

Perception and Processing of Safe Driving Messages: A Multi-Method Approach

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June 4, 2008



General Approach

- Health beliefs
- Message processing
 - Dual process approach
- Social context
 - Social norms, social influence
- Outcomes
 - Change in attitudes, norms or behavioral intent
- Multiple methodologies

Drinking and Driving Consequences

- Approximately 16,000 deaths per year
- 40 percent of all traffic-related fatalities are alcohol related
- Approximately one death due to an alcohol-related car crash every half-hour
- Drinking and driving crash risk peaks for drivers age 19-22 (Alabama data)

Source: NHTSA, 2005; Alabama CARE data, 2007

Effectiveness of Campaigns

- Elder and colleagues (2004)
- Meta-analysis of 8 studies showing 13% reduction in crashes
- Limitations
 - Correlational nature of the studies
 - Publication bias
 - DV was crash rate



What's missing

- Need for understanding of effect of messages on:
 - Message processing
 - Reactance
 - Perceived norms

Types of Messages

- Slater (1999)
 - Content analysis of anti drinking and driving ads
- Fear appeals
- Informational/testimonial
- Social modeling
- Empathy

Research Questions

- How are different message types processed by college student recipients?
- Do recipients perceive different message types to be more persuasive?
- Are social norms messages processed emotionally or rationally?

The Present Research

- Informational ads
 - Legal consequences
 - Statistical
- Emotional ads
 - Fear appeal
 - Empathy
- Positive social norm
- Control: Sunscreen

Theoretical Perspectives

- Dual process
- Reactance theory
- Social norms

Dual Processes in Persuasion

- Central route process
 - Message scrutiny if recipient is motivated and able
- Peripheral route process
 - Cues to message validity are processed quickly and easily if recipient is not motivated and able

(Petty & Cacioppo, 1986; Eagly & Chaiken, 1993; Hale, 2002)

Dual Process Predictions

- Informational messages should generate central thoughts
- Processing of emotional messages is unclear
 - Emotion as goad to process?
 - Emotion as peripheral cue? (Kopfman & Smith, 1998)
- Processing of normative messages is unclear
 - Positive norm portrayals = emotion? (Slater, 1999)
 - Statistics = informative appeal?

Reactance Theory

- Threats to freedom should result in perceptions that the message is biased
 - Law enforcement message
 - Fear appeal
- Message may boomerang
 - (Burgoon and colleagues; Rhodes & Roskos-Ewoldsen, in press)

Social Norms

- Exaggerated social norms for drinking & driving
 - Positive social norms messages should reduce norms (e.g., Rimal & Real, 2005)
- Unintended effects of statistical messages
 - Prevalence messages should exaggerate norms (Cialdini et al., 1991)

Method

- N=286
- 6 messages
- Between subjects design
- Written scripts presented on computer
- Pre and post exposure questionnaires
- Thought listing

