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**Social-moral driving competencies in
driver training and testing**
A tool for coaches and examiners

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Overview

- Driving and moral reasoning
- Driving style profile: self-assessments
- Results
- Conclusions and perspectives



The team

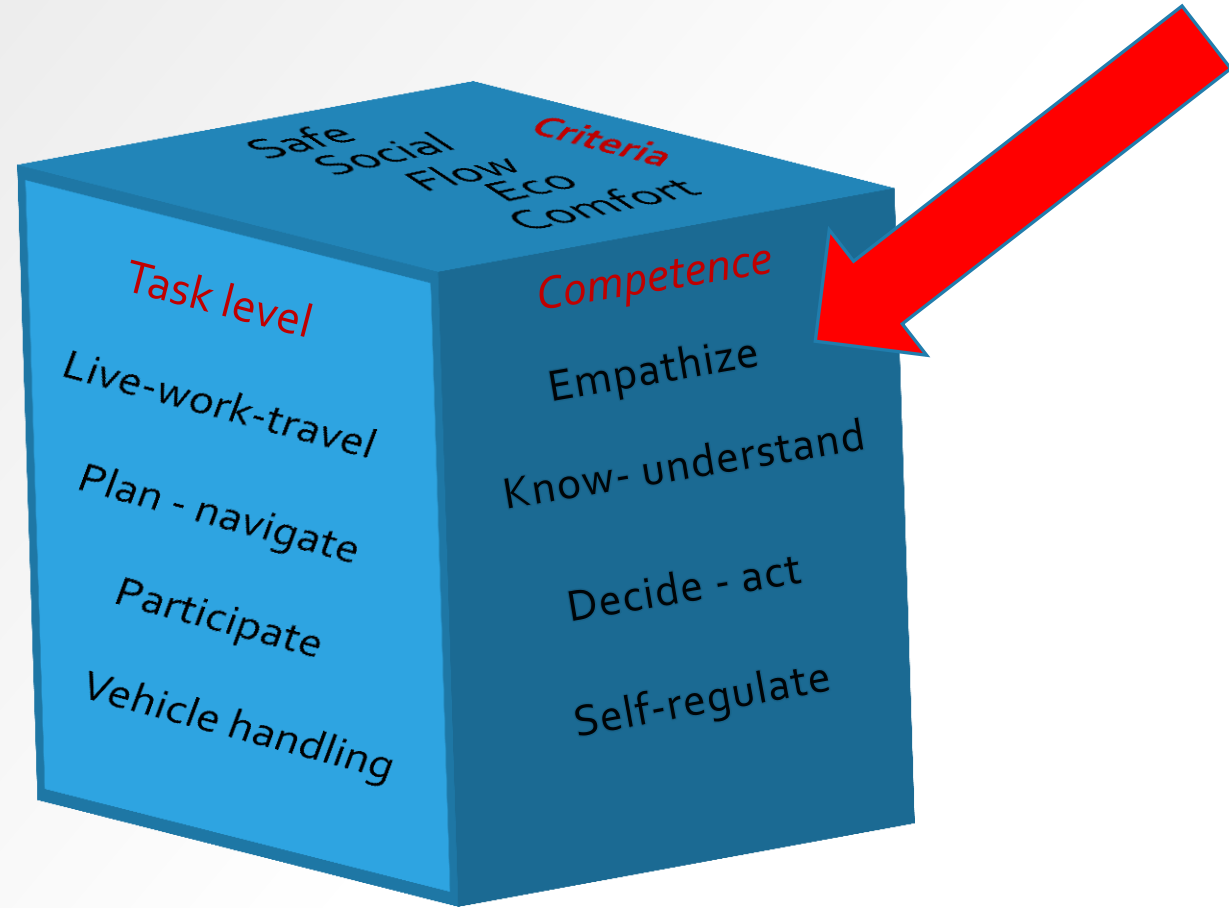
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1. DRIVING AND MORAL REASONING



1.1 Cube of driving competence



Neglected part:
social-emotional competence

1.2 Moral reasoning (Gibbs)

Reasoning: What is wrong and right in a personal situation?

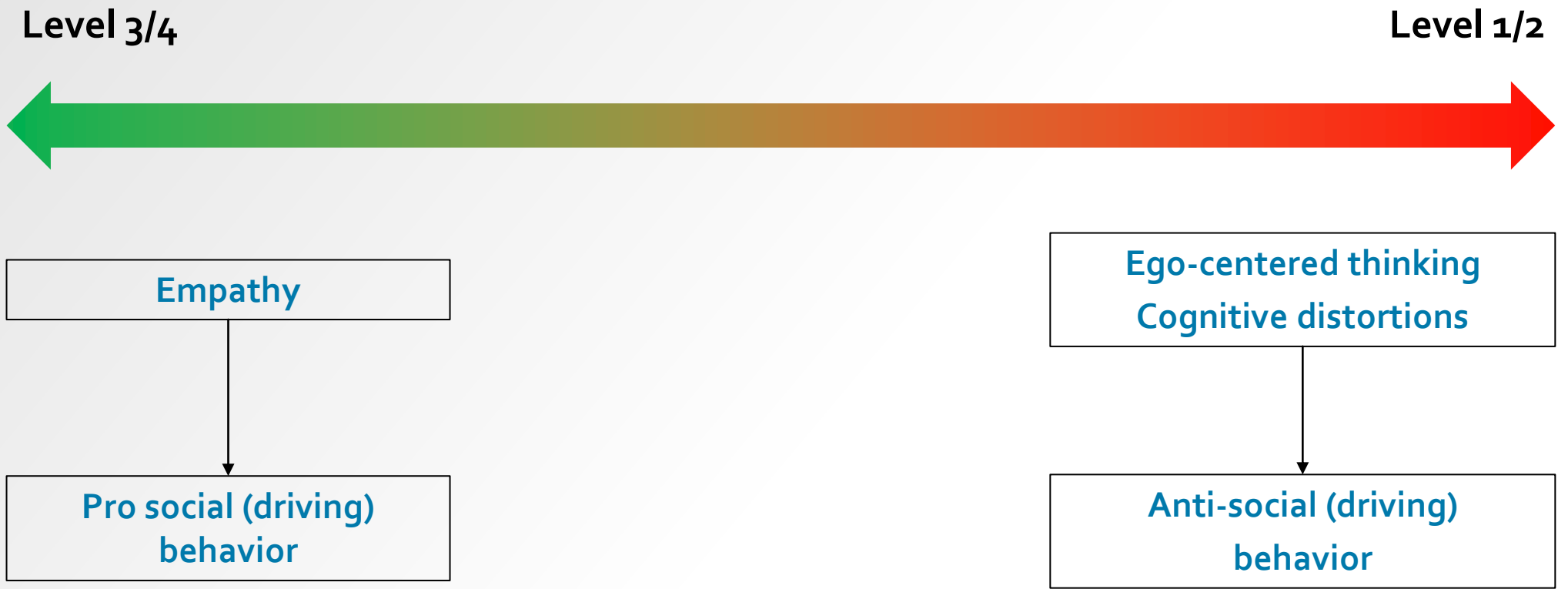
Dilemmas: Obey speed limit? Others go first? Lie? Be honest?

“Immature” reasoning

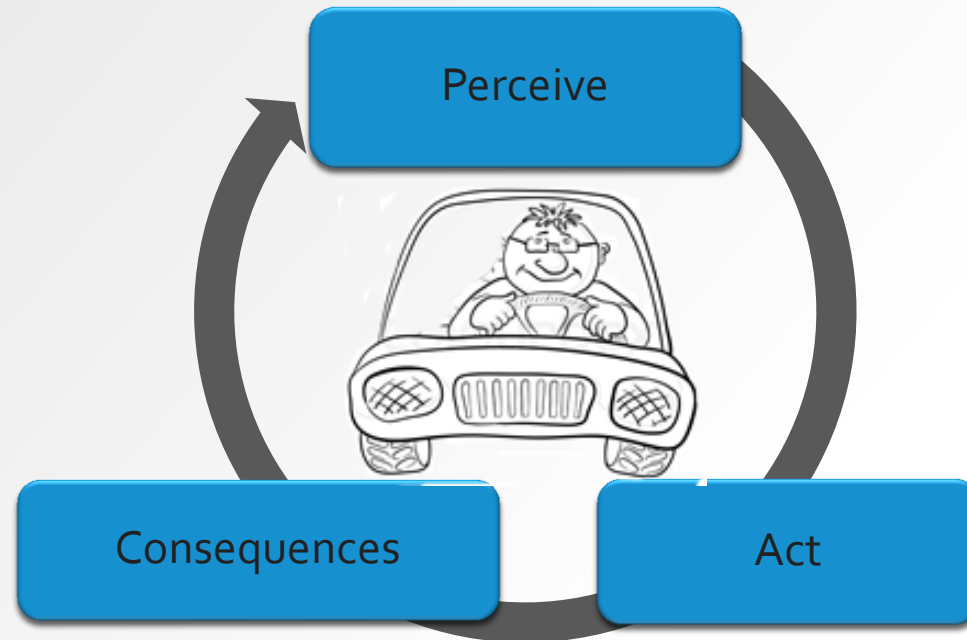
- **Level 1:** Punishment and reward; short term thinking.
- **Level 2:** Own preferences and pragmatics are central. Give a little, take a little.
- **Level 3:** Well being of other. Awareness of consequences of own behavior for others. reciprocity: I would like others to do the same for me, so I will do it
- **Level 4:** Functioning of society important, common interest is preferred above one’s own interest.

“Mature” reasoning

1.3 Moral reasoning: pro-social and anti-social driving behavior



1.4 When does moral reasoning show in traffic?

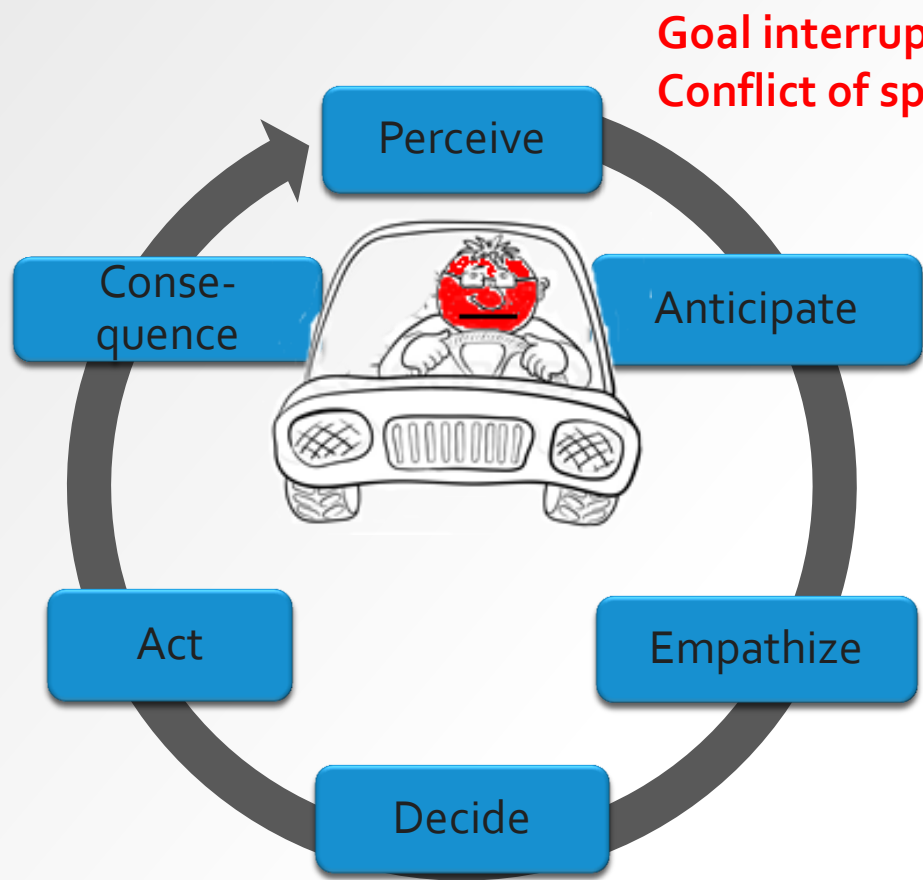


Automated driving: no conflicts of space, few dilemmas

1.5 When does moral reasoning show in traffic?

-: Narrow escape
+: Gain time

Space competition
Allotting others space
Violation, offense



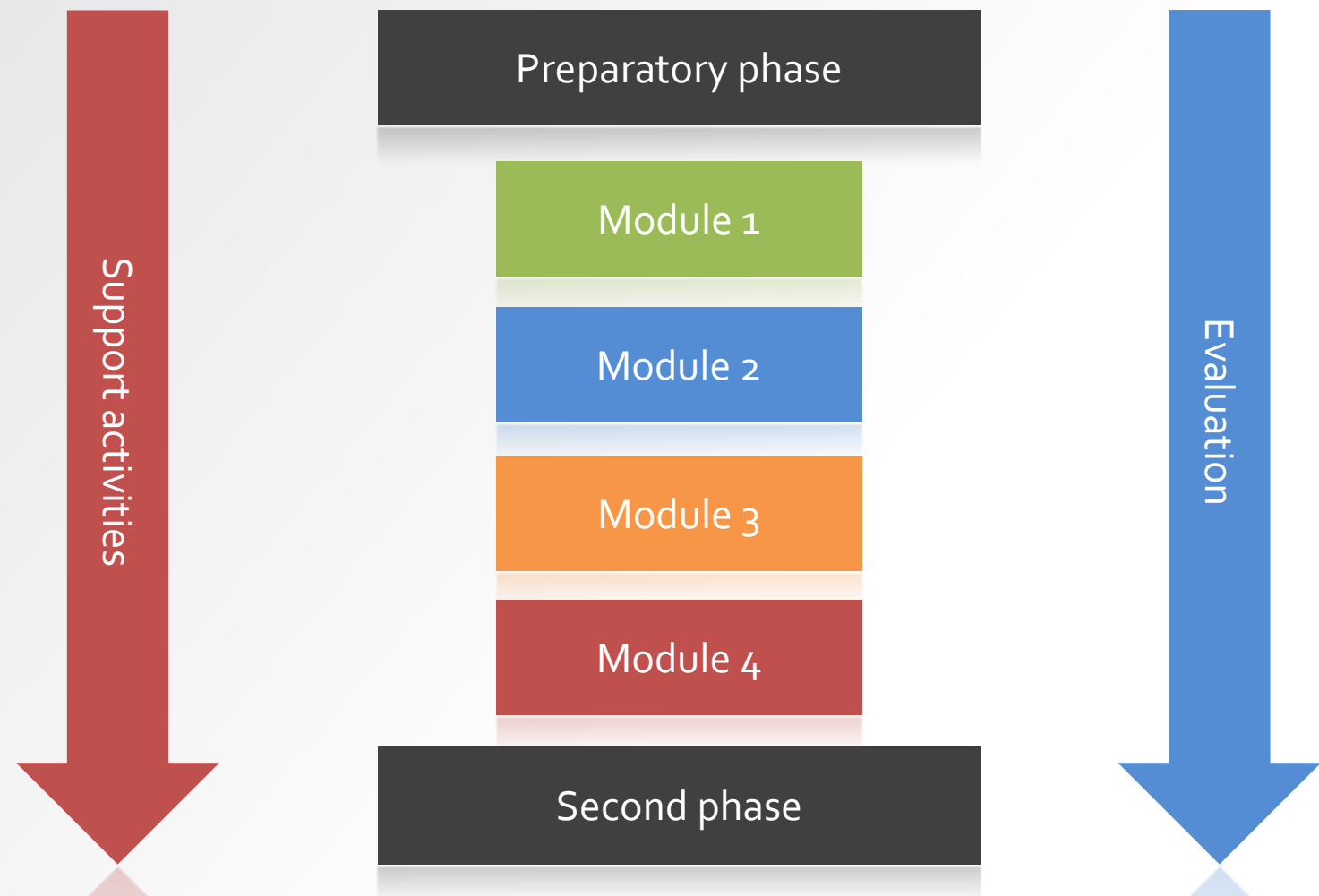
Goal interruption: red light
Conflict of space: others

What will happen when...

Ego-perspective
Other perspective

Pro-social vs. anti social choice
Rule compliance or violation

1.6 Context: ROM, driver training tailor-made





1.7 Research questions


- Which levels of moral reasoning can be observed amongst young novice drivers?
- To which extent is moral reasoning related to driving behavior, including speed choice, rule compliance, traffic violation and accident rates?
- How can a tool to elicit socio-moral reflection on the part of the young novice driver be integrated in training and testing?

2. SELF-ASSESSMENTS AND ADDITIONAL DATA COLLECTION

SELF EVALUATION

I don't understand. I need more work on this. 

I'm almost there. I might need a bit of extra help or practice. 

I can do this! I'm ready to move on. 

2.1 Three online self-assessments

1. Jusitification of rule compliance
2. Self-serving cognitive distortions to justify non-social driving behavior
3. Decisions in situations with a conflict of space

2.2 Justification of rule compliance

15 traffic situations, that often elicit violations

Sample item:

You are driving a route you know well
On an intersection with a cycle path you
approach a red light. There is no crossing
cyclist.



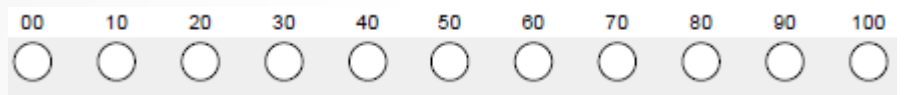
Out of 10 times that you come across this situation, how many times would you run through the red light?

