My title above is taken from the classic paper by Sapir. In a series of papers (1925, 1933), he argued that we perceive speech sounds not just in terms of their physical properties, but also in terms of how they function in the host language. In other words, our perception is phonemic rather than just phonetic. The psychological reality of phonemes has been discussed before; e.g. Zimmer 1969, Hsieh 1970, etc. However, with recent advances in cognitive neuroscience, we are now in a position to explore these issues by monitoring brain activities; e.g. Zheng et al 2012.

In contrast to other species, humans are unique in having developed thousands of diverse languages which are not mutually intelligible. However, any infant can learn any language with ease, because all languages are based upon common biological infrastructures of sensori-motor, memorial, and cognitive faculties. Some of these infrastructures are common to all the apes, with whom we share a long phylogeny. However, humans are unique in having greater control for phonation, and more effective neural links between phonation and articulation (Ackermann 2014). The ability to coordinate an acoustically robust glottal source with complex articulations is a crucial ingredient for language to emerge.

While languages may differ significantly in the sounds they use, the overall organization is largely the same. It is divided into two major systems: [1] discrete segmental systems for building words, including lexical tones; and [2] continuous prosodic systems, including intonation, for grouping words and expressing attitudes and emotions.

Within this organization, I will discuss tone languages, which make special use of F0 to build words. The best known of these is Chinese, but tone languages are found in many parts of the world, though they may operate on different principles. I will discuss the use of features in analyzing tones, both synchronically and diachronically; Wang 1967, 1972, 1987. I will also comment on relations between sound patterns in language and sound patterns in music, the two worlds of sound universal to our species; Ross et al 2007, Peng et al 2013.
References: