Measuring the Impact of Bicycle Marketing Messages

The idea

Is there a conflict between promotion of bicycling and promotion of bicycle safety?

If so, can we find ways to quantify the positive and negative impact of the different promotion messages?

These are the driving questions behind the project. The results are presented in this folder.

'Can we find ways to quantify the positive and negative impact of the different promotion messages?'

The methodology developed makes use of pictures. Everybody can read pictures, and pictures are an efficient way of sending messages.

Surveys containing the same questions, but having different survey (background) pictures, were sent to numerous respondents. When analyzing the results, replies to these opinion based questions were found to depend on which survey picture had been used with the questionnaire. The differences are in many cases statistical significant. The method therefore enables you to see how the impact of various messages, more or less unconsciously, affect people's opinions on cycling.

The method and the main results are presented on the next pages. Enjoy!

The online survey:

The survey

The Pictures

One of seven different pictures appeared on top as well on the bottom of each page of the survey. See page 4 for details.

The Visual Analogue Scale (VAS)

Opinion based questions were asked with VAS (Visual Analogue) scales. Each respondent was asked to indicate his or her position on a scale where different statements are given at the end-points.

The Questions

The following five opinion based questions were asked, each followed by VAS-scales for each of the four modes (car, bicycle, bus and train):

- *In city traffic, how high a risk do you consider the following road users have of getting hurt?*

  ...have no risk - *...have a high risk*

- *When in a city, what is your experience travelling by the following modes of transportation?*

  I do not like travelling by … - *I enjoy travelling by …*

- *What do you think about the visual appearance of the following road users (in city traffic)?*

  … do not look good - *… look very good*

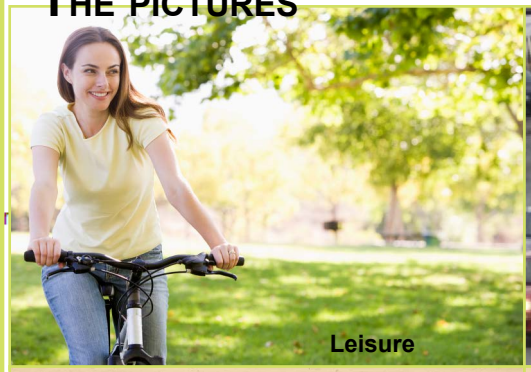
- *When using the following modes of transportation in the city, how afraid are you of getting hurt?*

  Travelling by … I am not afraid of getting hurt - *Travelling by ... I am very afraid of getting hurt*

- *How well do the following modes of transportation fit your 'image'?*

  The … hurts my image - *The … strengthens my image*

The pictures



Neutral

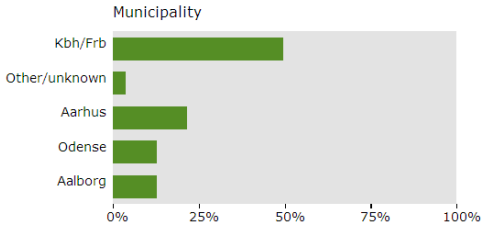
Why these pictures?

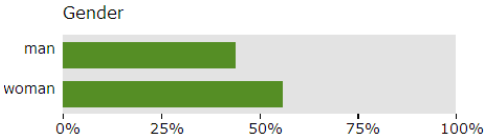
- Leisure is a typical pro-cycling image.
- Traffic jam represents a typical urban situation.
- Helmet / No helmet may reveal helmets' impact on attitudes.
- BMW is a typical car marketing picture.
- Accident may add to the perception of cycling as more risky.
- Neutral is used as a reference with no picture-impact.

