**Potential**
- Suitable for all users
- Suitable for all kinds of mobility (commuting, every day errands, sport, spare time activities)
- Replaces cars

**Properties / Materiality**
- High weight
- Battery must not get wet
- Different designs for different purposes
- Recuperation (Promise)
- High costs

**Actual Use**
- Used for free time activities and little for commuting (urban and rural areas)
- Supports in particular the mobility of elderly/impaired/unathletic people (enabler technology)
- Different use in urban and rural areas
- Rarely replace cars

**Explaining Factors**
The discrepancy between potential and actual use can be explained by values, traffic system and E-Bike infrastructure

**Values**
1. The athletic and young ride normal bicycles
2. The elderly, unathletic, impaired ride e-bikes

**Traffic System**
1. Cities:
   - Commuting distances small
   - Little parking space
   - Traffic jams
   - Dense system of public transport
2. Rural areas:
   - Commuting distances larger
   - No problem with parking and traffic jam
   - Public transport little attractive

**E-Bike Infrastructure**
1. Cities
   - Little private and (inexpensive) public infrastructure for locking high value e-bikes in dry places
   - E-Bikes are heavy; tracks to move them over stairs are often missing
   - Appropriate bicycle lanes exist
   - Female user sometimes experience difficulties with heavy e-bike (carrying)
   - Bicycle lanes are for commuting and errand activities
2. Rural Areas
   - Bicycle lanes are touristic and for spare time activities

**Recommendations for Urban Areas**
Extend the network by turning existing charging stations into sharing stations and providing weather and theft proof shelter
So the problem of a
- the high weight,
- the high costs
- the missing private infrastructure could be solved

Join e-bikes as one element amongst others in an integrated mobility system of cities by addressing:
- lack of private, weather proof, easy accessible storage space;
- threat of theft

**Abstract**
E-bikes are often perceived as zero-emission vehicles that promise sustainability and energy efficiency. However, the concept of e-bikes as “green” innovation is contested. Therefore several questions can be raised: In what way is this seemingly green innovation really used? Does it actually contribute to sustainability? What is necessary that e-bikes replace cars and contribute to sustainable traffic?

The paper shows that several factors have a concrete impact on the use of e-bikes: design elements, available private and public infrastructure, values as well as the users’ everyday practices.

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