„Implicit and explicit aggressiveness, traffic-related attitudes, and objective driving behavior"

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1. Aggressiveness and Driving Behavior
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3. Design
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1. Aggressiveness and Driving Behavior

Personality and Driving Behavior

Personality factors have been found to be related to problematic driving behaviour

- Aggressiveness, sensation seeking, risk taking

Limitations of prior research

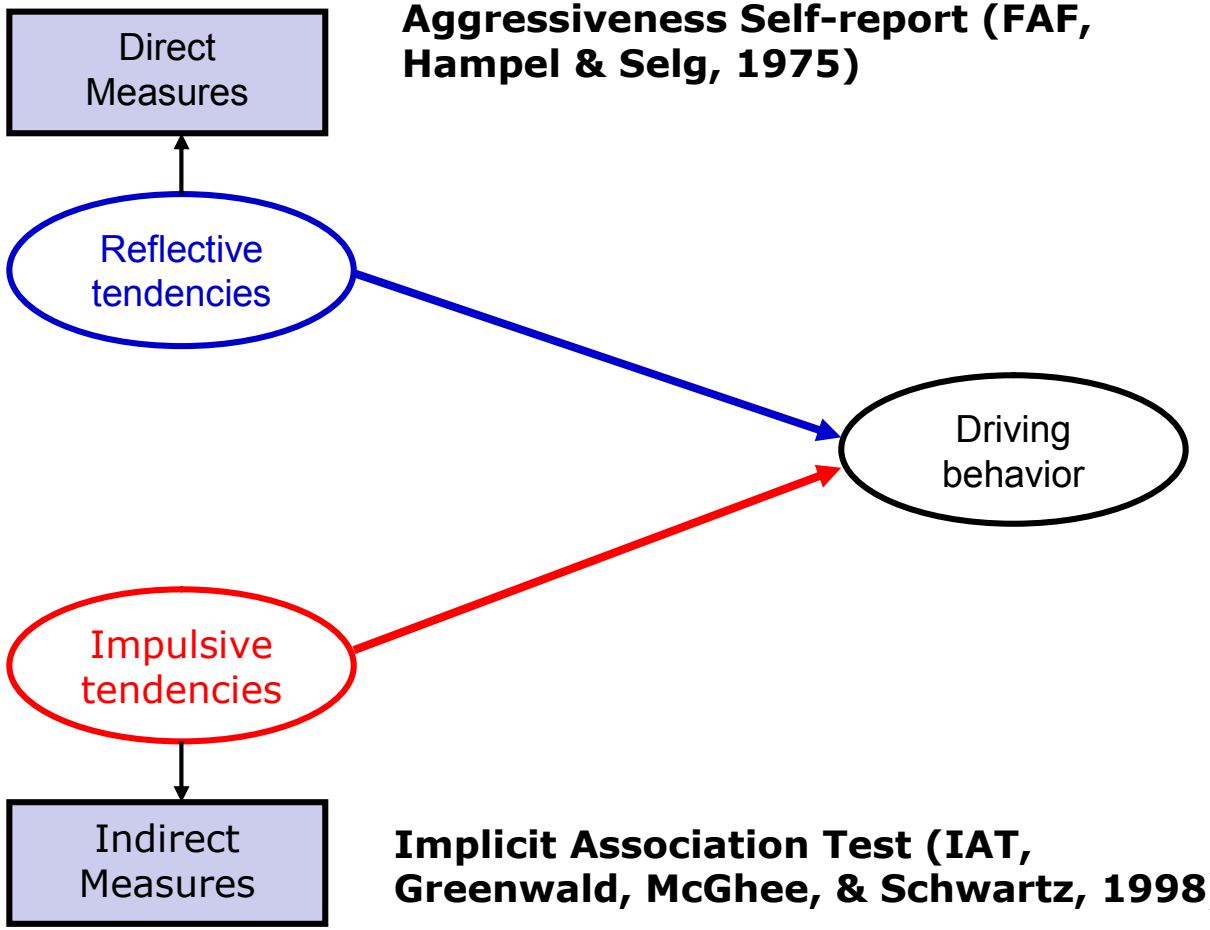
- Results are often restricted to self-reports (both predictors and driving behaviour)
- Cross-sectional designs
- Non-representative samples

Aims of the present study

- Extending the range of personality measures
  - Response time based implicit measures
  - Attitudes
- Prospective longitudinal design
- Objectively assessed driving behaviour

2. Implicit Aggressiveness

Measurement model



Aggressiveness Self-report (FAF, Hampel & Selg, 1975)

Implicit Association Test (IAT, Greenwald, McGhee, & Schwartz, 1998)

