

# Rapid modification of an ongoing reach using touch

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A hallmark of visually-guided reaching is the rapid correction of reach trajectory toward the target when it moves (Day & Lyon 2000)

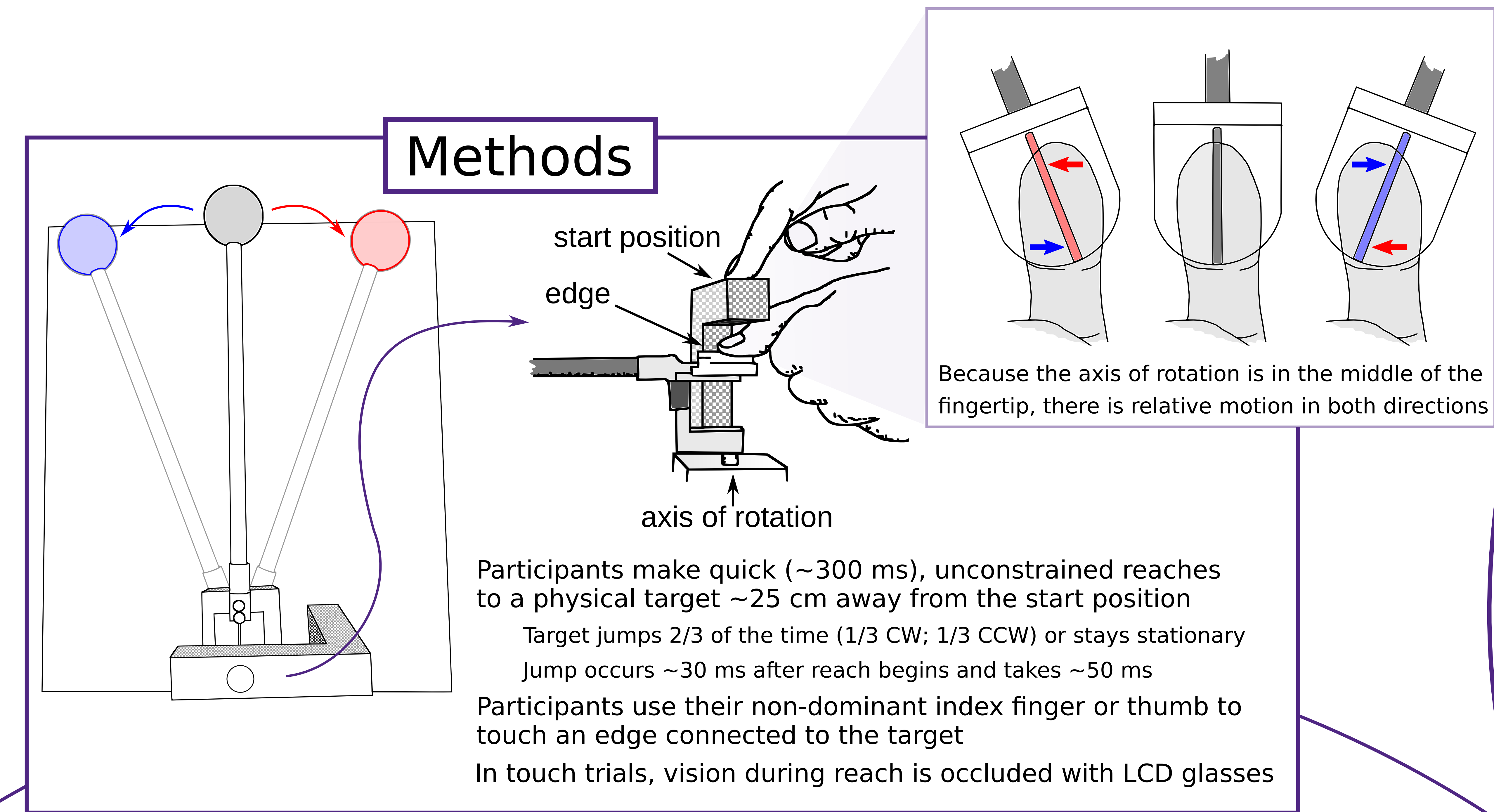
This early "pro-" response appears even when instructed to move in the opposite direction of target movement ("anti-reach")

People are able to update reach trajectories at similar latencies when guided by a tactile stimulus (Pruszynski et al. 2016)

