

A Preliminary Look At Safety Critical Events From The Motorcyclists' Perspective

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The Statistical Picture

- 1997-2009 – U.S. M/C fatalities have risen average 10% per year
- Peak of 5,312 in 2008
- MC fatalities increased from 5% to 13% of overall traffic fatalities

Value of Studying Near Crash Scenarios

- Improve understanding of external circumstances surrounding crashes
- Specify rider crash-avoidance actions
- Identify actions to correct for unsafe acts or the rider or others
- Improve applicability of rider training

Research Considerations

Include Rider's Perspective on:

- Utilization of Crash Avoidance Skills
- Improvements in Riding Skills
- Use of Protective Gear
- Attitudes About Safety
- Perceived Value of Training

Limitations of Prior Crash Causation Studies

- Narrative rider accounts often not gathered due to rider injury status
- Data limited to injury crashes
- Near crash situations not part of the national crash database
- National databases based only on fatalities

Statement of the Problem

- Safety critical events (near misses) have never been described and categorized for motorcyclists

Study Purposes

- Describe Safety Critical Events for Motorcyclists
- Evaluate training efforts in crash avoidance skills

Research Design

- MSF-sponsored training location in California
 - Following all state guidelines
- Course provides waiver
 - CA DMV on-bike test is disincentive
- Participants recruited during first classroom session
- Random assignment to conditions by cluster
 - Single class versus Multiple classes (BRC / RETS)



Participant Recruitment Process

- By Research Assistant, with RiderCoach cooperation
- Fully informed consent
- Incentives offered to join
 - Value of project – helping fellow motorcyclists
 - Full participation = full refund of BRC fees
 - Number of modules attended = # of tickets to drawing for one of TWO free motorcycles



- Initial questionnaire (MSQ) completed



Motorcycle Study Questionnaire (MSQ)

- Areas of Questions: motorcycle use and riding experience, motorcycle crashes, near misses, and traffic tickets, several measures of motorcycling attitudes and riding behavior, rider demographics, and other issues
- Please describe your most recent near miss on a motorcycle in detail below, including the most likely cause of the near miss and any skills or strategies you used to avoid a crash.

The Discovery Project
Motorcycle Study Questionnaire (MSQ)

Today's Date: _____
Driver License/ Permit #: _____
 RETS BRC

14. Sometimes riders have the impression of barely having avoided a motorcycle accident (i.e., of having a near miss). How many times have you experienced a near miss in the last 3 months while riding a MOTORCYCLE on a public road?
(Click ONE box)
Never: **1/ Never, please skip to question 14**
On 1 or 2 occasions:
On 3 to 5 occasions:
On 6 to 10 occasions:
On more than 10 occasions:

15. Please describe your most recent near miss on a MOTORCYCLE in detail below, including the most likely cause of the near miss and any skills or strategies you used to avoid a crash:

1. How long have you held this license/endorsement?
Please indicate the license class(es) below:
M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12
Years _____ Months _____
How long have you held this license/endorsement?
Years _____ Months _____
2. How long have you ridden a motorcycle on a public road in the last 3 months?
(Click ONE box)
No: **3/ No, please skip to question 14**
Yes: **4/ Yes, please answer questions 14-15**

The Sample

- 4804 MSQ's completed
- 83% reported no near miss experience during the previous 3 month period
- 54 – no follow up description
- 93 – generic descriptions
- Final Sample - 686

Table 1

How many times have you experienced a near miss in the last 3 months while riding a MOTORCYCLE on a public road?