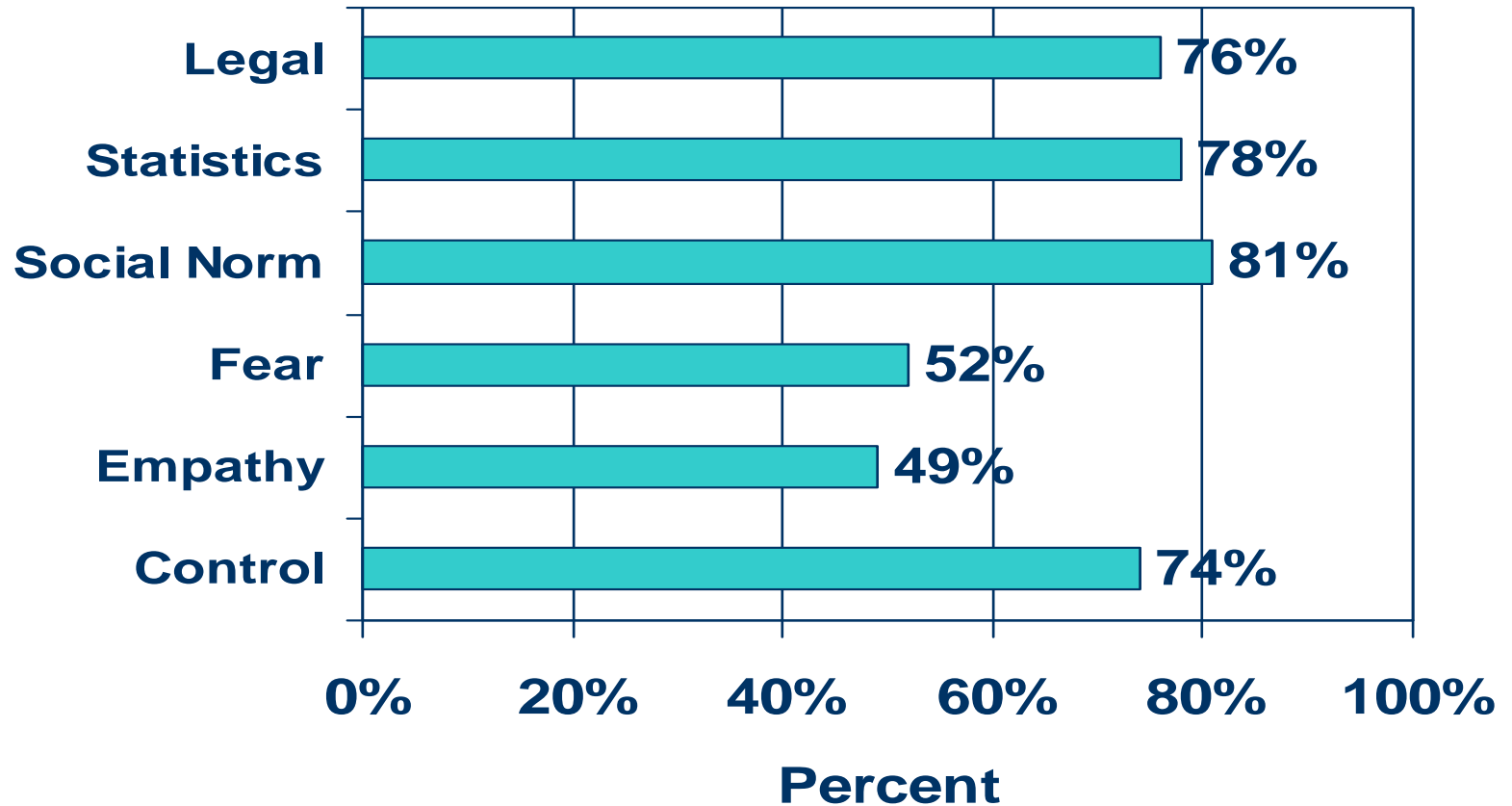
Measures

- Thought listing – central, peripheral, emotional
- Perceived bias
- Estimated norms
 - # of times typical student drove after drinking in past month
- Behavioral intention