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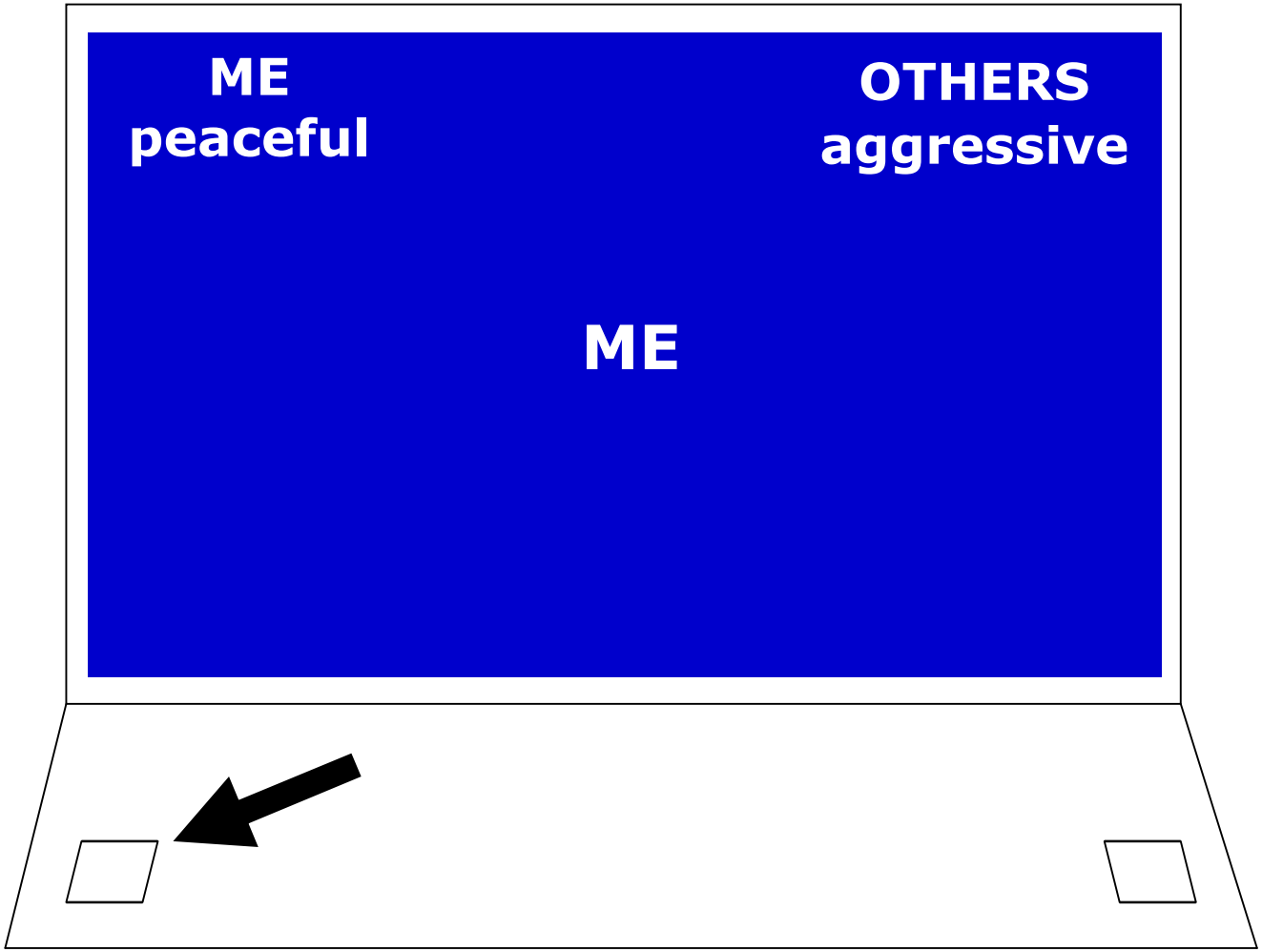

