

Referential and evaluative strategies of conceptual metaphor use in government discourse[☆]



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ABSTRACT

We undertake a corpus-based diachronic analysis in order to explore how leaders in China and Hong Kong have employed metaphors of EDUCATION in major governmental speeches and reports both before and after Hong Kong's handover from Britain to China. The results of this study demonstrate that Hong Kong SAR Chief Executives have similar patterns of source domain selections with Chinese Premiers as compared with Hong Kong Colonial Governors, indicating that the change in sovereignty brought about different ways of referring to education for the people of Hong Kong, with evaluative effects remaining positive overall. These findings demonstrate that diachronic and synchronic comparative analyses of metaphors within small, specialized corpora are useful in uncovering potential sociopragmatic shifts in how political leaders frame social issues.

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1. Introduction

The peaceful handover of Hong Kong from Britain to China in 1997 marked a watershed event in political history. Metaphoric conceptualizations of this event by the media have been analysed (Flowerdew and Leong, 2007; Lee, 2005), and the examination of the change in language policies before and after the handover (Bolton, 2011; Evans, 2017; Poon, 2010) have both previously been carried out. However, an exploration of how the conceptual metaphors used by the two groups of political leaders potentially diverge or converge has yet to be examined.¹ Of particular interest is a focus on a socio-pragmatic view of metaphor that examines how political leaders make use of conceptual metaphors as a referential and evaluative strategy to achieve communicative goals when transmitting their viewpoints to a wider audience (Jing-Schmidt and Peng, 2017). Our study undertakes this goal by examining how source domain selection and the frequency of metaphoric mappings within a given source domain highlights potential similarities and differences for a given target concept. We focus on the metaphors used by different groups of political leaders in Hong Kong and the People's Republic of China (PRC or China) as reflecting specific political assumptions about the target concept of EDUCATION. Our study is thus more aligned

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¹ See Stamatović (2017), Section 2.2, for a succinct overview of conceptual metaphors as related to a pragmatic analysis. We will be examining patterns that occur in specific-levels (Kövecses, 2010, p. 44) of conceptual metaphors by analyzing the linguistic metaphors and related source domains that instantiate these conceptual metaphors (Bailey, 2003).

with sociopragmatics (Leech, 1983), a sub-field of pragmatics that points out that the ways in which pragmatic meanings reflect “more specific ‘local’ conditions on language use” (Leech, 1983, p. 10).

In terms of metaphors used in relation to political events in Hong Kong and China, studies have focused on data analyzed from news outlets instead of on the language of political leaders (Lee, 2005; Flowerdew and Leong, 2007; Cheng and Ho, 2014; Jing-Schmidt and Peng, 2017; Ahrens and Zeng, 2021). Of particular relevance to this study is Jing-Schmidt and Peng (2017), who looked at metaphor use in anti-corruption discourse in the Chinese and English versions of the flagship newspaper, *People's Daily*, an important mouthpiece for the Chinese government. Jing-Schmidt and Peng (2017) found that the newspaper framed metaphors of corruption differently depending on whether they were written in Chinese for the local audience or in English for a foreign audience, arguing that there is a “clear pragmatic strategy in metaphor choice across languages, which is sensitive to culture-specific epistemic conventions and conceptual preoccupations” (p. 21).² They found that the HARM metaphors, including DISEASE, VERMIN, WEED, and SLOVENRY sub-metaphors, were frequently used in the Chinese data to frame the target domain of corruption as a harmful, dangerous, and destructive force and that WAR metaphors were frequently used in the English data to frame anti-corruption as an urgent and serious issue, and to express unwavering resolve.

Other studies have also provided insight into how politicians use conceptual metaphors to reflect and/or enhance the promotion of their ideological viewpoints. For example, Charteris-Black (2005) argued that Martin Luther King used LANDSCAPE and JOURNEY metaphors to create the messianic myth that became crucial to his charismatic leadership, while Winston Churchill invoked metaphors having to do with LIGHT/DARKNESS and JOURNEY to raise the morale of participants in combating the purported mythical powers of Hitler. In fact, most Western politicians have extensively used the JOURNEY metaphor to imply a positive evaluation as the purpose for the politician's actions, which are portrayed as destinations that have been evaluated as being worthwhile to achieve even when there are great obstacles in place (Charteris-Black, 2004).

The current study incorporates the proposals made in Ahrens (2010) to expand upon the previous ways that metaphors are used to articulate a particular standpoint. In particular, we propose that a comparative analysis of source domains associated with a particular target domain, as well as the frequency of mappings within each source-target domain pairing, allows for a straightforward examination of the referential and evaluative functions of metaphor. There is a previous comparative study that also investigated the use of source domains in specialized discourse (although it referred to source domain using a different term); specifically, Sun and Chen (2018) compared metaphor clusters (metaphors from the same source domain sharing a common root metaphor) between American and Chinese leaders' political speeches addressed to university students in three time periods. They argued that there are some fundamental differences in the metaphorical frames used in the two different cultures; however, they did not parse their Chinese data set, so they were comparing different types of frequency across their two data sets (i.e., character frequency versus word frequency). We will avoid this pitfall in the current study by focusing on policy addresses written in Chinese, as well as by parsing the data in advance of our analysis.

One difference between many of the studies that look at the language of political leaders and studies that look at the language of newspapers is that leaders are often speaking to all the citizens of an entire country, while the media is writing for a subset of that audience. In the case of politicians, they are concerned with their performance in the next election or their political party; in the case of the media, they are concerned with their level of readership and the concomitant amount of advertising dollars. Neither is the case in terms of Hong Kong and China; however, as neither colonial Hong Kong, the Hong Kong Special Administrative Region (HKSAR), nor the People's Republic of China held direct elections for their respective political leaders between 1984 and 2013/14. Yet even without direct elections, most political leaders prefer that their citizens agree with their policies since that leads to social harmony and further benefits the political leaders' legacies.

We propose examining the source domain selection for EDUCATION metaphors in these three different corpora of policy addresses by Hong Kong Colonial Governors, Hong Kong SAR Chief Executives, and Chinese Premiers to identify the pragmatic view of metaphors espoused by Jing-Schmidt and Peng (2017). Furthermore, this study seeks to determine if different source domains can strategically reference different aspects of target domains and how these source domains are then used as evaluative strategies for attaining communicative goals, even when the goals are not strictly necessary to the survival of a political leader or party.

In addition, examining the source domain selection for a particular target domain, such as EDUCATION, allows us to differentiate the strategies used by different leaders at different points in time and hypothesize the reasons for these differences; this information will allow for a greater understanding of the conceptual worldview of these leaders. EDUCATION is selected as the target domain because education policies are commonly presented in speeches and considered to be of great importance by the government both in Hong Kong (during the colonial and post-colonial period) and in modern-day China. We hypothesize that there is consistent attention to the topic of ‘education’ in the government speeches in both Hong Kong and the PRC. The first research question (RQ1) we address in this study is: How frequently was ‘EDUCATION’ addressed in the corpus of Hong Kong and PRC government discourse (see Section 4)?

Although education has been emphasized in both Hong Kong and the PRC, the Hong Kong colonial government, the Hong Kong Special Administrative Region (SAR) administration, and the People's Republic of China have had different approaches to education policy. In the following sections, we begin by providing an overview of the historical similarities and differences

² “To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.” (Entman, 1993:53).

between educational policies (Section 2). Next, we introduce the referential function of metaphor source domains and the evaluative function of source-target mapping principles (Section 3). Then, we present how to create the corpora and look at keyword frequency (Section 4). We then go step-by-step, first identifying metaphors (Section 5), then verifying their source domains (Section 6), and finally examining the mapping principles involved (Section 7) in testing our hypotheses before concluding this study and suggesting further areas of research (Section 8).

2. Overview of educational policies in China and Hong Kong

Education is prized as a cultural asset and as an impetus for social, political, and economic development in Chinese society. It has been seen for centuries as a way for a country to progress in science and technology towards modernization. In fact, education is so important that China has the 科举 *keju* 'Imperial Examination' system that was used to select officials for civil services in old China as early as the Sui dynasty (581–618 A.D.). The 'Imperial Examination' system was not an educational system, but it effectively oriented the country's education for about thirteen hundred years. Since the 1950s, China has had the 高考 *gaokao* 'National College Entrance Examination,' which families spend an enormous amount of personal resources on to ensure that their children progress in an extremely competitive academic environment.

In this section, we provide a brief overview of the political history of Hong Kong and Mainland China, as well as the respective systems of education in the two regions, in order to shed light on their commonality and differences, and to propose research questions to examine what source domains are referred to and how they are evaluated with respect to the target domain of EDUCATION.

