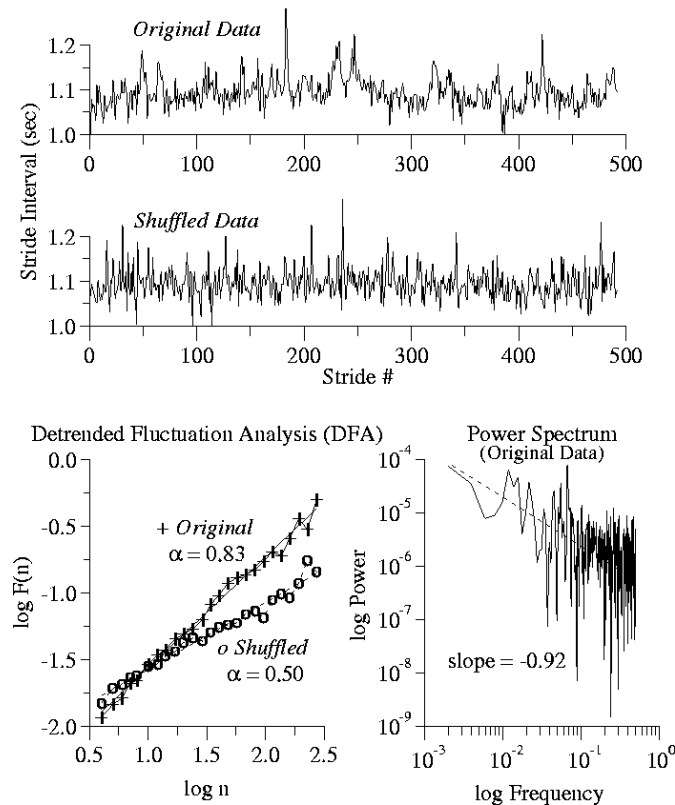


# Interactive Therapy with Instrumented Footwear

Fractal Dynamics of Gait During 9 Minute Walk



## Real-time musical feedback therapy

Derived gait rhythm and quality by looking at the load transfer between the front and back pair of insole pressure sensors.

An onset of significant gait arrhythmia or shuffling

=> a loud metronome click was produced to cue the patient back to a steady pace.

Introduction of ambient music, continually providing subtle rhythmic cues.

Detection of gait defects

=> the music became less melodic and strongly rhythmic, encouraging the wearer to walk at pace, at which point the pedestrian background music would resume (reward is regain of a pleasant sonic backdrop when the gait normalized).