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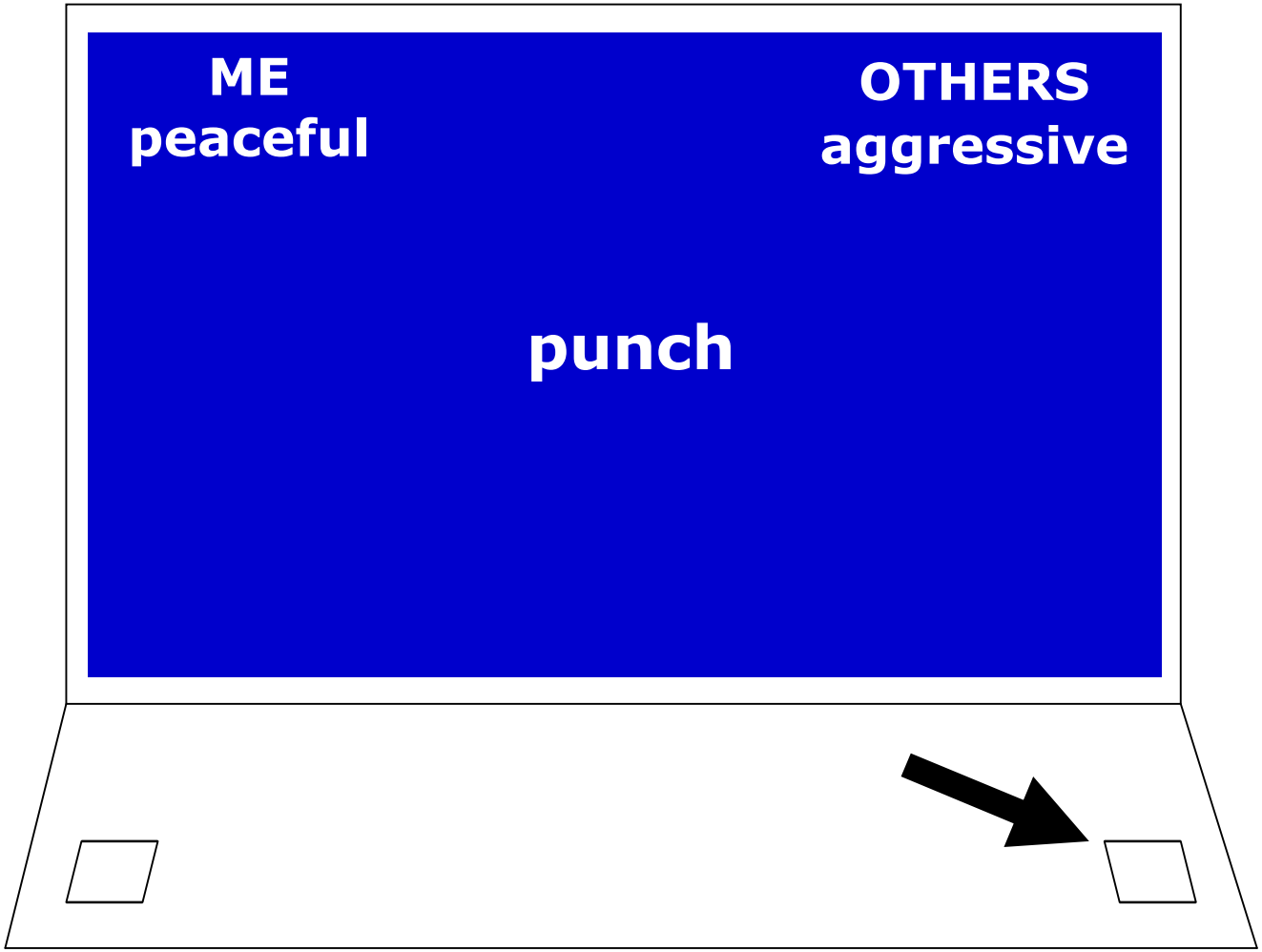

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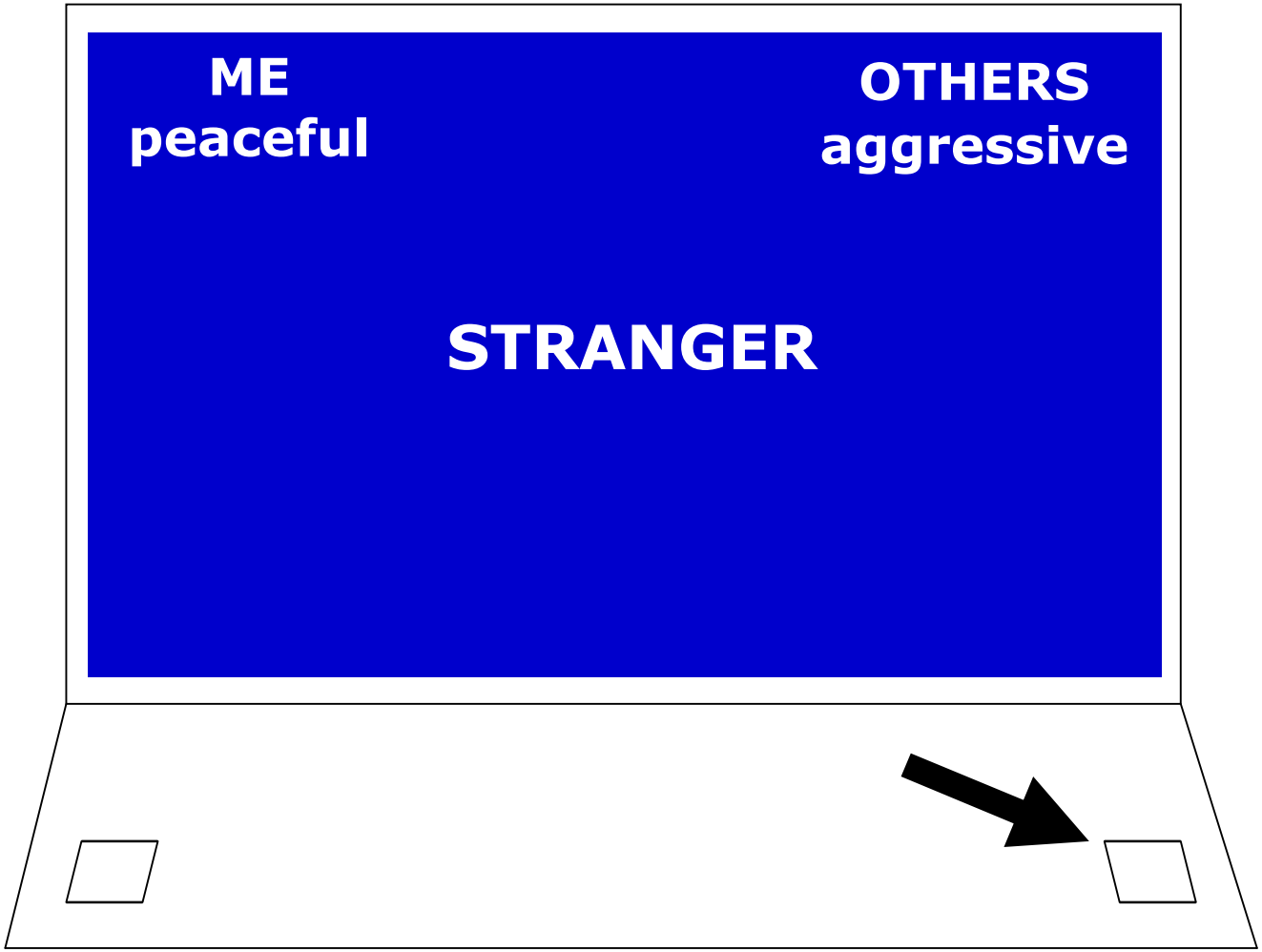

