



現今學術界分工愈來愈細，學術文章往往只供同行閱讀，範圍狹窄，用語相近。因此，大家不會預期一篇論文會同時引述中國人類學家費孝通和天體物理學家霍金，或者在一組講義投映中看到高更的畫和成人與嬰兒腦袋比較的照片，除非那是出自王士元教授之手。

王教授是中大電子工程學系研究教授，長期研究人類語言的演化，並與不同學科的學者合作，包括語言學、認知神經科學、遺傳學、人類學和計算機科學。似乎他從第一天做研究開始，便已針對宏大問題，並採用多學科的研究取向。

林林總總的人類語言，是王教授的研究重點。不論從演化理論還是複雜理論來說，人類語言對我們在公在私都十分重要。王教授視語言為表述世界的工具，是人類獨有的，人類在三百多萬年前直立起來，開始演化過程。隨着社會和自然環境愈來愈多樣化和複雜，這種演化過程急速加快。因此，語言不是靜態或封閉的系統，而是建立在許多生物和社會行為之上，並將它們吸納，尤其是呼吸、咀嚼、記憶和推理。語言是複雜適應系統，由諸多彼此互動的子系統構築而成，如語音、語法、語彙，每種都根據我們日常生活的變化，不斷適應和自我組織。其他複雜適應系統的例子包括股票市場、大腦和生態系統。

王教授到過世界許多地方做田野調查，包括中國一些偏遠地區，在那裏目睹中國的文化和語言種類之繁多。同時，在大規模都市化和全球化的情況下，他看到許多少數民族語言或方言有滅絕之虞。他說：「大部分人都知道保存地球的生物多樣性很重要和迫切，但極少人看到我們同樣須保存文化和語言的多樣性。」雲南省邀請他全面考察瀕危語言，並為該次訪查製作了半小時的影片 (<http://tiny.cc/b28j5w>)。

然而，有些微妙的適應變化似乎正在發生。王教授指出，

有些方言有復蘇跡象，而說也奇怪，這些都是拜現代媒體和通訊科技所賜。金宇澄的小說《繁花》描繪1960年代上海生活，把說上海方言變成很時髦的事情。王競的電影《萬箭穿心》描寫一名武漢婦人的磨難，電影令武漢方言變得熟悉和順耳。新媒體也有助保存瀕臨湮沒的語言。手機遊戲「瘋狂的方言」，以愈來愈艱深和少為人懂的中國方言來考驗玩家，大受歡迎。《中國日報》(2013年12月8日)引述王教授說：「保存語言主要是自發及由下至上的，借助多媒體也是有利和不可避免的。」語言自有其誕生、成長、衰頹和滅亡的軌跡。

王教授是中大新成立的語言與人類複雜系統聯合研究中心 (<http://clhc.cuhk.edu.hk>) 主任。這個中心是中大、北京大學和台灣聯合大學系統共同合作的成果，目標是集合三校的專門知識和資源，有策略地研究語言這個複雜適應系統。王教授早就與北京大學的語言學家合作，在雲南做田野調查，又與台灣聯合大學系統的認知神經科學家合作，從事針對語言處理的實驗室實驗。這兩種語言學研究取向相輔相成，聯合研究中心的主要任務是融會這兩種取向的研究成果，並已在中大開設課程，講授語言的生物學基礎，吸引了幾所香港大學不同學科的學生。

人類複雜性的不同層面，如政治、人際關係、教育、醫療等，都是以語言為中介或者構成元素。但王教授警告，大多數關於人類行為和心理學的主流模型，都是歐洲中心概念的產物，亦即其事實和觀察樣本，偏向取自工業化、富裕而民主的西方社會中受過教育的人口，我們身處的世界當然複雜得多。聯合研究中心的目標之一，是以不同的中國語言和方言為重點，探討人類複雜性，特別關注歐洲語言和文化不常見的特點，包括聲調、豐富的量詞、相對簡單的構詞方式，以及數以千計的漢字。

隨着聯合研究中心的成立，王教授將繼續挑戰大問題，包括高更的：「我們來自何處？」「我們是甚麼？」和「我們往何處去？」他深信，語言是解答這三個問題的關鍵。

especially respiration, mastication, remembering, and reasoning. Language is a complex adaptive system (CAS) with several interacting subsystems such as phonology, grammar, lexicon, etc., each constantly adapting and self-organizing to changes in our daily lives. Other examples of CAS include the stock market, the brain and the ecosystem.

