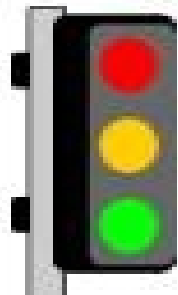


Evaluating the Safety Implications & Research Potential of “Green Box” for Young Drivers

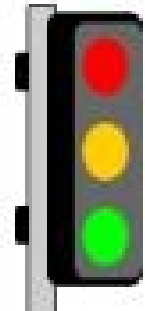
Driving Assessment, June 2005

Dr. Tsippy Lotan, Or Yarok, Israel
Dr. Tomer Toledo, Technion, Israel



אור ירוק
העמותה לשינוי תרבות הנהיגה בישראל
www.oryarok.org.il



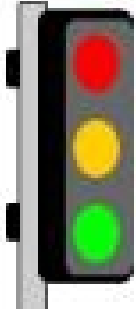


פיק"ר
ת"ר
ת"ר
ת"ר

OR YAROK = Green Light

4 major projects:

- Enforcement through volunteers
- **Young Drivers** (*Green Light for Life*)
- Public Motivation
- The Ran Naor Research Foundation



דרכון

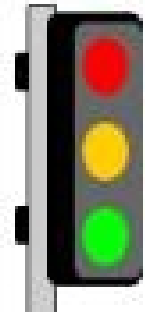
How do we get a driver's license in Israel?

Age **16.5** -----

- Theoretical test
 - At least 28 driving lessons by professional instructors
 - Driving test
-

- At the age of **17** a driver license can be obtained
- Followed by a 3 months phase of accompanied driving

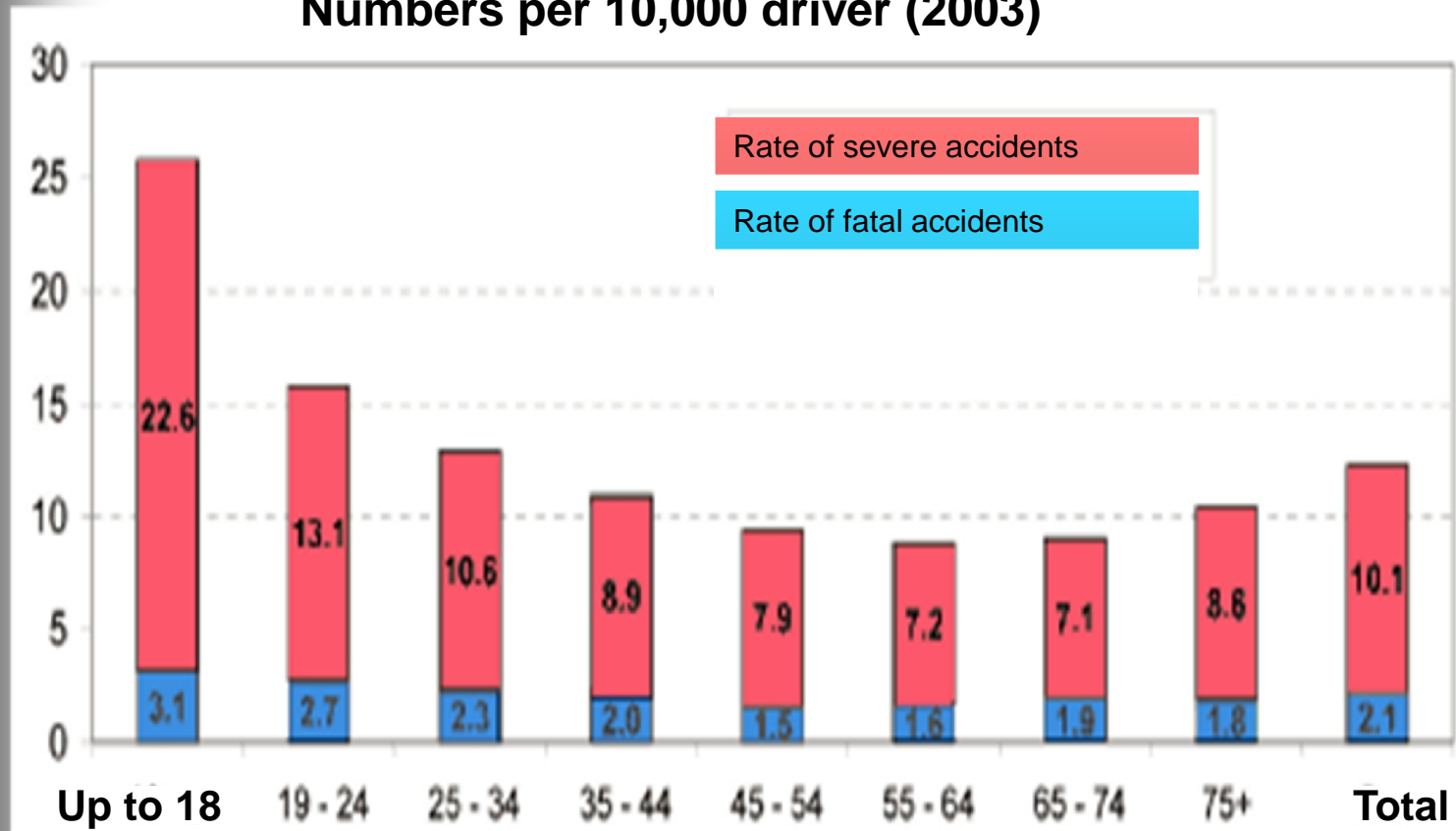


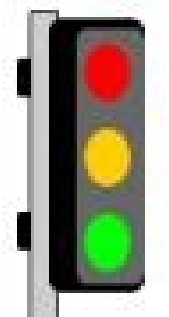


פיקוח תנועה

The Problem...