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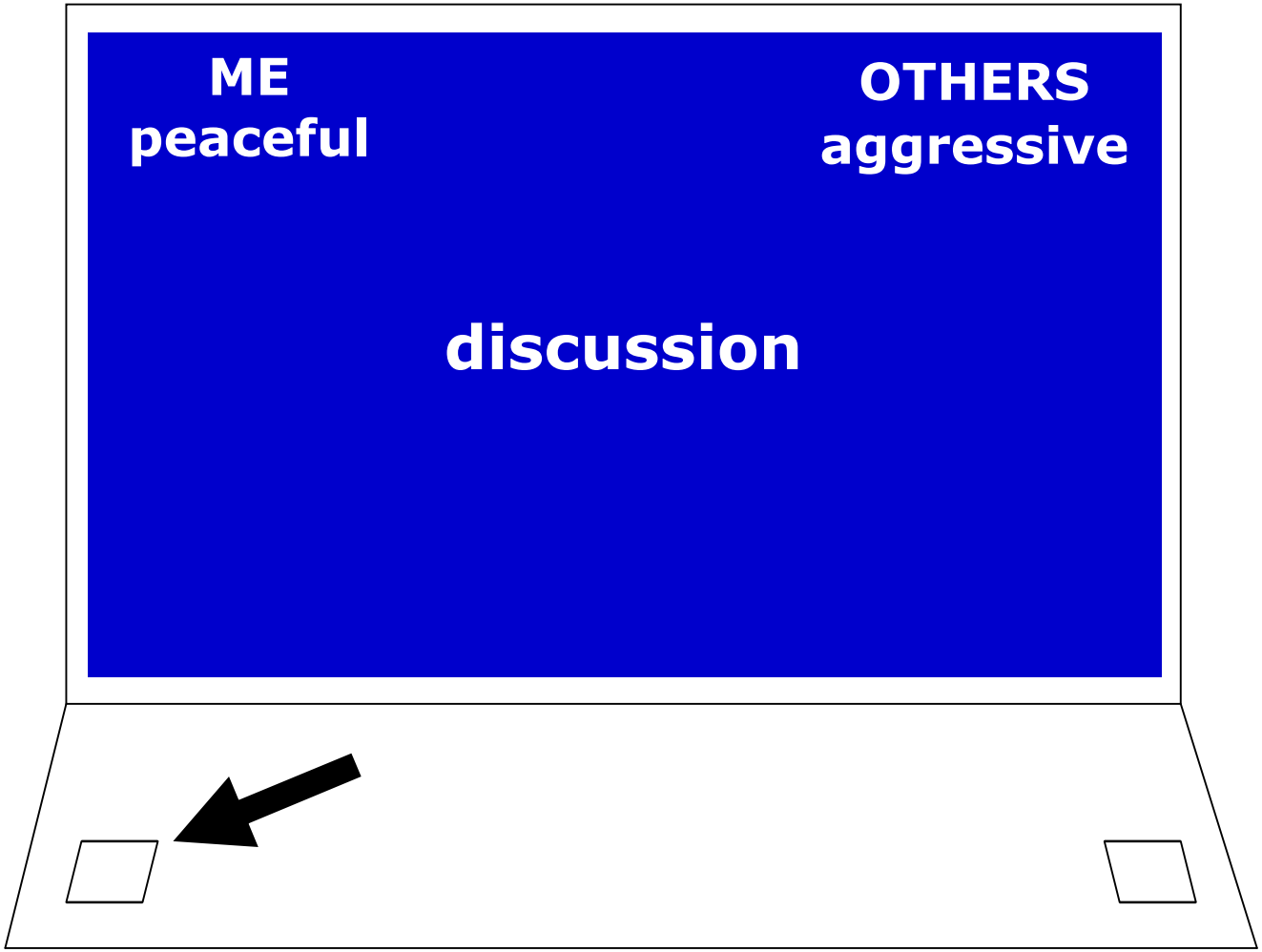

