

The German Pedelec Naturalistic Cycling Study – Overview of Results

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Research Questions

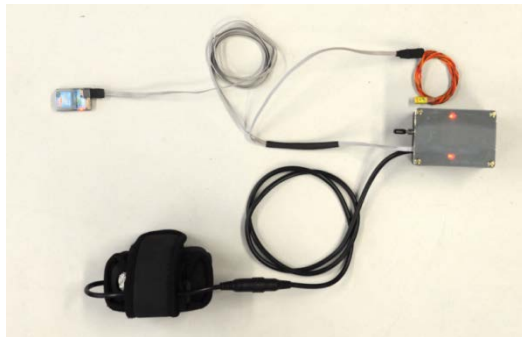
- **Traffic behaviour**
 - Speed
 - Number and type of critical incidents
- **Travel behaviour**
 - Number of trips, trip length, trip duration, trip purpose, infrastructure used
- **Method:** Naturalistic observation of pedelec cyclists and conventional cyclists for comparison

Legal classification of Pedelec and S-Pedelec in Germany

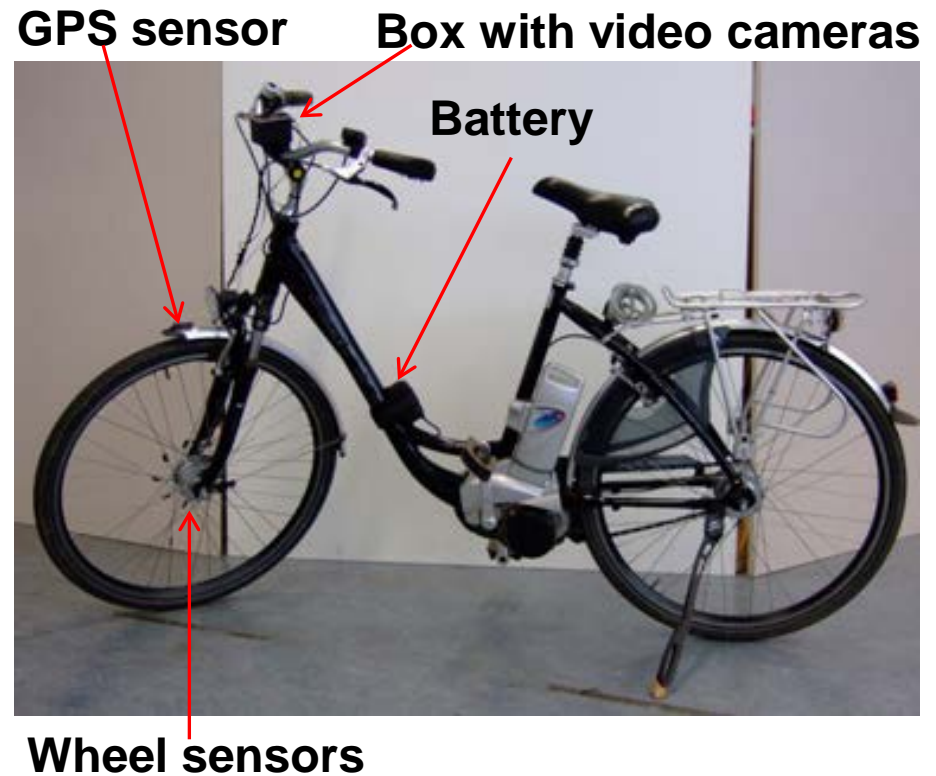
	Pedelec	S-Pedelec
Engine power	250 Watt	500 Watt
Motor assistance	25 km/h	45 km/h
Legal category	Bicycle	Moped*
Driving license	No	Yes
Helmet	Recommended	Mandatory
Motor liability insurance	No	Yes
Road usage	Bicycle infrastructure	Road infrastructure
Market share in Germany [7]	95 - 98%	3 - 5%

