Laila Marianne Martinussen - DTU Orbit (14/12/2017)
Laila Marianne Martinussen

Organisations

Senior Researcher, Department of Management Engineering
29/03/2016 → present
laima@dtu.dk
VIP

Technology and Innovation Management
30/03/2016 → present
VIP

Transport DTU
09/02/2017 → present
VIP

Researcher, Department of Transport
27/07/2010 → 14/07/2016 Former
laima@transport.dtu.dk
VIP

Transport policy and behaviour
10/05/2012 → 23/11/2016 Former
VIP

Traffic Safety
25/02/2012 → 10/05/2012 Former
VIP

Publications:

Accuracy of young male drivers’ self-assessments of driving skill
Accurate self-assessment of skill is important because it creates an appropriate level of confidence and hence behaviour. Inaccurate self-assessment of driving ability has been linked to reckless driving and accidents. Inaccurate self-assessment of driving skills may be a contributing factor to the over-representation of young male drivers in accident statistics. Most previous research on self-assessment of driving skills did not compare self-reported skills to objectively measured driving skills, so the aims of this study were: (1) to test the accuracy of young male drivers’ self-assessments of specific driving skills by comparing them with performance in a driving simulator; (2) to test whether self-assessment accuracy varied with driving skill, driving experience and sensation-seeking propensity. We found that young male drivers’ self-assessments were inconsistent with their driving performance, and that this inconsistency varied with driving skill, driving experience and sensation-seeking propensity. Groups with particularly inaccurate self-assessments are at high risk, because of their relative lack of skill, high mileage and sensation-seeking propensity. Self-assessments of hazard prediction and detection skills were particularly inaccurate. Understanding self-assessments of driving skill is crucial, but further studies are needed to allow preventive policies and interventions to take factors affecting self-assessments into account.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, University of Queensland
Authors: Martinussen, L. M. (Intern), Møller, M. (Intern), Prato, C. G. (Ekstern)
Pages: 228-235
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Transportation Research. Part F: Traffic Psychology and Behaviour
Volume: 46
Issue number: A
ISSN (Print): 1369-8478
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
Comparison between young male drivers' self-assessed and objectively measured driving skills

Self-assessment of skills is a self-generated feedback process that contributes to confidence in one's skills. The higher one's self-assessed skills, the more likely one is to feel competent a particular domain thereby influencing the related behaviors. Drivers' self-assessed driving skills are not always accurate, which may cause serious problems such as underestimation of risk, reckless driving and accidents. Most previous research on self-assessment of driving skills did not compare self-reported skills to objectively measured driving skills, so the aim of this study was to test the accuracy of young male drivers' self-assessments of driving skills using a driving simulator, and to examine whether self-assessment accuracy varied with driving skill, experience or sensation-seeking propensity. Results showed that the drivers' self-assessments were inconsistent with their driving performance, and this inconsistency varied with driving skill, driving experience and sensation-seeking propensity in a safety-critical way.

General information
State: Published
Developing a model for measuring fear of pain in Norwegian samples: The Fear of Pain Questionnaire Norway

Fear of pain is highly correlated with pain report and physiological measures of arousal when pain is inflicted. The Fear of Pain Questionnaire III (FPQ-III) and The Fear of Pain Questionnaire Short Form (FPQ-SF) are self-report inventories developed for assessment of fear of pain (FOP). A previous study assessed the fit of the FPQ-III and the FPQ-SF in a Norwegian non-clinical sample and proved poor fit of both models. This inspired the idea of testing the possibility of a Norwegian FOP-model. A Norwegian FOP-model was examined by Exploratory Factor Analysis (EFA) in a sample of 1112 healthy volunteers. Then, the model fit of the FPQ-III, FPQ-SF and the Norwegian FOP-model (FPQ-NOR) were compared by Confirmatory Factor Analysis (CFA). Sex neutrality was explored by examining model fit, validity and reliability of the 3 models amongst male and female subgroups. The EFA suggested either a 4-, a 5- or a 6-factor Norwegian FOP model. The eigenvalue criterion supported the suggested 6-factor model, which also explained most of the variance and was most interpretable. A CFA confirmed that the 6-factor model was better than the two 4- and 5-factor models. Furthermore, the CFA used to test the fit of the FPQ-NOR, the FPQ-III and the FPQ-SF showed that the FPQ-NOR had the best fit of the 3 models, both in the whole sample and in sex sub-groups. A 6-factor model for explaining and measuring FOP in Norwegian samples was identified and termed the FPQ-NOR. This new model constituted six factors and 27 items, conceptualized as Minor, Severe, Injection, Fracture, Dental, and Cut Pain. The FPQ-NOR had the best fit overall and in male- and female subgroups, probably due to cross-cultural differences in FOP. This study highlights the importance on exploratory analysis of FOP-instruments when applied to different countries or cultures. As the FPQ-III is widely used in both research and clinical settings, it is important to ensure that the models construct validity is high. Country specific validation of FOP in both clinical and non-clinical samples is recommended.

