



*Improving Safety Culture with Behavior-Based **Driver** Safety*

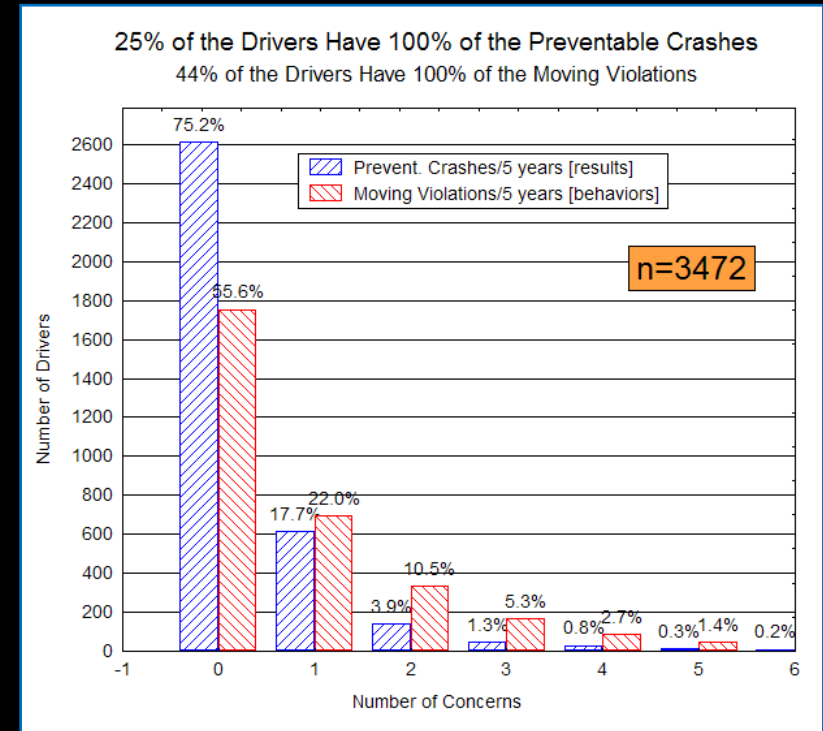
Michael Cantor

Quality Safety Edge

The “Problem” with Safety:

Serious incidents are rare events

- Get hit by car
- Crash your car
- Get a citation
- Trip over foreign object
- Slip in the bathtub
- Walk into a wall (cell phone)
- Train at crossing



We get away with unsafe acts *all the time!*



Culture *n* is a shared, learned, symbolic system of values, beliefs and attitudes that shapes and influences perception and behavior.



Behavior-Based Safety – application of behavioral principles to change the “safety culture”, usually in the workplace

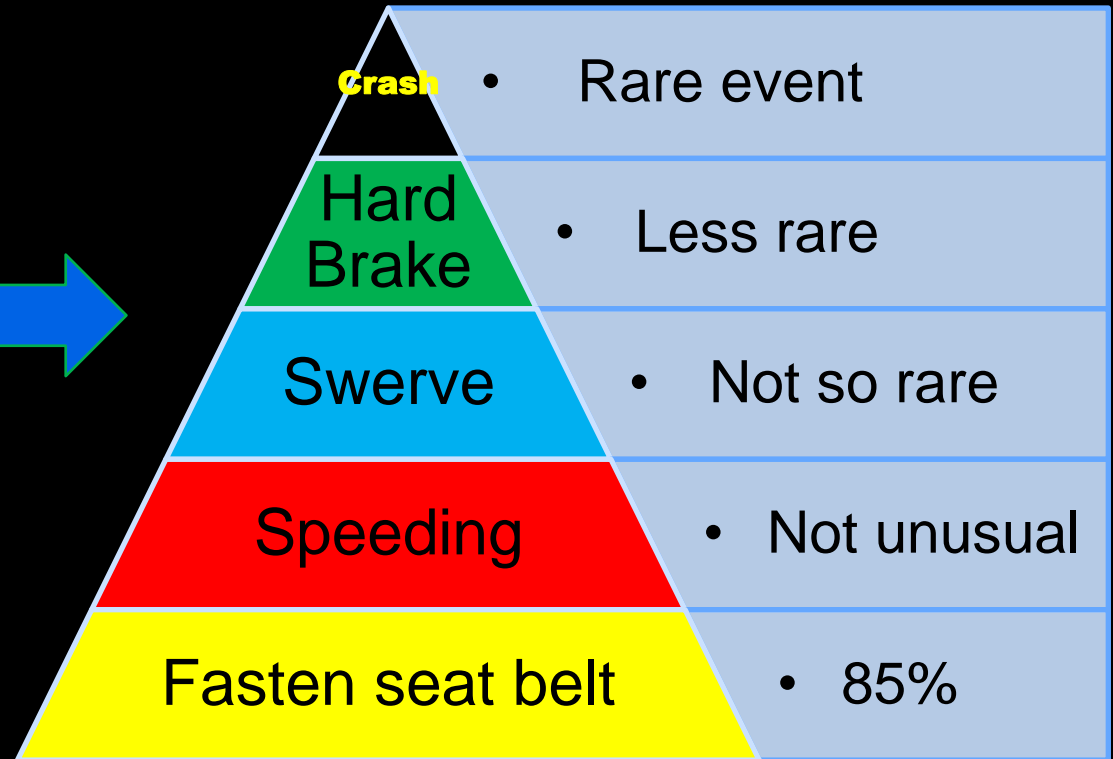
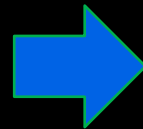
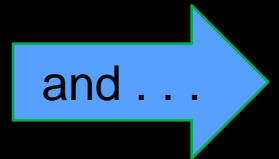
Behavior-Based Safety for *Drivers*