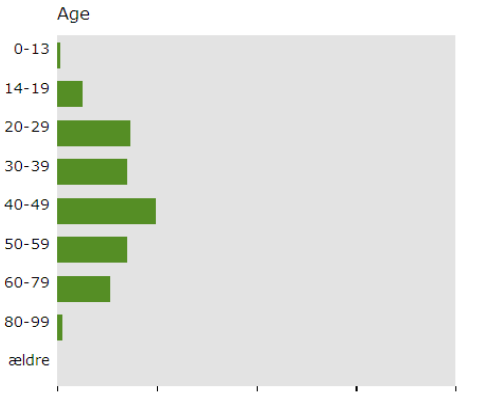
The Respondents

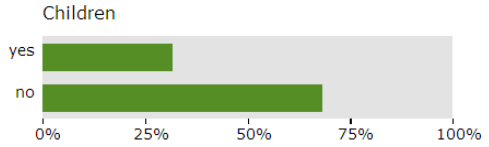
Facts

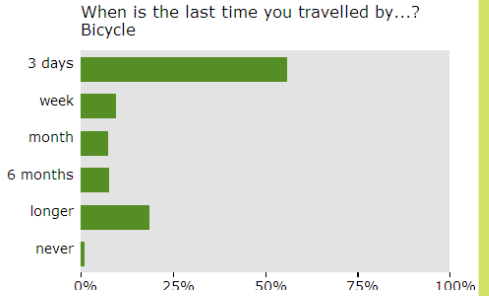
- 3,674 survey-responses received
- Respondents were from major Danish cities.
- More than half had used a bicycle within the last three days. The car was used most often, public transport least often.