General information
State: Accepted/In press
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, UiT The Arctic University of Norway, Norwegian University of Science and Technology
Authors: Vambheim, S. M. (Ekstern), Lyby, P. S. (Ekstern), Aslaksen, P. M. (Ekstern), Flaten, M. A. (Ekstern), Åsli, O. (Ekstern), Bjerkedal, E. (Ekstern), Martinussen, L. M. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Scandinavian Journal of Pain
ISSN (Print): 1877-8879
Ratings:
Scopus rating (2016): CiteScore 0.78
Scopus rating (2015): CiteScore 0.64
Scopus rating (2014): CiteScore 0.67
Scopus rating (2013): CiteScore 0.73
Scopus rating (2012): CiteScore 0.52
Scopus rating (2011): CiteScore 0.48
How indicative is a self-reported driving behaviour profile of police registered traffic law offences?

Although most motorised countries have experienced massive improvements in road safety over the last decades, human behaviour and differences in accident risk across sub-groups of drivers remains a key issue in the area of road safety. The identification of risk groups requires the identification of reliable predictors of safe or unsafe driving behaviour. Given this background, the aim of this study was to test whether driver sub-groups identified based on self-reported driving behaviour and skill differed in registered traffic law offences and accidents, and whether group membership was predictive of having traffic law offences. Sub-groups of drivers were identified based on the Driver Behaviour Questionnaire (DBQ) and the Driver Skill Inventory (DSI), while traffic offences and accidents were register-based (Statistics Denmark). The participants (N = 3683) were aged 18–84 years and randomly selected from the Danish Driving License Register. Results show that the driver sub-groups differed significantly in registered traffic offences but not in registered accidents. In a logistic regression analysis, the sub-group “Violating unsafe drivers” was found predictive of having a traffic offence, even when socio-demographic variables and exposure were controlled for. The most important predictive factor, however, was having a criminal record for non-traffic offences, while gender, living without a partner, and being self-employed also had a significant effect. The study confirms the use of the DBQ and DSI as suitable instruments for predicting traffic offences while also confirming previous results on accumulation of problematic behaviours across life contexts. The finding that driver sub-groups did not differ in registered accidents supports the recent research activities in finding and modelling surrogate safety measures.
The Fear of Pain Questionnaire-III and the Fear of Pain Questionnaire-Short Form: a confirmatory factor analysis

Background: The Fear of Pain Questionnaire-III (FPQ-III) is a widely used instrument to assess the fear of pain (FOP) in clinical and nonclinical samples. The FPQ-III has 30 items and is divided into three subscales: Severe Pain, Minor Pain and Medical Pain. Due to findings of poor fit of the original three-factor FPQ-III model, the Fear of Pain Questionnaire-Short Form (FPQ-SF) four-factor model has been suggested as an alternative. The FPQ-SF is a revised version of the FPQ-III, reduced to 20 items and subdivided into four subscales: Severe Pain, Minor Pain, Injection Pain and Dental Pain.

Aims and methods: The purpose of the study was to investigate the model fit, reliability and validity of the FPQ-III and the FPQ-SF in a Norwegian nonclinical sample, using confirmatory factor analysis (CFA). The second aim was to explore the model fit of the two scales in male and female subgroups separately, since previous studies have uncovered differences in how well the questionnaires measure FOP across sex; thus, the questionnaires might not be sex neutral. It has been argued that the FPQ-SF model is better because of the higher model fit across sex. To explore model fit across sex within the questionnaires, the model fit, validity and reliability were compared across sex using CFA.

Results: The results revealed that both models' original factor structures had poor fit. However, the FPQ-SF had a better model fit across sex compared to the FPQ-III. The model fit of the two models differed across sex, with better model fit for males on the FPQ-III and for females on the FPQ-SF.

Conclusion: The FPQ-SF is a better questionnaire than the FPQ-III for measurement of FOP in Norwegian samples and across sex subgroups. However, the FPQ-III is a better questionnaire for males than for females, whereas the FPQ-SF is a better questionnaire for females than for males. The findings are discussed and directions for future investigations outlined.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Transport DTU, UiT The Arctic University of Norway, University of Tromsø
Authors: Vambheim, S. M. (Ekstern), Lyby, P. S. (Ekstern), Aslaksen, P. M. (Ekstern), Flaten, M. A. (Ekstern), Asli, O. (Ekstern), Martinussen, L. M. (Intern)
Danske bilisters holdninger til sikker og risikabel kørsel

For at forstå hvorfor vi reelt gør som vi gør, når vi kører bil, har DTU Transport gennemført en undersøgelse om forholdet mellem eksplicite og implicitte holdninger. Vi udforskede forholdet mellem implicitte holdninger til sikker og risikabel kørsel, og selvrapporteret køreadfærd, - og færdigheder. Undersøgelsen havde deltagelse af 53 danske bilister (31 kvinder, 22 mænd).