- Difference: Usually requires **self**-observation; data less accurate (T. McSween)
- Determine checklist, e.g. backing, **intersection (#1, \$101 MM)**

<i>Intersection T-Bone (40%)</i>	Yes	No	Comment
Slow down on approach	x		Aim high
Go green, not yellow		x	2 sec, yellow
Look right <i>before</i> crossing traffic		x	
Look left <i>before</i> crossing traffic	x		

- Dispatcher contacts driver by cell phone, ~twice/week
- Driver pulls over; marks checklist
- Occasional ride-along with supervisor; keep positive
- Bus: 12% decline in unsafe behaviors (3rd party observer)
- Long-term effects unknown;

Behavior-based driver safety: a better way



- 3 accelerometers
- Switch (SB)
- GPS
- Video



Video forward & inside and inside vehicle

- Like “black box” in an airliner
- 20 sec *before, during and after* “safety event”
- Deletes the rest
- Incentives for fewer events

[Watch Crash on YouTube](#)

Attention: "I never saw it coming!"



Conspicuity (d') – longer, brighter, bigger



Habituation – Center high mounted stop light

Crash reduction declined: 35% > > > 4.3%

Information/Novelty – required for attention



- School's out. Framin's in!
- Everything's free! April Fool!
- We can repair your pane in the glass
- Best frame shop on Briarcliff [Road] . . . according to friends and family
- We have upped our appreciation of art, so up yours.

Attention to signals: *Bias* matters

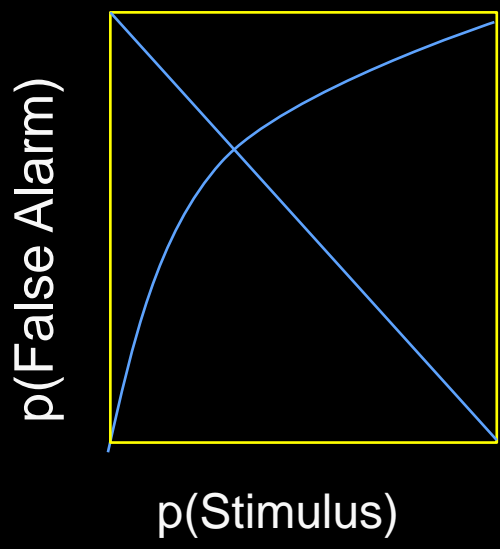


Detection depends upon $p(S)$

Car hits train due to *rural response bias*. [Watch YouTube](#)



Signal Detection



Combating Bias

- Warning signs
- Information about frequency
- Fire drills

Response bias in security





”Me . . . Speeding?”
“No way!”

Feedback alone is not sufficient

Consequence Needed

- Punishment
- Novelty
- Social R+ (Slow down, Atlanta)
- Surprise
- Intermittency





Thank you