

# Linguistic and Cultural Characteristics of Domain Names of the Top Fifty Most-Visited Websites in the US and China: A Cross-Linguistic Study of Domain Names and e-Branding

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The current study is a cross-linguistic, cross-cultural analysis of the domain names of the fifty most-visited websites of Internet-based businesses in the US and China (100 domain names examined; the ranking is an extraction from the *alexa.com* database). In particular, the study examines brevity, rhythm, recourse to semiotic systems, and semantic characteristics of the domain names. The findings suggest that the US most-visited domain names are more homogeneous in orthography and recourse to semiotic systems (largely alphabetic; semantic transparency). Chinese domain names are heterogeneous, mixing semiotic systems and featuring more cultural symbolism (particularly number symbolism) and literary intertextuality.

**KEYWORDS** domain name, Chinese domain name, English domain name, e-branding, dot-com, writing system, logography

## Introduction

Focusing on the domain names of the fifty most-visited websites of Internet-based businesses in the US and China (based on rankings from *alexa.com*),<sup>1</sup> the current study is a comparative analysis of the linguistic and cultural characteristics of domain names as a form of e-branding. The article argues that the domain names are “polyvalent” (Anis, 2007) in which one name serves multiple functions: marking identity, indexing service, constructing a mnemonic device (Al-Zoman, 2004: 830), and sometimes good luck charms. However, the nature of polyvalence in Chinese domain names is more complex, given the multilingual context in which Chinese domain names operate. The study shows that the preeminent domain names in the US are

homogeneous in orthography and recourse to semiotic systems (standard orthography, common word formation processes, and semantic transparency). Chinese domain names are heterogeneous, mixing distinct semiotic systems, and embedding cultural symbolism and literary intertextuality (Bakhtin, 1981/1953; 1986; Kristeva, 1986; Dobrovol'skij and Piirainen, 2005).

## Data and methodology

The data for the study are extracted from *alexa.com*, specifically, the ranking of most-visited websites by regions (China and the United States, *alexa.com*, accessed on September 6 2011). The study focuses on domain names of “dot-com” companies (e.g. *google.com*), excluding the websites of traditional brands (e.g. *nytimes.com* for the newspaper *New York Times*). This exclusion follows the argument that the brands of dot-com companies are “born on the web” (Scolari, 2008: 173) where the domain names create the original identities of the brands. In comparison, the domain name of the website for a traditional brand matches a preexisting identity.

Certain US-based websites are frequently visited by Internet users in China (e.g. *google.com*; *msn.com*). These international-scale US dot-com companies do not constitute domain naming practices in China. Thus they are excluded from the Chinese dataset. This exclusion is further justified by the absence of any China-based dot-com companies appearing among the most-visited websites in the United States.

The analysis focuses on the following characteristics of the domain names:

- Brevity, measured by the number of characters and syllables in a domain.
- Sound and rhythm, described by whether the domain name can be pronounced as words/phrases, and the presence of assonance, alliteration and total/partial reduplication.
- Recourse to semiotic systems, such as the Roman alphabet, Arabic numerals, logography and other systems (Ottenheimer, 2008).
- Intertextuality, identified by “appropriation” of existing meanings of lexicon/constructions/textual interpretations in new contexts of use and for creating new meanings (Bakhtin, 1981/1953; 1986; Kristeva, 1986; Dobrovol'skij and Piirainen, 2005).

### ***Brevity without detriment to meaning***

Brevity is a significant characteristic of both Chinese and English domain names. In the data from the US, the number of characters of the domain names ranges from one character (*t.co*) to fourteen characters (*buffingtonpost.com*). The mean length is 6.14 characters. The number of characters for Chinese domain names ranges from two characters (*56.com*) to nine characters (*Chinanews.com*). The mean length is 4.84 characters. The lengths of the majority of US domain names (42 or 84%) lie between three characters and nine characters. The lengths of the majority Chinese domain names (44 or 88%) lie between two characters to six characters. Table 1 summarizes these facts.