* Category L1e according to 2002 / 24 / EC

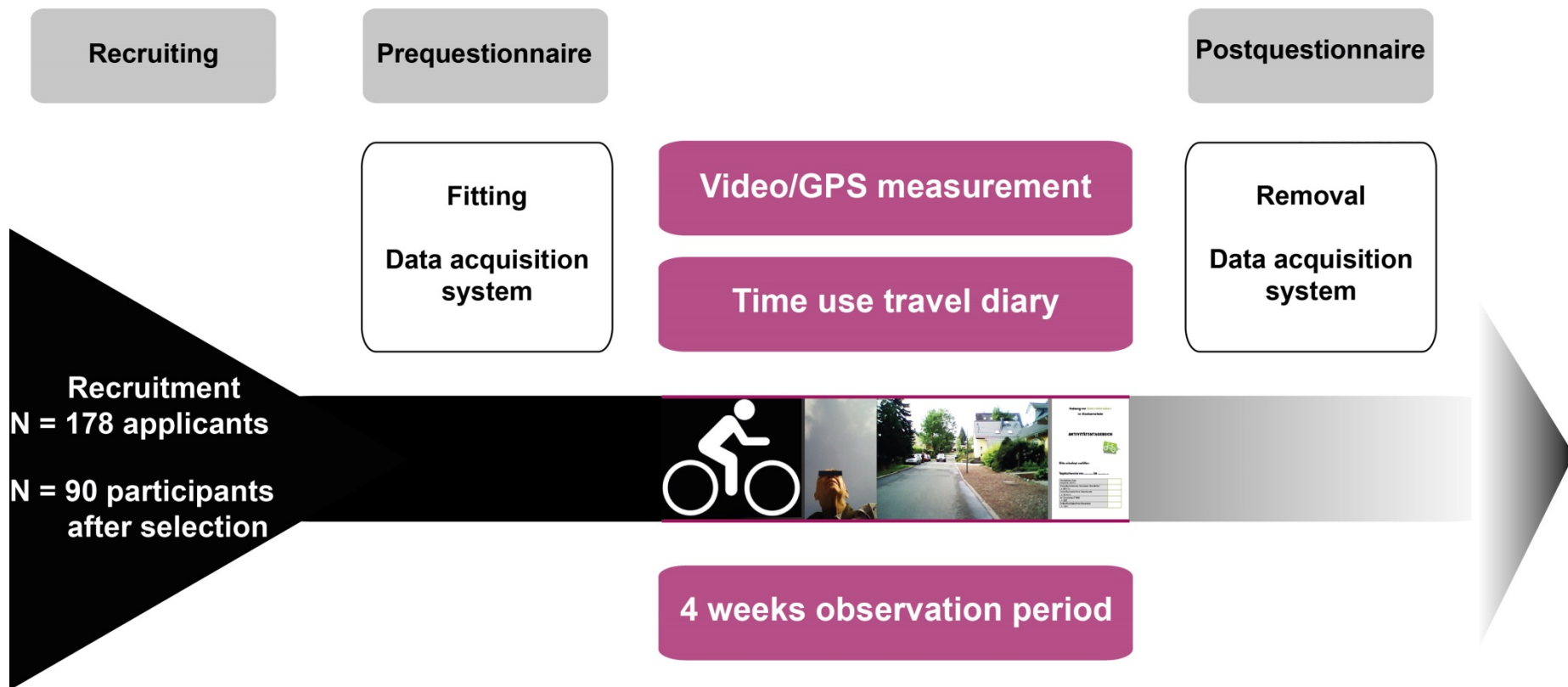
Data acquisition system



Video camera view (front)



Study Procedure



Results

Overview

User characteristics	Pedelecs are mainly used by elderly persons
Travel behaviour	Bicycle = Pedelec = S-Pedelec
Travel / cycling speed	Bicycle < Pedelec < S-Pedelec
Speed variance	Bicycle < (Pedelec = S-Pedelec)
Critical incidents	Bicycle = Pedelec = S-Pedelec

