

Understanding speech from the perspective of articulation and information coding

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We speak to convey information to the listener, and we listen to decode information carried by the speech signal. How we are able to do so is the ultimate puzzle for speech research. Much of the existing research effort, however, is devoted not to this central puzzle, but to various what could be called epiphenomena: speech rhythm, prosodic hierarchy, intonation structure, naturalness of synthetic speech, etc. In this talk I will argue that cracking the central puzzle of speech coding is not only the ultimate call for us as speech scientists, but also the key to understanding various epiphenomena. I will demonstrate that speech involves multi-dimensional information coding due to the richness of information to be encoded and the complexity of the underlying biophysical mechanisms. Understanding this process may lead to the discovery of the mechanisms behind many of the epiphenomena as well.

For some warm-up readings please visit <http://www.phon.ucl.ac.uk/home/yi/>