2.1. China

The education system in China has undergone large shifts since the founding of the People's Republic of China (Tsang, 2000). As a newly established nation back in 1949, the ruling Communist Party used education as a tool to equip Chinese citizens with the concepts of 'redness' (to be loyal to the Communist Party) and 'expertness' (to be professionally trained for a job). Later in the 1960s, educational development was impeded by the disruptive influences of the Great Leap Forward (1959–1962) and the Cultural Revolution (1966–1976). Primary and middle schools were suspended in the early years of the revolution and gradually reopened later; colleges and universities were closed and college entrance examinations were cancelled until the 1970s; college graduates were assigned to work in factories and the countryside, and urban youth were transferred to rural areas where there were few to no opportunities for higher education.

After 1976, a new Communist Party leadership took power and implemented education policies which placed education as a foundation on which to modernize China's agriculture, industry, science and technology, and military sectors. Education further developed in the late 70s and 80s with Deng Xiaoping's 'open door' policy and a substantial increase in funding for education during the Seventh Five-Year Plan, which was implemented between 1986 and 1990. As part of this emphasis on education, nine years of compulsory education officially took effect in July 1986, with the goal of attaining universal primary and secondary education and facilitating China's modernization. However, the big push for education came in 1999, when China started "a decade-long higher education expansion, with an annual increase rate of 2%, resulting in a gross higher education enrolment rate of 30% in 2012" (British Council, 2013). This push in higher education was followed by strong educational initiatives in the Tenth (2001–2005) and Eleventh (2006–2011) Five-Year Plans.³

2.2. Hong Kong

Hong Kong experienced its first change in sovereignty in 1842 when the former Chinese territory was ceded to Britain after the First Opium War. It was then returned to China in 1997. After being a British colony for 156 years, it now functions as a Special Administrative Region (SAR) of the People's Republic of China under the 'One country, two systems' policy, whereby the Hong Kong SAR is governed by a different set of laws than those in China. During the period when Hong Kong was a colony, its Governors were appointed by the British monarch based on advice from the British Foreign Secretary. In contrast, the Chief Executive of Hong Kong SAR is elected by an the Election Committee, whose members are themselves selected in an indirect and complex voting system from various sub-sectors (Lam et al., 2012).

The British system made education compulsory for those up to the age of 15, with further schooling being contingent upon exam results. China and the HKSAR also currently make education compulsory for students up until the age of 15. In addition, in contrast with China, in the HKSAR all students who want to complete their secondary education (at the age of 18) may do so for free.

Contemporary Hong Kong education now has a similar system of education as in China, consisting of pre-school education, six years of primary education, three years of junior secondary, three years of senior secondary education, and four years of tertiary education; with the difference being that in China access to senior secondary education and tertiary education is exam-based, while in Hong Kong only access to tertiary education is exam-based. In contrast with the HK Colonial Governors,

³ The full content of the Tenth Five-Year Plan can be found at: http://www.gov.cn/gongbao/content/2001/content_60699.htm. The full content of the Eleventh Five-Year Plan can be found at http://www.gov.cn/gongbao/content/2006/content_268766.htm.

the HKSAR has spent a considerable amount of effort discussing and promoting education initiatives since the handover in 1997. In addition to extending public education from 15 to 18 years, they also implemented a policy to switch from a 3-year to a 4-year curriculum in 2012, discussed implementing 'National and Moral Education,' and have discussed societal concerns surrounding which languages should be used in primary and secondary education. Given that HKSAR Chief Executives have had more initiatives related to 'education' than HK Colonial Governors, we expect to see that the target domain keyword 教育 *jiao4yu4* 'education' is used more frequently by the HKSAR Chief Executives.

In addition, given that we see a strong push for educational initiatives by Chinese premiers after 1999, we expect to see a frequency difference in the lexical usage of 'education' after 1999, compared to the period between 1984 and 1999. Of course, a difference in lexical frequency does not necessarily indicate a difference in the metaphorization, which leads to the second research question (RQ2): How frequently was EDUCATION being metaphorized in corpus of Hong Kong and PRC government discourse? (see Section 5).

3. The referential function of metaphor source domains and the evaluative function of source-target mapping principles

Conceptual Metaphor Theory (Lakoff, 1993; Lakoff and Johnson, 1980/2003) defines metaphors as cross-domain mappings between more concrete source domains (e.g., JOURNEY) and more abstract target domains (e.g., EDUCATION). Specific source domain choice highlights specific aspects of the target domain, which allows us to see the referents of the target domain. Examining the source domain selection for a particular target domain allows us to examine if different source domains strategically reference different aspects of the target domain. The analysis in this study shows that source domain determination can assist in identifying how EDUCATION is referred to and conceptualized. Considering the different political history and education systems of Hong Kong and the PRC, we hypothesize that the government leaders use different references of source domains when addressing the common societal issue of EDUCATION. Accordingly, the third research question (RQ3) we address is: How was EDUCATION being referred to via metaphor source domains in corpus of Hong Kong and PRC political discourse? (see Section 6).

A metaphor source domain can be construed both positively (e.g., WAR source domain with the keyword *protect* in 'protect civilians') and negatively (e.g., WAR source domain with the keyword *attack* in 'attack civilians') in real-world data. It is only by looking at what is frequently mapped between the source and target domains of the EDUCATION metaphors in the corpus that we can further find out whether the reference of EDUCATION is negative or positive. Ahrens (2010) proposes that the most frequent metaphorical keyword mapping is relevant to understanding the reason for the source-target domain pairing, also known as the Mapping Principle. The Mapping Principles can be formulated by examining the linguistic evidence (i.e., the entities, qualities, and functions that map between the source and target) or the corpus evidence for the frequency of mapping (Ahrens, 2010: 30), that is, the most frequently occurring lexical item in a source-target domain pairing is postulated to correspond to the Mapping Principle.⁴ Previous studies focusing on variations or similarities in the mapping principles between source-target domain pairings of specific metaphors have uncovered implicit political ideologies by politicians in public speeches (Ahrens, 2011, 2019; Ahrens and Lee, 2009; Ahrens and Zeng, 2021; Ahrens et al., 2021; Lu and Ahrens, 2008). The current study aims to see how patterns of source-target mapping principles can reflect the evaluative function of metaphors in the conceptualization of specific issues. Thus, the fourth research question (RQ4) is: How was EDUCATION being evaluated via the mapping principles between metaphor source and target domains? (see Section 7).

Jing-Schmidt and Peng (2017), mentioned previously, examined the referential and evaluative aspects of source domains as the pragmatic functions of metaphor. They identified metaphor source domains based on 'domain incongruity' (Lu and Ahrens, 2008) and Frame Semantics (Fillmore, 1985) by grouping concepts (i.e., metaphorical keywords) that are mutually associated into the same cognitive frames as source domains. They focused on the most entrenched (i.e., the most frequent) metaphor token under each source domain to discuss their evaluative functions in the context. Our study expands on Jing-Schmidt and Peng's (2017) research by adopting the framework of Mapping Principles, which provides a more principled way of examining the pragmatic functions of metaphors in corpora. We propose an operational method to analyze the referential aspects of metaphor by examining source domain choices and the evaluative aspects of metaphor by looking at the frequent metaphoric mappings within the given source-target domains. The source domain determination will follow a systematic verification procedure (Ahrens and Jiang, 2020) that offers a reliable way to determine what the target domain is referencing. We will then analyze patterns of Mapping Principles to see how target domains are being evaluated.

4. Corpus creation and keyword frequency

This study uses the online version of the policy addresses, which are available from the HKBU Corpus of Political Speeches at <https://digital.lib.hkbu.edu.hk/corpus/> (Ahrens, 2015). These two independently compiled Chinese corpora of political speeches were created by 1) compiling the policy addresses of HK Colonial Governors (from 1984 to 1996 when Hong Kong was a British colony) and HKSAR Chief Executives (from 1997 to 2014 when Hong Kong was a Special Administrative Region of

⁴ Kövecses (2017) does not refer to frequency but notes the same idea as "main meaning foci" (p. 344).

the People's Republic of China) (HK Corpus)⁵; 2) downloading speeches of Chinese Premiers (Corpus of Report on the Work of the Government by Premiers of the People's Republic of China) from 1984 to 2013 (PRC Corpus). After compiling all the speeches as text files, Natural Language Processing Software (Stanford Word Segmenter 3.7 and Stanford POS Tagger 3.7) (SNLPG, 2015) was used for Chinese word segmentation and part-of-speech tagging to facilitate calculating the word count. In addition, two native speakers then checked the part-of-speech tagging for consistency, and the complete tagged corpora were uploaded to the HKBU Corpus of Political Speeches (Ahrens, 2015).