0 1 2 3 4 5 6 7 8 9 10

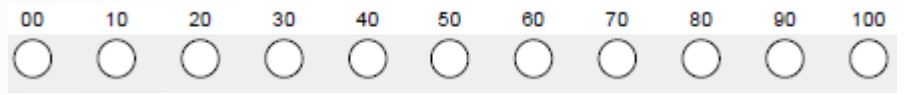
2.3 Four levels of justification

In those cases that you do NOT run through the red light, what are your motives to do so?
Distribute in total 100 points over the reasons below:

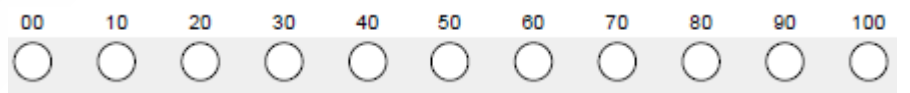
I want to prevent getting fines or being stopped by the police



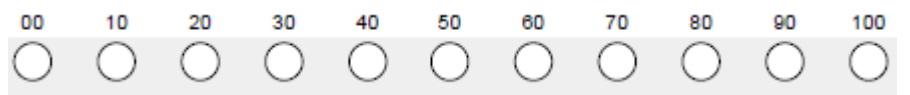
I want to prevent that I end up in a troublesome situation (danger, discomfort)



I do not want to bother other road users (nuisance, danger, discomfort)



I want to prevent the traffic to become unsafe of disturbed because of me



2.4 Self-serving cognitive distortions

34 statements: sample items

- **Self-Centered:** “When I can make an important business deal, I send text messages while driving.”
- **Blaming Others:** “When I follow someone within a short distance on the highway, it is because he does not clear the road for me in time.”
- **Minimizing/Mislabeling:** “If I return quickly, it is no big deal to park my car in a restricted area.”
- **Assuming the Worst:** : “When I want to merge into traffic, other road users won’t let me in voluntarily”

2.5 Decisions in situations with conflict of space

18 traffic situations

You are the driver of car A. From this point on, car B on the outer lane wants to move towards the middle lane, because the left lane is about to end. What do you choose to do?



Prosocial option

I reduce speed in order to let car B merge

Egocentric option

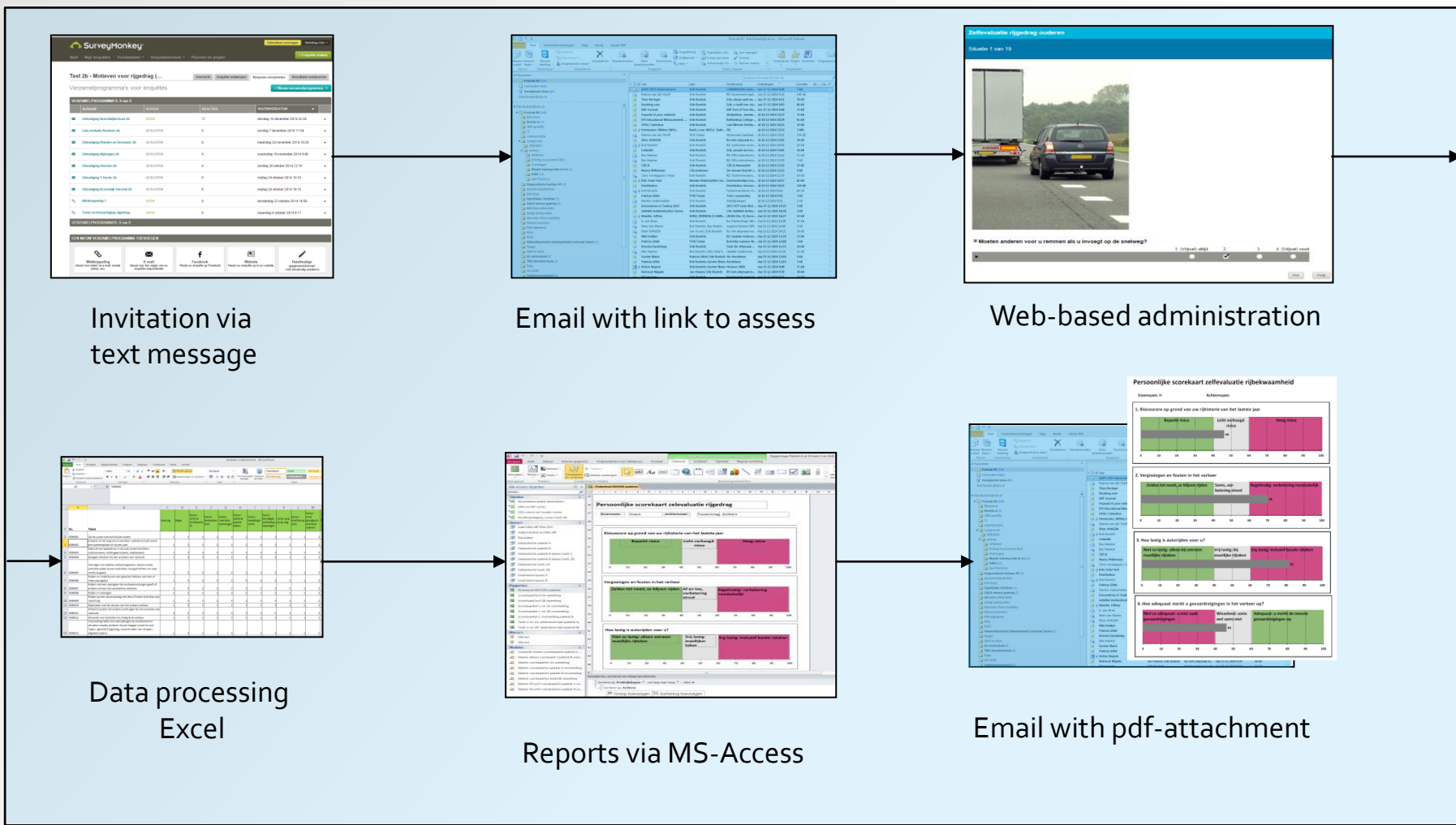
I accelerate in order to prevent car B to get into the middle lane