**General information**

State: Published
Organisations: Department of Transport, Transport policy and behaviour
Authors: Martinussen, L. M. (Intern)
Number of pages: 1
Pages: 2
Publication date: May 2015

**Publication information**

Pages (from-to): 2
Newspaper: Bygge-
Volume: 25. årgang
No.: Nr. 2
Main Research Area: Technical/natural sciences
Links:
http://bygge-anlaegsavisen.dk/laes-bygge-anlaegsavisen-online

**Bibliographical note**
A Go/No-go approach to uncovering implicit attitudes towards safe and risky driving

Self-report measures of driving-related attitudes and beliefs miss potentially important precursors of driving behaviour, namely, automatic and implicit thought processes. The present study used an adapted Go/No-go Association Task to measure implicit thought without relying on the participants' self-reports. Implicit attitudes towards safe and risky driving were measured in 53 Danish drivers (31 female, 22 male). Further, we explored the relationship between implicit attitudes towards risky and safe driving, and self-reported driving behaviour and skills. The results suggest that implicit attitudes towards driving behaviour can be measured reliably with the Go/No-go Association Task. Also, the results suggest that implicit attitudes towards safe driving and risky driving, respectively, may be separable constructs, and might thus stem from different cognitive processes. Finally, implicit attitudes were significantly related to self-reported driving behaviour and skills for male (but not female) drivers. Pending future research with larger sample sizes, the difference between implicit attitudes towards safe versus risky driving that we observed may contribute to a greater theoretical understanding of the causes of safe and risky driving.

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour, University of Copenhagen, University of Tromsø
Authors: Martinussen, L. M. (Intern), Sømhovd, M. J. (Ekstern), Møller, M. (Intern), Siebler, F. (Ekstern)
Number of pages: 10
Pages: 74-83
Publication date: 2015
Main Research Area: Technical/natural sciences

Publication information
Journal: Transportation Research. Part F: Traffic Psychology and Behaviour
Volume: 30
ISSN (Print): 1369-8478
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.36 SJR 1.065 SNIP 1.392
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.023 SNIP 1.454 CiteScore 2.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.986 SNIP 1.601 CiteScore 2.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.988 SNIP 1.765 CiteScore 2.22
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.62 SNIP 2.441 CiteScore 2.54
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.28 SNIP 2.175 CiteScore 2.56
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.184 SNIP 1.651
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.359 SNIP 1.824
Assessing the relationship between the Driver Behavior Questionnaire and the Driver Skill Inventory: Revealing sub-groups of drivers

The Driver Behavior Questionnaire and the Driver Skill Inventory are two of the most frequently used measures of self-reported driving style and driving skill. The motivation behind the present study was to identify sub-groups of drivers that potentially act dangerously in traffic (as measured by frequency of aberrant driving behaviors and level of driving skills), as well as to test whether the sub-groups differ in characteristics such as age, gender, annual mileage and accident involvement. Furthermore, the joint analysis of the two instruments was used to test drivers’ assessment of their own self-reported driving skills and whether the reported skill level was reflected in the reported aberrant driving behaviors. 3908 drivers aged 18–84 participated in the survey. K-means cluster analysis revealed four distinct sub-groups that differed in driving skills and frequency of aberrant driving behavior. The sub-groups also differed in individual characteristics and driving related factors such as annual mileage, accident frequency and number of tickets and fines. The differences between the sub-groups suggest heterogeneity across the population, and since two of the sub-groups reported higher frequency of driving aberrations and lower skill level, they seem more unsafe than the two others. The results suggest that drivers’ assessment of their driving skills is reflected in their aberrant driving behaviors, as drivers who report low levels of driving skills, also report high frequency of aberrant driving behaviors, and vice versa. The present findings highlight the need to look into driver’s attitudes towards safety, and to devise differential interventions targeting specific problematic groups of the population in the attempt to improve road safety nationwide.

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour, Traffic modelling and planning
Authors: Martinussen, L. M. (Intern), Møller, M. (Intern), Prato, C. G. (Intern)
Number of pages: 10
Pages: 82-91
Publication date: Sep 2014
Main Research Area: Technical/natural sciences

Publication information
Journal: Transportation Research. Part F: Traffic Psychology and Behaviour
Volume: 26
ISSN (Print): 1369-8478
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.36 SJR 1.065 SNIP 1.392
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.023 SNIP 1.454 CiteScore 2.06
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.986 SNIP 1.601 CiteScore 2.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.988 SNIP 1.765 CiteScore 2.22
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.62 SNIP 2.441 CiteScore 2.54
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.28 SNIP 2.175 CiteScore 2.56
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.184 SNIP 1.651
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.359 SNIP 1.824
Er danskerne motiverede for at køre sikkert?: Danskernes bedømmelse af egne kørefærdigheder

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour
Authors: Martinussen, L. M. (Intern)
Number of pages: 1
Pages: 8
Publication date: Feb 2014

Publication information
Pages (from-to): 8
Newspaper: Bygge-
Volume: 24. årgang
No.: nr. 1
Main Research Area: Technical/natural sciences
Links:
http://bygge-anlaegsavisen.dk/faes-bygge-anlaegsavisen-online

Bibliographical note
Sektion 3 : Transport & Motor
Source: PublicationPreSubmission
Source-ID: 92681794
Publication: Communication › Newspaper article – Annual report year: 2014