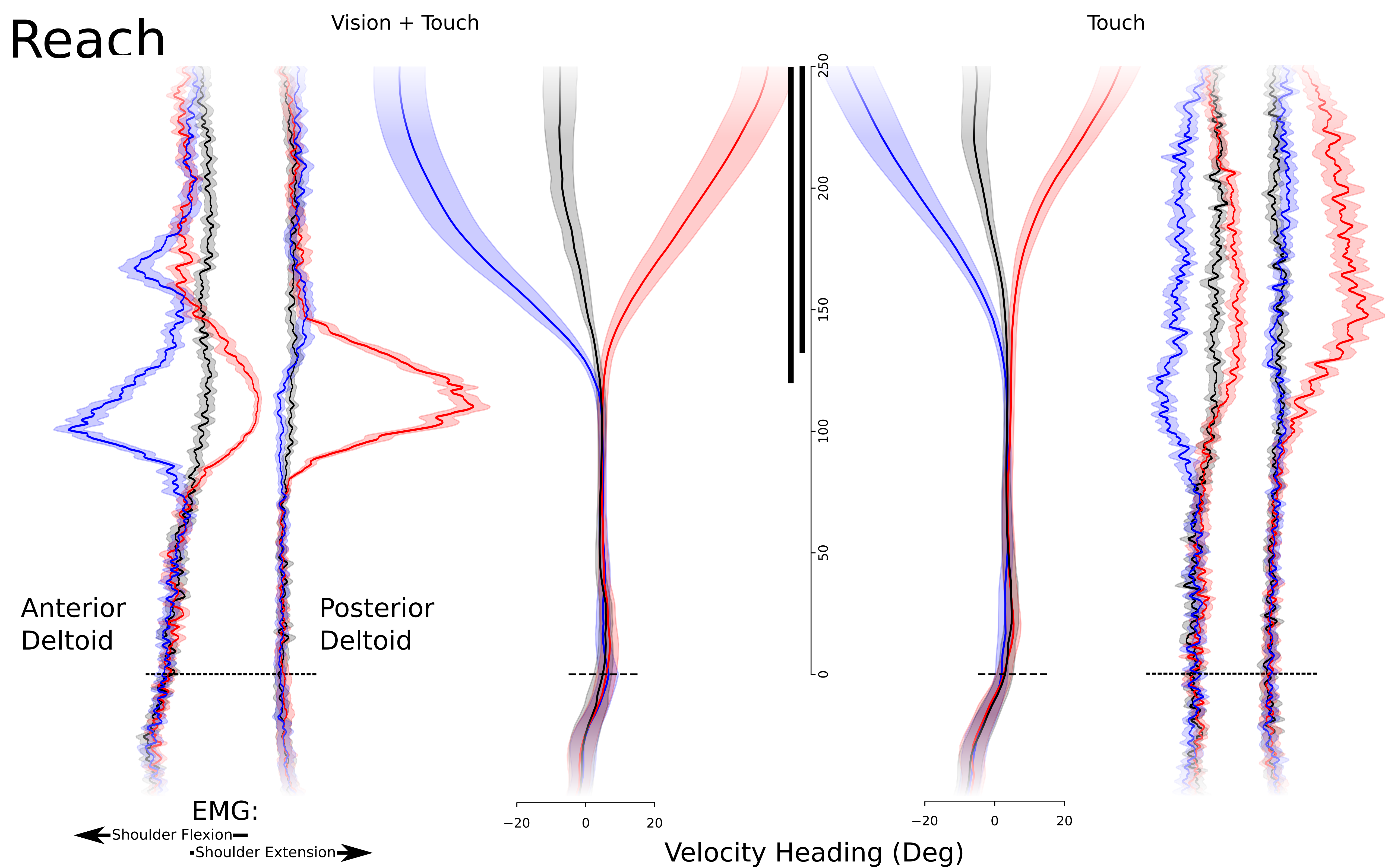
Here we investigate whether this pro- response occurs during an anti-reach paradigm under tactile guidance

This tight spatial stimulus-locking might not occur under tactile guidance because:

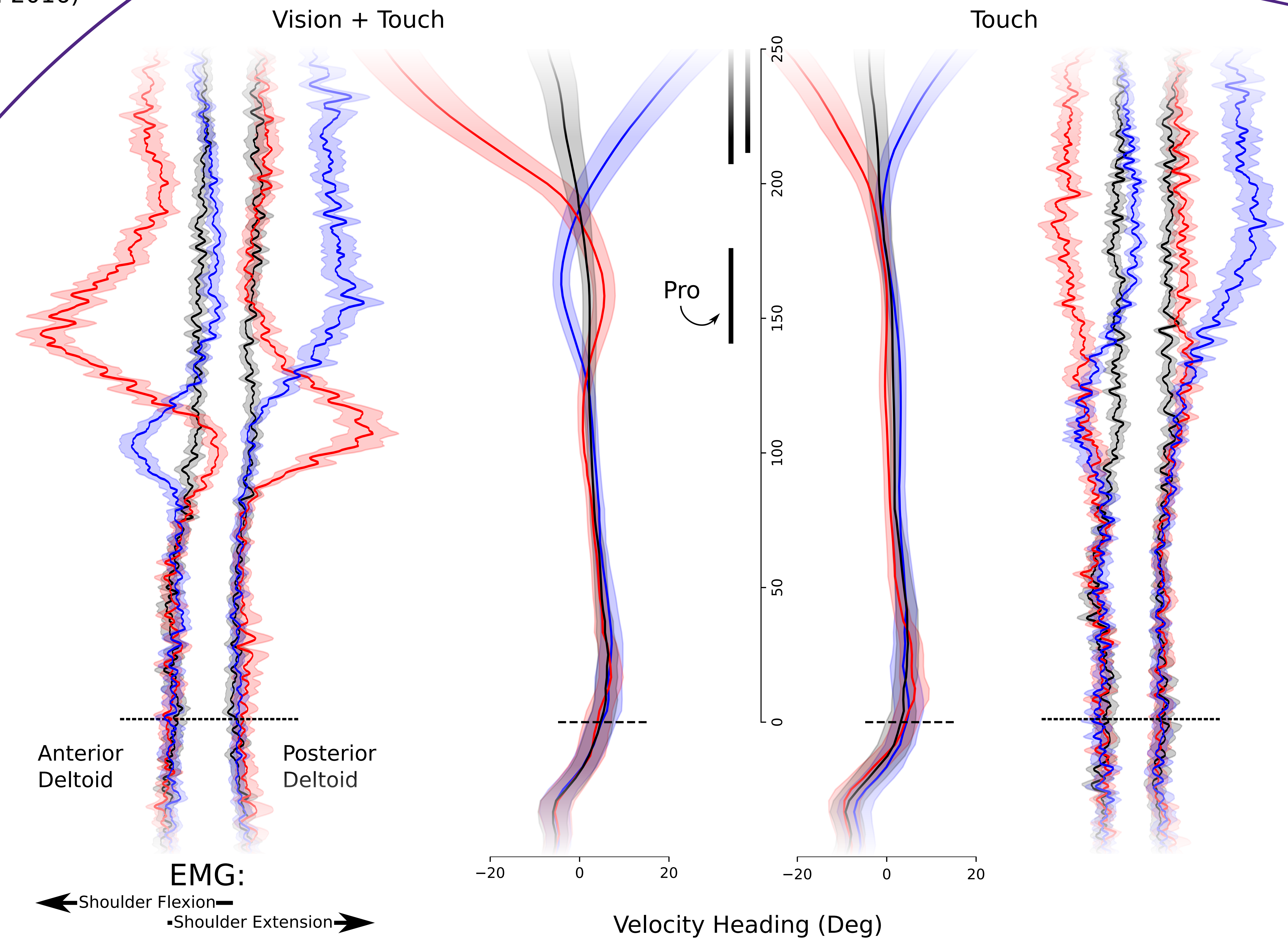
- We can manipulate non-rigid objects, for which the association between relative motion on the skin and object orientation varies
- Due to the nature of the stimulus, the finger experiences motion in both pro- and anti- directions