Results – Number of critical incidents

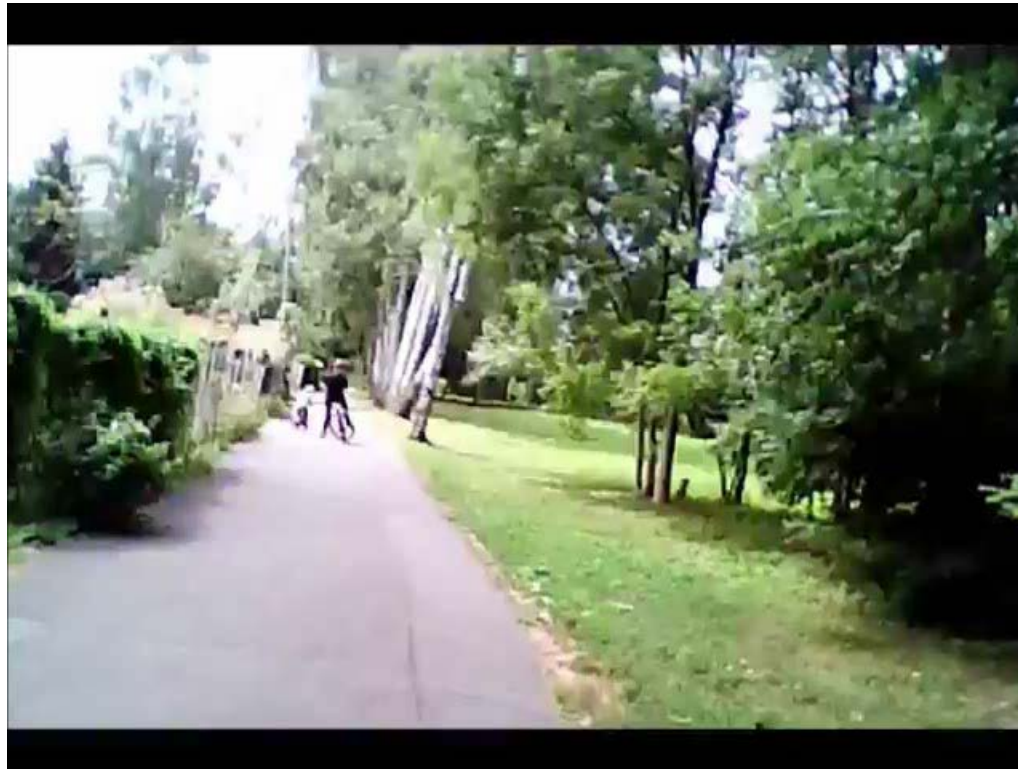
	N	Conflict with fall	Conflict no fall but reaction	Conflict no fall or reaction	Single fall	Near single fall	Total
Bicycle	31	0	71	6	1	2	80
Pedelec	49	1	84	13	1	2	101
S-Pedelec	10	0	19	2	0	0	21
Total	90	1	174	21	2	4	202

Data source: Video cameras

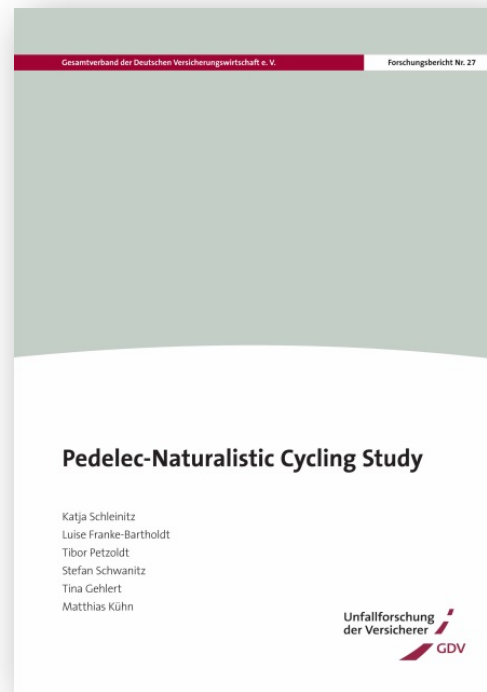
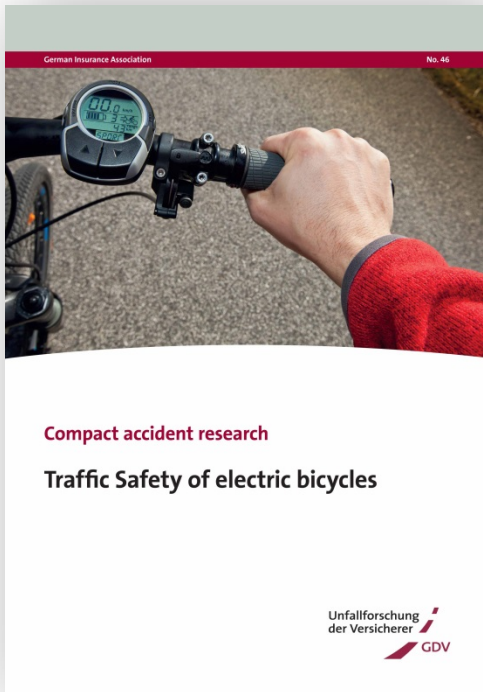
Turning-off accident



Conflicts in longitudinal traffic



Thanks for your attention!



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