Professor Wang's fieldwork has taken him to many parts of the world including some remote regions in China where he witnessed for himself the cultural and linguistic heterogeneity in China. At the same time, in the face of massive urbanization and globalization, he saw that many minority languages or dialects are under threat of dying out. He says, 'Most of us realize the importance as well as the urgency of maintaining the biodiversity of the globe we live in, but few of us see that the same applies to our cultural and linguistic diversity.' The Yunnan Province had invited him for a comprehensive tour of the endangered languages there, and made a half-hour film of the visit (<http://tiny.cc/b28j5w>).

However, all is not lost and some adaptive changes seem to be at work. Professor Wang acknowledges that some dialects are being revived or even popularized by, curiously enough, modern media and communication technology. Jin Yucheng's popular novel *Fan Hua*, which depicts Shanghai life from the 1960s, has made speaking the Shanghai dialect something attractive and voguish. Wang Jing's film *Feng Shui*, depicting the trials and tribulations of a woman from Wuhan, has made the Wuhan dialect sound familiar and acceptable to hearers from outside that part of China. The new media have also helped to preserve vernaculars which are on

In the academic world where knowledge is increasingly compartmentalized, research papers are often written for one's peers within a narrow stretch of intellectual terrain who carry on the same business with the same technical vocabulary. One therefore does not expect to come across quotations from, say, the Chinese anthropologist Fei Xiaotong and the astrophysicist Stephen Hawking in one essay, or a painting by Paul Gauguin and a picture of the adult vs the newborn brain in the same set of presentation slides, that is, unless it was from Prof. Willaim S-Y. Wang.

Professor Wang is Research Professor of the Department of Electronic Engineering at CUHK. He has devoted his long academic career to the studying of the emergence and evolution of human speech and collaborated with scholars from linguistics, cognitive neuroscience, genetics, anthropology and computer science, to name but a few. It is as if he has been taking aim at the big questions and adopting a multidisciplinary approach from the very first day of his research.

Human language in all its myriad forms is the linchpin of Professor Wang's research. It is important to our private and public communications, within the dual perspectives of evolution theory and complexity theory. To Professor Wang, language is a mental instrument for representing the world, unique to our species whose evolutionary trajectory began with erect posture over three million years ago. The trajectory accelerated sharply as our social and physical environments became increasingly diverse and complex. Thus language is not a static or closed system but rather builds upon and integrates many biological and social behaviours,



王士元教授探訪雲南普米族人，向一名婦人展示相片
Prof. William S-Y Wang shows a picture to a woman of Pumi ethnic minority

the verge of becoming extinct. The extremely popular mobile app game 'Crazy Dialects' challenges users to identify and decipher progressively arcane and little-known dialects spoken in China. Professor Wang was quoted in the *China Daily* (8 December 2013) as saying, 'Language preservation is largely a spontaneous bottom-up process. The multimedia are a healthy and inevitable step.' One simply has not seen enough of the birth, growth, decline and death of languages.

Professor Wang is the director of the newly established Joint Research Center for Language and Human Complexity (JRCLHC) at CUHK (<http://clhc.cuhk.edu.hk>). It is a joint effort of three partnering institutions: CUHK, Peking University and the University System of Taiwan, with the objective to pool the expertise and resources of the three partners for strategic studies of language as a complex adaptive system. Professor

Wang has long collaborated with linguists at Peking University on fieldwork in Yunnan, and with cognitive neuroscientists at the University System of Taiwan on laboratory experiments on language processing. A central mission of JRCLHC is to interweave the research from these two symbiotic approaches in linguistic research. The three partners of JRCLHC are already offering a non-credit course at CUHK on the biological foundations of language, which is drawing students from various disciplines at several Hong Kong universities.

Various aspects of human complexity, e.g., politics, human relationship, education, health care, etc., are mediated by and constituted in language. But Professor Wang cautions that most prevailing models of human behaviour and psychology are products of an Eurocentric conception, that is, the samples of facts and observations are taken from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) populations. Perhaps too obvious to state, our world or reality is more complex than that. One of the goals of JRCLHC is to examine human complexity with emphasis on various Chinese languages and dialects. Special attention will be paid to features not commonly found in European languages and culture, including the lexical use of tones, a rich system of classifiers, a relatively simple morphology, and writing in thousands of sinograms.

With the establishment of JRCLHC, Professor Wang will continue to take on the grand challenge of answering the questions once posed by Gauguin: 'Where did we come from?', 'What are we?', and 'Where are we going?'. He is convinced that language plays a pivotal role toward answering all three questions. 📖