

# Clinical Human Language Technology -- and Science

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4:30 pm, 07/25/2018, 1195 Bordeaux Dr, Sunnyvale, CA 94089

## ABSTRACT

We infer a lot from the way someone talks: personal characteristics like age, gender, background, personality; contextual characteristics like mood and attitude towards the interaction; physiological characteristics like fatigue or intoxication. Many clinical diagnostic categories have symptoms that are partly or entirely manifest in spoken interaction: autism spectrum disorder, neurodegenerative disorders, schizophrenia, and so on.

The development of modern speech and language technology makes it possible to create automated methods for diagnostic screening or monitoring. But more important is the fact that these diagnostic categories are phenotypically diverse, representing (sometimes apparently discontinuous) regions of complex multidimensional behavioral spaces. We can hope that automated analysis of large relevant datasets will allow us to do better science, and learn what the real latent dimensions of those behavioral spaces are.

In this talk, I'll present some suggestive preliminary results, and discuss future research opportunities as well as the existing barriers to progress.

**Bio:** Mark Liberman is the Christopher H. Browne Professor of Linguistics at the University of Pennsylvania, as well as Professor of Computer and Information Science, Faculty Director of Ware College House, and Director of the Linguistic Data Consortium. Before moving to Penn, he was member of technical staff and head of the Linguistics Research Department at AT&T Bell Laboratories from 1975 to 1990. He is a fellow of the Linguistic Society of America and the American Association for the Advancement of Science, and co-editor of the Annual Review of Linguistics. He received the Antonio Zampolli Prize from the European Language Resources Association in 2010, and the IEE James L. Flanagan Speech and Audio Processing Award in 2017. His current research focuses on features of speech, language, and communicative interaction that are associated with neuropsychological categories and with relevant dimensions of variation in the population at large.