The Hong Kong corpus is comprised of Hong Kong Policy Addresses. This is an annual address delivered by the Governor or the Chief Executive of Hong Kong to the Hong Kong Legislative Council and released to the public. The addresses mainly include a summary of the past work of the Hong Kong government and an introduction to its forthcoming policy initiatives. They also introduce policies to the Legislative Council, indicating the main operation of the Hong Kong government, and strive to build a communicative channel between the Hong Kong government and Hong Kong citizens. The speeches were independently written in English and Chinese.⁶ In this study, we focus on the Hong Kong Policy Addresses written in Chinese in order to compare with the PRC corpus, which is also written in Chinese.

The PRC corpus includes the Premier's Report on the Work of the Government, which is the official document of the state administrative organ of the government of the PRC. It is presented annually at the National People's Congress and released to the public. It mainly consists of a review of the work and achievements of the government in the past year, the government's work measures and plans, the main tasks of the government, e.g., a five-year plan, the introduction of government functions, foreign affairs, and the international situation.

In our study, we divided the Hong Kong corpus into different time periods (pre- and post-1997) to align with the handover of Hong Kong from Britain to the PRC. The PRC corpus was divided into two comparable time periods (pre- and post-1999). Using 1999 as a demarcation allowed us to avoid any speaker confounds as there was a change of PRC Premiers in 1999. The landmark event of education reform that took effect in 1999 in China is another reason for the demarcation. Table 1 presents the details of the PRC corpus and Hong Kong Corpus, respectively. More detailed information about the corpus, including the names of the speakers and their in office timeframes, can be found in Appendix 1.

Table 1
PRC (People's Republic of China) corpus and Hong Kong corpus of political speeches.

PRC Corpus		Hong Kong Corpus	
Speakers (Year)	Word count	Speakers (Year)	Word count
Chinese Premiers (Pre-1999: 1984–1998)	308,299	HK Colonial Governors (Pre-1997: 1984–1996)	298,572
Chinese Premiers (Post-1999: 1999–2013)	281,723	HKSAR Chief Executives (Post-1997: 1997–2014)	367,939
Subtotal	590,022	Subtotal	666,511
Total			1,256,533

Key-word-in-context (KWIC) searches were run in both corpora using tools on the HKBU Corpus of Political Speeches at <https://digital.lib.hkbu.edu.hk/corpus/index.php> website in order to build a list of expressions for the lexeme 教育 *jiaoyu* 'education'.⁷ Results were then extracted and downloaded into Excel files for further analyses on metaphorical tokens and types. We used a normalized ratio (NR per 100,000 words) for calculating the frequencies of the tokens and used a Log-likelihood test to compare word frequencies across corpora (Rayson and Garside, 2000). Log-likelihood ratio was calculated using Rayson's online Log-likelihood and Effect Size calculator (LR) at <http://ucrel.lancs.ac.uk/llwizard.html>. Items with a log-likelihood value over 6.63 (positive or negative) were marked with an asterisk to indicate significant overuse (+) or underuse (–) in the corpus at the level of $p < 0.01$ (see the scale of significance level at the above website). We reported Log-likelihood results (LL), which represent the likelihood of the difference between two corpora, and Log Ratio results (LR), which represent the effect size of the difference. Table 2 shows a total frequency of 167 per 100,000 words for 'education' in the PRC corpus compared to 148 in the HK corpus (LL = +7.06*, LR = 0.17), indicating a comparative overuse in the PRC corpus.

⁵ For Hong Kong corpus, the pre-1997 data was OCR scanned and typed from the hard copy available in the Reference Collection in the HKBU library. The post-1997 data was downloaded from <https://www.policyaddress.gov.hk>.

⁶ Based on a discussion with Hong Kong government speech writer Brett Free (p.c), the goal when translating the speeches into English is to make them sound as idiomatic and natural as speeches written by native speakers. Thus, we do not expect to find exact translations between the English and Chinese versions of the Hong Kong policy addresses, nor do we aim to analyze the translations.

⁷ Specifically, we obtained 985 instances from the Hong Kong corpus, including 939 instances of 教育 *jiaoyu* 'education', 21 instances of 教育局 *jiaoyu4ju2* 'Education Bureau', 13 instances of 教育界 *jiaoyu4jie4* 'education world', ten instances of 教育署 *jiaoyu4shu3* 'Education Bureau', and two instances of 教育科 *jiaoyu4ke1* 'education subject.' We obtained 983 instances from the PRC corpus, including 967 instances of 教育 *jiaoyu* 'education', four instances of 教育部 *jiaoyu4bu4* 'Ministry of Education', three instances of 教育费 *jiaoyu4fei4* 'education fee', three instances of 教育法 *jiaoyu4fa3* 'education policy', two instances of 教育家 *jiaoyu4jia1* 'educator', one instance of 教育界 *jiaoyu4jie4* 'education world', one instance of 受教育 *shou4-jiaoyu4* 'educated', one instance of 受教育者 *shou4jiaoyu4zhe3* 'educatee', and one instance of 教育兴农 *jiaoyu4xing1nong2* 'education in the development of agriculture.' Since the majority of the instances referred to the single term 教育 *jiaoyu* 'education' (95.3% in HK corpus and 98.4% in PRC corpus), the findings reflect the differences in actual attention to education in the corpora.

Table 2

Tokens of occurrence of 'education' in the PRC (People's Republic of China) and Hong Kong corpora.

PRC Corpus		Hong Kong Corpus	
Speakers (Year)	Tokens (NR)	Speakers (Year)	Tokens (NR)
Chinese Premiers (Pre-1999: 1984–1998)	465 (151)	HK Colonial Governors (Pre-1997: 1984–1996)	239 (80)
Chinese Premiers (Post-1999: 1999–2013)	518 (184)	HKSAR Chief Executives (Post-1997: 1997–2014)	746 (203)
Subtotal	983 (167)	Subtotal	985 (148)
Total			1,968

When the analysis is broken down into time periods, pre-1999 Chinese Premiers mentioned 'education' more often than HK Colonial Governors (NR = 151 vs. 80, LL = +66.79*, LR = 0.91). Furthermore, HKSAR Chief Executives did not talk about 'education' more often than post-1999 Chinese Premiers either (NR = 203 vs. 184, LL = 2.94, LR = 0.14), suggesting that the difference in the overall corpus is due to the Hong Kong colonial government paying less attention to the issue of 'education' compared to the Chinese government during 1984–1997, which also aligns with what is known about China's goal to advance economically by paying increased attention to educating its large population.

In addition, in the PRC corpus, PRC Premiers referenced 'education' more often in post-1999 (NR = 184) than in pre-1999 (NR = 151 vs. 184, LL = +9.63*, LR = 0.29). This is in alignment with our prediction in Section 2 regarding a preponderance of new initiatives post-1999 in China.

Lastly, 'education' was also mentioned less often in the pre-1997 HK corpus than in the post-1997 HK corpus (NR = 80 vs. 203; LL = -178.73*, LR = -1.34), indicating that HKSAR Chief Executives placed more emphasis on the issue of 'education' in policy addresses than HK Colonial Governors. A read-through of the examples generated by the KWIC analysis indicates that the HKSAR often referenced new initiatives in education, such as the alternative medium-of-instruction language proposal and the switch from a three-year to a four-year tertiary education system.

5. Metaphor identification

In Section 3, we demonstrated that Chief Executives and Premiers reference 'education' more often than Governors; now, we will determine which of these instances of 'education' were referenced metaphorically. Two linguists trained in metaphor identification read through all the instances extracted using the KWIC search to determine if 教育 *jiao4yu4* 'education' was being used metaphorically, literally, or as a proper noun. Metaphor identification follows two generally accepted approaches, the MIP - Metaphor Identification Procedure (Pragglejaz Group, 2007) and MIPVU - Metaphor Identification Procedure Vrije Universiteit (Steen et al., 2010) by ascertaining if a word has a more basic sense in the dictionary, basing our decision on Chinese lexical resources. For example, in the cases where 'education' was referenced metaphorically, we selected the keyword from the source domain that drove this decision (i.e., a word such as 投资 *tou2zi1* 'invest' in the phrase 投资 教育 *tou2zi1 jiao4yu4* 'invest in education'). We then checked to see if the keyword (投资 *tou2zi1* 'invest') had a meaning unrelated to 'education' as determined by the definition given in Sinica Bow (Chen et al., 1996), which is based on Chinese WordNet-SUMO.⁸ If the keyword was not found in Sinica Bow, we then checked the online Chinese dictionaries 汉语词典 *han4yu3 ci2dian3* 'Chinese Dictionary' at <http://www.kxue.com> and 汉典 *han4dian3* 'Chinese Dictionary' at <http://www.zdic.net> to further locate the definitions of the keyword.⁹

When analyzing the data, we included both conventional and nonconventional metaphors in the corpora. Conventional metaphors refer to "metaphors that structure the ordinary conceptual system of our culture, which is reflected in our everyday language," while nonconventional metaphors refer to "metaphors that are outside our conventional conceptual system, metaphors that are imaginative and creative." (Lakoff and Johnson, 1980/2003, p. 140). If the metaphorical meaning of a keyword can be found in Chinese WordNet-SUMO or Chinese dictionaries, we consider it to be a conventional metaphor. By contrast, if the metaphorical meaning of a keyword cannot be found in Chinese WordNet-SUMO or Chinese dictionaries, we consider it to be a nonconventional metaphor.