Apart from the brevity of the domain names measured by numbers of characters, the average syllable length is also similar in the two datasets. The average number of syllables per domain name is 2.32 in the US data and 2.46 in the Chinese data. The

TABLE 1  
LENGTH BY CHARACTERS (TOTAL N FOR EACH COUNTRY = 50)

Number of characters in domain name	National comparison of domain length by percentage	
	USA	China
1	2	0
2	4	10
3	10	12
4	20	20
5	6	20
6	12	26
7	18	6
8	10	4
9	8	2
10	4	0
11	2	0
12	2	0
14	2	0
Total	100	100

majority of the domain names in both datasets are two or three syllables long (78% in the US dataset, 80% in the Chinese dataset). Table 2 summarizes these facts.

These measurements render a domain name such as *google.com* in the US, or *baidu.com* in China, the prototypical length (both are two syllables long, consisting of five or six characters). The overall brevity of the domain names across the two datasets and the similar mean length of the domain names are interesting, in light of the typological differences of English and Chinese. Chinese morphemes are largely monosyllabic (Karlgren, 1962; Li and Thompson, 1981; Norman, 1988). The domain name, *sohu.com*, a popular website portal in China, consists of two morphemes: *so*, an anglicized Romanization of the character 搜 “to search,” and *hu*, the Pinyin-based

TABLE 2  
LENGTH BY NUMBER OF SYLLABLES (TOTAL N FOR EACH COUNTRY = 50)

Number of syllables in domain name	National comparison of domain length by percentage	
	USA	China
1	12	4
2	56	64
3	22	16
4	10	14
5	0	2
Total	100	100

Romanization of the character 狐 “fox.”<sup>2</sup> These two morphemes form a domain name that is four characters long, two syllables, signaling two meaning units “(a) search fox.” The English syllable structure is more complex than Chinese, allowing complex consonant clusters at the syllable-onset and -coda positions (Ladefoged, 2006). In addition, English morphemes tend to be multisyllabic. For example, *pandora.com*, a frequently visited Internet radio site, consists of seven characters, three syllables, but only one morpheme.<sup>3</sup>

The fact that the preeminent domain names in China and the US are remarkably similar in length, despite the typological differences of the two languages, suggests that these domain names do not use brevity as an absolute criterion. If brevity is the ultimate concern, Chinese domain names might consist of one syllable and two characters. This study hypothesizes that the necessity for a simple, brief, and memorable name balances the complex syllable structure and multi-syllabicity of morphemes of English (which leads to longer names in general). On the other hand, the simple morpho-phonological structure of Chinese combines with the need for a name to gain maximum meaning. Chinese words consist of a large quantity of compounds, a very common way of lexical formation in Chinese (Karlsgren, 1962: 16–31; Li and Thompson, 1981: 10). Consequently, the general length of Chinese domain names is more than one morpheme. Such language-specific balancing of brevity and meaningfulness results in the similarity in average length of domain names in the two typologically distinct languages.

### ***Pronounceability and rhythmic devices***

Besides brevity, the sound of a name is another facet of the quality of a domain name. If a domain name is directly pronounceable, the name, arguably, gains memorability and ease of recall or communication by word-of-mouth (e.g. *reference.com*, *myspace.com*). Articulation of a domain name may otherwise occur as discrete segments, such as acronyms (the four letters in *imdb.com* logographically use each letter to represent a word, “Internet Movie Database.” See discussions of logography in Anis, 2007 and Ottenheimer, 2008). A domain name may also be a combination of words and abbreviations (e.g., the letter “c” stands for “computer” in *cnet.com*, a computer-service site). These names, while not directly pronounceable, signal concrete information in a single letter and are shorter than their unabbreviated counterparts.