Findings

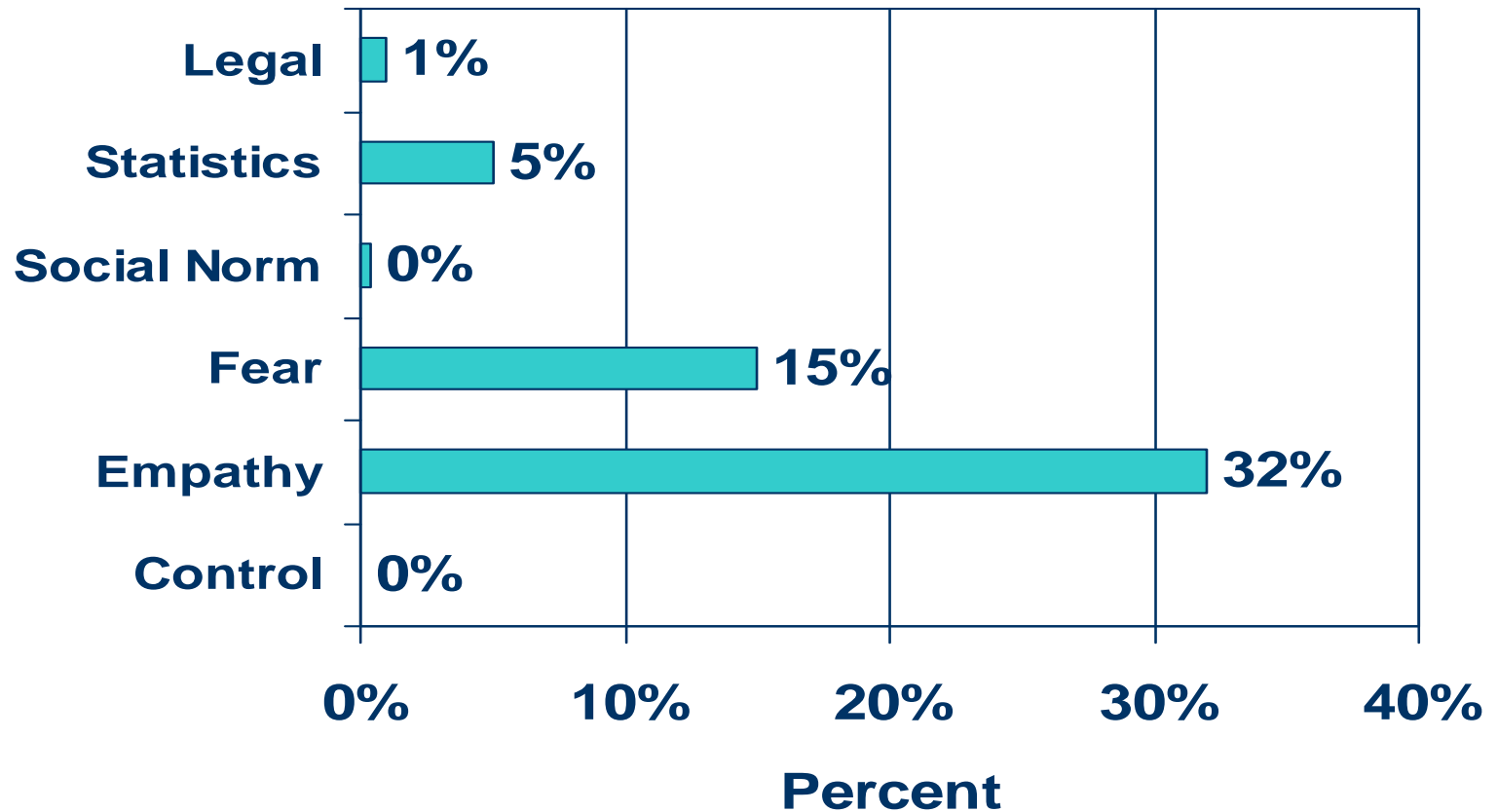


Message Processing: Central Thoughts



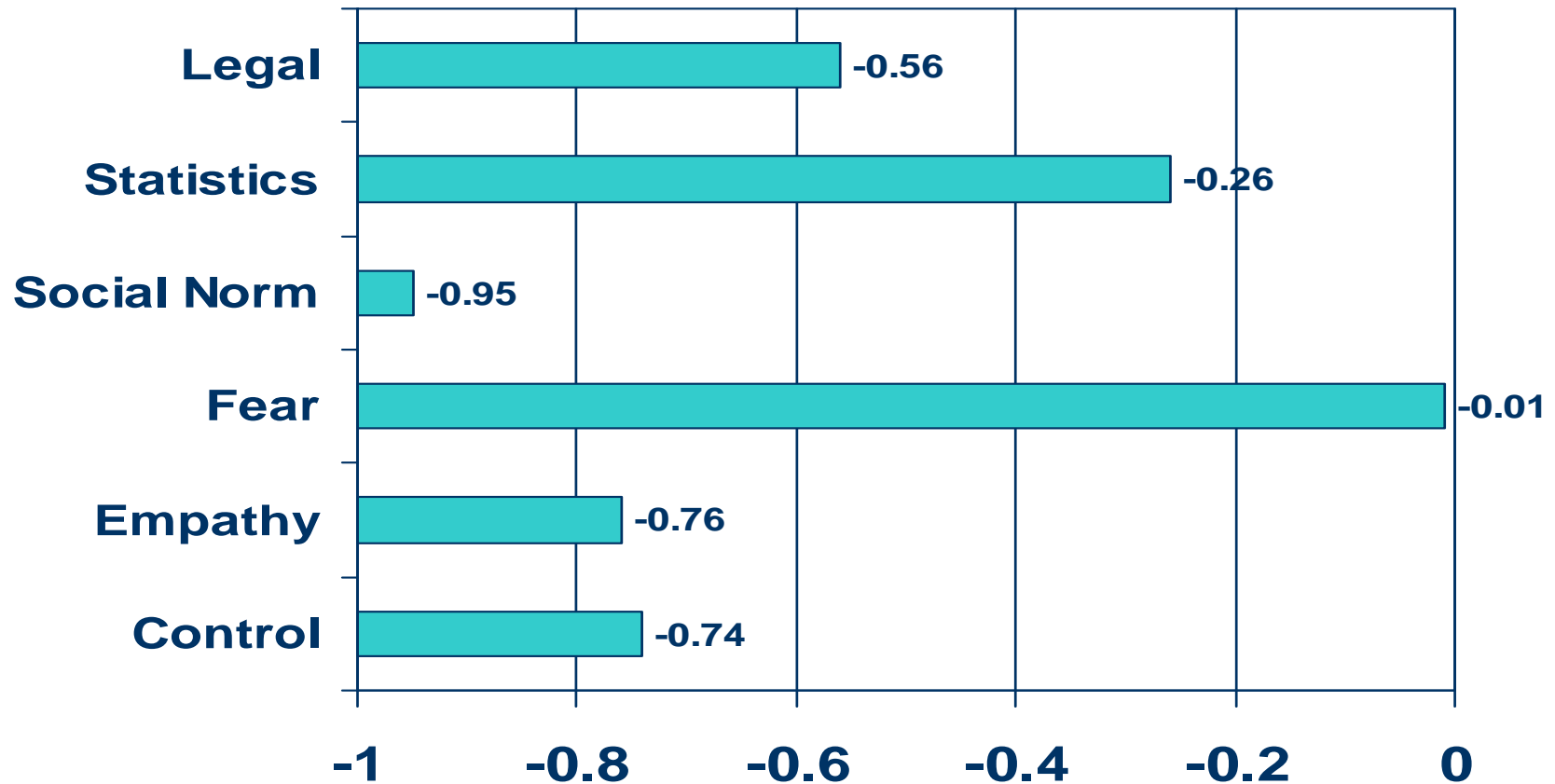
$F(5,262)=9.64, p>.001$

Message Processing: Emotional Thoughts



$F(5,262)=27.75, p>.001$

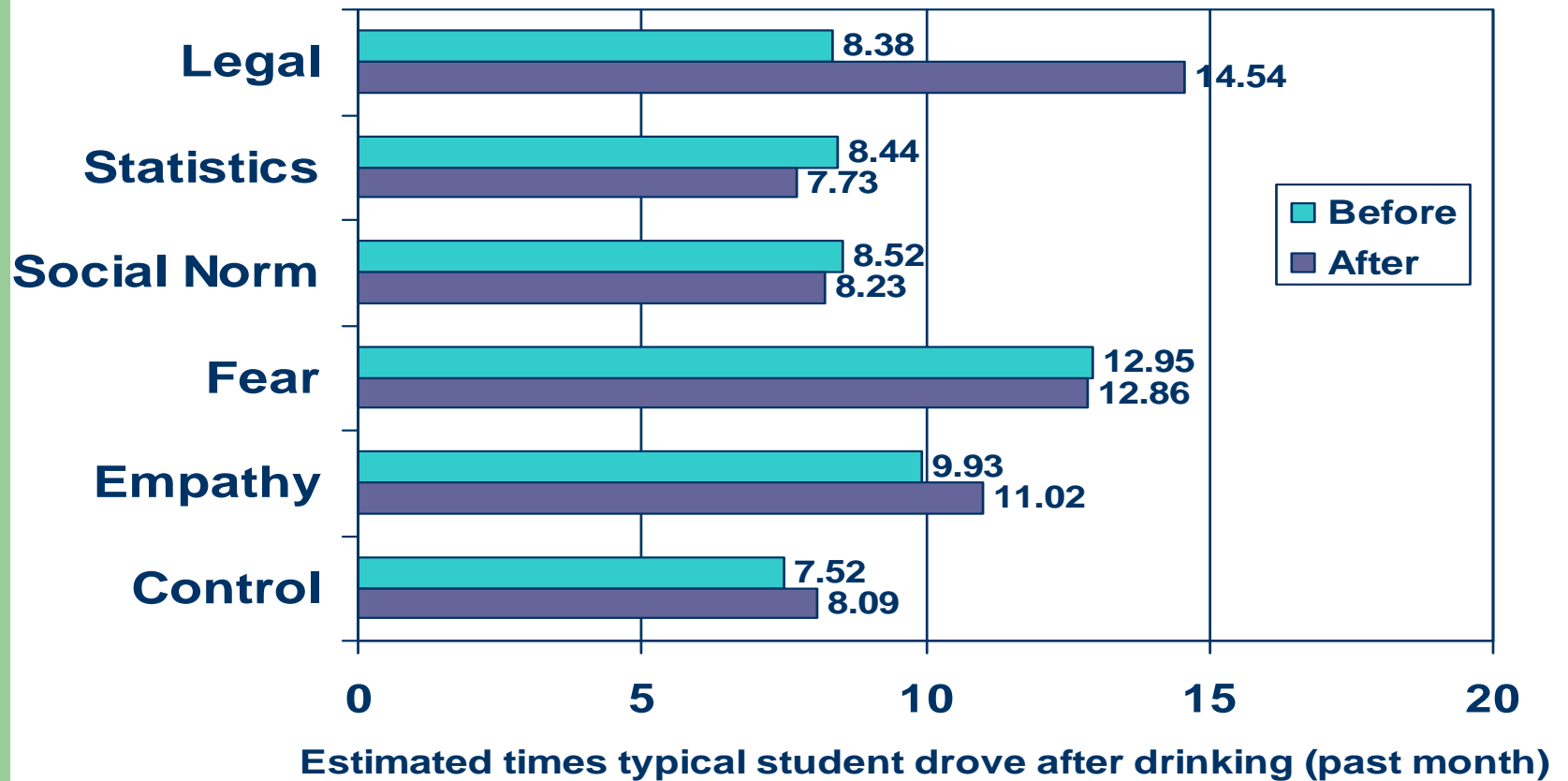