2.6 Additional data collection

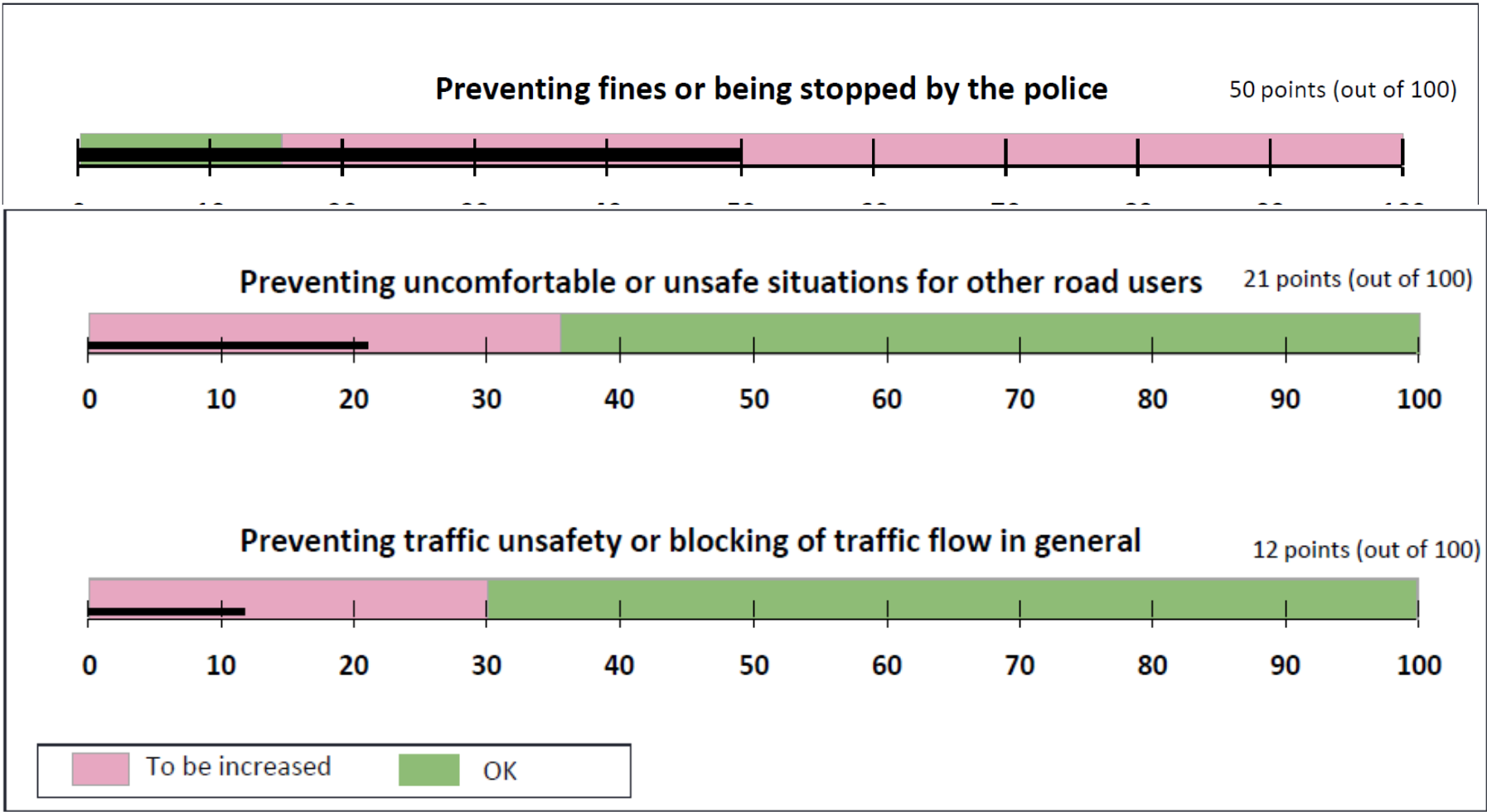
Driver Risk Assessment questionnaire (Roelofs et al , 2011)

- Violation of speed limits under various circumstances (9 items, $\alpha = 0.92$)
- Exposure to various risky traffic situations (5 items, ($\alpha = .78$))
- Driving on outer lanes (5 items, $\alpha = 0.75$)
- Frequency of traffic violations (15 items, $\alpha = .82$)