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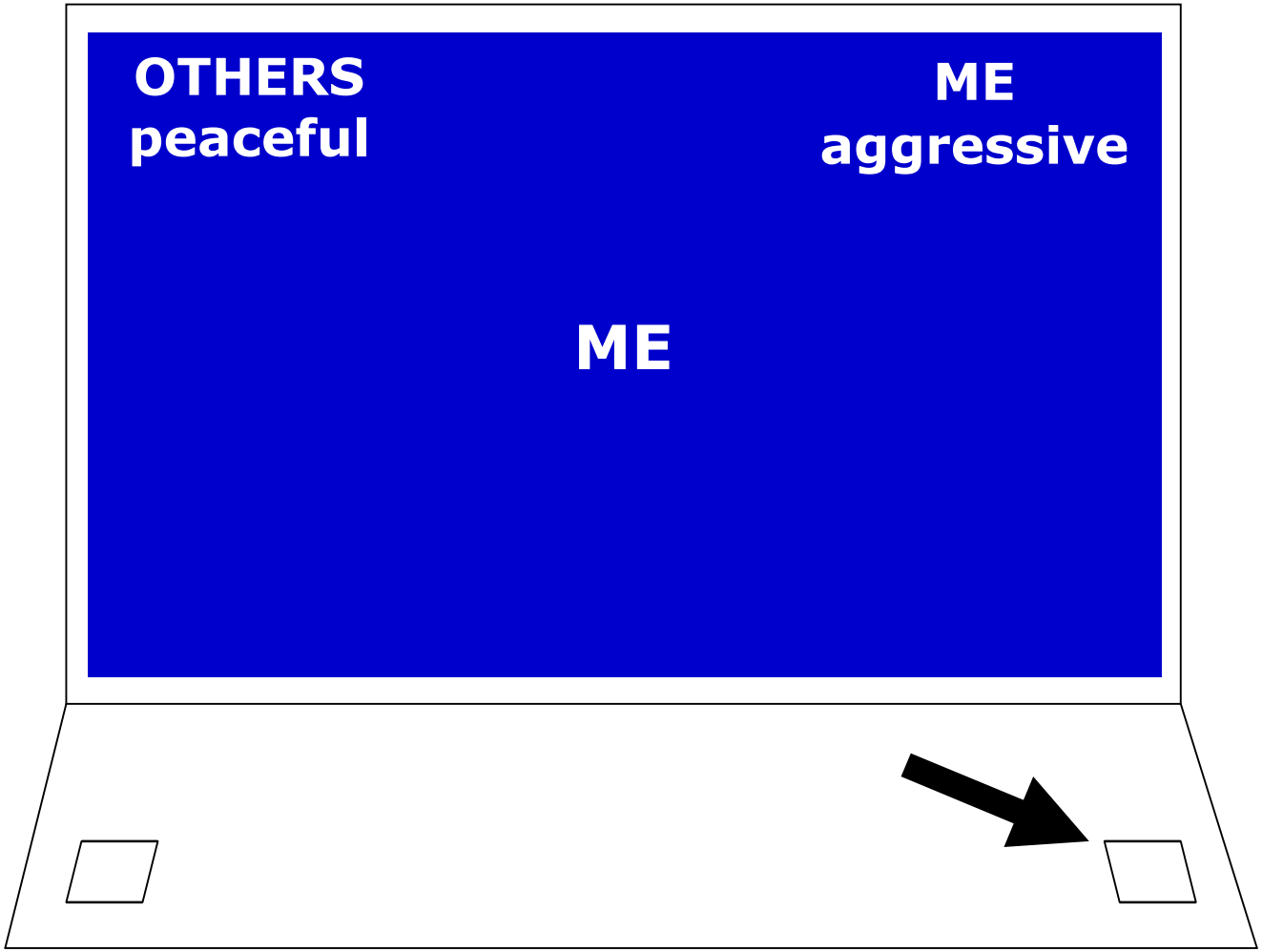

