What is the Flash-Lag Effect (FLE)?
A line of 5 dots rotates around its center. Four additional dots flash such that all 9 dots are physically aligned. Subjects perceive flashed dots as lagging behind moving dots (McKay, 1958; Nijhawan, 1994).

Predictive vs. Postdictive Explanations
Predictive: The brain compensates for neural delays by using motion information to predict where moving objects were at the time of the flash (Nijhawan, 1997).

Postdictive: The brain compensates for neural processing delays retrospectively, using motion information collected after the flash to estimate where moving objects should be. This explanation correctly predicts that FLE should not occur if moving dots disappear immediately after flash (Eagleman & Sejnowski, 2000; Condition 2).

Experimental Objective
To test the hypothesis that transient signals disrupt the FLE.

Methods
13 subjects were shown displays depicted in Conditions 1-5. Each dot subtended 0.25°. The line of dots rotated at 0.5 revolutions per second. On each trial, subjects were asked to align flashed dots with moving dots. We measured the degree of physical misalignment (θ) required for perceptual alignment. The FLE was defined as a positive θ.

Data
- Predictive prediction: no FLE
- Postdictive prediction: strong FLE

Conclusions
- Without this hypothesis, the predictive account can not explain the lack of FLE in the flash-terminated condition (condition 2).
- The postdictive account predicts the flash-terminated result and is consistent with our findings in conditions 3-5.
- Perhaps the brain uses postdiction to compensate for neural delays!

References