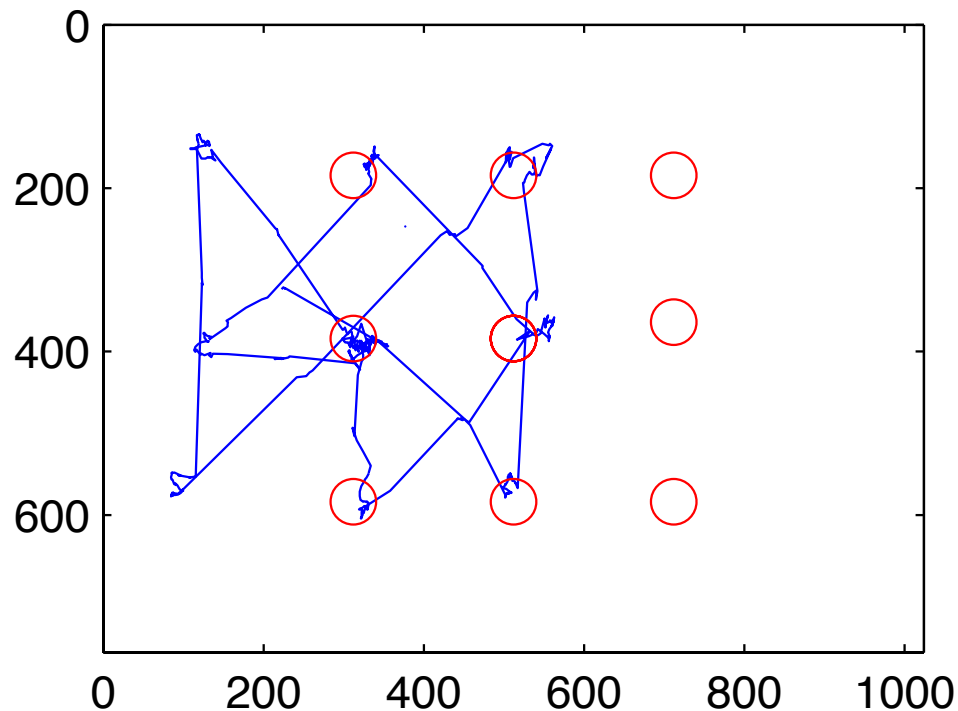


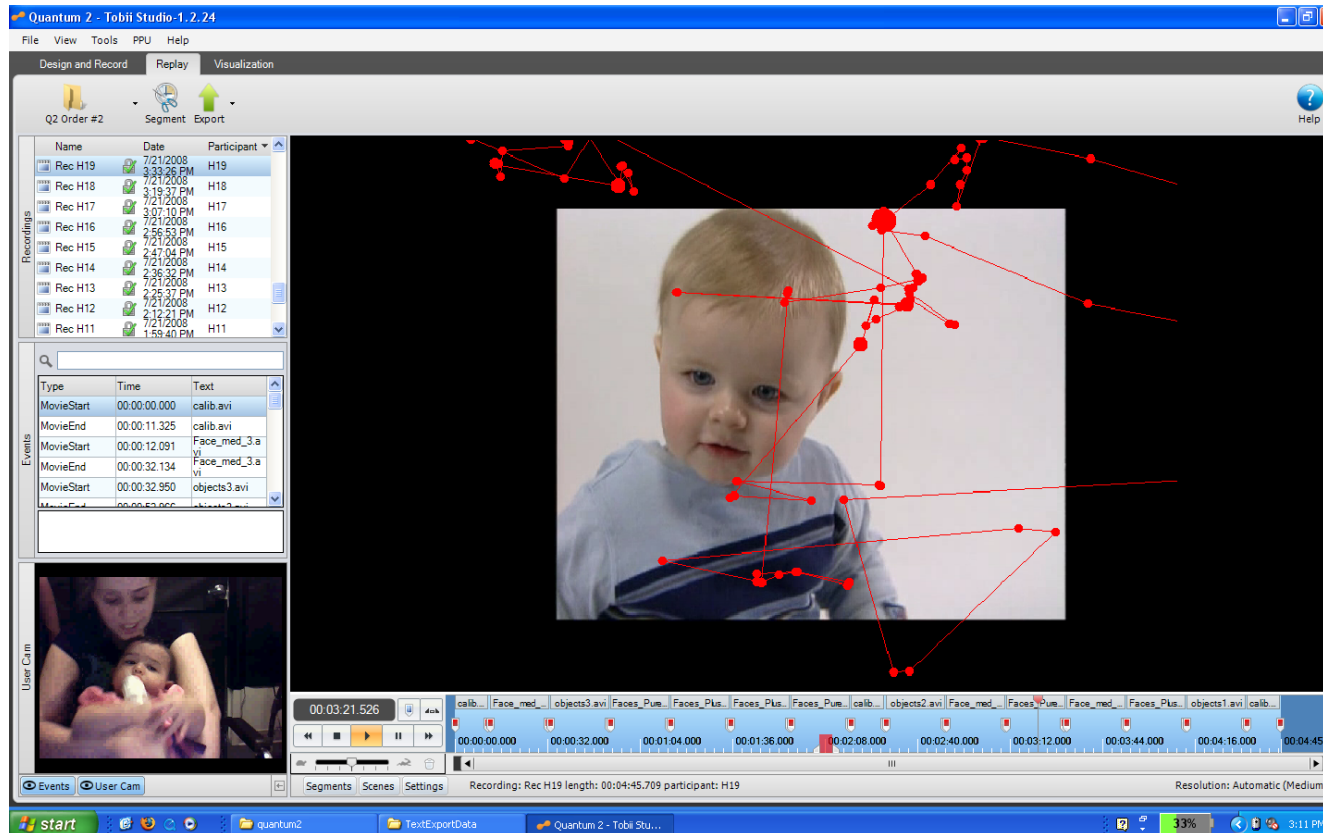
# Being sure you know where participants are looking: Offline calibration checking

