(A)symmetry of Spatial Verticality in Mandarin:
A corpus-based conceptualization of *shàng* and *xià* space particle constructions

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Mandarin is rich in the expressions of space and spatial semantics. The present study sheds light on the functions and connotations of a series of synonymous space particle constructions (SPCs) associated with the vertical postpositions *shàng* 'on' and *xià* 'under' in Mandarin: [*… (shàng|xià)*], [*…zhī(shàng|xià)*], [*zài…(shàng|xià)*], and [*zài…zhī(shàng|xià)*]. Cai (2013) maintains that spatial circumpositions (i.e., *zài…shàng*) are the typical form of spatial semantic representation, in which the preposition *zài* is weakened and functions merely as a location marker while the postposition (*shàng*) itself sufficiently takes over the spatial meaning. Zhang (2000) also asserts that all the prepositions that come before the locative prepositional phrases are omittable. Meanwhile, according to Chinese dictionaries, *zhī* is a grammatical word that is identical to *de* and can be marked as an adposition in spatial constructions. Although prior research mostly considered these four constructional variants equivalent, this study aims at exploring the unique semantic properties that underlie these near-synonymous SPCs under the hypothesis that true synonyms are rare (Saeed, 2011). The data were retrieved from the latest written version of Corpus of Contemporary Taiwanese Mandarin (COCT), one of the largest and representative corpora in Taiwan. An estimated 670,000 concordance lines for *Shàng* and 200,000 for *Xià* were retrieved and incorporated into the statistical analysis. We conducted a multiple distinctive collexeme analysis (Gries and Stefanowitsch, 2004) for *shàng* and *xià* SPCs respectively. The four variants for each vertical space particle involves the manipulation of two factors, with(out) *zhī* and with(out) *zài*. The comparison on the verticality were based on the semantic features extracted from the most distinctive collexemes of both constructions. Our analysis suggests several symmetrical behaviors for the vertical SPCs. *Zhī* attracts animate entities (e.g., *dì wáng ZHĪ SHÀNG* 'above emporer'; *bǐ jiào ZHĪXIÀ* 'under comparison'), and *zài* induces semantic prosody, attracting more unexpected negative and positive co-occurring lexical items (landmarks; LMs) (e.g., *ZÀI wèn tí SHÀNG* 'on the problem'; *ZÀI zhī chí XIÀ* 'under support'). Additionally, the bi-character LMs tend to cooccur with constructions including *zhī* (viz., [*…zhī(shàng|xià)*] and [*zài…zhī(shàng|xià)*]), and the monosyllabic LMs favor the single-word SPCs (i.e., [*…(shàng|xià)*]); these may due to the prosodic tendency in Chinese (Lin et. al, 1993). On the other hand, these two sets of SPCs demonstrate a few distinctive asymmetrical behaviors. [*Zài_shàng*] among *shàng* SPCs cooccurs with over half of the distinctive concrete LMs, whereas it is [*…xià*] among *xià* SPCs that favors the bulk of them. We posit that these asymmetrical preferences may be attributed to the markedness of the postpositions *shàng* and *xià*. Since *shàng* is in the cognitive level more prominent and is the concept people tend to fetch first (Jingfei, 2019), features of unmarkedness, it requires *zài* to narrow down the senses to collocate with concrete lexemes. In contrast to the aforementioned symmetric animateness for verticality, for all *xià* SPCs, both NP and VP are involved in the most distinctive LMs, while VP is rarely seen in *shàng* SPCs. This may be associated with the conceptual complexity of *shàng* becoming a topicalizer within SPCs.

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