Rate of involvement in car crashes by age
Numbers per 10,000 driver (2003)

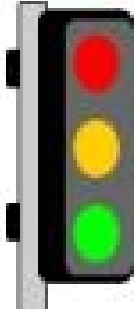




אור ירוק למים

Green Light for Life





Prof. Dr. J. J. J. J. J.

Accompanying research



questionnaires



focus groups

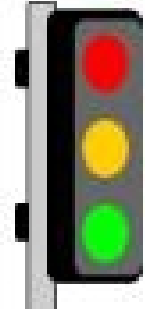


surveys

feedback forms



What people choose to say ---

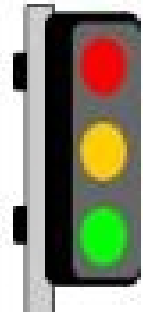


DrivTrix

What people do --

- monitor drivers' behavior
- establish the relation between drivers' driving profile and safety
- establish change in drivers' behavior

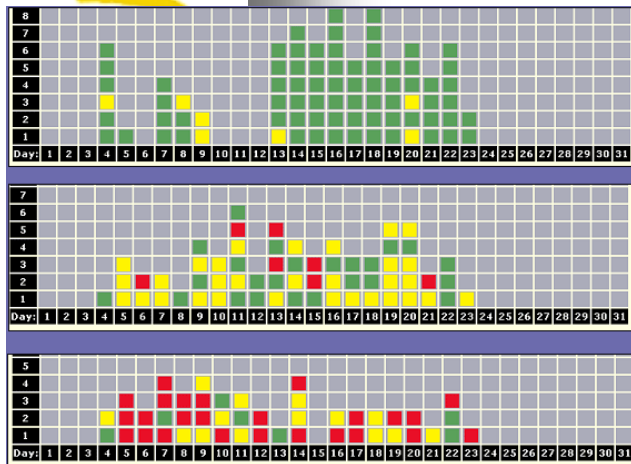




How does it work?

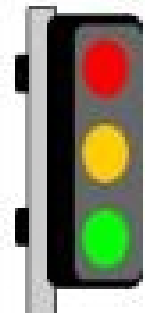
All trips are monitored

Personal Driving Profile



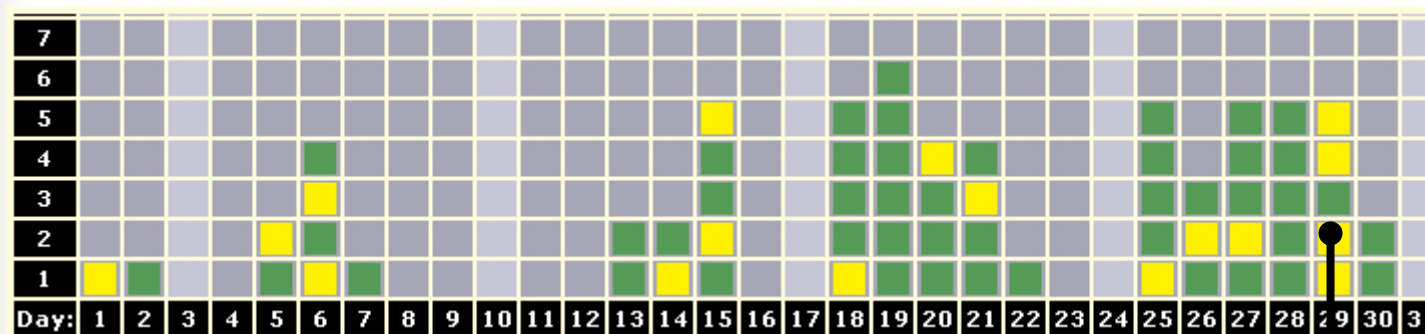
Date/Time	Maneuver	Level
29/01/2004 7:30:21	Session Start	■
29/01/2004 7:30:40	Turn and Xel	■
29/01/2004 7:34:46	Xel out of Tm	■
29/01/2004 7:55:19	Accelerating	■
29/01/2004 8:07:50	Brk in Turn	■
29/01/2004 8:50:08	Turn and Xel	■
29/01/2004 9:09:29	Session End	■

- Braking
- Accelerating
- Break into turn
- Accelerate into turn
- Turn while accelerating
- Turn while braking
- Turning
- Accelerate while in turn
- Break while in turn



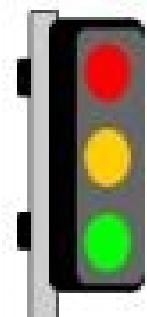
DriveDiagnostics

Information Specific to Driver Behavior



Date/Time	Maneuver	Level
29/01/2004 7:30:21	Session Start	
29/01/2004 7:30:40	Turn and Xel	
29/01/2004 7:34:46	Xel out of Tm	
29/01/2004 7:55:19	Accelerating	
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29/01/2004 8:50:08	Turn and Xel	
29/01/2004 9:09:29	Session End	