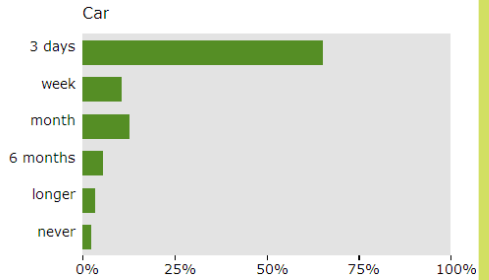


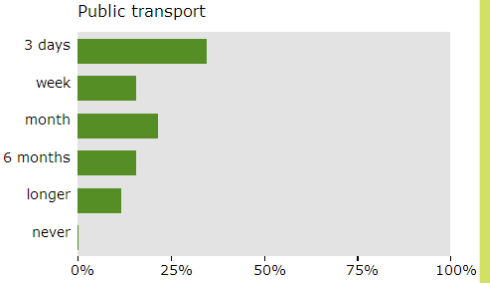


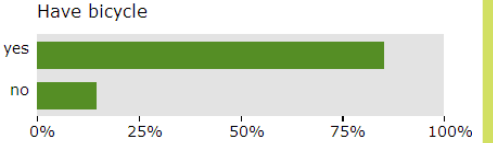


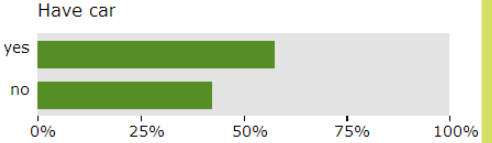






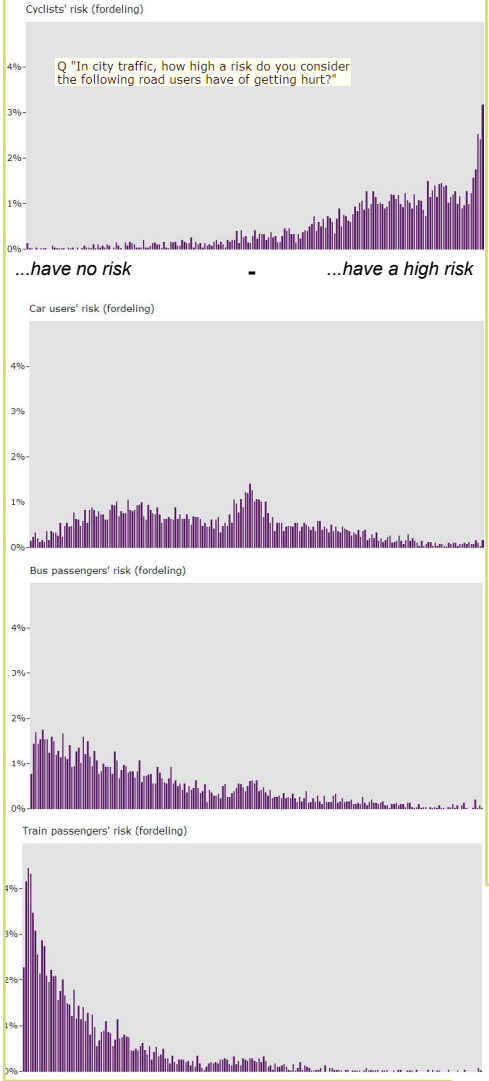


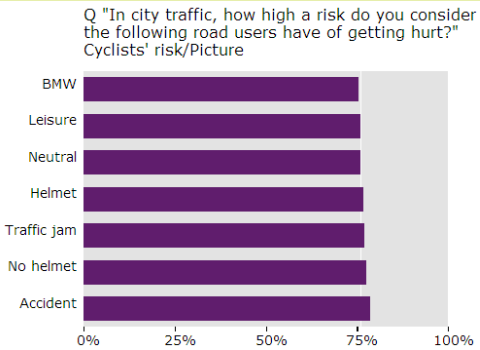


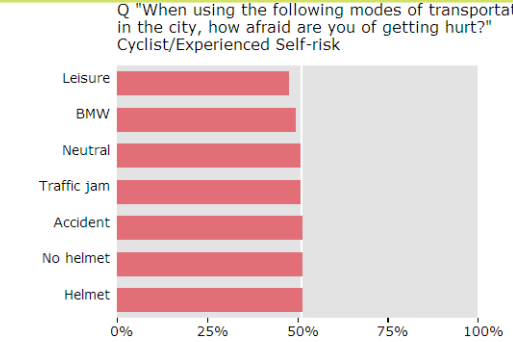


Perceived Risk

"Fingerprints" of public opinion







Cycling is very risky

The risks of cycling are often brought to debate, and cycling scores high on risk – almost double the score for cars and five times the score for trains.

The impact of the survey-pictures

The impact of the survey-pictures on the risk of cycling is generally negative – most of the pictures bring about a higher risk-score than the neutral. Expectedly, the accident-picture makes people score cycling more risky, while the leisure-picture pulls in the opposite direction. Quite surprisingly the BMW-picture does as well.

Statistical significance

Perceived risk: $P < 0{,}01$ (null hypothesis for the extremes)
Experienced risk of cycling: $P < 0{,}04$ (null hypothesis for the extremes)

The Bar Charts

These bar charts show how the respondents have answered the question concerning perceived risk, here concerning cyclists. The bars show the average of how the respondents rated cyclists' risk (left) and their own risk as a cyclist (right) depending on what picture they were shown.

'Expectedly, the accident-picture makes people score cycling more risky, while the leisure-picture pulls in the opposite direction.'

Fingerprints of the public opinion

It is possible to get a simple picture – a fingerprint – of the various opinions, which is a fast way of getting an idea of what the public opinion is on a given issue. The graphs shown on the left - perceived risk for cyclists, car users, bus passengers and train passengers - are examples of such fingerprints. These fingerprints tell that the public finds "cycling is very risky", "car driving is not very risky" and "trains are indeed not risky".
Technically the fingerprints represent the distribution of replies on the VAS-scale. The taller a given vertical line is (y-axis value), the more respondents have selected the corresponding value on the x-axis when ticking the VAS-scale.

Experienced Self-risk

I'm not in risk as a cyclist

The risk you experience yourself as a cyclist is found lower that the general risk – something which also applies for the other modes. In contrast to what was found for the general risk, survey pictures typically resulted in a lower risk-score, again with leisure and BMW having the best effect.