In the corpora of the current study, we found that most of the metaphorical instances could be categorized as conventional metaphors based on the above criterion. For instance, we identified the keyword 推动 *tui1dong4* 'push forward' in the phrase 推动 教育 *tui1dong4 jiao4yu4* 'promote education' as a conventional metaphor of EDUCATION IS AN OBJECT because the metaphorical meaning of 'promote the work' can be found in 汉典 *han4dian3* 'Chinese dictionary'. Only a few cases were

⁸ WordNet (<http://wordnetweb.princeton.edu/perl/webwn>) is a large lexical database of English with words interlinked by means of conceptual-semantic and lexical relations. SUMO (<http://www.adampease.org/OP/>) is a formal ontology that has been mapped to all of the WordNet lexicon. For the Chinese data analysis in this study, we use Chinese WordNet-SUMO, and Chinese Dictionaries as the lexical resources to check word meanings. Chinese WordNet-SUMO can be accessed at <http://sinica.caityunai.com/>.

⁹ The steps undertaken here are similar to step 3 in MIP (Pragglejaz Group, 2007, p. 3) and steps 2 to 4 in MIPVU (Steen et al., 2010, p. 26), in which the possibility of a cross-domain mapping was checked.

found to be nonconventional; e.g., we categorized the keyword 宝藏 *bao3zang4* ‘treasure’ in the phrase 宝藏教育 *bao3zang4 jiao4yu4* ‘treasurable education’ as a nonconventional metaphor of EDUCATION IS A TREASURE because Chinese Word-Net/SUMO and the Chinese dictionaries we used only show the basic literal meaning of 宝藏 *bao3zang4* ‘treasure’ as referring to ‘treasurable object,’ and do not list a metaphorical meaning.¹⁰

Cohen’s Kappa was calculated to measure inter-coder agreement for metaphor identification. We randomly selected 500 instances out of a total of 1,968 EDUCATION instances for the inter-reliability test on metaphor identification. Results for the coding of metaphor was ‘almost perfect’ at 0.835 (Landis and Koch, 1977), indicating good levels of agreement. All remaining disagreements were resolved prior to conducting the source domain analysis. The results of metaphorical and literal instances in the PRC corpus are presented in Table 3.

Table 3

Tokens of overall metaphorical tokens and literal tokens of ‘education’ in the PRC (People’s Republic of China) corpus.

PRC Corpus	Metaphorical Tokens (NR)	Literal Tokens (NR)
Chinese Premiers (Pre-1999)	280 (91)	185 (60)
Chinese Premiers (Post-1999)	298 (106)	220 (78)
Total	578 (98)	405 (69)

‘Education’ is used metaphorically more often than literally (NR = 98 vs. 69; LL = +30.61*, LR = 0.51). There is no significant difference in the rate of metaphorization of EDUCATION in pre-1999 when compared with post-1999 (NR = 91 vs. 106; LL = −3.36, LR = −0.22). We also found a different frequency pattern for the Hong Kong Corpus, as presented in Table 4. Overall, ‘education’ is expressed metaphorically less often than literally in the corpus, but does not reach significance (NR = 68 vs. 80, LL = −6.03, LR = −0.23). Critical to our research question; however, the metaphorization of EDUCATION occurs less frequently in the pre-1997 Governor’s corpus as compared with the post-1997 Chief Executive’s corpus (NR = 102 vs. 352, LL = −98.35*, LR = −1.49).

Table 4

Tokens of overall metaphorical tokens and literal tokens of ‘education’ in the Hong Kong corpus.

Hong Kong Corpus	Metaphorical Tokens (NR)	Literal Tokens (NR)
HK Colonial Governors (Pre-1997)	102 (34)	207 (69)
HKSAR Chief Executives (Post-1997)	352 (96)	324 (88)
Total	454 (68)	531 (80)

This finding demonstrates that not only do HKSAR Chief Executives discuss ‘education’ more often (as shown in Table 2), but they also metaphorize the concept more frequently than the HK Colonial Governors (as seen in Table 4). This difference contrasts with the lack of a difference in the frequency of metaphorization between HKSAR Chief Executives and PRC Premiers post-1999 (NR = 96 vs. 106; LL = −1.62, LR = −0.14), as seen in Tables 3 and 4, indicating that HKSAR Chief Executives align their frequency of metaphor use closely with PRC premiers when talking about the topic of ‘education’.¹¹

Of course, as in the comparison between Premiers pre-1999 and post-1999, it remains to be seen if Chief Executives and Premiers post-1999 (as well as Governors) are referring to similar source domains to conceptualize EDUCATION. Furthermore, we would like to examine the mapping principles underlying the source domains used in order to understand the rationale for their appearance in the policy addresses. Thus, in the next two sections, we will examine the source domains that were used to conceptualize EDUCATION to determine what underlying concepts were being referenced and the frequency of mapping within each source domain to see if those references were evaluated positively or negatively over different corpora and different time periods.

6. Referential function of metaphor: source domain analysis

6.1. Source domain analysis

We follow the previous approaches used for source domain verification (Ahrens and Jiang, 2020) to determine the source domains of the metaphors identified. As this source domain analysis has several steps where decisions must be made, coders were trained in the steps involved in identifying source domains. We randomly selected 500 metaphorical instances out of the total 1,032 metaphorical instances for the inter-reliability tests on source domain verification.

Results for the coding of the source domains indicate Kappa values as follows: SYSTEM = 0.792, PERSON = 0.652 and VEHICLE = 0.782 (i.e., ‘substantial agreement’); BUILDING = 0.970, PRODUCT = 0.950, JOURNEY = 0.874, BUSINESS = 0.917

¹⁰ In total, we found 971 cases of conventional metaphors and 12 cases of nonconventional metaphors. Files of data analysis can be accessed on the Open Science Framework at <https://osf.io/a9xc3/>.

¹¹ Results from chi-square tests also reflect a significant association between corpus type and metaphor/literal type ($p = .000$), showing that overall, PRC premier metaphorize the concept of EDUCATION more frequently than expected by chance (residual > +2) while HK Colonial Governors use less metaphors to talk about EDUCATION than expected by chance (residual < −2). The chi-square analyses can be found on the OSF website at <https://osf.io/a9xc3/>.

and OBJECT = 0.839 (i.e., ‘almost perfect’ agreement).¹² The variability in the inter-rater reliability results show that, overall, the source domains of BUILDING, PRODUCT, JOURNEY, BUSINESS, and OBJECT are easier to verify than the source domains of SYSTEM, PERSON, and VEHICLE. One reason is that some source domains are more common and thus more familiar to the coders, e.g., BUILDING and JOURNEY have been found as the frequently occurring source domains used in political discourse (Charteris-Black, 2005), thus allowing for them to be more easily verified. The variability may also be due to a lack of specificity on levels of categorization within a source domain before the inter-rater reliability tests were run. For instance, before we discussed the results of the inter-rater reliability tests, the raters subsumed the domain of PRODUCT under the domain of BUSINESS. However, we found in our data that the keywords under the source domain of PRODUCT mainly referred to the ‘quality’ of a product and the action ‘improve.’ The keywords under the source domain of BUSINESS mainly referred to ‘business,’ ‘benefits,’ and the action ‘invest.’ Thus, after the discussion reliability tests, we set new criteria that PRODUCT and BUSINESS should be identified as two separate categories in order to determine the most useful categorization level for the purposes of this study (see also in Fn. 15). After discussing all cases of disagreements between the two raters, one rater re-analyzed the original 500 instances and completed the source domain verification for the rest of the 532 instances.