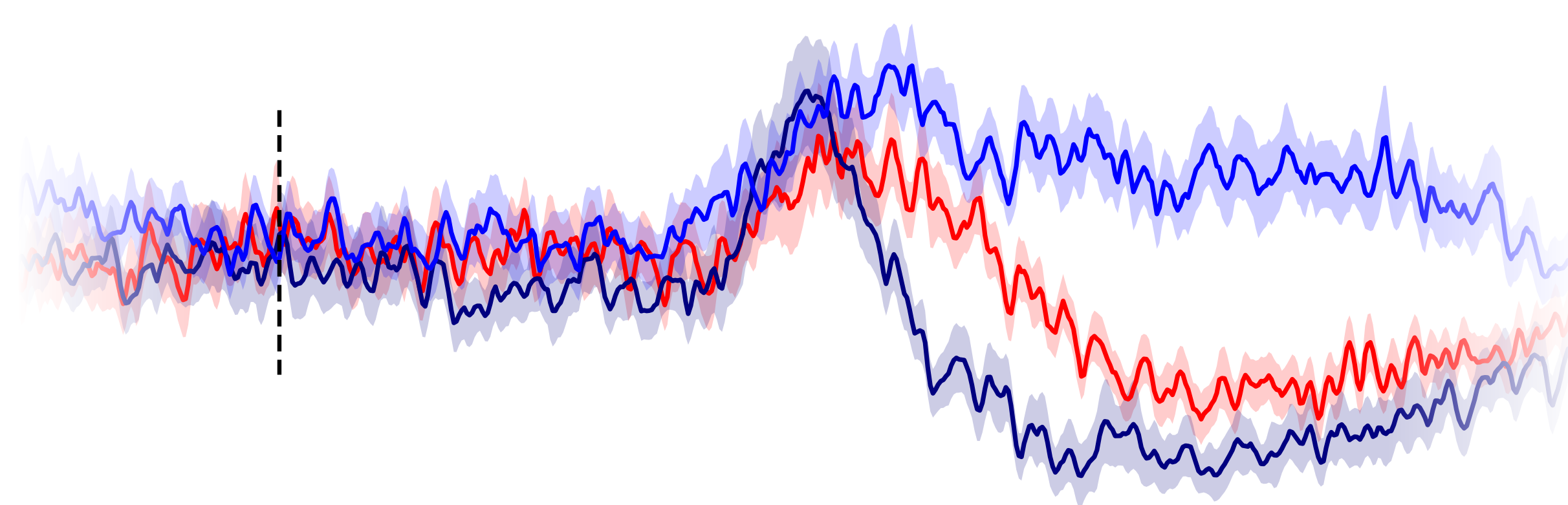
## Reach



## Anti-Reach



Touch: Pro-  
Vision + Touch: Anti-  
Touch: Anti-



While there is no kinematic pro- component, non-direction-specific EMG activity is evident in Touch at similar latency to the pro- component in vision

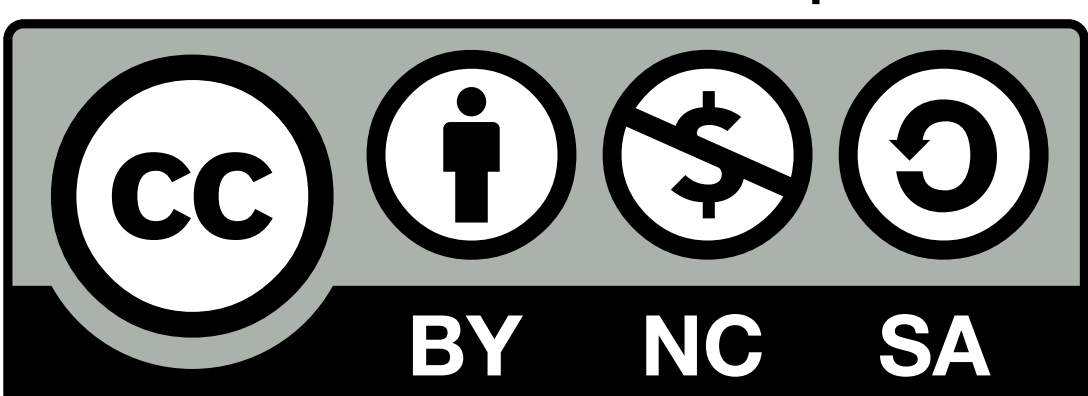
This occurs despite participants' ability to react at similar latency in a direction-specific way

The non-direction specific response does not appear to be large co-contraction

Is tactile guidance more amenable to arbitrary remapping, or do these responses result from mixed relative motion on the fingertip?

We will use a partial edge (stimulus moves in only one direction) to try to tease apart this question

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