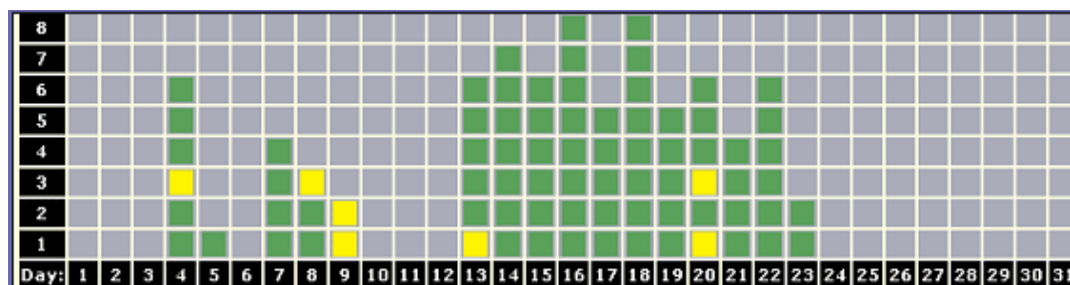


Profile

Cautious, Moderate, and Aggressive Drivers as Seen on the Internet

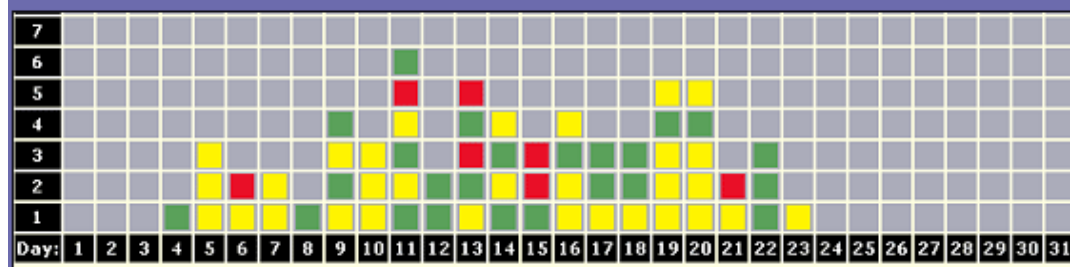
Profile: cautious

Average of 0-20 maneuvers in 10 driving hours



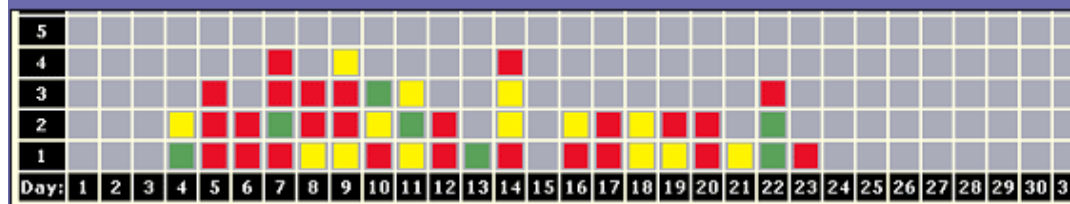
Profile: moderate

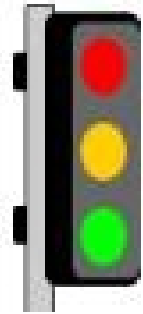
Average 20-50 maneuvers in 10 driving hours



Profile: aggressive

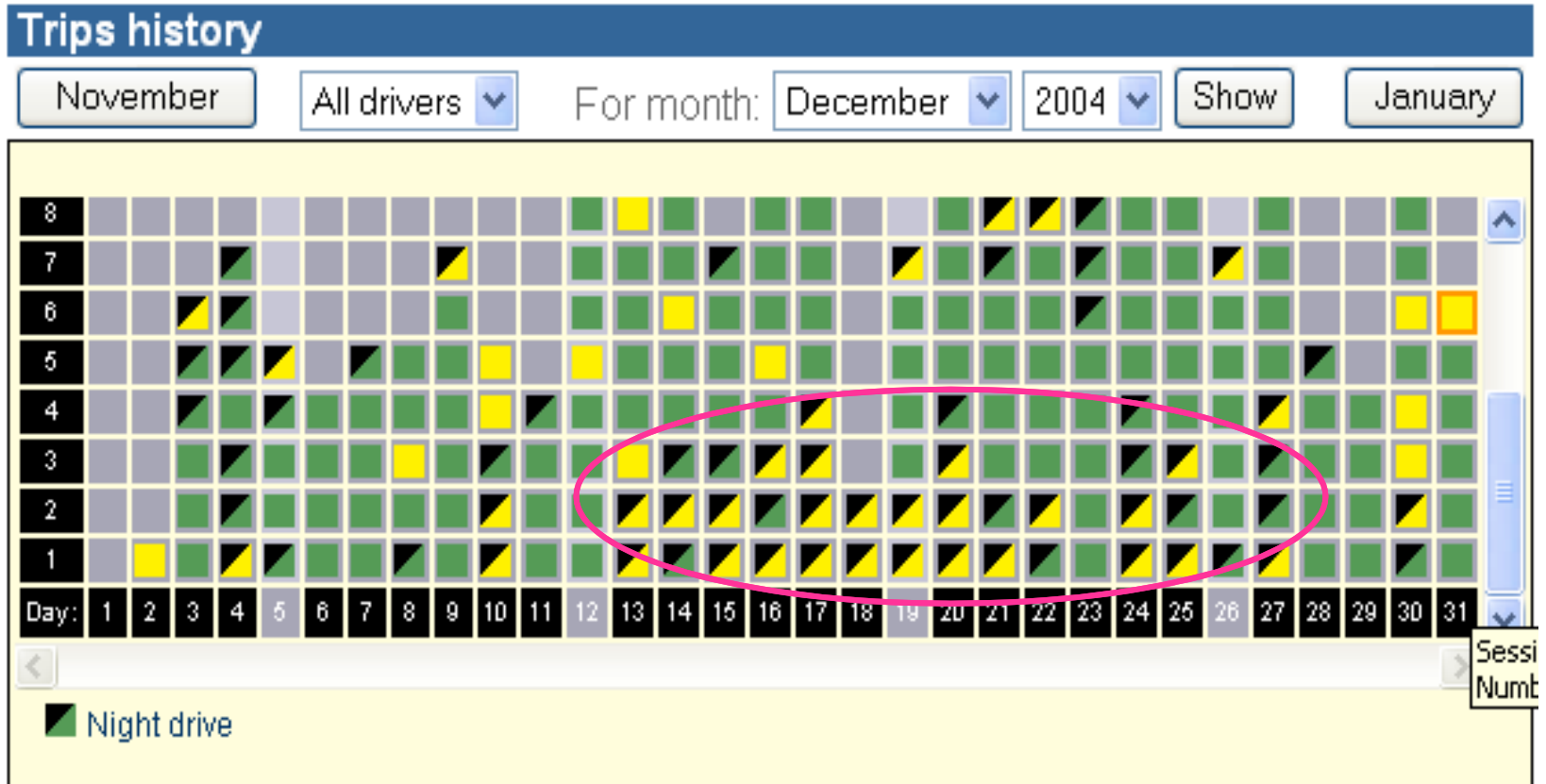
Average 50+ maneuvers in 10 driving hours

