Road Safety Policy Implementation for Improving Pedestrian Environment: Lessons from France and Sweden

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Photo: http://gizmodo.com/5-ideas-to-make-roads-safer-for-cars-and-pedestrians-1533163537
This Presentation Focuses on...

Pedestrian Safety Strategies

1. Background
2. Case Study
3. Findings
4. Implications

: Lesson learned from France and Sweden
: Policy implementation in the U.S.
Background and Significance

• We are walking more: **60% of people walk for physical activity**, and the share of adults who said they walk for transportation **grew 6%** from 2005 to 2010 (CDC, 2012).

• Success in reducing passenger vehicle occupant deaths by 33% between 2003 and 2012, but total **45,860 people** died from auto-pedestrian crashes. 16 times the number of Americans who died in natural disasters over last 10 years.

**Total Pedestrian Fatalities in Traffic Crashes, 2003-2012**

Source: USDOT, Safer People, Safer Streets (2014)
Total Road Fatalities and Pedestrian Fatalities in USA (2003-2012)

Decreasing number, but increasing share of pedestrian fatalities.

A pedestrian was killed every 2-hours and injured every 7-minutes in traffic crashes. Any loss of death is unacceptable.

Can we achieve far less pedestrian fatalities on roads by implementing road safety program?
Who are the “Leaders”? 

Many European Countries serve as role models for other countries...

Road Fatalities per 100,000 Population in IRTAD Member Countries (2012)
Who are the “Leaders”?

Road Fatalities and Pedestrian Fatality in IRTAD Member Countries (2012)

Top 15 High-income Countries: (Excluding the US)

- Vision Zero (Sweden, 1997)
- Sustainable Safety (Holland, 1998)

US:

- Annual Pedestrian Fatality and Total Road Fatality Rate (1995-2009)

- 38% (50%)

Source: WHO, 2013

“U.S. may need more effective interventions to improve pedestrian safety outcome…”

Source: IRTAD 2014 Road Crash Summary Report
Case Study

Objective
(1) To examine the road safety strategies of model countries
(2) To explore potential implementations for the U.S. for improving pedestrian safety.

Methods
• Literature review
• Secondary data

Case Selection
• **France** (2002-2005)
• **Sweden** (1997-2007)
France
(2002-2005)

(1) Responsibility Share
(2) Controls and Sanctions
(3) Campaigns and Educations
(4) Infrastructure Improvements
Lessons from France

History (from 1990 to 2000)
- Level of road enforcement was one of the lowest in Europe.
- 1997: First fatality-reduction target (reduce 50% of road fatalities by 2002), but no remarkable decline.

Initiative (from 2002)
- The Government started to take road safety seriously
- Strong political commitment and charismatic leadership: made “road safety” an issue
- 2002-2005 Road Safety Program (no quantitative target)

(1) Responsibility Share

• The primary responsibility for road crashes was on "everyone", including road users, policy-makers, and rest of the population.

“At the heart of the commitment to road safety there is a fundamental struggle for a society that is more humane, one with greater solidarity and respect for others. We share the roads. Road Safety is something we provide for each other.”

-Excerpt from speech by President Chirac at launch of World Health Day 2004

Source: http://news.bbc.co.uk/2/hi/europe/1969902.stm
(2) Controls and Sanctions

- **2001**: 31% of total fatal crashes were caused by speeding
- **2003**: Strong enforcements on speeding
- **Automatic Speeding Enforcement** system (cameras)
- Tougher drink-driving laws and penalty fines

- 1,000 fixed/500 mobile radar units were installed
- In 2005, the rate of **fatal road injuries** decreased 65% compared to 2001
(3) Information Campaigns and Education

- Intensive communication with the public along with a new road enforcement to develop a “safety culture”
- Life-long traffic safety education (from primary school)

“…so much television and radio aired new plans and interviews for the Automatic Speeding Enforcement system…”

“It immediately reduced road fatalities by 21% and pedestrian fatalities by 27.7% within a year.”

(Source: French Ministry of Interior, 2010)

(4) Infrastructure Improvements

- Less attention on improving road infrastructures during 2002-2005 period

(Source: gettyimages.com)

Results

37.4% of pedestrian deaths reduced during 2002-2005 France Road Safety Program.