Pronounceability appears to be a consideration more central to the US domain names than Chinese domain names. In the US domain names, 41 of 50 (82%) are directly pronounceable, including existing words/phrases (*amazon.com*, *reference.com*, *godaddy.com*, *about.com*, *ask.com*), unfamiliar lexicon where orthography shifts to conform to conventional orthography (*google.com* from the coinage “googol”; Scolari, 2008: 187), or coinages that are pronounceable as they conform to the phonotactic rules of English (e.g. *bing.com*, *hulu.com*, *groupon.com*; cf. Ladefoged, 2006). Only a small portion of the domain names (9 of 50 or 18%) use abbreviations, including four acronyms (*aol.com*, *imdb.com*, *msn.com*, *rr.com*), and five instances using letters logographically (e.g. “t,” in *t.com*, represents *twitter.com*; “c” represents “computer” in *cnet.com*; “x” represents adult content in *xvideos.com*).

A higher percentage of domain names in the Chinese dataset are not directly pronounceable (19 of 50, 20% more than the percentage in the US data). For example,

*qq.com*, a social networking site, duplicates the same letter “q” and creates a symmetrical, visually memorable name. As discussed in more detail in Section 3, Chinese domain names use different semiotic systems, which build visual appeals and mnemonic devices independent of the alphabetic use of the Roman letters.

Another facet of the sound of the domain name is its containing rhythm-creating devices such as assonance (defined as repetition of the nuclei of two consecutive syllables in this study), alliteration (repetition of the initial consonants of two consecutive syllables), and partial or total reduplication of two consecutive morphemes. These forms of repetitions augment the aesthetic appeal of the domain names by creating certain rhythms in sounds of the names (e.g. *google.com* in the US data and *paipai.com* in the Chinese data).

In the English data, 44 domain names feature two or more than two syllables. Among these names, 29.5% use a rhythmic device, including four domain names with alliteration of adjacent syllables (e.g. *paypal.com*, *google.com*), 13 cases of assonance of adjacent syllables (e.g. *blogspot.com*, *hulu.com*), and one case of total duplication (*rr.com*, “road runner”). In the Chinese data, 48 domain names have two, or more than two, syllables. Among these names, 37.4% use a rhythmic device, including 10 domain names of assonance (e.g. *qiyi.com*, *taobao.com*), and eight (excluding cases of assonance) feature total or partial duplication (*renren.com*, *soso.com*). Reduplication is a more common morphological process in Chinese than English (Li and Thompson, 1981; Finegan, 2007). When such a typological feature is also a rhetorical device in domain names, the appearances of the Chinese domain names are markedly different from their English counterparts.

## Recourse to multiple semiotic systems

Domain name technology, originally designed for English, uses the Latin/Roman alphabet (Mockapetris, 1983; National Research Council of the National Academies, 2005). Such bias is apparent from the technical constraint that a domain name may only consist of 37 characters including the 26 letters in the Roman alphabet, the 10 Arabic numerals and the dash “-” (Mockapetris, 1983; National Research Council of the National Academies, 2005). All nation-states, regardless of their writing systems, many of which do not use the Roman alphabet, must comply with this constraint. Despite recent attempts of Internet technology to internationalize domain names and accommodate different writing systems (Klensin, 2010), the Roman alphabet is still the dominant script of the domain name, especially for the market place.

This linguistic constraint and bias of the domain name industry creates two different contexts for Chinese and US domains. In the US, the Roman letter requirement of the domain name coheres with the end-user’s language habits. Thus, communicating the identity of a dot-com company to its potential customers, via the company’s domain name, is straightforward.

In contrast, written Chinese utilizes graphemes (one form corresponds to a morpheme as well as a syllable; see Karlgren, 1962; Li and Thompson, 1981; Norman, 1988). Pinyin, the official Romanization of Mandarin Chinese in China (Li and Thompson, 1981: xvi), is primarily a learning tool for developing literacy in Chinese, and a device for inputting Chinese on a computer. In general, the domain name industry’s original bias conflicts with Chinese Internet users’ language habits.