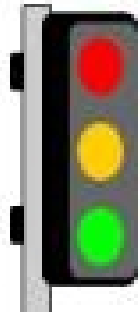




... that's what happens when you're asleep

Don't fix it





Validation

Fleet Distribution







Maneuver name	
Break into turn	82
Braking	55
Speed alert	33
Accelerating	29

Aggressive

Driver	Tendency	Action
 261	=	AF
 273	=	AF
 272	=	AF
 262	=	AF
 271	=	AF









Maneuver name	
Break into turn	38
Braking	24
Accelerating	10
Speed alert	10

Moderate

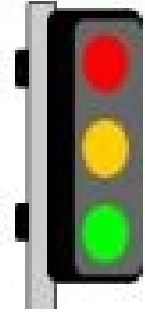
Driver	Tendency	Action
 266	=	AF
 264	=	AF
 278	=	AF
 270	=	AF
 260	=	AF
 274	=	AF

Maneuver name	
Braking	14
Break into turn	14
Breaking while in turn	2
Break while in turn	2

Cautious

Driver	Tendency	Action
 269	=	AF
 277	=	AF
 265	=	AF
 268	=	AF
 275	=	AF
 267	=	AF
 263	=	AF
 279	=	AF

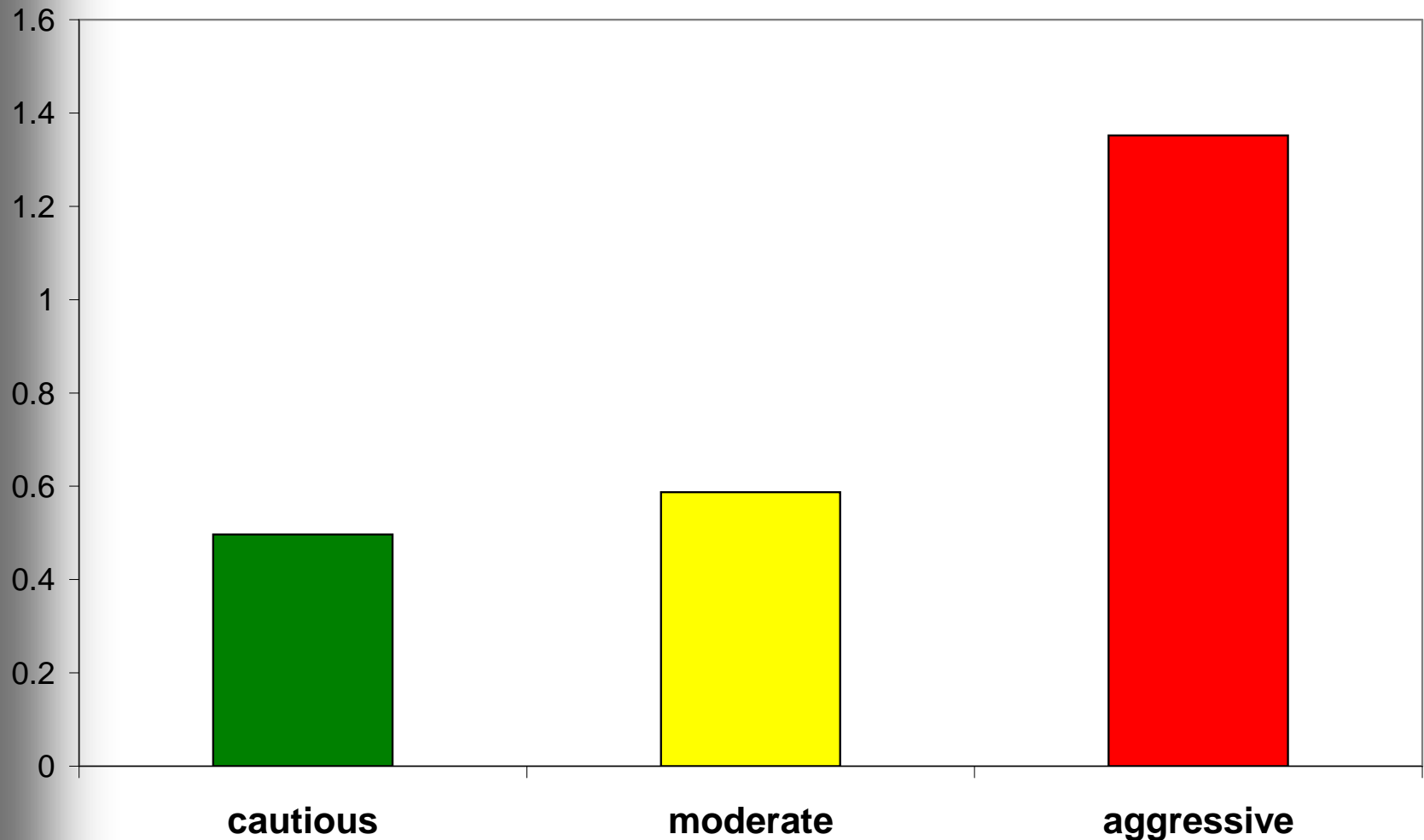
Prof. Dr. Jir

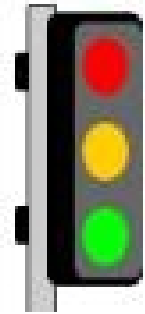


Prof. Dr. T. J. J.

Drivers' classification & Safety

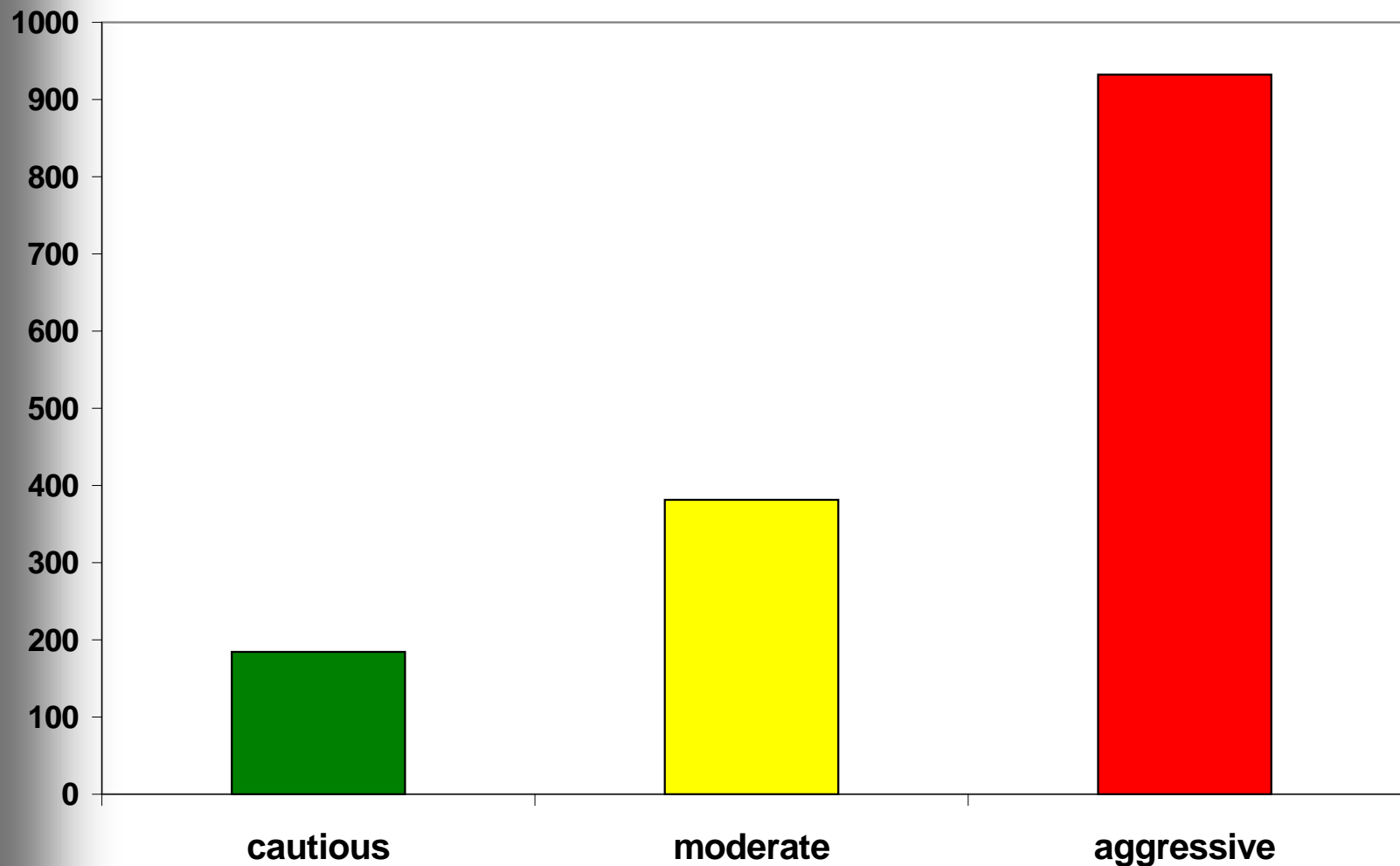
Number of accidents per year by driver class



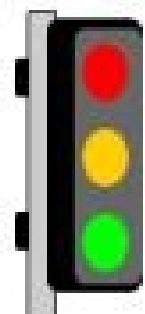


Drivers' classification & Safety – cont.

