## Paper Proposal:

Marking Up Stone: TEI, GIS and Medieval Runology

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What can XML-based markup standards, designed for the printed page, offer to the study of memorial stones carved over one thousand years ago? And what does the explosion in webbased GIS tools mean for the study of runestones and their surrounding landscape?

The history of Runology over the past few decades offers an object lesson in both the promises and pitfalls of early digitization: the 1970s and 80s brought new insights gained from database-backed queries of medieval inscriptions, while those decades' technological legacy has also left researchers facing the manifest inadequacy of ASCII-based character encoding and missing support for scholarly markup. Recent innovations in digital humanities technologies, including the TEI (Text Encoding Initiative) P5 guidelines, geospatial referencing, and Unicode, promise to transform our understanding of runic carvings.

As a precursor to querying textual repositories, the semantic coding of TEI Level 5 helps researchers form new questions, and seek new answers, about the linguistic and artistic artifacts that remain some of our most important clues about Northern European civilization in the years 800-1300AD. Semantic markup of personal and family relationships can help expose the complex networks between a memorial's patron, subject, and even carver. ISO language tags help clarify the various tongues (Germanic dialects, Latin, and in one recently-decoded example, even Basque) that these stones were carved in.

Parallel to these developments in semantic markup, exciting advances in geospatial technology enable the relationship between natural landscape and manmade memorial (indeed, the slippery boundary between the two) to become manifest on the screen. Examples of research problems which can be addressed through geospatial databases include the transportation of runestones to different sites, their occasional incorporation into new structures as raw materials, as well as their inclusion in elaborate settings with other, non-carved material. Digitally mapping these runic landscapes, past and present, exposes connections hitherto unseen.

Etymologists trace *rune* back to an original sense of 'whisper, secret counsel,' but the techniques and technologies highlighted in this talk offer a case study in the way that the digital transformation of the humanities creates meaning out of mystery.

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