Data Source: CARE data base 2012
Sweden
(1997-2007)

(1) Responsibility Share
(2) Controls and Sanctions
(3) Campaigns and Educations
(4) Infrastructure Improvements
Lessons from Sweden

History (from 1970s to 2000)

- Since 1967, road safety has been a priority
- Since the late 1970s, Sweden’s rate of traffic fatalities per km traveled has been the lowest among OECD countries
- Political debates were on “how many fatalities are acceptable”

Initiative (from 1997)

- Swedish Road Administration developed “Vision Zero” concept
- “What must be done to eliminate the risk of road injuries and deaths?”
Lessons from **Sweden** (1997-2007)

(1) **Responsibility Share**

- Do not blame the user, main responsibility is on “**system designers** (road managers, politicians, police, and other players including transport carriers and health services)”

1. The **system designers are always ultimately responsible** for the design, operations and use of the road transport system and are thereby responsible for the level of safety within the entire system;

2. **Road users are responsible for following the rules** for using the road transport system set by the system designers; and

3. If road users fail to obey these rules due to a lack of knowledge or if injuries do occur, **the system designers are required to take the necessary further steps** to counteract people being killed and seriously injured.
(2) Controls and Sanctions

- Vehicle speed should not exceed the level of violence that human body can tolerate
- Scientifically established speed limits to “embrace driver’s errors”
- Separate vehicles from pedestrians with barriers on speeds exceeding 30km/h (19mile/h) roads
- Speed limit on pure residential streets was 7 km/h (human walking speed)
- Low BAC limit: 0.2 g/l (still the lowest in Europe)
Lessons from Sweden (1997-2007)

(3) Information Campaigns and Education

- Less attention on media campaigns and education efforts to improve road user’s behavior (compare to France)

Educational measures focus on improving human behavior BUT Vision Zero focused more on improving "traffic system design"
Lessons from Sweden (1997-2007)

(4) Infrastructure Improvements (Urban)

- Built environment that ensure "low injury risk of pedestrians"
- Roundabouts (Traffic-calming)

Reduce right-angle conflicts at corners = Less severe collisions

Source: Delware Valley 2013. Annual Crash Data Bulletin
Lessons from Sweden (1997-2007)

(4) Infrastructure Improvements (Rural)

- “2+1” lanes with “median barriers”
  - 3-lane road with the passing lane alternating on each side

Less drivers speed up to pass a slower vehicle
= Lower risk of severe collisions

Lessons from Sweden (1997-2007)

Results

Number of Pedestrian Fatalities (Sweden)

1997-2007 Safety Program

33.3% of pedestrian deaths reduced during 1997-2007 Sweden Vision Zero Program.

Data Source: IRTAD 2012
Percentage Change in Pedestrian Fatalities since 1970 (1970=100%)

Data Source: IRTAD 2012

Focused on vehicle and infrastructure improvements

Focused on improving safety culture
Summary of Findings

- New allocation of experts’ political responsibilities and raising safety awareness among the public.
- Great emphasis on modifying drivers’ behavior by strong road enforcements combined with public education and road design.

It’s not a “stand-alone” strategy

<table>
<thead>
<tr>
<th>France</th>
<th>Sweden</th>
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<tbody>
<tr>
<td>Everyone</td>
<td>System Designers</td>
</tr>
<tr>
<td>Automatic Speeding</td>
<td>Scientifically established speed limits</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Controls/Sanctions</td>
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<tr>
<td>Campaign/Education</td>
<td>Infrastructure Improvement</td>
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Responsibility Share

It's not a “stand-alone” strategy
Next Steps...

- New safety interventions in the U.S. should involve **raising road safety awareness** among all parties (cultural transformation).

- **Modify drivers’ behavior** to eradicate pedestrian fatalities and severe injuries.

- **Integrate safety strategies** and work with a **broad base of decision-makers** (knowledge-based plan).

- Foster **commitment at the highest levels** of Government.

Source: San Francisco Pedestrian Strategy (2013)
Good News...

Safety-Conscious Planning Efforts

Adopted **Vision Zero** in **New York** and **San Francisco** in 2014 and **Portland** and **Seattle** in 2015
Questions?

For more information, contact Jean Kim at: jeankim3@uw.edu

Thank You!