality involving the ability of the NP_1 entity are displayed by all of these sub-constructions. In addition, these sub-constructions are located on a substantive-schematic continuum (cf. Fillmore et al. 1988). For instance, both NP_1 and NP_2 range from a full-fledged noun phrase to a pronoun, And X can be filled with elements from full-fledged predicates to phase markers or potential markers.

In addition, although not shown in the surface construction, this family of NP_1 V NP_2 *m5* X constructions implicates certain comparative meaning. This implicit comparative meaning is realized in the parallel English translation with the phrases 'not enough to…', 'too…to…' or 'not as…as…' in the previous examples. Specifically speaking, certain value of NP_1 is less than a standard of comparison for NP_1 to fulfill the intended result. Furthermore, all of the sub-constructions show both implicative and non-implicative readings (cf. Karttunen 1971, Hacquard 2005). In other words, the speaker may imply that the action denoted by the verb or the intended result denoted by X fails to be fulfilled in the actual world or merely in some possible worlds. Therefore, the sentence *do1-e2 cii5 ngin5 m5 si2* (刀仔劌人毋死。) 'The knife was/is too dull to stab people to death.' have both episodic reading (Yesterday, the knife was not able to stab people to death.) and generic reading (In general, the knife is not able to stab people to death. But in some possible conditions, the knife can stab people to death.).

This study, after adopting the constructional approach (as proposed by Goldberg 1995, 2006, Jackendoff 1997, Goldberg & Jackendoff 2004, among others), which declares that construction itself should be taken as a meaning-bearing unit, will probe into the syntactic and semantic subtleties of this schematic construction involving the covarying relations among NP_1, V, NP_2, and *m5* X. With a closer scrutiny of modality, negation, verb decomposition,

mapping of conceptual and syntactic structures, and implicit comparative meanings, this study intends to give a complete account of the regularities and idiosyncrasies exhibited by the family of Hakka NP_1 V NP_2 *m5* X constructions.

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以語言資源輔助特定領域內容檢索之研究
A Study of Retrieval of the Content in Specific Domains with the Aid of Language Resources

摘要

數位典藏國家型科技計畫旨在將珍貴的重要文物典藏加以數位化，目前由各分項計畫執行並透過設計一聯合目錄展示系統將所有建置完成的典藏成果提供各界使用者進行資訊檢索。作為一跨領域整合的展示介面，聯合目錄展示系統在定位上必須提供使用者方便且有效率的查詢，然而由於各式各樣典藏品的種類屬性繁多與資料全文搜尋方法功能上的限制，增加了典藏內容與使用者之間的隔閡及檢索之困難度。本研究提案嘗試以特定領域知識內容作為研究範圍，設計一使用 Wordnet 及 Domain Lexico-Taxonomy (DLT)等語言資源輔助領域知識檢索之策略，過程中探討過去在利用語言資源輔助資訊檢索研究上的相關檢索策略並比較各策略適用的條件，亦說明本研究可能面臨的限制與挑戰，最後提出本研究可能的成果及未來發展的方向。

一、 議題與理論基礎

數位典藏國家型科技計畫旨在將珍貴的重要文物典藏加以數位化，目前由各分項計畫執行並透過設計一聯合目錄展示系統將所有建置完成的典藏成果提供各界使用者進行資訊檢索。聯合目錄作為 50 餘個典藏計畫成果的共同展示系統由於資料量龐大，因此目前將內容主題劃分為 14 個主題類別，包括：生物、地質、人類學、檔案、地圖與遙測影像、金石拓片、善本古籍、考古、器物、書畫、新聞、漢集全文、影音與建築等，每一主題類別包含有約 115,593 筆典藏資料，其中每一筆典藏紀錄資料都採用 Dublin Core 標準提供了詳細後設資料。作為一跨領域整合的展示介面，聯合目錄展示系統在定位上必須提供使用者方便且有效率的查詢，然而由於各式各樣典藏品的種類屬性繁多與資料全文搜尋方法功能上的限制，增加了典藏內容與使用者之間的隔閡及檢索之困難度。

如何將大量以中文描述的典藏品內容資料提供使用者進行查詢或提供其他研究之應用，以及去除語言藩籬促進國際間知識內容的研究交流亦是相當重要的課題。本研究提案嘗試以特定領域知識內容作為研究範圍，設計一使用 Wordnet 及 Domain Lexico-Taxonomy (DLT)等語言資源輔助領域知識檢索之策略，過程中探討過去在利用語言資源輔助資訊檢索研究上的相關檢索策略並比較各策略適用的條件，亦說明本研究可

能面臨的限制與挑戰，最後提出本研究可能的成果及未來發展的方向。

本研究擬定兩個主要的研究目的：

1. 透過領域知識內容的關聯詞彙建構領域與領域間的知識結構連結。
2. 建構領域內容關聯詞表作為資訊檢索時關鍵搜尋詞擴展及收斂策略的參考資源。

二、相關研究簡評

資訊檢索一般可針對檢索的資料類型區分為兩種，第一種是針對網際網路上所有的資料內容所進行的檢索，由於檢索的範圍太過廣泛，因此必須透過許多不同的策略來針對查詢關鍵字進行擴展以求找出使用者有興趣的內容，大多數的網際網路搜尋引擎網站所提供之服務皆屬於此類。第二種則是針對特定範圍資料所進行的資訊檢索，此類資訊檢索的使用者是在資料內容固定的情況下進行查詢，例如新聞媒體網站或是數位博物館網站。