	Frequency	Percent
Never	3971	2.7
On 1 or 2 occasions	696	14.5
On 3 to 5 occasions	105	2.2
On 6 to 10 occasions	23	0.5
On more than 10 occasions	9	0.2
Total	4804	



Content Analysis

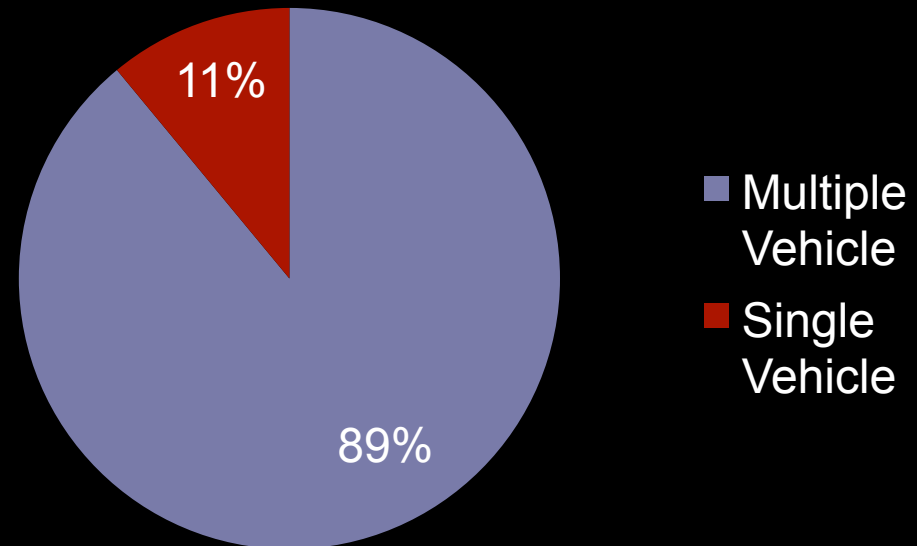
- Unit of Analysis: Near Miss Description
- Inductive Category Development
 - Random Sample of 100
 - Discussion
- Four main variables
 - Number of Vehicles
 - Near Crash Type
 - Motorcyclist Primary Response / Secondary Response
 - Traffic Safety Concept Inclusion
- Reliability Analysis
 - Two Coders – training & discussion
 - Met criterion set by Landis & Koch

Results: Number of Vehicles

■ Number of Vehicles

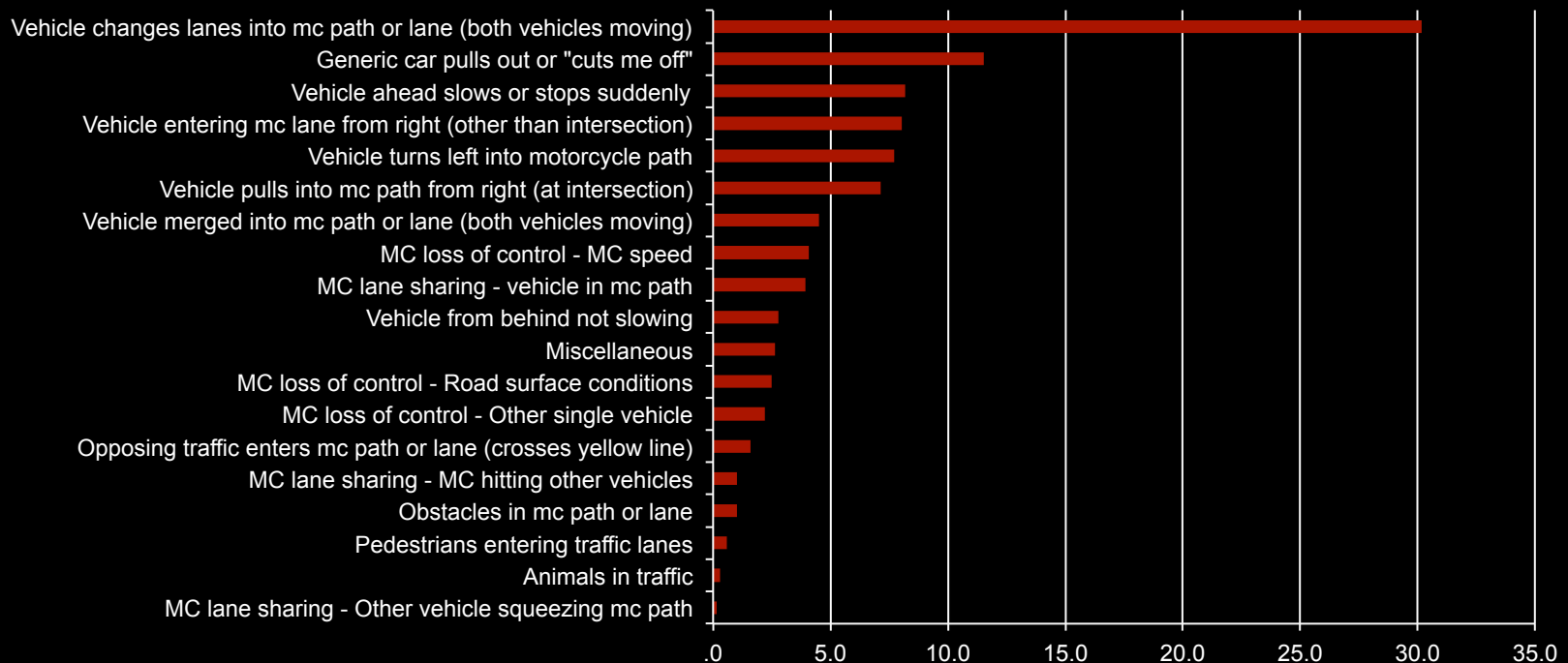
- Multiple Vehicle: 89%
- Single Vehicle: 11%