Perceived Message Bias



$F(5,262)=2.37, p>.05$

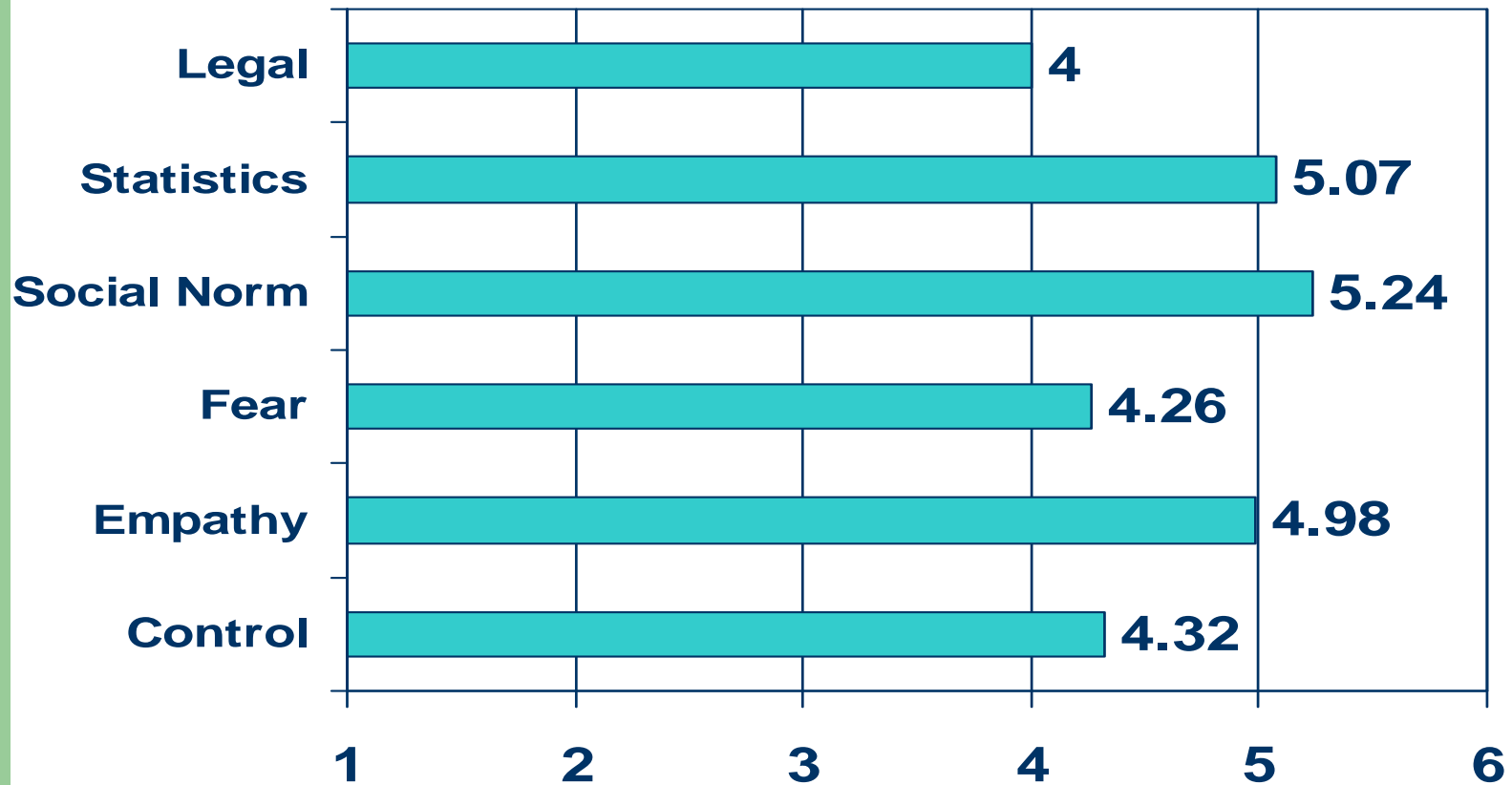
Rated on a 7 point scale: -3 = not at all biased to 3 = very biased

Estimated Drinking and Driving Norms



$F(5,259)=2.78, p>.05$

Behavioral Intention: Make Plan in Future to Avoid Driving after Drinking



$F(5,262)=2.24, p>.05$

Rated on a 7 point scale: 1 = not at all likely to 3 = very likely

Findings: Theoretical Overview

- Dual Process:
 - Informative ads centrally processed
 - Norm ad centrally processed
 - Emotional ads not centrally processed
 - Suggests norms as information, emotion as heuristic cue
- Reactance Theory:
 - Fear ad seen as biased, empathy ad not biased
 - Informational ads moderately biased
- Social Norms:
 - No effect of norms ad on perceived norms
 - Legal ad exaggerated drinking and driving norms

What Messages to Use?