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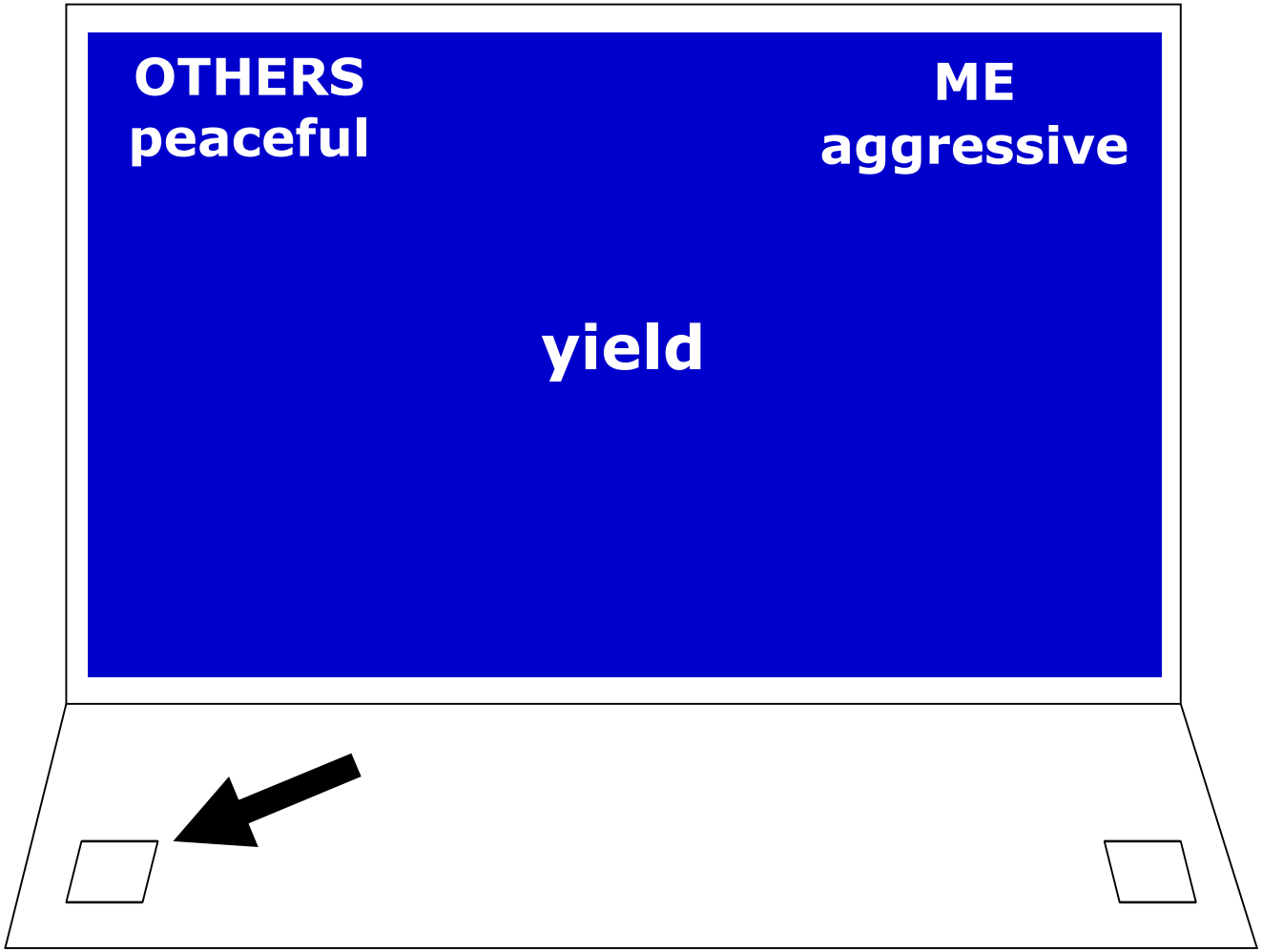

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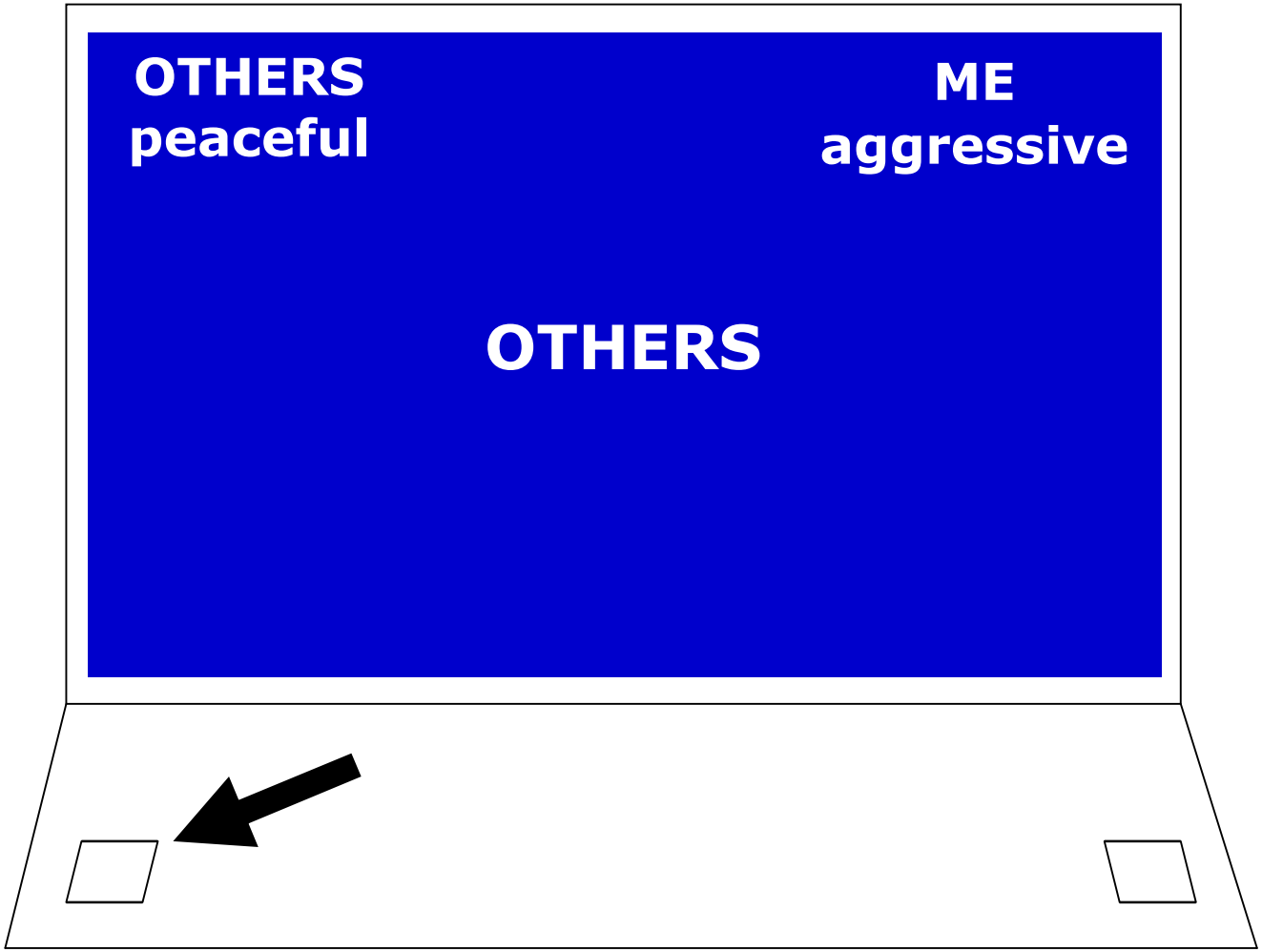