2.7 Data collection procedure



2.8 Feedback: example



3. RESULTS





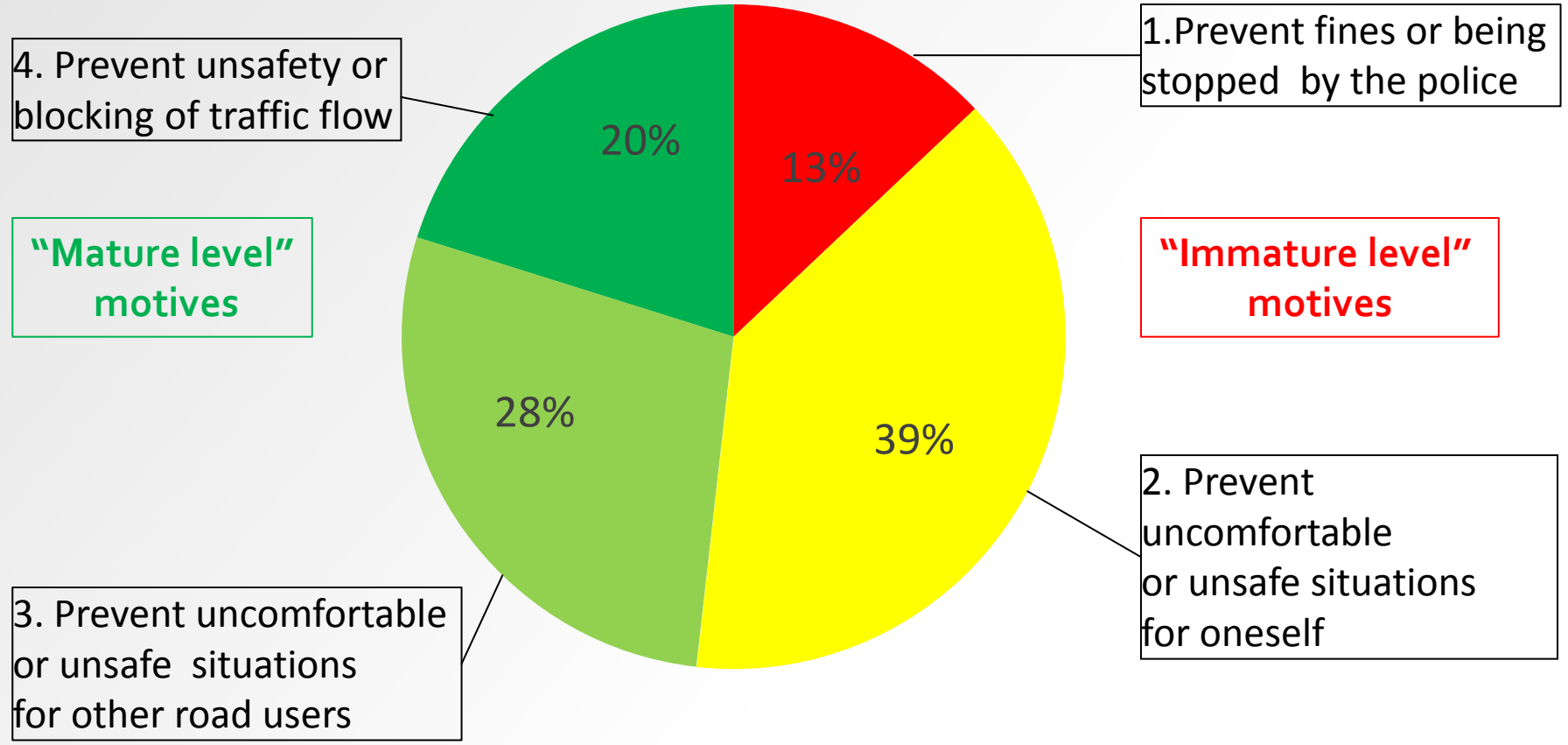
3.1 Research sample

- Participants second phase program (n>1,600)
- ROM pilot project (>100)

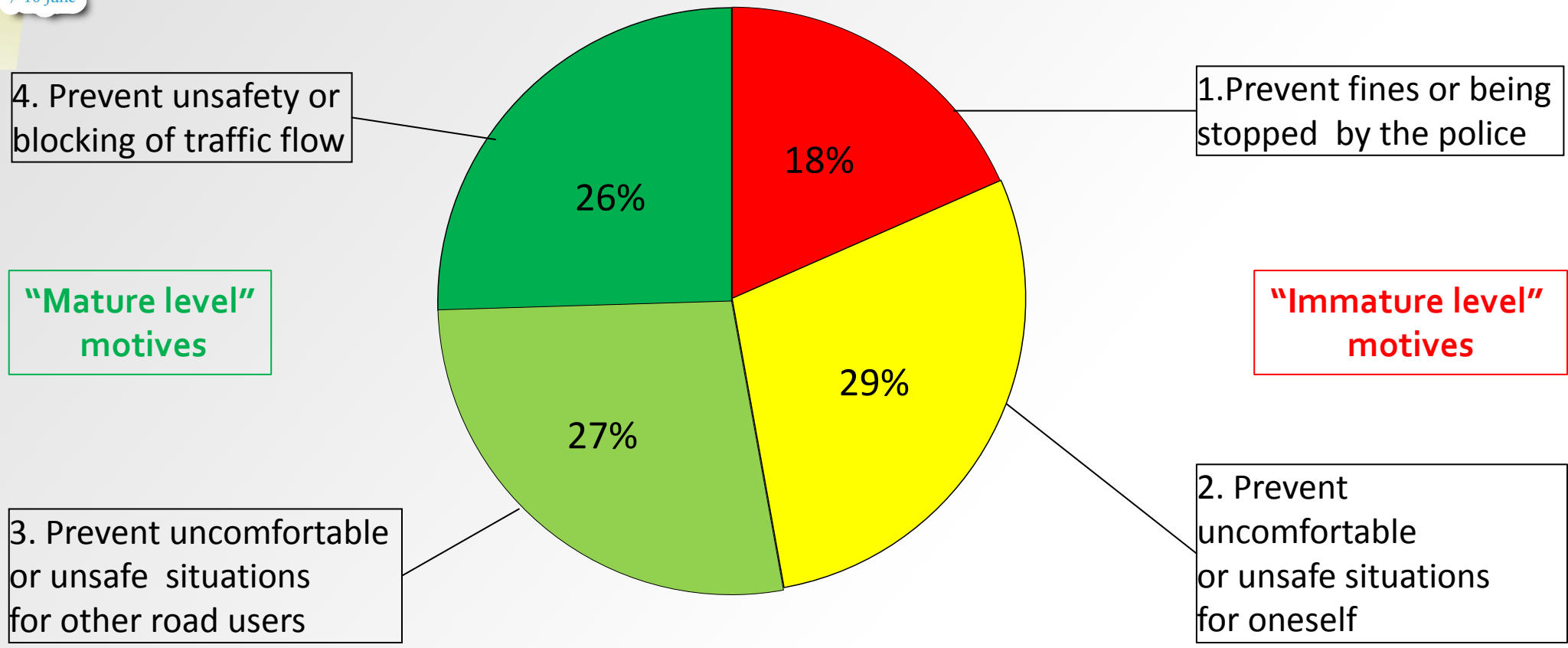
	Age	N
Male	19.7	479 (49,1%)
Female	20.1	497 (50,9%)

	%	Population
Secondary education	5.2%	11.6%
Intermediate vocational education	27.9%	21.6%
Higher education	51.2%	29.4%
Working or between jobs	16.4%	37.4%