Percent



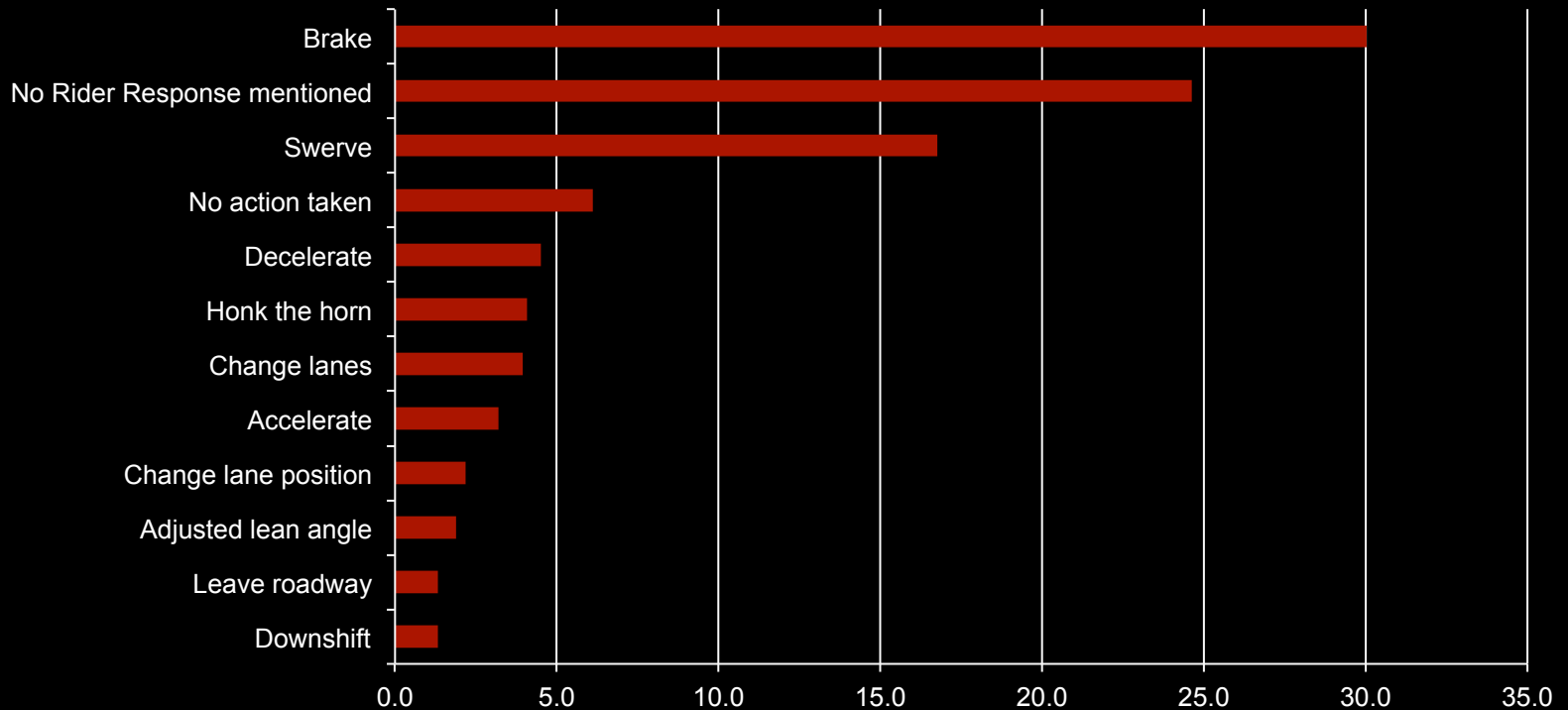
Results: Near Crash Type

Near Crash Type: Percent



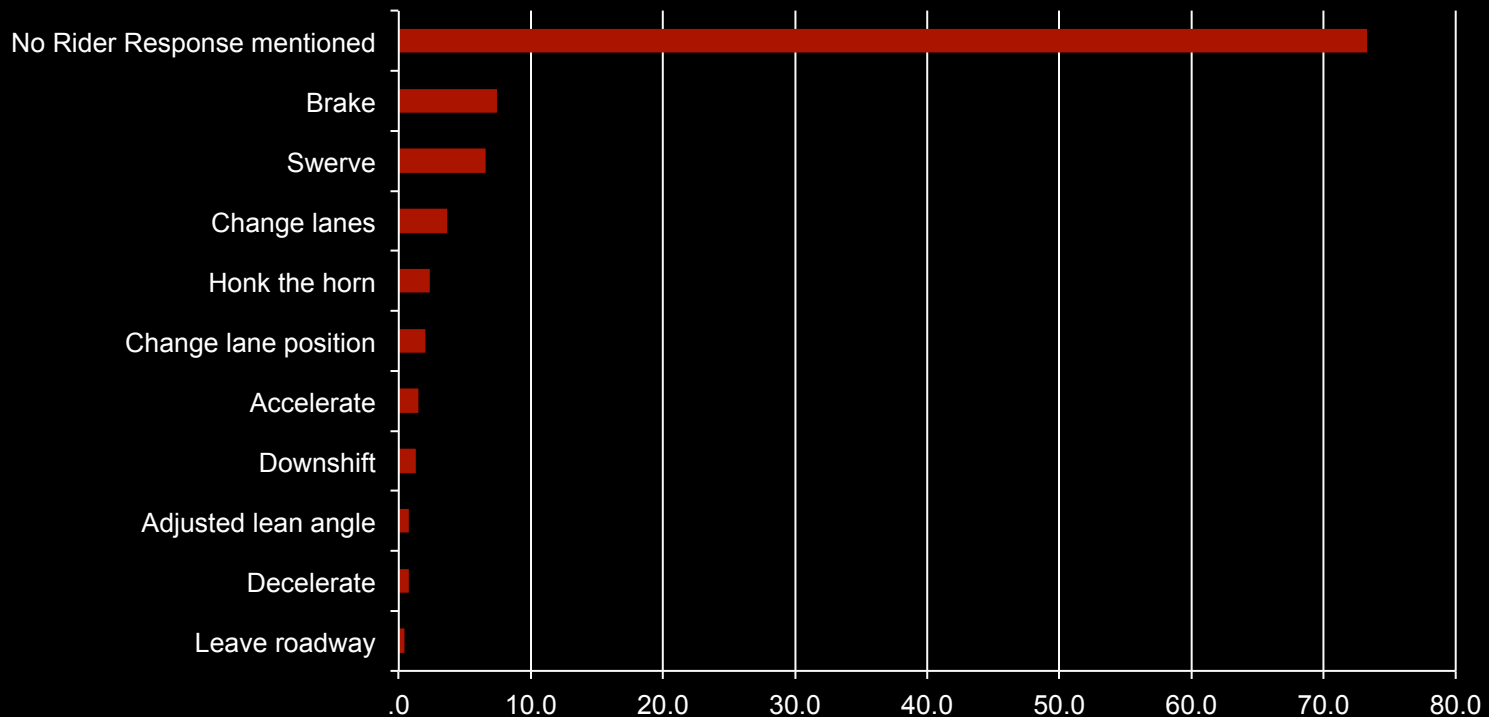
Results: Primary Rider Response

Primary Rider Response: Percent



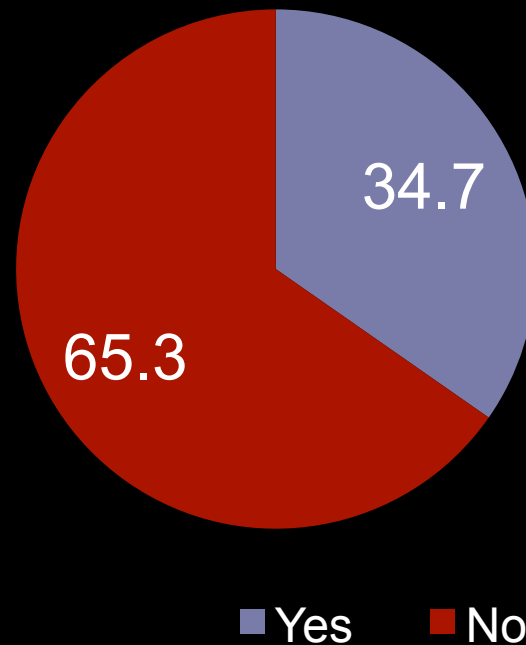
Results: Secondary Rider Response

Secondary Rider Response: Percent



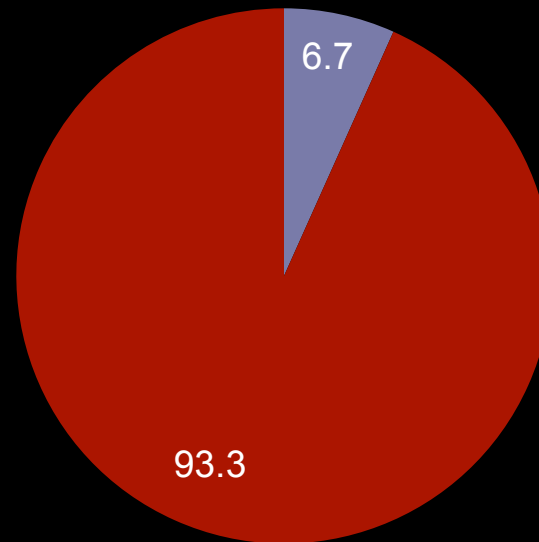
Results: Traffic Safety Concept Included?

Traffic Concept Cited: Percent



Results: Motorcyclists Error Indicated?

Motorcyclist Error Indicated: Percent



■ Yes ■ No

Conclusion

- **Mirrors Crash Causation Data**
 - Multiple Vehicle Involvement
 - Self-report Overrepresents this type of crash
- **Self-Report Bias Evident**
 - Rider Error
 - Multiple Vehicle versus Single Vehicle
- **Rider Responses**
 - Braking
 - Swerve
- **Limitations**
 - Short, incomplete descriptions
 - Descriptions treated as independent
- **Future**
 - Cross analysis by other questionnaire categories

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Questions?

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