- Legal ad
 - Centrally processed, exaggerated norm, moderately biased, low behavioral intention
- Social norm & statistics
 - Centrally processed, strong behavior intention
 - Social norm ad unbiased
- Fear & Empathy
 - Emotionally processed
 - Fear: highly biased, low behavioral intention
 - Empathy: unbiased, strong behavior intention
- The Winners: Empathy and Social norm
- The Losers: Legal and Fear

Legal Consequences: Further Understanding

- Experiment results:
 - Counter-argued
 - Exaggerated norms
 - Biased
 - Unrelated to behavior intent
- Focus group study – qualitative method
- Examine lived experience of young drivers
 - Experience validity (Petronio, 2007)

Focus Group Method

- 4 groups
 - 2 each established drivers (18-20) and newer drivers (16-17)
- Trained moderator, structured discussion guide
- Thematic analysis of transcripts
- Drinking and driving theme emerged for older but not younger groups

- Everybody in this room can name ten people who drink and drive... I definitely had friends that all the time would go out and stay at a bar until three in the morning and then drive back home. Or drive to [neighboring university] for a day and get wasted and drive back.

Male, 18 to 20 year-old group

- Three-fourths of the people who have wrecks because they're driving; they don't get a DUI or it doesn't go in as they're drinking. Most people get away with a wreck or a ticket after they've been drinking, even though that's the cause of it.

Male, 18 to 20 year-old group

Disconnect between message and experience

- Alabama: Limited law enforcement resources
- Legal consequences campaign
- Inconsistency => lack of credibility
- Thus, lived experience of target audience is at odds with message claims
 - Perceived as biased and not effective

Empathy Message: Further Understanding

- Processed emotionally
- Unbiased
- Strong behavioral intention

The Role of Affect in Driving

- Focus groups
 - Driving is fun
 - Social support of risky stories through laughter
- Theoretical explanation: Affect heuristic
 - Slovic – link between liking and risk perception

Phone Survey

- Driving behavior questions
 - Acceleration/Braking
 - Speeding
 - Aggressive driving (switching lanes; tailgating)
 - Racing
- Ratings of
 - Frequency
 - Liking
 - Risk

Sample Characteristics

	Teen (n=409)	Adult (n=504)
Mean Age	17.4	36.5
% Female	54	65
% Caucasian	86	79
% African-American	10	17
Wrecks in last 3 years	.52	.25

Young vs. Older Drivers

- Young drivers engage in more risky behaviors
- Young drivers perceive behaviors as less risky than older drivers
- Young drivers like risky behaviors more

The Affect Heuristic

- As liking goes up
- Risk perception goes down
- Prediction: negative correlation

Correlations between ratings of risk and ratings of liking

	Teen	Adult
Driving faster than speed limit when it feels safe	-.405	-.286
Driving while sleepy	-.502	-.253
Racing with other cars	-.343	-.267
Driving through a red light	-.326	-.191

Affect Heuristic Implications

- Gives insight into message effects
 - Empathy ads counter positive affect
- New area of inquiry in message effects

Conclusions

- 3 studies, 3 methods with complementary findings
 - Experimental method details process and perception
 - Focus group method enriches understanding of lived experience
 - Survey method for testing generality of findings and establishing correlation among constructs
- Important to examine message processing
- Affect with personal connection – empathy – is promising

Future Directions

- Role of affect in message processing
 - Work with Monahan on anti-smoking messages
 - Extend to driving
- Role of norms in perpetuating risky behavior and how to counter it
 - Foster a “culture of safety” rather than a “culture of speed”?
 - Change culture around drinking?
- Can legal consequences messages be less reactive?
 - Source?
 - Arguments?

Acknowledgements

- Funding from CDC, NHTSA
- Colleagues
 - Dave Roskos-Ewoldsen, University of Alabama
 - Jennifer Monahan, University of Georgia
- Research team
 - Nita Hestevold
 - Aimee Edison, PhD
 - Kelly Pivik
 - Marnie Sutton