Dårlige bilister tager chancer i trafikken

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour
Authors: Martinussen, L. M. (Intern)
Publication date: 30 Jan 2014

Publication information
Newspaper: Ingenioeren
Ratings:
ISI indexed (2013): ISI indexed no
Age, gender, mileage and the DBQ: The validity of the Driver Behavior Questionnaire in different driver groups

The Driver Behavior Questionnaire (DBQ) is one of the most widely used instruments for measuring self-reported driving behaviors. Despite the popularity of the DBQ, the applicability of the DBQ in different driver groups has remained mostly unexamined. The present study measured aberrant driving behavior using the original DBQ (Reason, J.T., Manstead, A., Stradling, S.G., Baxter, J., Campbell, K., 1990. Errors and violations on the road – a real distinction. Ergonomics, 33 (10/11), 1315–1332) to test the factorial validity and reliability of the instrument across different subgroups of Danish drivers. The survey was conducted among 11,004 Danish driving license holders of whom 2250 male and 2190 female drivers completed the questionnaire containing background variables and the DBQ. Exploratory and confirmatory factor analysis showed that the original three-factor solution, a four-factor solution and a two-factor solution had acceptable fit when using the whole sample. However, fit indices of these solutions varied across subgroups. The present study illustrates that both the original DBQ and a Danish four-factor DBQ structure is relatively stable across subgroups, indicating factorial validity and reliability of the DBQ. However, as the Danish DBQ structure has an overall better fit, the present study highlights the importance of performing an exploratory analysis when applying the DBQ in order to assess the problem areas within a driving population. © 2013 Elsevier Ltd. All rights reserved.
Do drivers have a realistic view of their driving ability?
The Driver Behavior Questionnaire (DBQ) and the Driver Skill Inventory (DSI) are two of the most frequently used measures of driving style and driving skill. The motivation behind the present study was to test drivers’ insight into their own driving ability based on a combined use of the DBQ and the DSI. Moreover, the joint use of the two instruments was applied to identify sub-groups of drivers that differ in their potential danger in traffic, as well as to test for heterogeneity across the population, namely whether the sub-groups of drivers differed in characteristics such as age, gender, annual mileage and accident involvement. 3908 drivers aged 18–84 participated in the survey. The results suggested that the drivers have good insight into their own driving ability, as the driving skill level mirrored the frequency of aberrant driving behaviors. K-means cluster analysis revealed four distinct clusters that differed in the frequency of aberrant driving behavior and driving skills, as well as individual characteristics and driving related factors such as annual mileage, accident frequency and number of tickets and fines. Thus, two sub-groups were identified as more unsafe than the two others, as well as heterogeneity across the population was observed. The present findings highlight the need to look into driver’s attitudes towards safety, in order to improve the motivation to drive safely. Information from this study is useful for interventions to be able to target specific problematic groups of the population in the attempt to improve road safety nationwide.

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour, Traffic modelling and planning
Authors: Martinussen, L. M. (Intern), Møller, M. (Intern), Prato, C. G. (Intern)
Number of pages: 1
Publication date: 2013
Event: Abstract from Strategisk forskning i transport og infrastruktur, Kongens Lyngby, Denmark.
Main Research Area: Technical/natural sciences
Driver style and driver skill – Clustering sub-groups of drivers differing in their potential danger in traffic

The Driver Behavior Questionnaire (DBQ) and the Driver Skill Inventory (DSI) are two of the most frequently used measures of self-reported driving style and driving skill. The motivation behind the present study was to test drivers’ consistency or judgment of their own self-reported driving ability based on a combined use of the DBQ and the DSI. Moreover, the joint use of the two instruments was applied to identify sub-groups of drivers that differ in their potential danger in traffic (as measured by frequency of aberrant driving behaviors and level of driving skills), as well as to test whether the sub-groups of drivers differed in characteristics such as age, gender, annual mileage and accident involvement. 3908 drivers aged 18–84 participated in the survey. The results suggested that the drivers are consistent in their reporting of driving ability, as the self-reported driving skill level mirrored the self-reported frequency of aberrant driving behaviors. K-means cluster analysis revealed four distinct clusters that differed in the frequency of aberrant driving behavior and driving skills, as well as individual characteristics and driving related factors such as annual mileage, accident frequency and number of tickets and fines. These differences between the clusters suggest that two of the sub-groups are less safe than the two others. The present findings highlight the need to look into driver’s attitudes towards safety, in order to improve the motivation to drive safely. Information from this study is useful for interventions to be able to target specific problematic groups of the population in the attempt to improve road safety nationwide.

