

Improving Safety Culture with Behavior-Based Safety

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Quality Safety Edge

WayPoint Research



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

Business Culture (Safety)

- Safety signs: **Safety First**
- Safety Bingo
- X days without accident
- Training, training
- More training, etc.

Understanding Behavior: B.F. Skinner

Antecedent

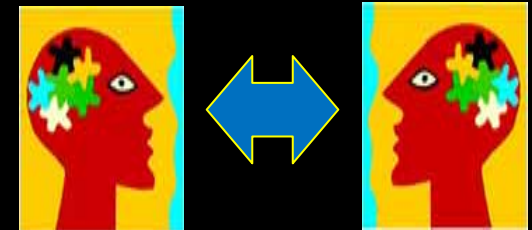
Behavior

Consequences

Behavior-Based Safety (B-Mod)

1. Analyze existing safety data
2. Employees and management take ownership (instead of top down)
3. Pinpoint *improvement* area (e.g. trip and fall)
4. Produce a checklist

<i>Trip and fall behavior</i>	Yes	No	Comment
Clean spills immediately	x		< minute!!
Put parts in bin, not on pallet		x	"no time"
Wear rubber-soled shoes		x	
Emplace safety cone	x		

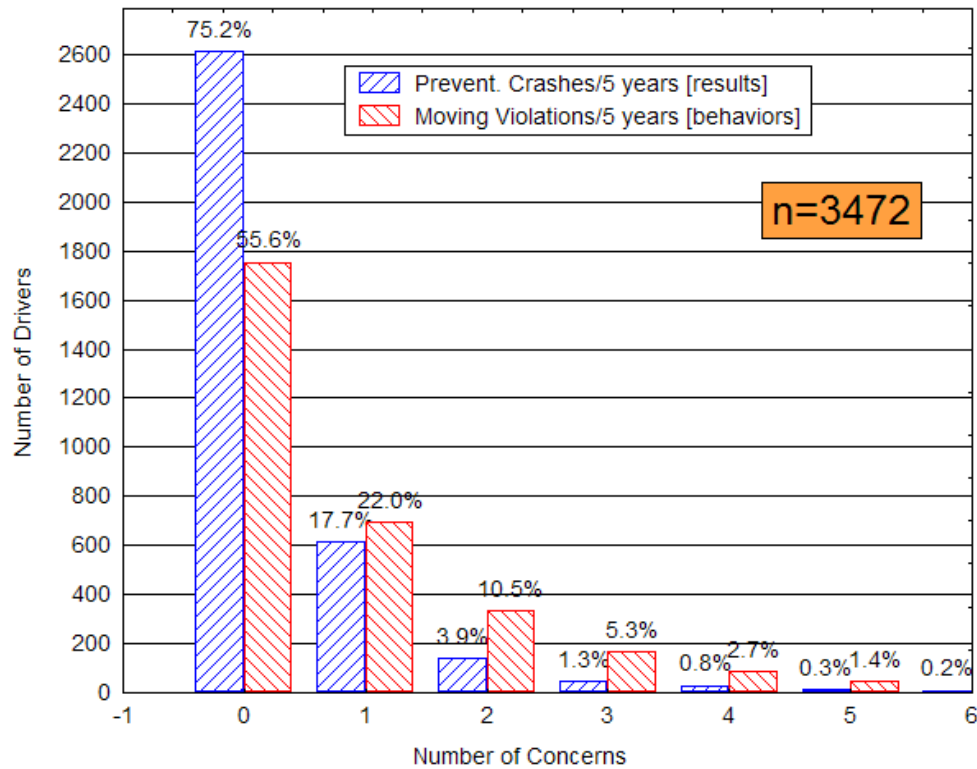


5. **Peer to peer** feedback once or twice per week, **surprise** visit
6. Gather and post **% participation data**; anonymous, *always positive*
7. Celebrate participation, results: ~20% improvement

Behavior-Based Safety for *Drivers*

Diff
Det

25% of the Drivers Have 100% of the Preventable Crashes
44% of the Drivers Have 100% of the Moving Violations



less accurate (T. McSween)

\$101 MM)