6.2. Source domain determination results

In this section, we focus on frequent source domain types and compare their usage patterns in different regions and in different time periods in our corpus, with the criteria for determining frequent source domain types based on a cumulative cut-off percentage of up to 95% of the total source domains found in the Hong Kong and PRC corpora. In the following section, we turn to evaluating Ahrens’ (2010) proposal that a target domain selects different source domains for different reasons.

Patterns of the frequent metaphor source domains for the two time periods under consideration in the PRC corpus are presented in Fig. 1.¹³ We found that in the PRC corpus the target domain concept of EDUCATION primarily involves the source domain of BUILDING, secondarily focuses on the concept of EDUCATION as BUSINESS, followed by SYSTEM, OBJECT, and PRODUCT source domains.

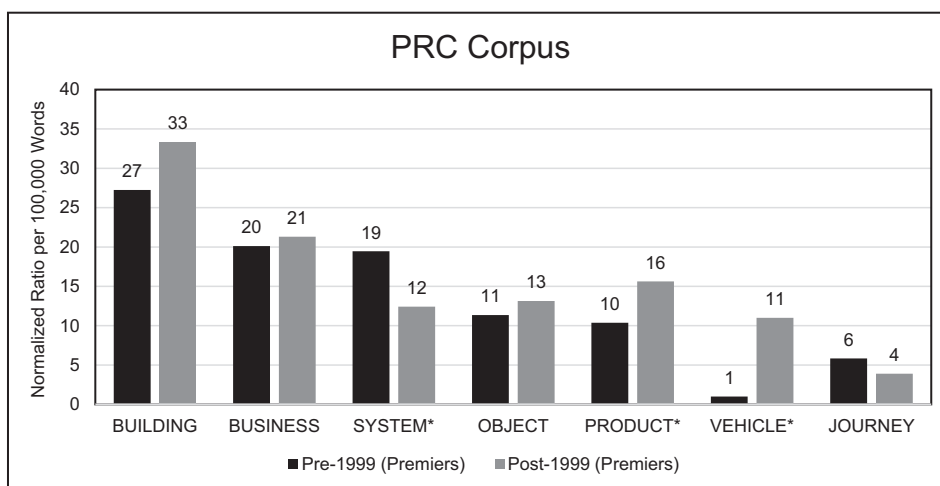


Fig. 1. Normalized Ratio of frequent source domains associated with the target domain of EDUCATION in PRC pre-1999 and post-1999 corpora.

In addition, PRC Premiers use four source domains relatively consistently within the pre-1999 and post-1999 speaker groups (BUILDING, BUSINESS, OBJECT, and JOURNEY). The two source domains of PRODUCT and VEHICLE show an increase post-1999, while SYSTEM shows a decrease.

Fig. 2 shows the frequencies of the source domains that are commonly referred to when discussing EDUCATION in the Hong Kong corpus.¹⁴ Overall, the Hong Kong government leaders invoke the source domain of PRODUCT most frequently. They also conceptualize EDUCATION as BUILDING, followed by OBJECT, BUSINESS, and SYSTEM. Of note, VEHICLE and JOURNEY do not make the frequency cut-off, indicating that they are not critical source domains for EDUCATION in the Hong Kong context.

¹² Files of data analysis and inter-rater reliability test results can be accessed on the OSF at <https://osf.io/a9xc3/>.

¹⁵ As mentioned in Section 6.1, we decided that PRODUCT and BUSINESS were two distinct categories, but a different choice could also be made, which subsumes PRODUCT under BUSINESS. If such a decision were made, the prevalence of BUSINESS metaphors would be even greater for HK Chief Executives as compared to PRC Premiers and HK Governors.

¹³ An asterisk next to the source domain indicates that there is a significant difference in frequency with log-likelihood value. Frequency tables with log-likelihood values can be found on OSF at <https://osf.io/a9xc3/>.

¹⁴ Ahrens and Lee, 2009 refers to frequency of source domains as the ‘metaphoric density.’

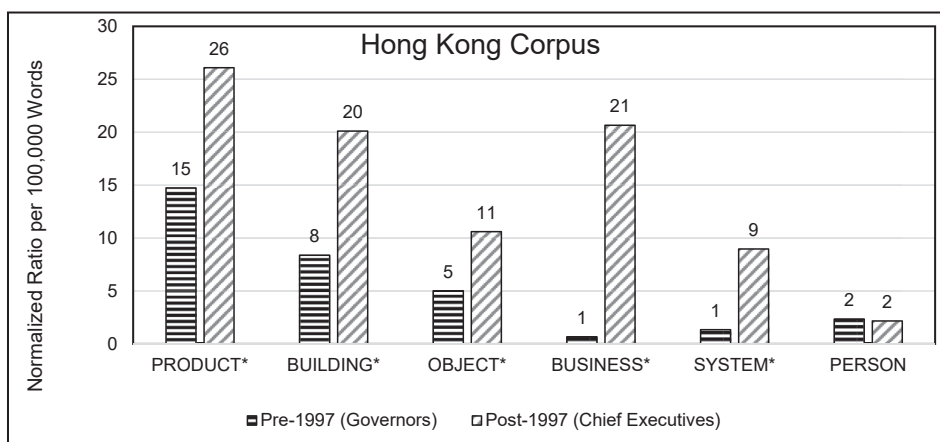


Fig. 2. Normalized Ratio of frequent source domains associated with the target domain of EDUCATION in Hong Kong pre-1997 and post-1997 corpora.

The six source domains that are invoked are similar to the source domains used by the PRC Premiers, which suggests that reference to these source domains is important for conceptualizing EDUCATION to both Hong Kong and PRC political leaders. This indicates that while there are frequency preferences regarding how often a source domain is utilized, the source domains that are preferred are relatively similar. That is, both sets of leaders are not referring to EDUCATION as A WAR or EDUCATION as A PLANT, to name two other frequently used source domains in political discourse (Ahrens, 2019; Charteris-Black, 2004; Lakoff, 1991).

It can be seen that there are stark differences in the normalized ratios between the Governors in pre-1997 and the Chief Executives in post-1997 with the use of the source domains PRODUCT, BUILDING, OBJECT, BUSINESS, and SYSTEM. This result is in line with the hypothesis that political leaders with different viewpoints will prefer to reference different source domains, even when talking about a relatively common topic of government and societal concern, such as EDUCATION.

We can see a similar finding in Fig. 3. Log-likelihood values demonstrate that the source domain use varies significantly between PRC Premiers and HK Colonial Governors for five of the eight most common source domains, indicating that these two groups of speakers strongly diverge in how they refer to and conceptualize EDUCATION. In addition, PRC Premiers primarily rely on the BUILDING source domain while the HK Colonial Governors prefer to invoke the PRODUCT source domain when conceptualizing EDUCATION.

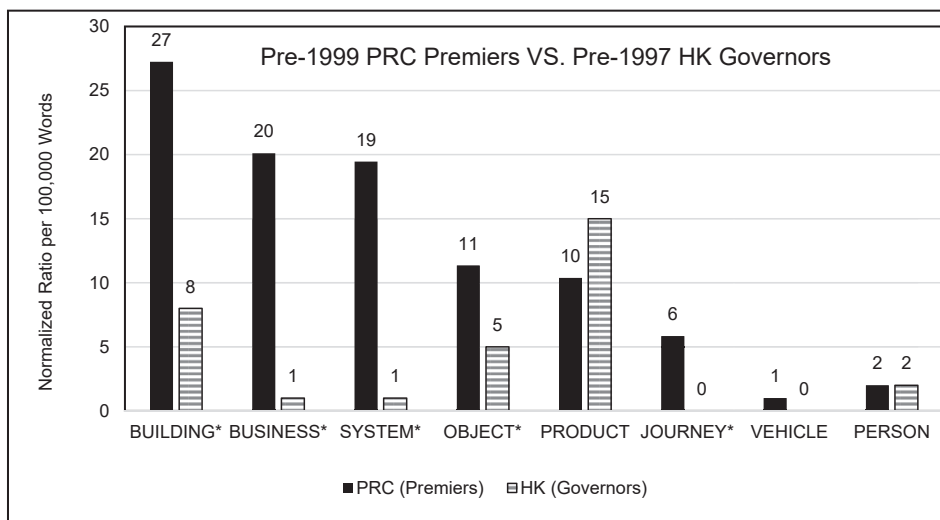


Fig. 3. Normalized ratio of the frequent source domains associated with the target domain of EDUCATION by PRC Premiers in Pre-1999 Corpus and HK Colonial Governors in Pre-1997 Corpus.