The Fingerprint

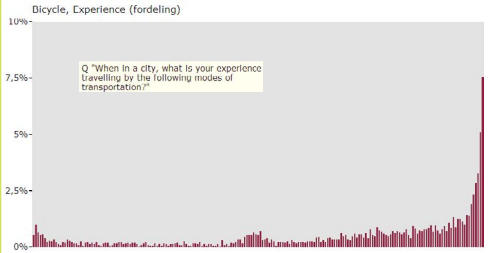
The fingerprint for experienced self-risk when cycling differs significantly from the fingerprint of cyclists' general risk. The risk-score is thus varying a lot between users with no special focus point. So it may be that "cycling is very risky" from a general point of view, but this doesn't exclude that "I'm not in risk as a cyclist" can be claimed at the same time.

Make cycling personal

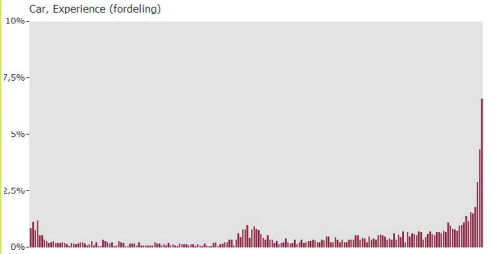
From a marketing perspective the message is clear: Make people imagine themselves as a cyclist, and don't report on what risk cyclists as such may be exposed to.

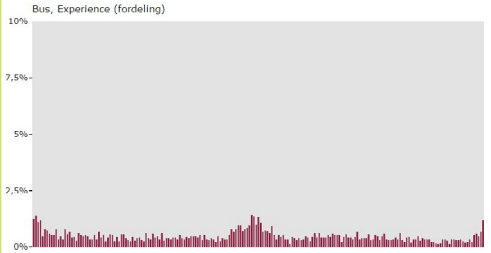
Experience

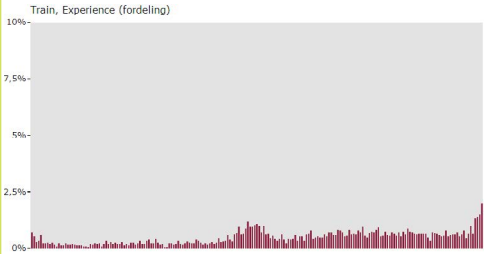
"Fingerprints" of public opinion



I do not like travelling by … - *I enjoy travelling by …*







Cycling - Best Travelling Experience!

Respondents generally report good experiences using both cars and bicycles in the city. The two modes are suprisingly equal, also when it comes to fingerprints of the response distribution. The bicycle even scores a little higher than the car.

Helmets are Bad and Leisure is Good for Cycling

There are some similarities, but also striking differences, when it comes to the impact of survey-pictures on car and bicycle experience. Most pictures tend to make respondents less happy for both modes, except for the traffic jam, which has a negative influence on both. The pictures impact on car and cycling experiences differ a lot between pictures. The helmet picture moves the cycling experience downwards and the car experience upwards on the 'enjoyment scale'. The leisure picture, on the other hand, has a significant negative influence on the car experience. Surprisingly, the BMW picture had a small positive impact on the car as well as the cycling experience.

'The helmet picture moves the cycling experience downwards and the car experience upwards on the 'enjoyment scale'.'

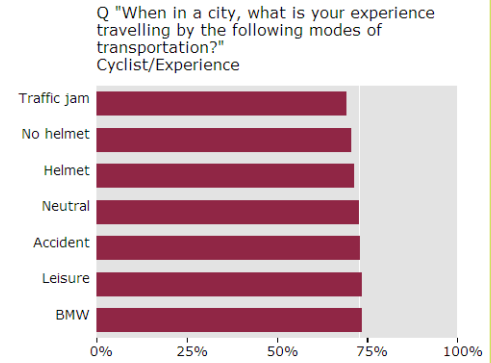
Safety not good for cycling

In general, the helmet and accident survey pictures don't have a major impact on cycling responses, but clearly move the experience of all other modes up. The difference between the helmet and the no helmet picture is also significant. This is a strong indication that typical safety promotion moves peoples' preference from cycling to other modes, and thus represents negative bicycle marketing.

