

# Assessing the Impact of Bicycle Treatment Type on the Frequency of Right-Hook Conflicts Between Bicyclists and Motorized Vehicles at Signalized Intersections

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## Motivation

- Right-turning drivers can turn right on green while bicyclists are moving through the intersection, (right-hook conflicts).



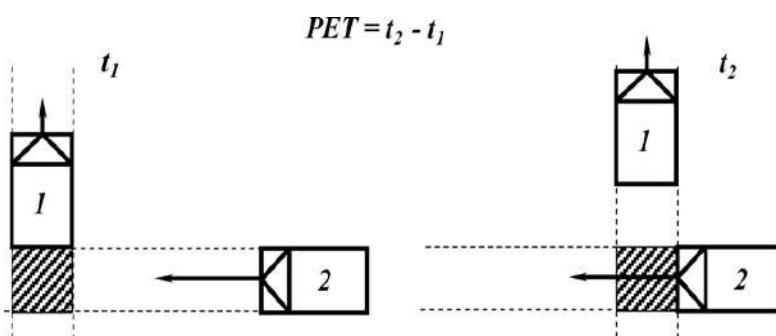
Source: <https://bikesiliconvalley.org/>

- Assessing those interactions can reveal unsafe conditions and in turn, support the development of countermeasures in a proactive manner without relying on crash analysis.

## Data collection

- Video data was collected from 10 sites in Boston & Cambridge, Massachusetts, about 2-4 hours/site
- Segment-level treatments: protected and conventional bike lanes, and sharrows (shared lanes)
- Intersection-level treatments: none, bike boxes, crossing-markings

## Methodology



Adopted from Allen, 1987

Regression model:

- Response variable: number of traffic conflicts per 15 min.,
- Independent variables: number of bicyclists, number of right-turning vehicles, and the treatment type.
- Traffic conflicts with a  $PET \leq 4$  sec. were used.

## Findings

- Right-hook conflicts increase when right-turning vehicles and bicyclist increase, but are not affected by the type of bicycle treatments (segment or intersection levels).
- In conflicting paths, bicyclists maintain a smaller distance between themselves and the vehicle in their front.