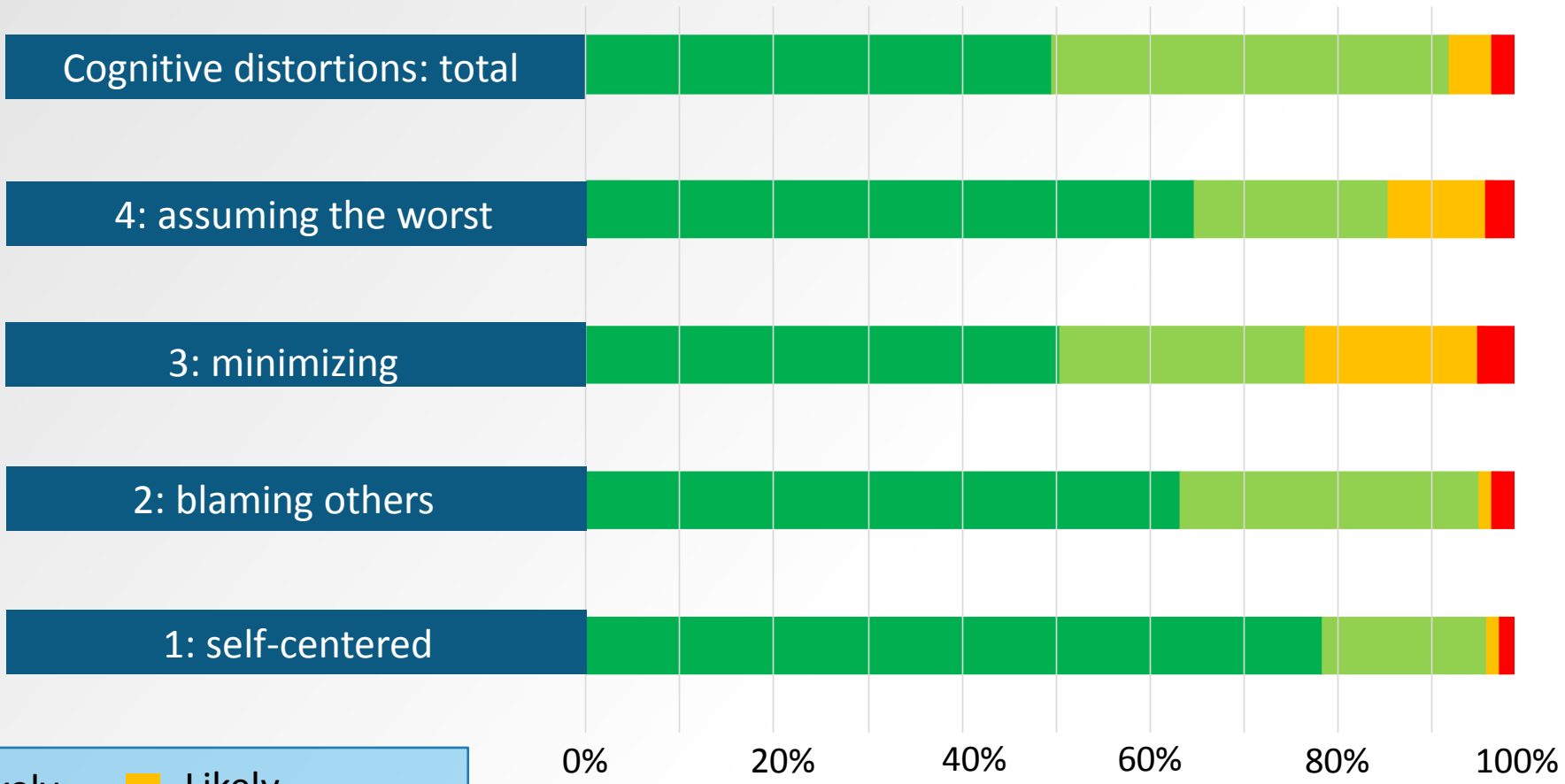
3.2 Justification of rule compliance: before driver training



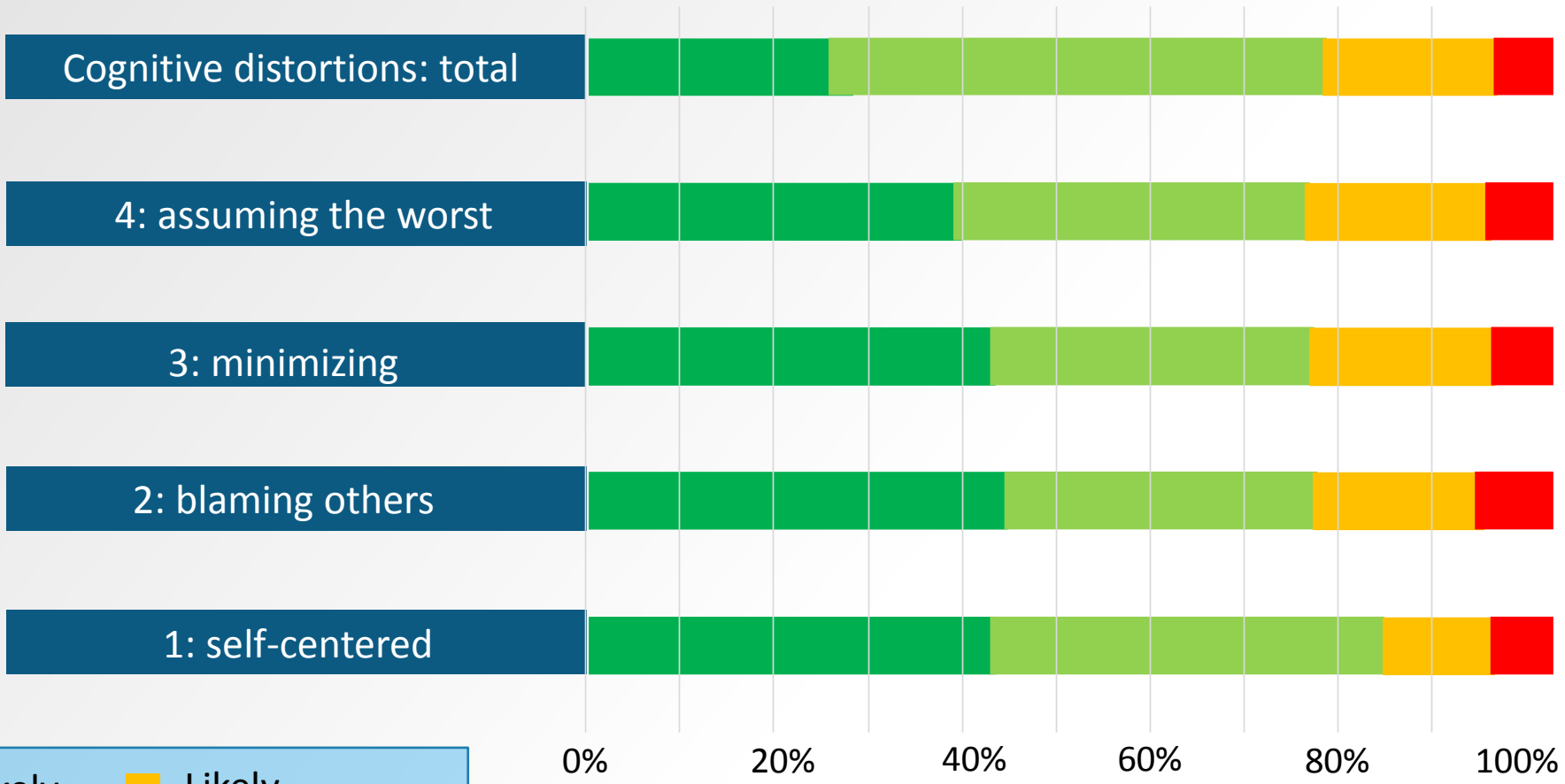
3.3 Justification of rule compliance: half a year driving experience