一般資訊的檢索是用詞彙來代表概念。但概念與詞彙的關係並非都是一對一的，如同義詞（Synonym）即用來表示多個詞彙可代表同一個概念。因此，在檢索時若能建構概念與詞彙間的明確關係，將有效提升檢索效益[1]。在一般搜尋引擎的設計上，最常見的策略是利用詞形比對的方式作為資訊檢索的基本方法，再輔助以各種的查詢詞彙擴展或是相關統計運算結果來找出使用者感興趣的資料。除了利用關鍵詞進行全文檢索（Full-Text Search）外，有些資訊檢索系統尚針對文件的內容進行分析，給予文件資料檢索標識（如主題詞彙或分類號），並使用索引詞彙來表示文件內容，資訊使用者與資訊檢索系統之間藉由索引詞彙與檢索詞彙之間的對映來達到擷取與過濾資訊的目的[2]。查詢問句的擴展通常以使用者提供的檢索詞彙為基礎，當原始查詢問句的檢索效益不好時，則可以追加更多的詞彙來改善。關於查詢問句的擴展，尚有相關研究提出利用相關回饋（Relevance Feedback）或是使用知識架構（Ontology）的元知識（Atom Knowledge）來進行[6]。Stiles 是最早提出利用相關詞彙來改進檢索效益理論的學者之一[3]。

在Mandala等人的研究中則討論了使用WordNet來作為資訊檢索時的優點與缺點[5]。而Huang等人則提出領域詞彙分類法 (Domain Lexico-Taxonomy; DLT) 半自動地建立領域詞表， 在識別及處理多領域語言資料內容上提供核心詞彙資訊[4]。

三、研究設計

由相關研究探討可以得知一般資訊檢索系統處理使用者輸入不精確查詢詞彙時所

採用的策略。而本研究則提出了另外一個方向的思考，目的是在特定領域範圍內透過中介的關聯詞詞集，來將不精確的使用者查詢詞, 指向系統內現存的資料，以協助使用者找到目標資料。在關聯詞詞集的建立上主要針對具有 1. 相同意義，2. 特殊關係的詞彙進行擴展。首先將各領域內容的敘述文句進行斷詞擷取關鍵詞詞集，然後透過 WordNet 提供的同義、反義、上位詞及下位詞進行關聯詞詞集的擴充，同時比對各筆典藏品資料內後設資料間的相關性，將具有相關屬性值的資料進行關係連結，而此一連結可以透過後設資料屬性值的比對將不同領域內容間的典藏品產生關聯並得到相互間之關係，進而在各領域獨立階層結構間進行連結。而關聯詞詞集在使用者對整個資料庫進行查詢時，可以進行檢索關鍵詞的擴展與收斂結果的功能，設計上在使用者輸入之關鍵詞無法檢索出理想資料結果時，透過 DLT 提供之領域特用詞集及 WordNet 所提供的關聯詞詞集可以對查詢關聯詞進行擴展並查詢，然後將擴展後重新查詢得到的結果回傳給使用者。

四、預期成果

本研究提案的首要目標為透過提供領域內知識內容的特用詞集及關聯詞彙並作為資訊檢索時的中介查詢詞集。預期的成果將可以解決領域知識內容資料在不同分類主題的階層結構之間的關係連結，例如在聯合目錄展示系統中，將主題分為 14 大類，若使用者輸入”白菜”作為檢索查詢詞時，可以在”器物”與”植物”主題中同時找到紀錄，採用一般策略之查詢檢索所得結果各筆資料彼此之間獨立，透過本研究設計之關聯連結方式可以得到這些結果彼此之間的關係。此外在使用者查詢過程輸入非正確詞時，可以協助使用者引導至資料庫內已建置之正確結果，例如資料庫中無”幽靈”資料，但存在有”鬼”之資料，則本研究預期成果將在使用者輸入”幽靈”時，透過關鍵詞詞集及領域特用詞的擴展協助使用者查詢並回傳與原始查詢最接近”鬼”之資料內容，這種方式可稱為以資料為基礎的”錯誤查詢拉回策略”。這種方式的優點在於擴充能檢索出正確目標的檢索查詢詞範圍，讓使用者的查詢更有效率。

五、創新與特色描述

數位典藏為一大型之跨領域典藏計畫，由於各領域間內容的組成差異相當大，因此有必要提供一整合性的查詢介面供各界使用者使用，然而由於特殊的內容與定位，因此不適合採用一般的搜尋引擎策略，一般策略容易找出太多不相關的內容資料並且無法透過詞彙與詞彙之間的關係進行連結。因此本研究設計一輔助檢索策略，使用 WordNet 及 DLT 等語言資源進行典藏資料關聯詞集與特用詞集的擴充，有別於傳統資訊檢索針對開放式資料進行檢索，而是針對封閉式資料庫檢索環境中的資料關係進行建置。此一檢索策略不僅可應用於數位典藏聯合目錄展示系統上，更可供其他具有封閉式資料內容之系統在設計查詢檢索策略時參考使用。

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