Lastly, Fig. 4 shows that HKSAR Chief Executives differ with the post-1999 PRC Premiers as they use the BUILDING and VEHICLE source domain less often, but use the PRODUCT source domain more often. Interestingly, the degree to which the HKSAR Chief Executives differ from the PRC Premiers falls in between the large difference between the HK Colonial Governors and the PRC Premiers (Fig. 3) and the small difference between the pre-1999 and post-1999 PRC Premiers (Fig. 1). However,

the differences between the Chief Executives and PRC Premiers still exist, particularly in terms of the frequency of source domains used.

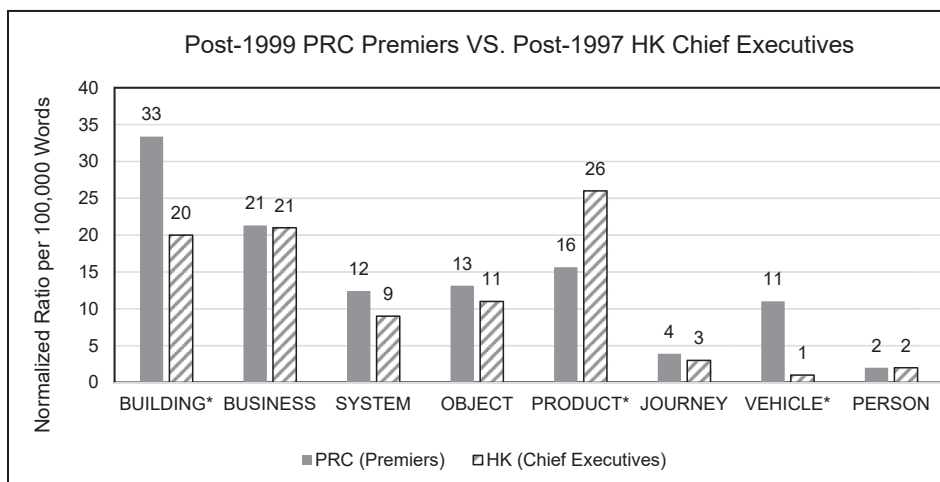


Fig. 4. Normalized ratio of the frequent source domains associated with the target domain of EDUCATION by PRC Premiers in Post-1999 Corpus and HKSAR Chief Executives in Post-1997 Corpus.

We suggest that these patterns may be caused by the different cultural backgrounds of each audience: the HK Governors' target audience are those who grew up in a capitalist society during a colonial period, and the Chief Executives' audience are those who grew up in a Special Administrative Region under the 'one country, two systems' principle, which keeps capitalist aspects while at the same time being socially, economically, and politically influenced by the PRC. Similarly, the focus on BUILDING vs. BUSINESS for PRC premiers indicates that they view EDUCATION more as something that can be constructed than as a company with profits and losses. Given that leaders in China have the authority to construct large-scale buildings and even towns or cities, it is a natural extension to view EDUCATION as something that is big and can be 'built.' Hong Kong Chief Executives, with their focus on Hong Kong as a major financial city, pride themselves in seeing Hong Kong as an international business centre; hence, viewing EDUCATION as a business is a natural outgrowth of this conceptualization of Hong Kong as a centre for business; EDUCATION is simply another aspect of the business environment that pervades Hong Kong.

In addition, the findings in Figs. 3 and 4 are interesting considering that Hong Kong was one of the four Asian "tigers" between the 1960s and 1990s with tremendous industrial growth. It was also during that period that it transitioned to a major global financial centre, which it remains to this day. Thus, the reference to EDUCATION as a PRODUCT occurs comparatively more often by both the Governors and the Chief Executives (versus PRC premiers), which may be a result of Hong Kong's association with the production of material goods during its period of economic growth.

7. Evaluative function of metaphor: mapping principle analysis

7.1. Mapping principles of conceptual metaphors

Having compared the source domain categories in different time periods among different groups of governmental leaders, we now turn to analyzing the variety of metaphorical keywords that occurred within the different source domains in order to see to what extent similar concepts are mapped within the source domains, as well as the polarity of the keywords.

In alignment with previous studies, we continue to investigate the Mapping Principles in EDUCATION metaphors by looking at the most frequently occurring lexical items in each source-target pairing. We selected the top metaphorical keyword with a frequency of at least two as the criteria for identifying "the most frequently occurring lexical items" under the EDUCATION metaphor source-target mappings in order to see how each of these source domains are invoked to handle a different aspect of EDUCATION, e.g., to make it more common, to talk about how good it is, or to talk about its implementation.

7.2. Mapping principles of EDUCATION metaphors in Hong Kong corpus

In fact, Table 5 below shows that the most frequently used keyword in each source domain for each time period all have positive evaluations in the Hong Kong corpus; however, the connotation within each source domain differs slightly.

Table 5

The most frequent metaphorical keywords with a frequency of at least two in both the pre-1997 and post-1997 Hong Kong corpora.

Source domain	Hong Kong Pre-1997				Hong Kong Post-1997			
	Keywords	Frequency	N.R.	Percentage	Keywords	Frequency	N.R.	Percentage
PRODUCT	質素 'quality'	18	6.03	40.91	質素 'quality'	18	4.89	18.75
BUILDING	擴展 'expand'	9	3.01	47.37	加強 'strengthen'	25	6.79	32.47
OBJECT	推行 'carry out'	11	3.68	73.33	推行 'carry out'	18	4.89	37.50
					推動 'push'	18	4.89	37.50
BUSINESS	投資 'invest'	2	0.67	100.00	投資 'invest'	33	8.97	41.25
SYSTEM	普及 'popularize'	3	1.00	75.00	改革 'reform'	40	10.87	75.47

Take, for example, HK Colonial Governors, who conceptualized EDUCATION as PRODUCT, BUILDING, and OBJECT. When conceptualizing EDUCATION as a PRODUCT the most frequently used keyword is 質素 *zhi4su4* 'quality,' as BUILDING it is 擴展 *kuo4zhan3* 'expand,' and as OBJECT it is 推行 *tui1xing2* 'carry out.'¹⁵ Ahrens (2010) postulated a Mapping Principle constraint that says a target domain invokes different source domains for different reasons; we can see this happening again with the Hong Kong data.¹⁶ This constraint, in fact, also holds when the HKSAR Chief Executives' use of source domains is examined. PRODUCT is again used to talk about 質素 *zhi4su4* 'quality,' but BUILDING is used primarily to talk about 加強 *jia1qiang2* 'strengthen' (and secondarily to talk about 擴展 *kuo4zhan3* 'expanding'), while OBJECT is used for both 推行 *tui1xing2* 'carry out' and 推動 *tui1dong4* 'push.' Strengthening, for example, is categorized under the source domain of BUILDING as one of its basic meanings is 'to make something stronger so that it will take more weight or force without breaking.' It highlights one process of 'building construction,' e.g., the current foundation of the education system needs additional strengthening:

- (1) 加強 大專 教育
jia1qiang2 da4zhuan1 jiao4yu4
 strengthen tertiary education
 'strengthen tertiary education'

'Push' indicates that additional effort is needed, e.g.,

- (2) 推動 國民 教育
tui1dong4 guo2min2 jiao4yu4
 push national education
 'push forward compulsory education'

In addition, HKSAR Chief Executives also invoke the source domain of BUSINESS and SYSTEM. When the source domain of BUSINESS is invoked, the most frequently used keyword is 投資 *tou2zi1* 'investment', e.g.,

- (3) 投資 教育
tou2zi1 jiao4yu4
 invest education
 'invest in education'

When SYSTEM is used, the most frequently mapped concept is 普及 *pu3ji2* 'popularize' in pre-1997 and 改革 *gai3ge2* 'reform' in post-1997, e.g.,

- (4) 實施 教育 改革
shi2shi1 jiao4yu4 gai3ge2
 implement education reform
 'implement education reform'
- (5) 普及 初中 教育
pu3ji2 chu1zhong1 jiao4yu4
 popularize secondary education
 'popularize secondary education'

These mapping principles, or main meaning foci, allow us to further understand the reason for the source domain selection and allow us to see different patterns of usage among government leaders.

7.3. Mapping principles of EDUCATION metaphors in PRC corpus

The most frequent metaphorical keywords under the five frequent source domains in the PRC corpus are presented in Table 6. We found similar usage patterns for the keywords in both the pre-1999 and post-1999 data, showing similar mapping principles within each source-target domain pairings of EDUCATION metaphors.