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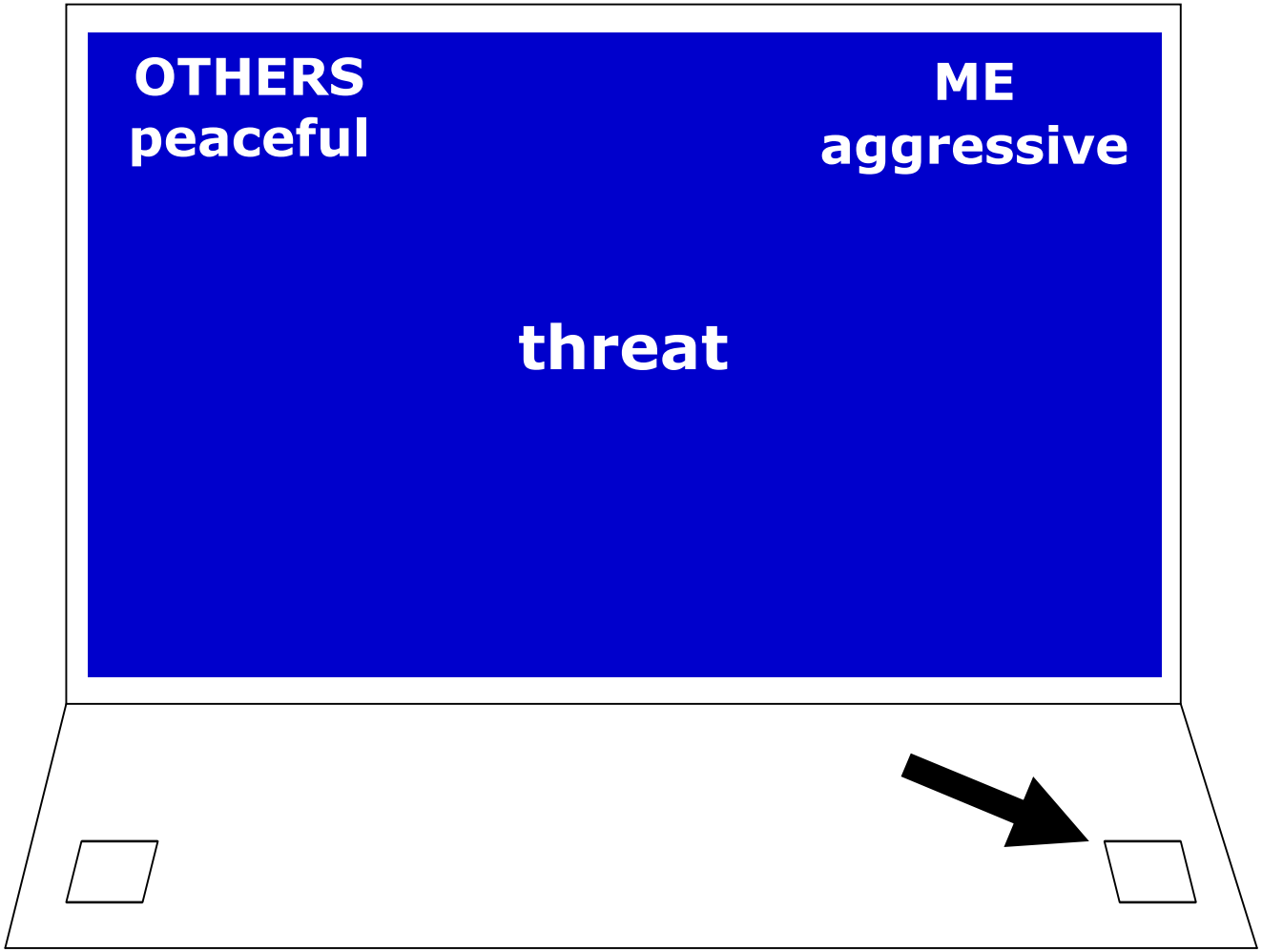