3.4 Cognitive distortions: start of driver training



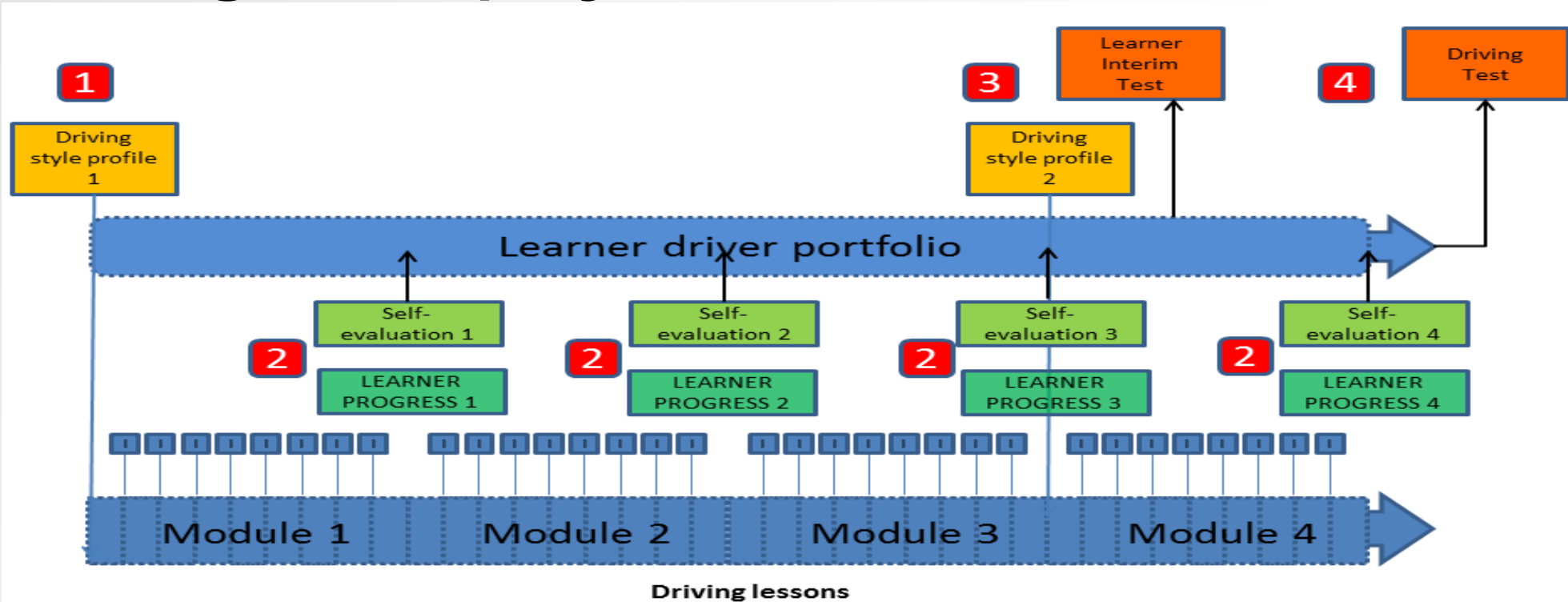
3.5 Cognitive distortions: half a year of driving experience



3.6 Reliability and validity

- Aspects of moral reasoning can be measured reliably
- 20% of drivers use cognitive distortions
- Low levels of moral reasoning are significantly associated with higher driving speeds, more traffic offenses and higher accident involvement
- Male gender and high mileage predict lower levels of moral reasoning

3.7 Use of self-assessments in training and testing: ROM project



3.8 Usefulness of tool in training and testing

- Learner drivers have an enhanced insight into their personal risk factors and are stimulated to reflect on these factors
- The tool helps to elicit socio-moral reflection by young drivers and to discuss how they can drive in a socially and morally responsible way
- Driving coaches can tailor the training to the needs of the learner drivers
- By building up a portfolio, personality related driving competencies can also be integrated into the driving test

4. FINAL CONCLUSIONS AND PERSPECTIVES



4.1 Conclusions

- Reliable and valid tool
- Useful in driver training and testing, especially to address personality related driving competencies (level 4 of the GDE-matrix)
- Supports driving teachers in their coaching role



4.2 Restrictions

- Perceptions of own driving
- Cognitive distortions and driving may be confounded in the self-assessment
- Validation by means of hard data is desirable (real number of fines vs reported; use of black box data; claims made to insurance company)

4.3 Implications for training and testing

- Driving competence is not only a matter of having the technical skills and the knowledge, but also of being ready to empathize with others and show appreciation of the traffic system
- Moral reasoning and empathizing are elements of personality related driving competence that do matter for driving style and safe and responsible driving
- There should be increased attention for socio-moral self-reflection in training and testing
- The driving style profile tool can help to realize that!

Thank you for your attention!