Accidents cost per year by driver class (\$)



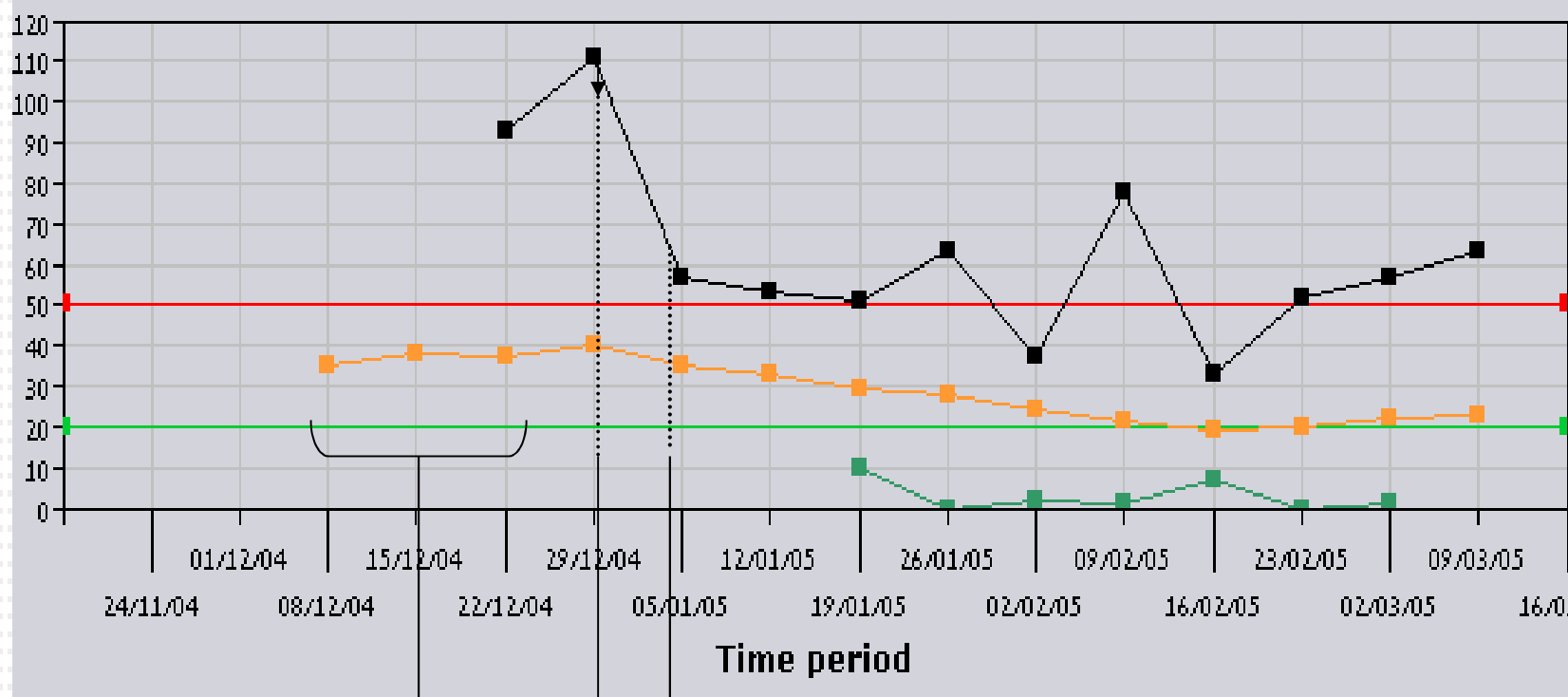
Prof. Dr. J. J. J.