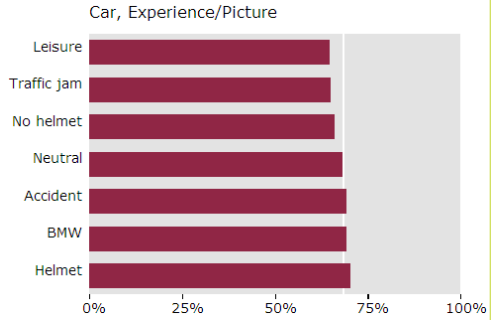
'This is a strong indication that typical safety promotion moves peoples' preference from cycling to other modes, and thus represents negative bicycle marketing.'

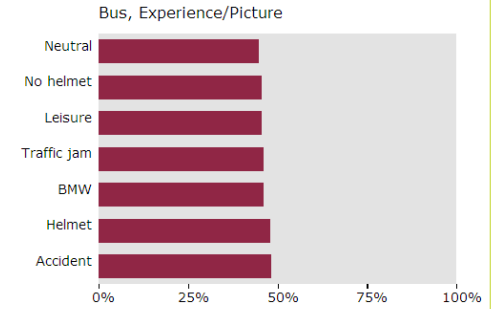
Statistical significance of picture-impact

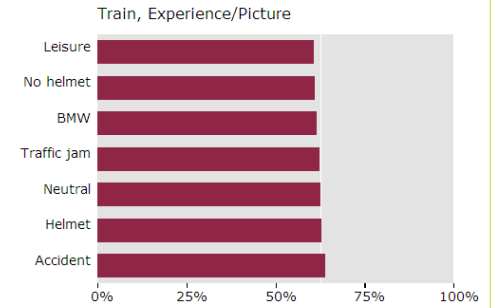
The null hypothesis of the extremes (least value and highest value for the modes) has the following propabilities:
P < 0,02 (bicycle)
P < 0,01 (car)
P < 0,04 (bus)
P < 0,08 (train)
Car and bicycle experience are therefore the modes most impacted by the survey pictures.

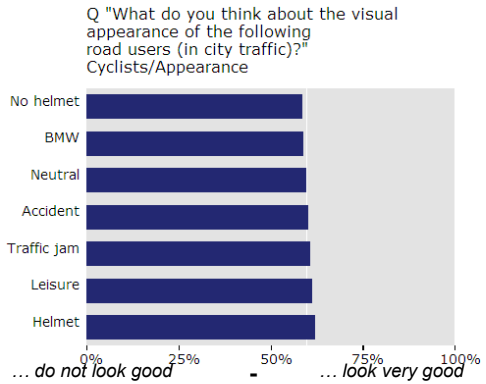


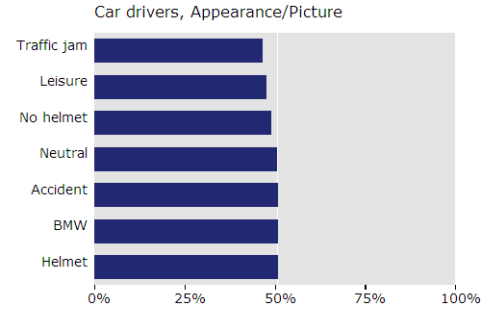
I do not like travelling by … - *I enjoy travelling by …*