Comment

high

ec, yellow

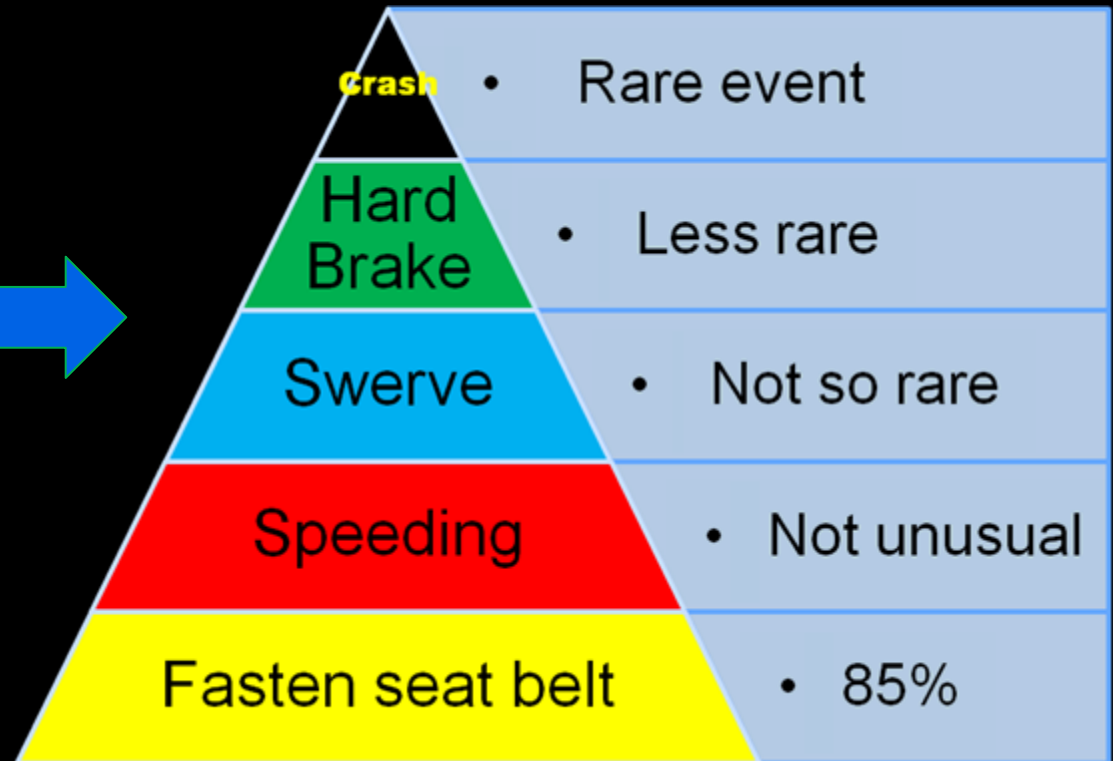
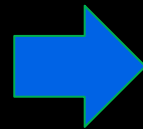
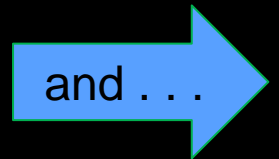
week

ve

server)

- Long-term effects unknown;

Behavior-based driver safety: a better way



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



Video forward & inside

- 20 sec *before* event
- 20 sec *after* event
- Deletes the rest

- Incentives for fewer events
- 20% crash reduction (?)



Attention: "I never saw it coming!"



Conspicuity (d') – longer, brighter, bigger



Habituation - CHMSL 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.

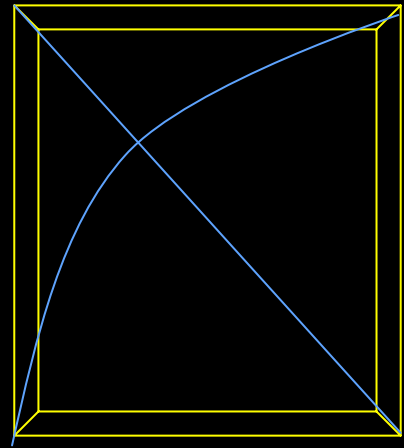
Attention to signals: *Bias* matters



Detection depends upon $p(S)$



$p(\text{False Alarm})$



$p(\text{Stimulus})$

Combating Bias

- Warning signs
- Information about frequency
- Fire drills





”Me . . . Speeding?”
“*No way!*”

Feedback alone is not sufficient



Consequence Needed

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

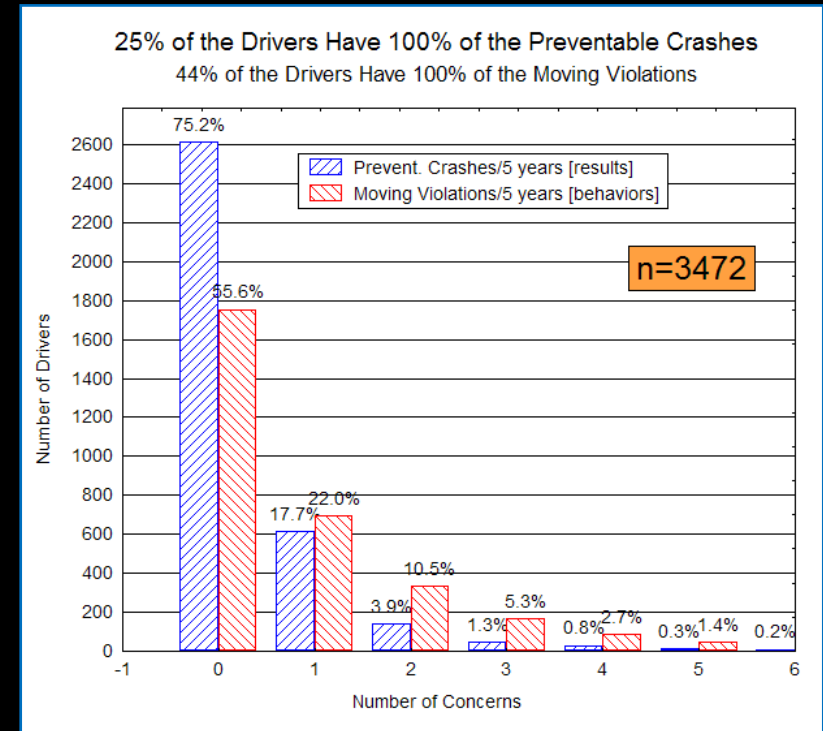


Thank you

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!*