Behavior change

מספר האירועים לעשר שעות נסיעה

Maneuvers/10-Hours

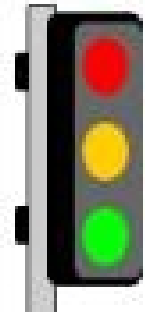


Blind profiling

Meeting announcement

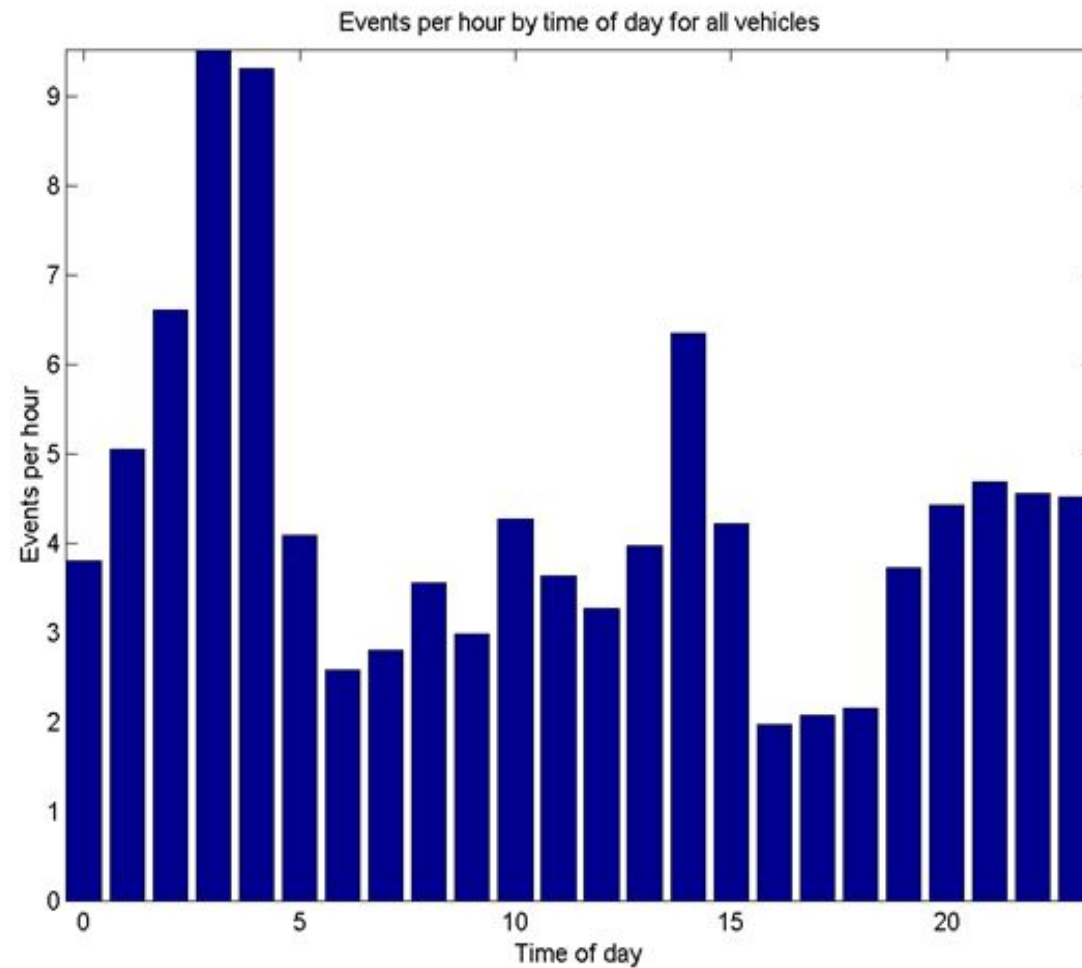
meeting

אירועי תחבורה

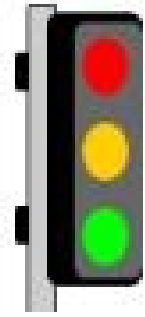


Preliminary results

Event Distribution by Time of Day



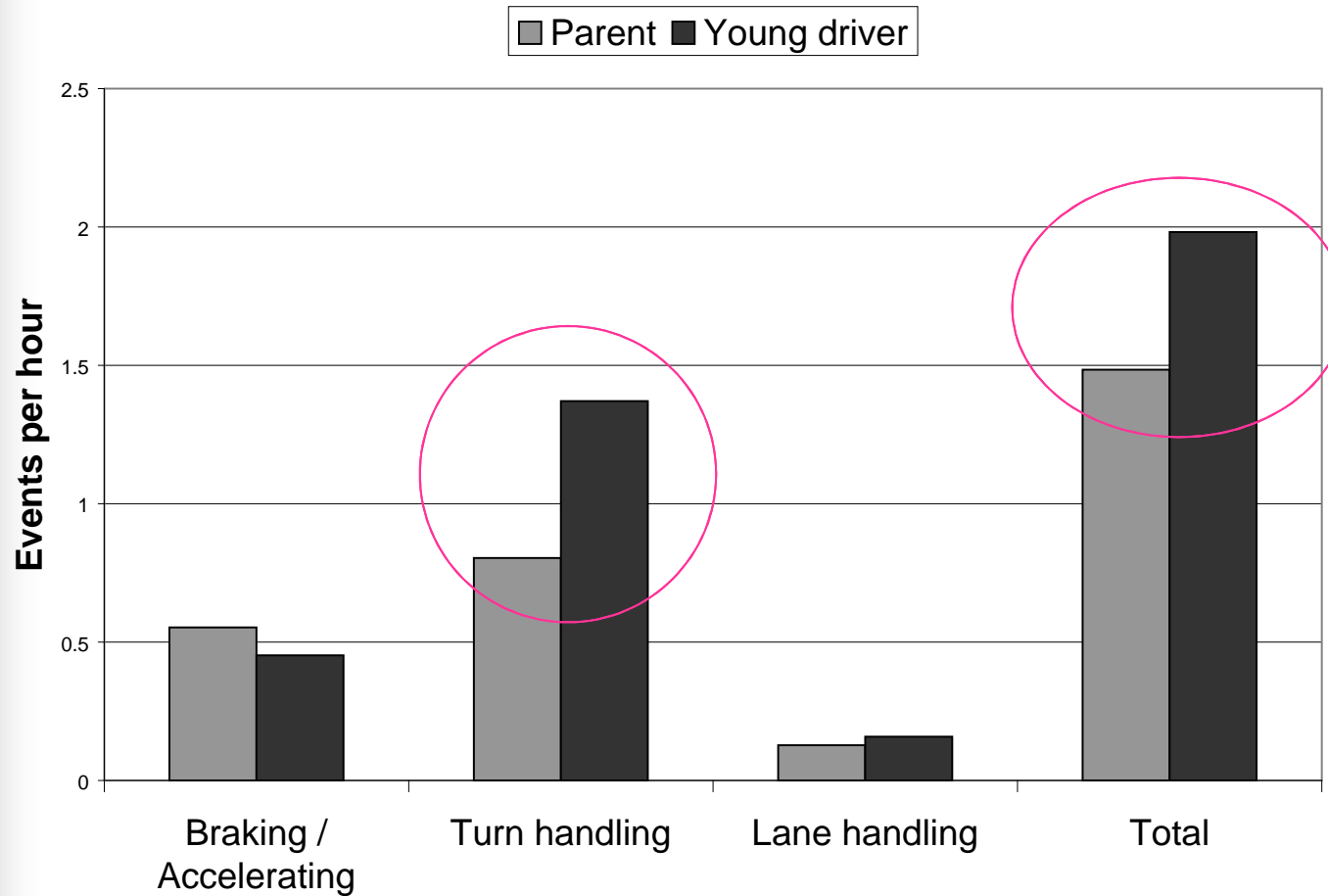
אירועי תחבורה



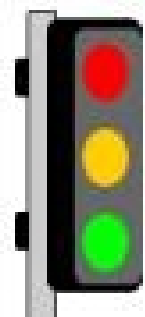
פיקוח

Results – cont.

