

## Constraint interaction in the inscription of Chinese characters

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Chinese writing has a long and venerated tradition dating back over 3,000 years and serves a variety of purposes from the purely practical to the purely aesthetic. In the ordinary writing of Chinese characters (*xiezi* 寫字), the primary function is to convey the lexical meaning of the written character. In the art of Chinese calligraphic inscriptions (*shufa* 書法), however, the visual form of the written characters is simultaneously a means of communication and aesthetic visual expression. In this vein, the logographic nature of the Chinese orthographic system makes the characters particularly suitable to creative visual elaboration in the inscription of a text.

We propose to explore the possible application of Optimality Theory (OT) as a framework for the analysis of Chinese calligraphic inscriptions. Just as the figurative language of poetry is “a departure from the literal” (Bloom, 2004), the inscription of the character in *shufa* is a departure from the legible, so that its form is both “expressive and evocative.” Our goal is to develop a theory of the way that violable *markedness* constraints enforce representational well-formedness in the structuring of calligraphic inscriptions. We aim therefore to extend the results of modern research on the role of constraints in phonological grammar to the field of Chinese calligraphy.

There are two possible domains of analysis. The first and most basic domain is to formally describe the characteristics of different calligraphic scripts (e.g., seal, clerical, standard, semi-cursive, and cursive script). The second domain concerns aesthetic stylistic norms specific to the art of calligraphic inscriptions. In this domain, the well-formedness of a calligraphic inscription lies in its accordance with period-specific stylistic norms that typically are a violation of previously established normative constraints. In the present work, we focus on the former domain: the writing of inscriptions in specific calligraphic scripts.

We propose that the formal properties of different calligraphic scripts can be understood as arising through the interaction of a set of violable constraints. We argue that coherence-generating ‘markedness’ constraints enforce visual well-formedness at three levels of organization: 1) the overall compositional arrangement of the inscription (e.g., the organization of characters within each column and between each row; *zhangfa* 章法), 2) the compositional structure of individual character formations (*jiegou* 結構), and 3) the forms of the individual brushstrokes (*bifa* 筆法). At the same time, a set of ‘faithfulness’ constraints ensures that the surface form of written characters is legible and resembles the canonical form enough to be recognized. We propose that the same set of constraints is operative across scripts and that what differentiates calligraphic scripts is the specific ranking of constraints.

In putting forth this theory, the ultimate goal is to make the shift to a cognitive perspective in the field of art history by investigating the explanatory force of a constraint-based analysis of the surface forms of Chinese calligraphic inscriptions.