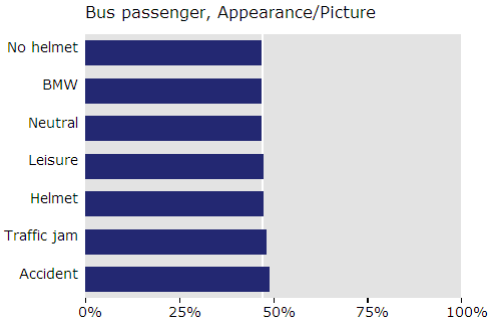


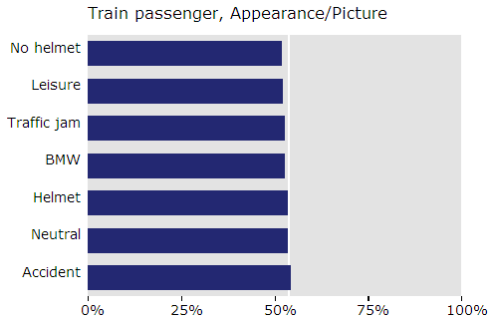












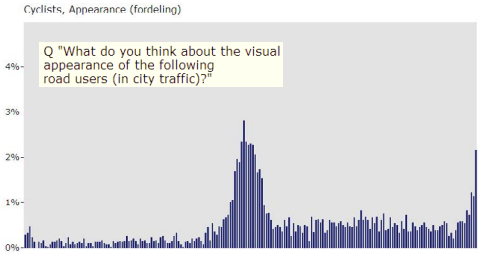
Appearance and Image

Asking questions about appearance and image first and foremost taught us one thing: Don't ask these kinds of questions to a Dane! Numerous respondents commented on the questions, and found them irrelevant or even stupid. "Image doesn't mean anything to me" was a typical comment. The fingerprints also reflect this, with many giving responses in the middle area.

'Cyclists obviously look better than other road users'

Nevertheless, one can see that cyclists obviously look better than other road users. Also, cycling has a very positive image according to the public, who had strong opposition to commenting on the issue.

"Image doesn't mean anything to me" was a typical comment. The fingerprints also reflect this, with many giving responses in the middle area.



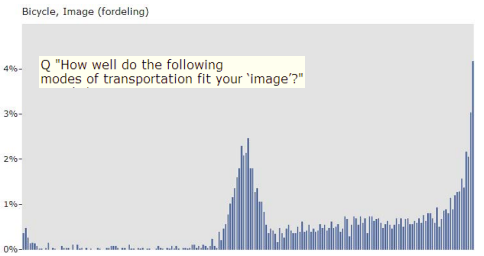
Statistical significance of picture impact, Appearance

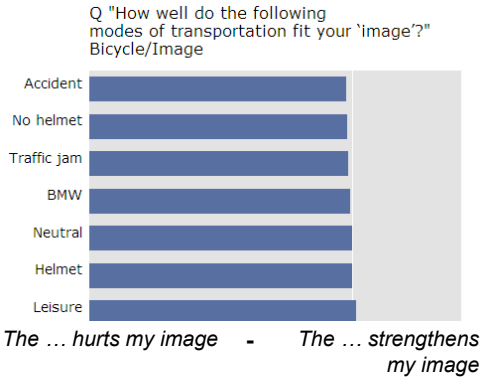
The null hypothesis of the extremes (least value and highest value for the modes) has the following propabilities:
P < 0,02 (bicycle)
P < 0,002 (car)
P < 0,2 (bus)
P < 0,08 (train)

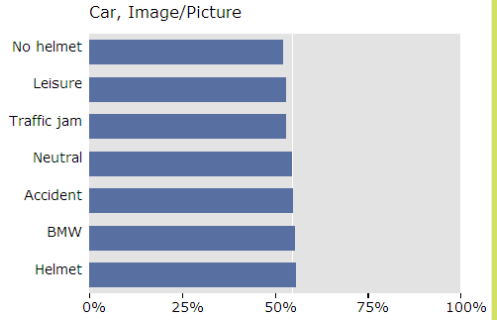
'Image doesn't mean anything to me!'