Consequently, English domain names evince regular word-formation processes, transparency of meaning, and homogeneity of recourse to semiotic systems. The domain names largely use Roman letters alphabetically and in conventional orthography. The names resort to regular morphological processes, such as borrowing existing words (*reference.com*, *amazon.com*, *go.com*), compounding (*facebook.com*, *warriorforum.com*, *youtube.com*), phrases (*myspace.com*, *stumbleupon.com*), acronymy (*aol.com*, *msn.com*), and blending (*groupon.com*, “group coupon”). Occasional coinages of new words conform to conventional English syllable structure and orthography (*zedo.com*). When letters are used logographically, the use of letters conforms to conventional morphological processes of English, that is, they function as prefixes, adding a semantic unit to a fully formulated lexical stem (e.g. “e-” in *ehow.com*, indexes “electronic”).

Among these commonplace words, playfulness occurs in the form of neography (i.e., existing words spelled unconventionally; e.g. *tumblr.com*, a domain name that plays on “tumbler”). Previous research on mobile communication (Anis, 2007) identified neography as a strategy of users of mobile devices to expedite the process of texting and economize space while texting (b<sub>4</sub> for “before,” Anis, 2007). Neography also marks in-group identity and social and affective meanings. Five of the domains of the fifty most-visited websites in the US utilize this strategy, all of which are websites for social networking and online media services, arguably catering to younger and technologically savvy generations (*flickr.com*, *imgur.com*, *netflix.com*, *reddit.com*, *tumblr.com*). These domain names still represent the typical syllable structure of English, pronounceable and recognizable by English-language users.

Compared to the US domain names, the domain names of the frequently visited sites in China do not display such regularity in their recourse to semiotic systems. The Chinese domain names operate within multiple sign systems, particularly numbers and logographic/iconic uses of the Roman alphabet and Arabic numerals. The different systems used include Pinyin (e.g., *baidu.com*, *paipai.com*), English (e.g. *china.com*, *chinanews.com*), anglicized Pinyin (e.g. *sina.com*, which, in Pinyin-based orthography, would be *xinlang.com*), numerals (*56.com*, *57.com*, *126.com*, *163.com*), and various combinations of these semiotic systems. For example, the name of the web-administration service site, *cnzz.com*, consists of two parts: “cn” is the International Organization for Standardization (ISO) country code for “China” and “zz” is an acronym, representing “zhàn zhǎng,” the Chinese equivalent of the expression “webmaster.”

Among such hybridity of various sign-systems, a semiotic system extensively used in the Chinese domain names is Arabic numerals. Numerals are a sign-system independent of the writing system of either English or Chinese. Thus, it appeals to the broadest populations regardless of their literacy in English or Romanized Chinese. In contrast with the absence of numerals in the US data, 12 domain names (24%) in the Chinese data utilize numerals.

The functions of these numerals are diverse, reflecting the complexity and irregularity of recourse to sign-systems in the Chinese domain names. For example, a numeral-based domain name may have no semantic relation to the website itself except for providing a memorable web address without reliance on Roman letters (e.g., *163.com*, a web portal site; *4399.com*, an online gaming site; *126.com*, an email service site). These domain names also resort to number symbolism in the Chinese

culture. For example, the number 9 symbolizes longevity due to its resemblance to the pronunciation of the word *jiǔ* 久 “long-lasting.” The number 6, sounding similar to *liū* 溜 “to slide” and *liú* 流 “to flow,” symbolizes smooth operation (Bates, 2007; see also Dobrovolskij and Piirainen, 2005). Thus, while these number-based domain names construct mnemonic devices, independent of the Roman letters, they also act as “good luck charms.”

Other number-based domain names may evoke multiple sign-systems, such as using the pronunciation of a digit to represent a syllable (i.e., “rebus writing,” Anis, 2007). For example, the digit, 5, is a near-homophone with the first-person singular pronoun *wǒ* “I” in modern Chinese. The number occurs in several domain names, evoking the concept of “I.” The domain name *51job.com* has a similar pronunciation as the phrase *wǒ yào* job, literally, “I want job.” Not surprisingly, this domain name services a site of an online job-search portal. The frequently visited video-sharing site, *56.com*, incorporates two digits that, in a string, are homophones with the phrase 我乐 *wǒ lè*, “I (am) happy.” The string also marks two incremental digits, thus becoming memorable. In addition, the digit, 6, is an “auspicious” number in the Chinese culture.