Event correlation between parents and their young drivers

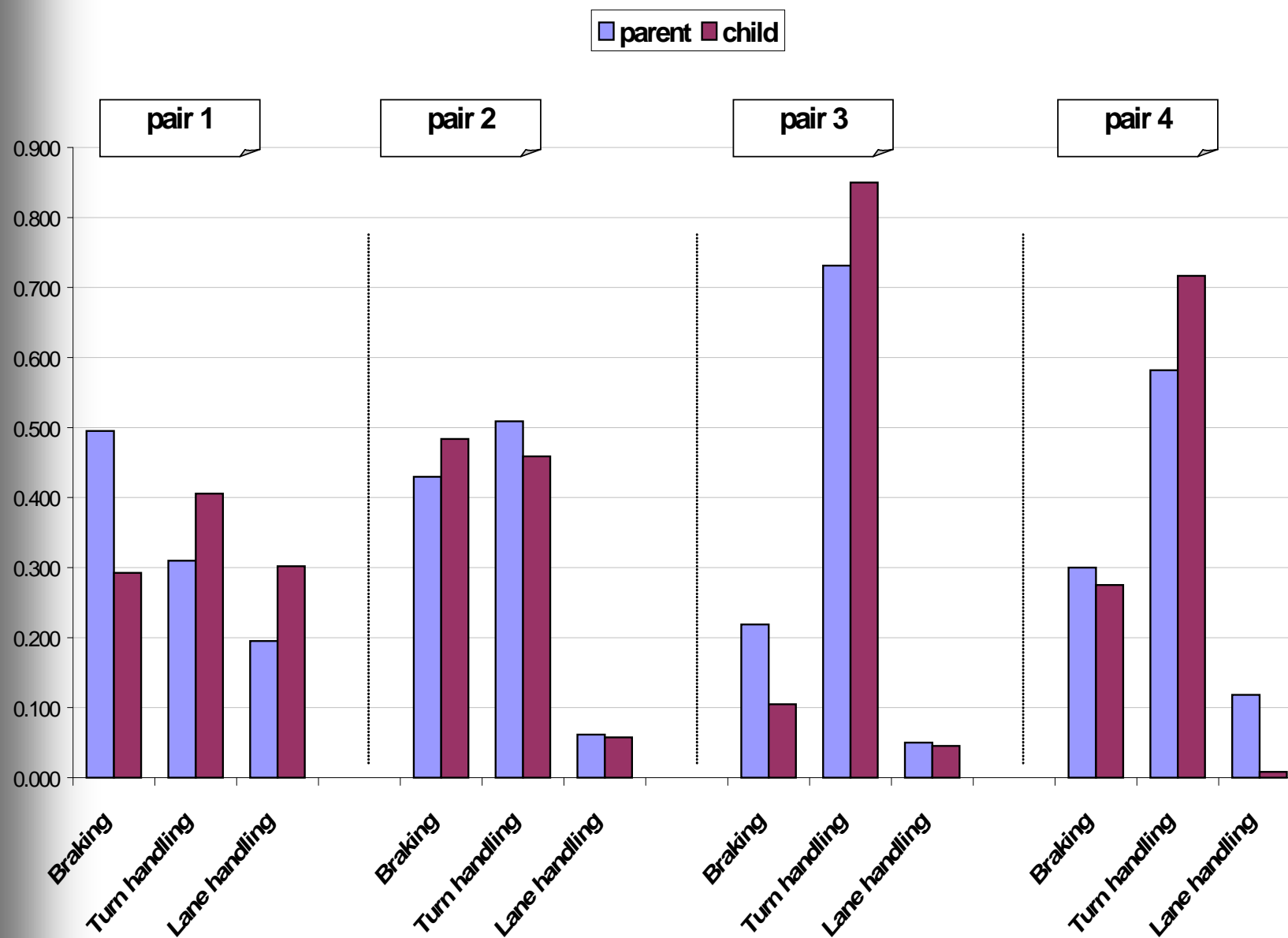


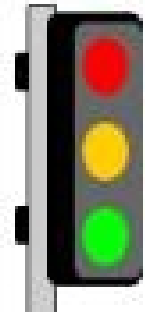
Based on 2488 trips, 4 pairs (parents & young drivers)



פיקדון

Types of events for pairs of parent and child





Or Yarok

Future Research – Experiment Design

Sample Size	<ul style="list-style-type: none">■ N= 120 families■ N=20 (pilot)
Controlled parameters	<ul style="list-style-type: none">■ Participation in the project■ Feedback type
Length of Experiment	8 months
Participation parties	<ul style="list-style-type: none">■ Or Yarok www.oryarok.org.il■ DriveDiagnostics (manufacturer) www.drivediagnostics.com