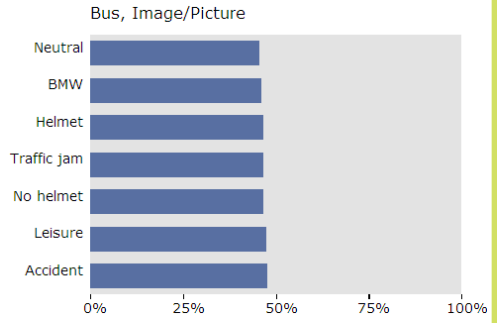
Statistical significance of picture impact, Image

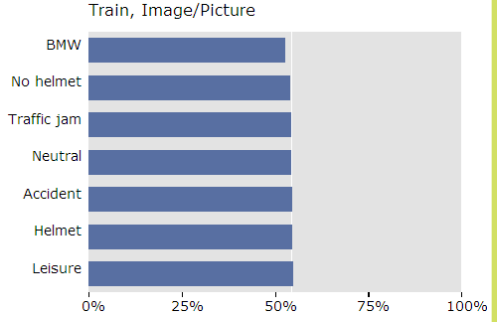
The null hypothesis of the extremes (least value and highest value for the modes) has the following propabilities:
P < 0,06 (bicycle)
P < 0,02 (car)
P < 0,3 (bus)
P < 0,08 (train)

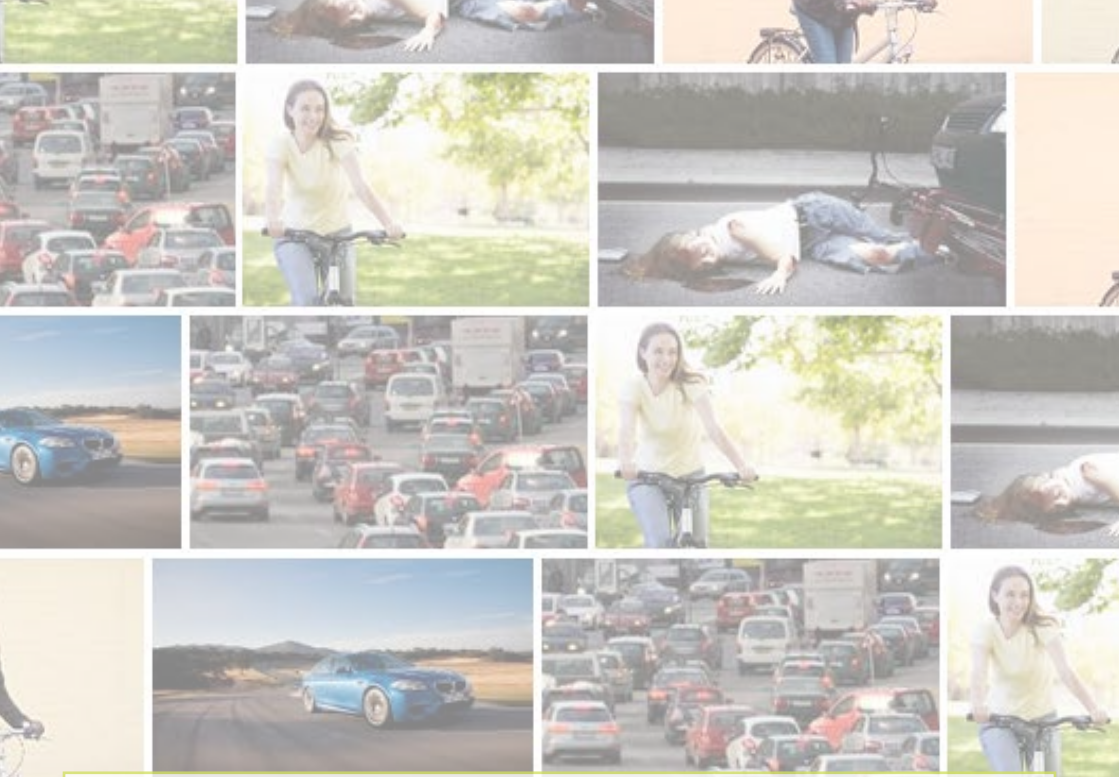












The Project

The project is carried out by Thomas Krag Mobility Advice with support from Copenhagenize Consulting.

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More info is available at www.thomaskrag.com