General information
State: Published
Organisations: Department of Transport, Transport policy and behaviour, Traffic modelling and planning
Authors: Martinussen, L. M. (Intern), Møller, M. (Intern), Prato, C. G. (Intern)
Number of pages: 1
Publication date: 2013
Main Research Area: Technical/natural sciences
Links: http://www.x.dtu.dk/Sites/strategisk_transportforskning2013/Program.aspx
Source-ID: u::9673
Publication: Research › Conference abstract for conference – Annual report year: 2013
Facilitating improved road safety based on increased knowledge about driving behaviour and profiling sub-groups of drivers

The aim of the Ph.D. study presented in this thesis was to facilitate improved road safety through increased understanding of methods used to measure driving behaviour, and through increased knowledge about driving behaviour in sub-groups of drivers. More specifically, the usefulness of the Driver Behaviour Questionnaire (DBQ) within a Danish context was explored, sub-groups of drivers differing in their potential danger in traffic were identified, and the relationship between implicit attitudes towards safe and risky driving and self-reported driving behaviour was explored. The methods applied were a questionnaire survey on a random sample of 4,849 drivers, and an implicit attitude test on 55 drivers. The findings are reported in four articles that all are included in this thesis. The main contributions of the thesis are the following:

1. It is shown that Danish drivers' perform aberrant behaviours with underlying mechanisms of lack of focus, emotional stress, recklessness and confusion, and hence it is highly important to further explore means to making drivers become more focused or attentive when driving, and to deal with emotional responses in traffic like impatience and frustration (Article 1).
2. It is shown that the DBQ is a valid measure across sub-groups of drivers (Article 1).
3. A Mini-DBQ is developed, which can be applied when a shorter DBQ instrument is needed (Article 2).
4. It is demonstrated that the DBQ and the DSI together can be used to identify sub-groups of drivers that differ in their potential danger in traffic, and can give a more nuanced picture of drivers' self-assessment of driving behaviour (Article 3).
5. It is suggested that different interventions should be applied in different sub-groups of drivers, and that these drivers are aware of their shortcomings in driving skills, indicating that the problem lies in the drivers' attitudes towards safety (Article 3).
6. It is indicated that rather than viewing safety and risk as two ends of a continuum, safety and risk should be understood as two separate constructs, with different underlying motives. Therefore it is suggested that interventions should focus both on increasing safety and on decreasing risk, as measures to increase attitudes towards safety might not decrease attitudes towards risk (Article 4).
7. It is shown an attitude-behaviour inconsistency within males who report high frequency of violations/errors, with the implication that even though drivers' attitudes towards safety are positive or attitudes towards risk are negative, safe behaviour will not necessarily follow (Article 4).

Implicit attitudes towards risky and safe driving

Implicit social cognitions are thought processes that are not accessible to conscious introspection. These automatic processes can be measured with simple computer tasks that do not rely on participants' self-reports. Across a broad range of research areas (e.g., stereotyping; prejudice; consumer choice; health behavior), measures of implicit cognition have been shown to predict behavior particularly well if the behavior is associated with social desirability concerns and/or if a decision must be made spontaneously.

Driving behavior is characterized by frequent decisions under time pressure; further, self-reports of the intention to drive safely (or not) are socially sensitive. Therefore, we examined automatic preferences towards safe and risky driving with a Go/No-go Association Task (GNAT). The results suggest that (1) implicit attitudes towards driving behavior can be measured reliably with the GNAT; (2) implicit attitudes towards safe driving versus towards risky driving may be separable constructs.

We propose that research on driving behavior may benefit from routinely including measures of implicit cognition. A practical advantage is a lesser susceptibility to social desirability biases, compared to self-report methods. Pending replication in future research, the apparent dissociation between implicit attitudes towards safe versus risky driving that we observed may contribute to a greater theoretical understanding of the causes of unsafe and risky driving behavior.
Implicit attitudes towards risky and safe driving in a Danish sample

Implicit social cognitions are thought processes that are not accessible to conscious introspection. These automatic processes can be measured with simple computer tasks that do not rely on participants’ self-reports. Across a broad range of research areas (e.g., stereotyping; prejudice; consumer choice; health behavior), measures of implicit cognition have been shown to predict behavior particularly well if the behavior is associated with social desirability concerns and/or if a decision must be made spontaneously. Driving behavior is characterized by frequent decisions under time pressure; further, self-reports of the intention to drive safely (or not) are socially sensitive. Therefore, we examined automatic preferences towards safe and risky driving with a Go/No-go Association Task (GNAT). The results suggest that (1) implicit attitudes towards driving behavior can be measured reliably with the GNAT; (2) implicit attitudes towards safe driving versus towards risky driving may be separable constructs. We propose that research on driving behavior may benefit from routinely including measures of implicit cognition. A practical advantage is a lesser susceptibility to social desirability biases, compared to self-report methods. Pending replication in future research, the apparent dissociation between implicit attitudes towards safe versus risky driving that we observed may contribute to a greater theoretical understanding of the causes of unsafe and risky driving behavior.