¹⁶ Conceptual Mapping Model postulates that 'it is the mapping principle that constrains the possibilities for nonconventional metaphor extensions, and that it may be the mapping principle that is activated during judgment tasks' (Ahrens, 2010, p. 30).

Table 6

The most frequent metaphorical keywords with a frequency of at least 2 in both the pre-1999 and post-1999 PRC corpora.

Source domain	PRC Pre-1999				PRC Post-1999			
	Keywords	Frequency	N.R.	Percentage	Keywords	Frequency	N.R.	Percentage
BUILDING	加强strengthen	36	11.68	37.50	加强strengthen	50	17.75	43.86
BUSINESS	事业 business	57	18.49	72.15	事业 business	32	11.36	50.00
SYSTEM	普及 popularize	17	5.51	35.42	普及 popularize	15	5.32	30.61
OBJECT	提高 raise	10	3.24	28.57	推进 carry forward	19	6.74	51.35
PRODUCT	质量 quality	11	3.57	33.33	质量 quality	19	6.74	42.22
	宣传 advertise	11	3.57	33.33				

In both the pre/post-1999 periods, PRC premiers primarily used the keyword 加强 *jia1qiang2* 'strengthen' under the source domain of BUILDING in the conceptualization of EDUCATION, e.g.,

- (6) 加强 教育 基础 能力 建设
jia1qiang2 jiao4yu4 ji1chu3 neng2li4 jian4she4
 strengthen education foundation ability construction
 'strengthen the establishment of education basic skills'

When talking about EDUCATION as a BUSINESS, PRC premiers in both periods mainly used the keyword 事业 *shi4ye4* 'business' as in example (7):

- (7) 发展 教育 事业
fa1zhan3 jiao4yu4 shi4ye4
 develop education business
 'develop educational enterprises'

The premiers also used the same frequent keyword 质量 *zhi4liang4* 'quality' under the source domain of PRODUCT in pre/post-1999, e.g.,

- (8) 提高 教育 质量
ti2gao1 jiao4yu4 zhi4liang4
 improve education quality
 'improve education quality'

Thus, we see similar mapping principles and connotations for the EDUCATION metaphors in the PRC corpus, reflecting a consistent political frame about the 'education' issue among government leaders before and after 1999.

7.4. Comparisons of mapping principles between Hong Kong and PRC

The above discussion demonstrates that the mapping principles of EDUCATION metaphors in the Hong Kong corpus are different in pre-1997 and post-1997, while the mapping principles are mostly similar in the PRC corpus in pre-1999 and post-1999.

By comparing the PRC and Hong Kong corpora, we found similarities in terms of the mapping principles for the EDUCATION IS A PRODUCT metaphor and the EDUCATION IS AN OBJECT metaphor. The aspect of 质量/質素 *zhi4liang4/zhi4su4* 'quality' under the source domain of PRODUCT was frequently mapped to the target domain of EDUCATION, reflecting that government leaders in both Hong Kong and the PRC have been emphasizing the quality of education during the whole period.¹⁷ In OBJECT metaphors, we see the aspect of 前进 *qian2jin4* 'carrying forward' under the source domain of OBJECT frequently mapped to the target domain of EDUCATION, suggesting that Hong Kong and PRC leaders share the same goal of 'carrying forward' the education, which shows that education development was taken as an important task in both regions.

We also found differences in the mapping principles for the EDUCATION IS A BUILDING, EDUCATION IS A BUSINESS, and EDUCATION IS A SYSTEM metaphor. For BUILDING metaphors, it is interesting to see that the aspect of 加强 *jia1qiang2* 'strengthen' was most frequently mapped from the source domain of BUILDING to the target domain of EDUCATION in both the pre and post-1999 periods in the PRC corpus, while it was only frequently mapped in the post-1997 Hong Kong corpus. The preference of PRC leaders to use this term may be one reason why the HKSAR Chief Executives increased the frequency of using this term, contrasting the HK Colonial Governors. The BUSINESS metaphor is another interesting contrast because 事业 *shi4ye4* 'business' is the most frequently mapped term for PRC Premiers, compared to HKSAR Chief Executives who used 投資 *tou2zi1* 'invest.' 事业 *shi4ye4* 'business' in Chinese mainly refers to 'career' or 'achievements;' thus, the use of the source domain of BUSINESS in this context is not to focus on investment (or by extension, the returns from the investment), but instead on 'education as a career with achievements to be made' (see examples 3 and 7). Lastly, for the SYSTEM metaphor, both HK Colonial Governors and PRC premiers emphasized the aspect of 普及 *pu3ji2* 'popularizing,' while HKSAR Chief Executives talked more about 改革 *gai3ge2* 'reforming,' suggesting a different direction of education development in Hong Kong

¹⁷ The lexical choices for 'quality' differs between the PRC and Hong Kong with the PRC using 质量 *zhi4liang4* 'quality' and Hong Kong using 質素 *zhi4su4* 'quality'.

post-1997, mostly due to the fact that the new system would focus on ensuring students would be trained to be biliterate and trilingual going forward.

8. Conclusion

This study has provided empirical data and applies a contrastive, corpus-based approach to analyzing the metaphor patterns for EDUCATION metaphors in political speeches by PRC Premiers, HK Colonial Governors, and HKSAR Chief Executives over the past thirty years. We have shown that post-1999 and post-1997 government leaders discussed 'education' more often than the political leaders prior to those two time periods, suggesting increased attention to 'education' in the two regions over time. In addition, we found different rates of metaphorization of 'education' in the PRC and Hong Kong corpora, with PRC Premiers in both pre-1999 and post-1999 metaphorizing EDUCATION to a similar degree, and HKSAR Chief Executives metaphorizing EDUCATION more often than HK Colonial Governors, indicating that the issue of 'education' was important enough that the referential strategy of metaphor was needed to frame the suggested proposals (Edelman, 1971).

Furthermore, the contrastive analysis of source domain selection allows us to determine which conceptual domains are referenced (or not) by different groups of government leaders. The keyword analysis of the mapped lexemes allows us to postulate the mapping principles or main meaning foci of each source domain. This critical step permits the examination of subtle differences in the way a source domain is used by different groups of government leaders and extends Jing-Schmidt and Peng (2017)'s study of cross-linguistic differences in metaphor usage to demonstrate that these differences may even occur within a single language. It also demonstrates that mapping principles or meaning foci of metaphors are not static, but may vary when there is a pragmatic reason to do so, as we saw in the case of the BUILDING source domain in Hong Kong pre- and post-1997, and in the contrast between how the BUSINESS and SYSTEM source domain is used by HKSAR Chief Executives and PRC premiers. When using the BUILDING source domain in the conceptualization of EDUCATION, HK Colonial Governors in pre-1997 were found to focus more on 'expanding' education while both HKSAR Chief Executives in post-1997 and PRC premiers focused more on 'strengthening' education, i.e., 'the current foundation of the education system needs additional strengthening.'

The contrasts show that the focus in the PRC corpus is on what is under the government's control, i.e., the construction of buildings. When using the BUSINESS source domain, HKSAR Chief Executives put more emphasis on the 'investment' in education (or by extension, the returns from the investment), and PRC Premiers frequently talked about 'education' as 'a career with achievements to be made.' These patterns reveal the deeply ingrained capitalist mindset in Hong Kong compared to the PRC, which embraces only some aspects of capitalism. For the source domain of SYSTEM, both HK Colonial Governors and PRC premiers emphasized the aspect of 'popularizing' education, while HKSAR Chief Executives instead focused on 'reforming' education, suggesting that HK and PRC government leaders wanted to expand the education systems in both HK and the PRC prior to 1997 or 1999 respectively. In the later period, HK government leaders were satisfied with the scale of the education system in Hong Kong, and their focus then shifted to education reform.

Lastly, this study adds additional insight to Jing-Schmidt and Peng (2017)'s proposal that a contrastive examination of domains used in small corpora, along with the lexical patterns associated with these domains, provides a method to extract sociopragmatic features of metaphor choice for speaker groups, thereby extending our understanding of metaphor use in a socio-cultural context.

Declaration of competing interest

The authors declare that there is no conflict of interest.

