Counting systems: decimalization and linguistic complexity

The spreading of a counting system that is numerical, decimal, and based on arithmetical operations, especially addition and multiplication, is a strong global trend in language evolution today. This shift raises a number of issues. First, the trend is often ascribed to interference from the most widespread languages worldwide, which are decimal, e.g. English, Spanish (Comrie 2003)—a tempting hypothesis, which however leaves questions open. Others suggest that numerical systems with high upper limits—such as decimal systems—are complex and meet the requirements of modern times. Yet the criteria to identify "complexity" or "requirements" often remain implicit. From a diachronic perspective, finally, the spreading of the decimal numeral system raises the question as to underlying patterns, especially the role of complexity in numeral formations: does decimalization reflect a historical trend towards more or less complexity?

This last question is the more relevant because decimalization is not only manifest in numerals but also in measure systems: while residues survive, many of them have become decimal over the past few hundred years. These measure systems, which ultimately may have their origins in non-numerical quantification, were widespread in early times and typically quantify length, volume (liquid/dry), mass, weight, area, etc. The systems are custom based and use readily accessible elements as measure, e.g. body parts, objects, activities, and so forth: Engl. *foot* (length), *cup* (volume), *stone* (weight), *furlong* 'length of a ploughed furrow'. Importantly, each commodity had its own units of quantification and conversion factors.

In this talk, I assess the complexity of the modern decimal numeral system, identifying its various manifestations and evaluating its main characteristics against early systems of quantification as we know them from residues of the type mentioned above and from comparative analysis of non-decimal systems in early and contemporary languages worldwide, e.g. body-part numerals, concrete numerals, or conglomerate systems. Linking the results and insights to the current discussion in the field about linguistic complexity, I will argue that the modern decimal system is less complex because of its consistency both at formal and systemic level.