Short and user-friendly: the development and validation of the Mini-DBQ

The Driver Behavior Questionnaire (DBQ) is used to measure aberrant driver behavior by asking drivers how often they engage in various aberrant driver behaviors. Since the development of the original DBQ, several modified versions have been developed. The difference between the various versions is that new items are added or existing items modified or excluded. However, despite the differences, all versions are relatively long and therefore time-consuming and tiring to answer, which might limit the usability of the instrument. The main purpose of the present study was to develop a mini DBQ version by reducing the 27-item original DBQ to the shortest possible DBQ version. A second aim was to explore the feasibility of a second-order structure within the data, which means that violations, errors and lapses factors load on a higher-order aberrant driver behavior factor. The presence of a second-order structure further indicates the validity of the DBQ and its theoretical structure. Confirmatory factor analysis (CFA) was used to test the fit (i.e., how well the models explain the data) of the original DBQ versus the fit of the shortest possible DBQ, as well as the presence of a second-order structure for the DBQ. The results identified a nine-item Mini-DBQ. In addition, a second-order structure was established in the data. These findings indicate that the Mini-DBQ is a valid and useful short measure of aberrant driver behavior.
**Short and user-friendly: The development and validation of the Mini-DBQ**

The Driver Behavior Questionnaire (DBQ) is used to measure aberrant driver behavior by asking drivers how often they engage in various aberrant driver behaviors. Since the development of the original DBQ, several modified versions have been developed. The difference between the various versions is that new items are added or existing items modified or excluded. However, despite the differences, all versions are relatively long and therefore time-consuming and tiring to answer, which might limit the usability of the instrument. The main purpose of the present study was to develop a mini DBQ version by reducing the 27-item original DBQ to the shortest possible DBQ version. A second aim was to explore the feasibility of a second-order structure within the data, which means that violations, errors and lapses factors load on a higher-order aberrant driver behavior factor. The presence of a second-order structure further indicates the validity of the DBQ and its theoretical structure. Confirmatory factor analysis (CFA) was used to test the fit (i.e., how well the models explain the data) of the original DBQ versus the fit of the shortest possible DBQ, as well as the presence of a second-order structure for the DBQ. The results indicated a nine-item Mini-DBQ. In addition, a second-order structure was established in the data. These findings indicate that the Mini-DBQ is a valid and useful short measure of aberrant driver behavior.

**General information**

State: Published  
Organisations: Department of Transport, Transport policy and behaviour, Middle East Technical University  
Authors: Martinussen, L. M. (Intern), Lajunen, T. (Ekstern), Møller, M. (Intern), Özkan, T. (Ekstern)  
Pages: 1259-1265  
Publication date: 2013  
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Accident Analysis & Prevention  
Volume: 50  
ISSN (Print): 0001-4575  
Ratings:  
BFI (2017): BFI-level 2  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 3.24 SJR 1.49 SNIP 1.97  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 1.206 SNIP 1.808 CiteScore 2.63  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 1.19 SNIP 2.067 CiteScore 2.79  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 1.359 SNIP 2.688 CiteScore 3.2  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 1.3 SNIP 2.238 CiteScore 2.56  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 0.922 SNIP 2.008 CiteScore 2.61  
ISI indexed (2011): ISI indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 1.146 SNIP 2.356  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 1.203 SNIP 1.848
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.276 SNIP 2.228
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.109 SNIP 2.064
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.5 SNIP 2.244
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.008 SNIP 2.387
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.899 SNIP 1.947
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.785 SNIP 1.933
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.614 SNIP 1.443
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.613 SNIP 1.368
Scopus rating (2000): SJR 0.756 SNIP 1.146
Scopus rating (1999): SJR 0.588 SNIP 1.2
Original language: English
The Driver Behavior Questionnaire, Violations, Traffic safety, Risky driving
Electronic versions:
MINI_DBQ_AAP_LAST_VERSION.pdf. Embargo ended: 06/11/2015
DOIs:
10.1016/j.aap.2012.09.030
Source: dtu
Source-ID: n:oai:DTIC-ART:elsevier/374638836::24077
Publication: Research - peer-review › Journal article – Annual report year: 2013

Projects:

**Slow On the Bottle - Enjoy the Road (SOBER)**
Looking at the relationship between explicit attitudes towards drunk driving, implicit attitudes towards drunk driving and intention of drunk driving behavior.

Department of Transport
Transport policy and behaviour
Period: 01/02/2015 → 30/12/2017
Number of participants: 4
Acronym: SOBER
Project participant:
Møller, Mette (Intern)
Sømhovd, Mikael Julius (Ekstern)
Siebler, Frank (Ekstern)
Project Manager, academic:
Martinussen, Laila Marianne (Intern)

**Financing sources**
Source: Public research council
Name of research programme: Tryg Fonden
Web address: http://www.trygfonden.dk/
Year of approval: 2014

Betydningen af holdning, adfærd og socio-demografiske faktorer for bilisters uheldsrisko
Department of Transport
Improving Road Safety: Developing a Basis for Socio-economic Prioritising of Road Safety Measures