Numbers may apply logographic and iconic meanings. For example, *hao123.com* is a web portal, consisting of the adjective, *hǎo*, “good,” and the numeral string, “123.” The string “123” is incremental and iconic for an act of enumeration. Similar strategies occur in the names of *360buy.com*, an e-commerce site, and *360.cn*, an Internet-security service site. Both domain names utilize the iconic and logographic values of the number string “360,” (i.e., 360 degrees, a full circle). Both websites feature a colorful circle as part of their logos on their respective websites. Apparently, these two domain names capitalize on the symbolic value of “360” suggesting a full shopping experience (the e-commerce site) and complete security protection (the Internet-security service site).

## Intertextuality: evoking cultural scripts of interpretation

The term “intertextuality” captures such linguistic phenomena where language users appropriate existing meanings to create new contextualized uses and new meanings (Bakhtin, 1981/1953; 1986; Kristeva, 1986). Through intertextuality, a domain name evokes rich imageries and schematic interpretations (Fillmore et al., 2003: 235). For example, *pandora.com* is the domain name of the popular Internet radio site. The name evokes the Greek mythology of “Pandora,” the first woman who is “all-giving or all gifted” (Lachs, 1974: 341–375). The “About” page of *pandora.com* explicitly references the Greek mythology of Pandora, and further states: “Pandora received many gifts from the gods, including the gift of music, from Apollo [. . .] She was also, as we all know, very curious [. . .].” The name thus evokes rich, positive associations for the music-sharing site, which construes music as “a gift,” and music listening a process of discoveries by “curious” minds (“About Our Name,” *Pandora Media Inc.*).

Among the US domain names, intertextuality largely plays on the level of appropriating a nominal concept (*pandora.com*, *yahoo.com*, *wikipedia.com*, and *paypal.com*). For example, the online e-commerce payment tool, *paypal.com*, uses the existing phrase, “Pen Pal,” replacing “pen” with “pay” through analogy, while retaining the compound structure and rhythmic alliteration.

Chinese domain names incorporate literary intertextuality (utilizing meanings and schematic interpretations based on the origin of the name in literary works). The domain name evokes, not an entity, but a synopsis of a narrative or representation of a philosophy of life. For example, *baidu.com* is the leading search engine in China. The name, *baidu*, is the Pinyin rendition of the two Chinese graphemes, 百度 *bǎidù*, literally “hundred-times.” This brand name is recognizable as appropriated from the narrative poem by 辛弃疾 Xīn Qìjì, a poet in the Song Dynasty. As widely known among literate Chinese and publicized as the official “Baidu Story” on the “About Us” page of the company’s website, the classic poem depicts the Lantern Festival, the only time in the feudal society when unmarried females had the freedom to appear in public and chance-meet males. The poem depicts a man falling in love with a woman at first sight during a celebration of the Lantern Festival. Amid the crowds, he lost sight of the girl and searched in vain. After searching “a hundred times [. . .] suddenly, I turned by chance, to where the lights were waning, and there she stood” (“The Baidu Story,” *Baidu Inc.*). Interesting is the choice of *bǎidù*, “hundred-times” for the brand name. In the narrative models of Labov and Waletzky (1967/1997) and Longacre (1981), the event of “searching a hundred times” represents the peak of tension and the height of the complicating actions, before the “release of tension” and the supply of a “resolution.” In light of narrative structures, instead of capitalizing on a nominal expression, as in the US dataset, the domain names of literary intertextuality in the Chinese data may be a “narrative” synoptic appropriation of the original source.