Michael C. Frank & Ed Vul



International Conference on Infant Studies 2010

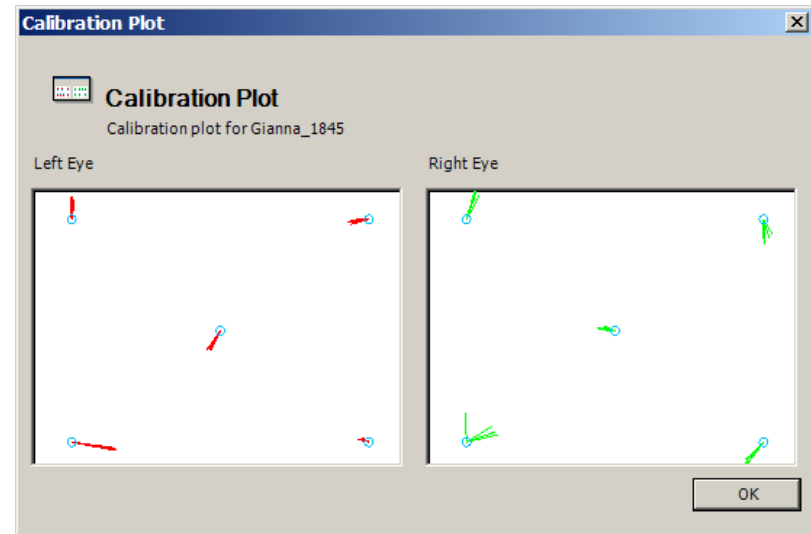
# Standard calibration error



Inconsistent calibrations or calibrations that provide minimal track are easy to detect via data playback.

# When it's not so easy to tell

- Calibrations that look OK (top) can nevertheless be systematically incorrect
- e.g. have X and Y offsets from the true point of gaze
- neither the Tobii line display nor inspection of the data will reveal these systematic errors



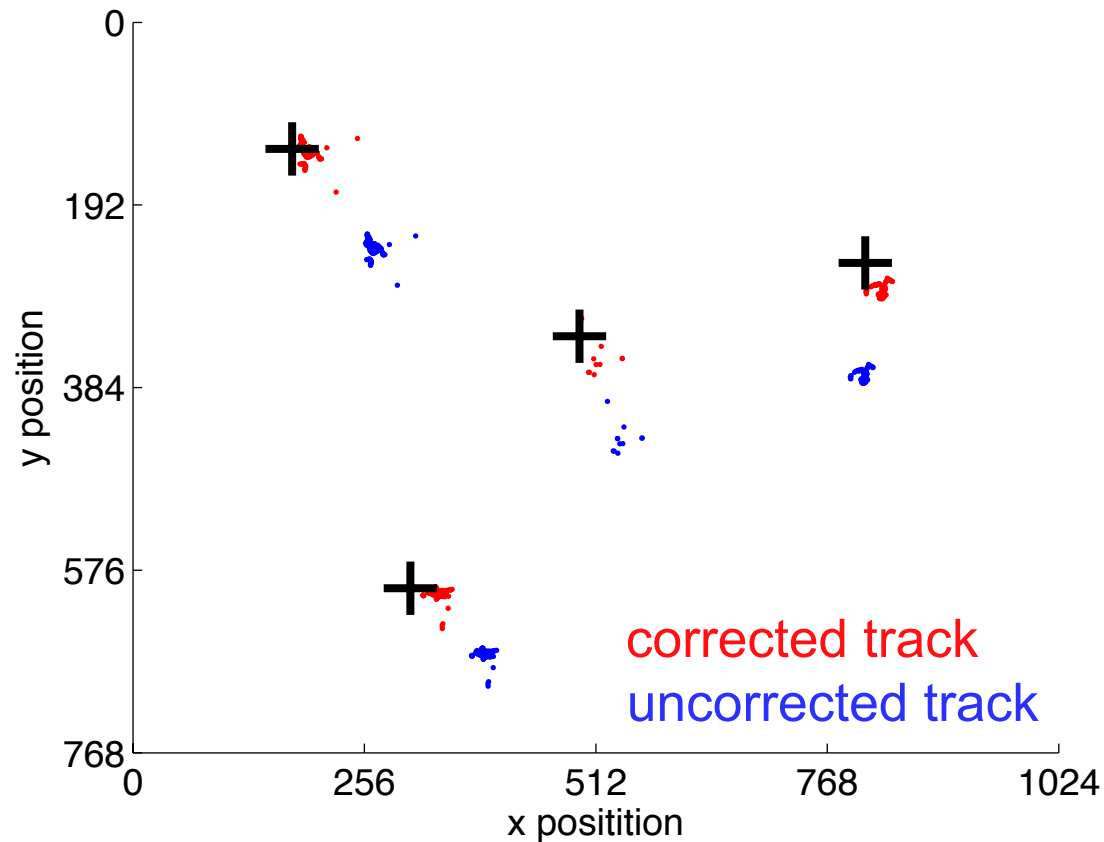
# Solution: calibration check

- In our work we add dynamic movies that have only one point that infants will fixate
- We then use gaze data from these calibration check movies to correct calibration errors offline



# Offline calibration adjustment method

Two separate robust regressions (X and Y dimension)  
adjust track via scale and intercept terms



Human coder judges acceptability of adjustment

# Functions of calibration check

1. Evaluate quality of tracking data
2. Exclude calibrations that are not salvageable
3. Improve calibrations that are close to correct
4. Correct for fixation drift over time
  - (n.b. we haven't done this yet)