The aim of this project is to develop an improved basis for efficient socio-economic prioritising of road safety measures. Road fatalities and injuries are together with congestion the largest externalities connected to transport. The traditional way of predicting road accidents – and thus assessing road safety measures – has been to model accidents as a function of road type and traffic volume only. However, these variables cannot alone explain the trend in accidents over time and moreover, in traditional models the severity and accidents are completely decoupled. This project will overcome these shortcomings and combine the modelling approach with in-depth insight into road user behaviour. This project will use the aggregate and disaggregate parts of the so-called DRAG modelling approach to establish quantitative relations between accidents of various degrees of severity and road user (risk) behaviour, vehicle ownership, infrastructure and economic activity. Moreover, the project will estimate preference-based economic values of road safety measures. As a novelty, accident modelling will include both police recorded accidents and emergency room recorded accidents. In addition, modelling will include individual socio-economic and demographic data from the entire Danish population. Finally, a more qualified inclusion of human behaviour factors, i.e. road user sub group behaviour, in the models will be possible. Methods range from in-depth interviews to statistical modelling. The project is organised in five work packages (WPs), each with defined tasks and scope. Thus, data for WP3 will be documented and provided by WP1 and 2; modelling will take place in WP3, qualification of the models in WP2, development of a scientifically founded valuation method of accidents in WP4, and eventually transforming results into recommendations in WP5.
Activities:

**Projekt ledelse for forskere**  
Period: 29 Aug 2016 → 29 Nov 2016  
Laila Marianne Martinussen (Participant)  
Department of Management Engineering  
Technology and Innovation Management

Related event  
**Projekt ledelse for forskere**  
29/08/2016 → 29/11/2016  
Kgs. Lyngby, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**UDTU: Education in University Teaching at DTU - Module 3**  
Period: 5 Nov 2014 → 7 Nov 2014  
Laila Marianne Martinussen (Participant)  
Department of Management Engineering  
Technology and Innovation Management

Related event  
**UDTU: Education in University Teaching at DTU - Module 3**  
05/11/2014 → 07/11/2014  
Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

**'Ny viden om trafiksikkerhed'**  
Period: 30 Sep 2014  
Laila Marianne Martinussen (Lecturer)  
Department of Transport  
Transport policy and behaviour

Related event  
**Samarbejde om Sikker Trafik**  
30/09/2014 → 01/10/2014  
Vejle, Denmark  
Activity: Talks and presentations › Conference presentations

**UDTU: Education in University Teaching at DTU - Module 2**  
Period: 24 Sep 2014 → 26 Sep 2014  
Laila Marianne Martinussen (Participant)  
Department of Management Engineering  
Technology and Innovation Management

Related event  
**UDTU: Education in University Teaching at DTU - Module 2**  
24/09/2014 → 26/09/2014  
Gentofte, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.
Strategic Research in Transport and Infrastructure  
Period: 11 Jun 2014 → 12 Jun 2014  
Laila Marianne Martinussen (Speaker)  
Department of Management Engineering  
Technology and Innovation Management  

Description  
Presented the paper "Driver style and driver skill – Clustering sub-groups of drivers differing in their potential danger in traffic".

Related event

Strategic Research in Transport and Infrastructure  
11/06/2014 → 12/06/2014  
Kgs. Lyngby, Denmark  
Activity: Talks and presentations › Conference presentations

Strategic Research in Transport and Infrastructure  
Period: 11 Jun 2014 → 12 Jun 2014  
Laila Marianne Martinussen (Speaker)  
Department of Management Engineering  
Technology and Innovation Management  

Description  
Presented the paper "Short and user-friendly: the development and validation of the Mini-DBQ"

Related event

Teaching and learning DTU  
Period: 8 Apr 2014 → 11 Apr 2014  
Laila Marianne Martinussen (Participant)  
Department of Transport  
Transport policy and behaviour  

Related event

Teaching and learning DTU  
08/04/2014 → 11/04/2014  
Kgs. Lyngby, Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

IMPROSA work shop  
Period: 3 Mar 2014 → 4 Mar 2014  
Laila Marianne Martinussen (Participant)  
Department of Transport  
Transport policy and behaviour  

Description  
IMPROSA Work shop.

Related event
Driver style and driver skill – Clustering sub-groups of drivers differing in their potential danger in traffic
Period: 11 Nov 2013 → 12 Nov 2013
Laila Marianne Martinussen (Lecturer)
Department of Transport
Transport policy and behaviour

Related event
Strategisk forskning i transport og infrastruktur
11/06/2013 → 12/06/2013
Kongens Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Short and user-friendly: the development and validation of the Mini-DBQ
Period: 11 Nov 2013 → 12 Nov 2013
Laila Marianne Martinussen (Lecturer)
Department of Transport
Transport policy and behaviour

Related event
Strategisk forskning i transport og infrastruktur
11/06/2013 → 12/06/2013
Kongens Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

4th NORBIT Conference on Transport Behaviour
Period: 4 Nov 2013 → 5 Nov 2013
Laila Marianne Martinussen (Speaker)
Department of Transport
Transport policy and behaviour

Related event
4th NORBIT Conference on Transport Behaviour
04/11/2013 → 05/11/2013
Kgs. Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

European Congress of Psychology
Period: 9 Jul 2013 → 12 Jul 2013
Laila Marianne Martinussen (Speaker)
Department of Transport
Transport policy and behaviour

Related event
European Congress of Psychology
09/07/2013 → 12/07/2013
Stockholm, Sweden
Activity: Talks and presentations › Conference presentations
Young Researcher Seminar
Period: 5 Jun 2013 → 12 Jun 2013
Laila Marianne Martinussen (Speaker)
Department of Management Engineering
Technology and Innovation Management