3. Design

Method

Design

- Prospective longitudinal study over 6 years

Sample

- Initial sample (N = 524) men and women
- Age 17-26 years (mean 19.1)
- Data collection after passing theoretical exam (before autonomous driving)
- Effective sample N = 487

Measures

Aggressiveness

- Explicit Aggressiveness (FAF, α = .84)
  - Spontaneous Aggressiveness
  - Reactive Aggressiveness
  - Impulsiveness
- Traffic-related aggressiveness (adapted version of the AVIS, α = .93)
- Implicit Aggressiveness (Agg-IAT, α = .78)

Traffic Related Attitudes

- Traffic related risk taking (α = .84)
- Attitudes toward showing off (α = .90)
- Acceptance of traffic rules (α = .62)

Objective criteria of driving behavior

Traffic Offenses

- Entries in the Central Traffic Database (VZR; specific offenses, suspension of driver's license)
- Yearly readout for all participants
- Expert rating of traffic offenses regarding their degree of aggressiveness (dangererousness, social norm violation, risk taking)

Means of analyses

- Correlations
- (Multiple logistic regressions)

4. Preliminary Results

Incidence of traffic offenses

N = 524	Women	Men
Passed practical driving test (N = 487)	247	240
Observation Period T1 to T2	1.4 – 4 years mean 2.7 years	
Number of drivers with registered traffic offenses	17 (6.9%)	49 (20.4%)
Suspensions of driver‘s licenses	2 (0,8%)	13 (5.4%)

Prediction of traffic offenses

Women	Offenses (yes/no)	Number of offenses	Suspension of license
Aggressiveness			
Explicit Aggressiveness (FAF)	.13*	.08	-.07
- Reactive Aggressiveness	.17**	.11	-.02
Traffic-related Aggressiveness (AVIS)	.03	.01	-.07
Implicit Aggressiveness	-.06	-.05	-.08
Traffic related attitudes			
Traffic related risk taking	-.04	-.07	-.04
Showing off	.07	.07	-.02
Non-acceptance of traffic rules	.09	.05	.00

Prediction of traffic offenses

Men	Offenses (yes/no)	Number of offenses	Suspension of license
Aggressiveness			
Explicit Aggressiveness (FAF)	-.04	.07	.09
- Reactive Aggressiveness	-.03	.08	.13*
Traffic-related Aggressiveness (AVIS)	.09	.19**	.15*
Implicit Aggressiveness	.04	.07	.10
Traffic related attitudes			
Traffic related risk taking	.08	.15*	.15*
Showing off	.07	.15*	.15*
Non-acceptance of traffic rules	.07	.14*	.08

Prediction of traffic offense quality

Men N = 44	Aggressiveness	Riskiness	Norm violation	Dangerouseness
Aggressiveness				
Explicit Aggressiveness (FAF)	.37*	.30*	.43**	.43**
- Reactive Aggressiveness	.32*	.32*	.44**	.32*
Traffic-related Aggressiveness	.30*	.31*	.37*	.33*
Implicit Aggressiveness	.20	.20	.08	.25
Traffic related attitudes				
Traffic related risk taking	.37*	.40**	.42**	.32
Showing off	.25	.28	.33*	.25
Non-acceptance of traffic rules	.23	.21	.27*	.27*

5. Conclusion

Conclusion

After 1.4 to 4 years (mean 2.7) of driving

- 20.4% of men and 7% of women were registered at the VZR
- 5,4% of men and 0,8% of women lost their licence due to traffic offenses

Personality factors and attitudes predicted driving offenses

- Reactive and traffic-related aggressiveness
- Risk taking, non-acceptance of traffic rules, showing off
- At present, no significant effect of implicit aggressiveness

Open Questions

Influence of longer observation period

- Higher rate of traffic offenses (after 2-year probation period) may increase predictive validity of personality variables
- Longer retest interval may decrease predictive validity due to personality change

Consequences for traffic safety

Improving prevention

- An early identification of novice drivers at risk could allow voluntary secondary prevention programmes
- Identification of aggression-related risk factors could improve tertiary prevention programmes
- The efficiency of such prevention programmes would need to be evaluated in randomized control trials

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Thank you for your attention!