Such process-oriented use of literary intertextuality is not a singular case. Several sites feature such literary meanings. The name of the social-networking site, *tianya.com*, literally “sky-end,” originates from a classic poem of friendship by poet 王勃 Wáng Bó in the Tang Dynasty. The original poem created a metaphor in which 天涯 *tiān-yá* “sky-end” represents the farthest distance physically, yet the closest to the heart due to feelings of friendship and benevolence. The search engine, *youdao.com*, literally, 有道 *yǒudào* “[there] exists way,” evokes the literary writing of the ancient philosopher, 孟子 Mèngzi/Mencius, which teaches the importance of morality (where morality is metaphorically referenced by the word, 道 *dào* “way”).

## Conclusion and discussion

Domain names originate as mnemonic devices to aid human recognition and remembrance of Internet addresses (Mockapetris, 1983; National Research Council of the National Academies, 2005). As mnemonic devices, simplicity and memorability are arguably important aspects of domain names. These criteria nevertheless are not absolute. Brevity and meaningfulness need to coincide with local linguistic habits and the semiotic systems salient in the local culture. As Haiman (1985: 401) argued, “to maximize iconicity and to maximize economy are two of the most important competing motivation for linguistic forms in general.” In the current study, the polyvalence of domain names in two typologically distinct languages illustrates this overarching drive of language development. The competing forces of economy and meaningfulness drive and constrain language creativity.



Economy in form and polyvalence in meaning/function for domain names occur at a local level. The monolingual context of the domain names in the US allows regularity of the domain names. The localization is more complex in China, due to the non-alphabetic nature of the Chinese writing system, the multiple semiotic systems at the Chinese Internet user's disposal, and the cultural significance of numbers and literary symbolism.

Likely, the extensive blending of different semiotic systems in Chinese domain names arises from the multilingual context of Chinese domain names and the original English-bias of domain-name technology. But also arguable is the conjecture that written Chinese, a writing system based on graphemes, renders Chinese language users more accommodating to visually based sign systems (numbers, logographic use of letters and numbers). In contrast, the alphabetically oriented writing system of English has resulted in English speakers' comfort with reading alphabetically formed domain names. Research, based on a larger dataset and from different analytical angles, is necessary to verify these hypotheses.

Another area for further research is the relationship of domain names and other proper names in other territories in the two respective countries, such as product brand names, names of organizations and corporations, and place names. Empirically derived knowledge of naming practices, in a wide range of traditions, provide insights into the complex landscape of naming as a culturally situated, linguistically mediated, variedly constrained social phenomenon.

## Acknowledgements

The author thanks the anonymous reviewers for their very helpful and instructive feedback. Partial results of the study were presented at the 2012 CIBER Business Language Conference (Chapel Hill, North Carolina), and the 2011 Georgetown University Round Table on Languages and Linguistics (GURT) (Georgetown, Washington, DC). The attendees of the two presentations provided valuable input. The author is grateful to the Junior Faculty Scholarship Support Program at the College of Liberal Arts and Sciences at the University of Illinois at Chicago that funded the two conference travels.

## Notes

- <sup>1</sup> *Alexa.com* is a website owned by *amazon.com*. It is a reputable website traffic tracking site. The rankings of websites by *alexa.com* are primarily based on total unique visits to a tracked site.
- <sup>2</sup> Pinyin is the official Romanization of modern Mandarin Chinese in China (cf. Li and Thompson, 1981: xvi).
- <sup>3</sup> As an anonymous reviewer rightly suggested, "morpheme" is not a straightforward and non-controversial construct to apply in the analysis of proper names, a word category to which domain names belong. Since the current study focuses on dot-com companies, the constituent morphemes of

a domain name are identifiable and subject to morpheme-structure analysis. A domain name, such as *stumbleupon.com* in the US, or *sohu.com* in China, apparently consists of two morphemes at its creation stage. However, once a domain name gains the status of a proper name, its constituent morphemes may no longer be semantically transparent, and gradually lose analyzability. Internet users may simply regard the domain name as consisting of a single morpheme. The reviewer is correct in pointing out that the semantics of proper names is a separate field of inquiry, and one should proceed with caution when analyzing the morpheme structure of a proper name.

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