Description
Presented the paper 'Implicit attitudes towards risky and safe driving in a Danish sample''

Related event

Young Researcher Seminar
05/06/2013 → 07/12/2013
Lyon, France
Activity: Talks and presentations › Conference presentations

Implicit attitudes towards risky and safe driving in a Danish sample
Period: 4 Jun 2013 → 7 Jun 2013
Laila Marianne Martinussen (Lecturer)
Department of Transport
Transport policy and behaviour

Related event

ECTRI/FERSI Young Researchers Seminar
05/06/2013 → 07/06/2013
Lyon, France
Activity: Talks and presentations › Conference presentations

Road Safety on Four Continents
Period: 15 May 2013 → 17 May 2013
Laila Marianne Martinussen (Lecturer)
Department of Transport
Transport policy and behaviour

Related event

Road Safety on Four Continents
15/05/2013 → 17/05/2013
Beijing, China
Activity: Talks and presentations › Conference presentations

Road Safety on Four Continents
Period: 15 May 2013 → 17 May 2013
Laila Marianne Martinussen (Speaker)
Department of Management Engineering
Technology and Innovation Management

Description
Presented the paper "Driver style and driver skills – clustering drivers differing in their potential danger in traffic"

Related event

Road Safety on Four Continents
IMPROSA work shop
Period: 8 Nov 2012 → 9 Nov 2012
Laila Marianne Martinussen (Participant)
Department of Transport
Transport policy and behaviour

Related event

IMPROSA work shop
08/11/2012 → 09/11/2012
Kgs. Lyngby , Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

IMPROSA
Period: 10 Nov 2011 → 11 Nov 2011
Laila Marianne Martinussen (Participant)
Department of Transport
Transport policy and behaviour

Related event

IMPROSA
Kgs. Lyngby, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Press clippings:

Viser nyt studie virkelig, at kvinder er bedre til at køre bil end mænd?
Laila Marianne Martinussen
30/11/2017
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Media contribution (1)

Viser nyt studie virkelig, at kvinder er bedre til at køre bil end mænd?
30/11/2017
Mandag Morgen (National), Denmark, Web
Rasmus Kørm-Jespersen og Andreas Grimstrup Ragn
https://www.mm.dk/tjekdet/artikel/viser-nyt-studie-virkelig-at-kvinder-er-bedre-til-at-koere-bil-end-maend
Laila Marianne Martinussen
Press / Media

11 veje udstyres med stærkasser
Laila Marianne Martinussen
28/10/2017
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Media contribution (1)

11 veje udstyres med stærkasser
28/10/2017
Tv2 news (National), Denmark, Television
1 minute, 17 seconds
Laila Marianne Martinussen
Manipulation af ubevidste holdninger skal bekæmpe spritbilisme
Laila Marianne Martinussen
20/02/2017

Description
Department of Management Engineering, Technology and Innovation Management, Transport DTU

Ny forskning: Underbevidstheden sender dig fuld ud i trafikken
Laila Marianne Martinussen
02/12/2016

Subject
Sprituskørsel kan knytte sig til et mismatch mellem, hvad du tror, du mener og dine ubevidste holdninger, mener forsker fra DTU
Department of Management Engineering, Technology and Innovation Management

Farligt, mindre hensynsfuldt og fyldt med egoister: Danskernes dom over trafikken er hård: Trafikken er blevet farligere de senere år, mener danskerne ifølge en undersøgelse, Kantar Gallup har lavet for Gjensidige Forsikring. Men billedet stemmer ikke overens med statistikkerne, påpeger forskere.
Laila Marianne Martinussen
27/10/2016
Department of Management Engineering, Technology and Innovation Management

Berlingske, Web
Laila Marianne Martinussen
27/10/2016
Department of Management Engineering, Technology and Innovation Management
Magasinet Penge: Trafikulykker koster dyrt
21/01/2015
Magasinet penge, Television
DR 1
https://www.dr.dk/tv/se/penge/penge-113
Laila Marianne Martinussen
Transport policy and behaviour, Department of Management Engineering, Technology and Innovation Management
Press / Media

Musik under kørslen er en fordel for bilister
Laila Marianne Martinussen
09/10/2014

Subject
Bilkørsel og musik
Department of Transport, Transport policy and behaviour

Media contribution (1)
Musik under kørslen er en fordel for bilister
09/10/2014
NetAvisen, Web
Nadia Guldbæk Welch
http://navisen.dk/blog/musik-under-korslen-gavner-erfarne-bilister/
Laila Marianne Martinussen
Department of Transport, Transport policy and behaviour
Press / Media

Unge kører ulovligt ræs på offentlige veje
Laila Marianne Martinussen
25/03/2014

Subject
Trafiksikkerrhed
Department of Transport, Transport policy and behaviour

Media contribution (1)
Unge kører ulovligt ræs på offentlige veje
25/03/2014
NetAvisen, Print
Karoline Graulund Nehr
http://navisen.dk/blog/unge-korer-ulovligt-raes-pa-offentlige-veje/
Laila Marianne Martinussen
Department of Transport, Transport policy and behaviour
Press / Media