Appendix 1

PRC (People's Republic of China) corpus and Hong Kong corpus of political speeches

PRC Corpus			HK Corpus		
Speakers	Year	Word Count	Speakers	Year	Word Count
Zhao Ziyang	1984–1988	82,046	Sir Edward Youde	1984–1986	54,147
Li Peng	1988–1998	226,253	Sir David Wilson	1987–1991	110,753
			Sir Chris Patten	1992–1996	133,672
Pre-1999	1984–1998	308,299	Pre-1997	1984–1996	298,572
Zhu Rongji	1999–2003	85,981	Tung Chee-hwa	1997–2005	169,654
Wen Jiabao	2004–2013	195,742	Donald Tsang Yam-Kuen	2006–2012	144,965
			Leung Chung-ying	2013–2014	53,320
Post-1999	1999–2013	281,723	Post-1997	1997–2014	367,939
Subtotal	1984–2013	590,022	Subtotal	1984–2014	666,511
Total					1,256,533

References

- Ahrens, Kathleen, 2010. Mapping principles for conceptual metaphors. In: Lynne, Cameron, Deignan, Alice, Low, Graham, Todd, Zazie (Eds.), *Researching and applying metaphor in the real world*. John Benjamins, Amsterdam, pp. 185–207.
- Ahrens, Kathleen, 2011. Examining conceptual metaphor models through lexical frequency patterns: A case study of U.S. presidential speeches. In: Hans-Joerg, Schmid (Ed.), *Windows to the mind. Series: Applications of cognitive linguistics*. Mouton De Gruyter, Berlin, pp. 167–184.
- Ahrens, Kathleen, 2015. *Corpus of Political Speeches*. Hong Kong Baptist University Library, Retrieved Date Accessed, from <http://digital.lib.hkbu.edu.hk/corpus/>.
- Ahrens, Kathleen, 2019. First Lady, Secretary of State and Presidential Candidate: A Comparative Study of the Role-Dependent Use of Metaphor in Politics. In: Julien, Perrez, Reuchamps, Min, Thibodeau, Paul (Eds.), *Variation in Political Metaphor*. John Benjamins, Amsterdam, pp. 13–34.
- Ahrens, Kathleen, Jiang, Menghan, 2020. Source Domain Verification Using Corpus-based Tools. *Metaphor and Symbol* 35 (1), 43–55.
- Ahrens, Kathleen, Lee, Sophia, 2009. Gender versus politics: When conceptual models collide in the U.S. Senate. In: Kathleen, Ahrens (Ed.), *Politics, gender, and conceptual metaphors*. Palgrave MacMillan Publisher, Basingstoke and New York, pp. 62–82.
- Ahrens, Kathleen, Menghan, Jiang, Winnie Huiheng, Zeng, 2021. BUILDING metaphors in Hong Kong Policy Addresses. In: Callies, Marcus, Marta, Degani (Eds.), *Metaphor in Language and Culture across World Englishes*. Bloomsbury Academic, London, pp. 105–128.
- Ahrens, Kathleen, Zeng, Winnie Huiheng, 2021. Expressing concepts metaphorically in English editorials in Sinosphere. In: Peters, Pam, Burridge, Kate (Eds.), *Exploring the ecologies of world Englishes in the twenty-first century: Language, society and culture*. Edinburgh University Press, UK, pp. 170–192.
- Bailey, Richard, 2003. Conceptual metaphor, language, literature and pedagogy. *J. Lang. Learn.* 1 (2), 59–72.
- Bolton, Kingsley, 2011. Language policy and planning in Hong Kong: colonial and post-colonial perspectives. *Appl. Ling. Rev.* 2, 51–74.
- British Council, 2013. *A Brief Overview of Chinese Higher Education System*. British Council, India, Retrieved from: https://www.britishcouncil.in/sites/default/files/higher_education_system_of_china.pdf.
- Charteris-Black, Jonathan, 2004. *Corpus Approaches to Critical Metaphor Analysis*. Macmillan, London.
- Charteris-Black, Jonathan, 2005. *Politicians and Rhetoric: the Persuasive Power of Metaphor*. Palgrave-MacMillan, Basingstoke and New York.
- Chen, Keh-Jian, Huang, Chu-Ren, Chang, Li-Ping, Hsu, Hui-Li, 1996. Sinica Corpus: design methodology for balanced corpora. In: *Proceedings of the 11th Pacific Asia Conference on Language, Information and Computation*, pp. 167–176.
- Cheng, Winnie, Ho, Janet, 2014. Brainwashing or nurturing positive values: competing voices in Hong Kong's national education debate. *J. Pragmat.* 74, 1–14.
- Edelman, Murray, 1971. *Politics as Symbolic Action: Mass Arousal and Quiescence*. Markham, Chicago.
- Entman, Robert M., 1993. Framing: toward clarification of a fractured paradigm. *J. Commun.* 43 (4), 51–58.
- Evans, Stephen, 2017. Language policy in Hong Kong education: a historical overview. *Eur. J. Lang. Pol.* 9 (1), 67–84.
- Fillmore, Charles J., 1985. Frames and the semantics of understanding. *Quad. Semant.* 6 (2), 222–254.
- Flowerdew, John, Leong, Solomon, 2007. Metaphors in the discursive construction of patriotism: the case of Hong Kong's constitutional reform debate. *Discourse Soc.* 18 (3), 273–294.
- Jing-Schmidt, Zhuo, Peng, Xinxia, 2017. Winds and tigers: metaphor choice in China's anti-corruption discourse. *Lingua Sin.* 3 (1), 1–26.
- Kövecses, Zoltán, 2017. Levels of metaphor. *Cogn. Linguist.* 28 (2), 321–347.
- Kövecses, Zoltán, 2010. *Metaphor: A Practical Introduction*. Oxford University Press, UK.
- Lakoff, George, 1991. Metaphor and war: the metaphor system used to justify war in the Gulf. In: Hallet, Brien (Ed.), *Engulfed in War: Just War and the Persian Gulf*. Matsunaga Institute for Peace, Honolulu, HI, pp. 95–111.
- Lakoff, George, 1993. The contemporary theory of metaphor. In: Ortony, Andrew (Ed.), *Metaphor and Thought*. Cambridge University Press, New York, pp. 202–251.
- Lakoff, George, Johnson, Mark, 1980/2003. *Metaphors We Live by*. University of Chicago Press, Chicago.
- Lam, Wai Man, Lui, Percy Luen Tim, Wong, Wilson (Eds.), 2012. *Contemporary Hong Kong Government and Politics: Expanded Second Edition, Vol. 2*. Hong Kong University Press, Hong Kong.
- Landis, J. Richard, Koch, Gary G., 1977. The measurement of observer agreement for categorical data. *Biometric* 33 (1), 159–174.
- Leech, Geoffrey, 1983. *Principles of Pragmatics*. Longman, London.
- Lee, Cher Leng, 2005. Metaphor and media: exploring the China's and Hong Kong's discourse of Hong Kong's transition. In: Manfred Kienpointner, Shi-xu, Servaes, Jan (Eds.), *Read the Cultural Other: Forms of Otherness in the Discourses of Kong Kong's Decolonization*. Mouton de Gruyter, Berlin and New York, pp. 139–164.
- Lu, Louis Wei-lun, Ahrens, Kathleen, 2008. Ideological influences on BUILDING metaphors in Taiwanese presidential speeches. *Discourse Soc.* 19 (3), 383–408.
- Poon, A.Y., 2010. Language use, and language policy and planning in Hong Kong. *Curr. Issues Lang. Plann.* 11 (1), 1–66.
- Pragglejaz Group, 2007. MIP: a method for identifying metaphorically used words in discourse. *Metaphor Symbol* 22 (1), 1–39.
- Rayson, Paul, Garside, Roger, 2000. Comparing corpora using frequency profiling. In: *Proceedings of the Workshop on Comparing Corpora-held in Conjunction with the 38th Annual Meeting of the Association for Computational Linguistics (ACL 2000)*. Association for Computational Linguistics, pp. 1–6.
- Stamatović, Milica Vuković, 2017. Metaphors of parliamentary budget debates in times of crisis: the case of the UK and the Montenegrin parliament. *Pragmat. Soc.* 8 (2), 281–311.
- Steen, Gerard J., Dorst, Aletta G., Herrmann, J. Berenike, Anna, Kaal, Krennmayr, Tina, Pasma, Trijntje, 2010. *A Method for Linguistic Metaphor Identification: from MIP to MIPVU*. John Benjamins Publishing, Amsterdam and Philadelphia.
- Sun, Yi, Chen, Xi, 2018. A diachronic analysis of metaphor clusters in political discourse: a comparative study of Chinese and American presidents' speeches at universities. *Pragmat. Soc.* 9 (4), 626–653.
- The Stanford Natural Language Processing Group, 2015. *Stanford Log-Linear Part-Of-Speech Tagger [Software]*, Version 3.6.0. <http://nlp.stanford.edu/software/tagger.html>.
- Tsang, Mun C., 2000. Education and national development in China since 1949: oscillating policies and enduring dilemmas. *China Rev.* 579–618.

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