Transportøkonomisk institutt
Stiftelsen Norsk senter for samferdselsforskning

www.toi.no

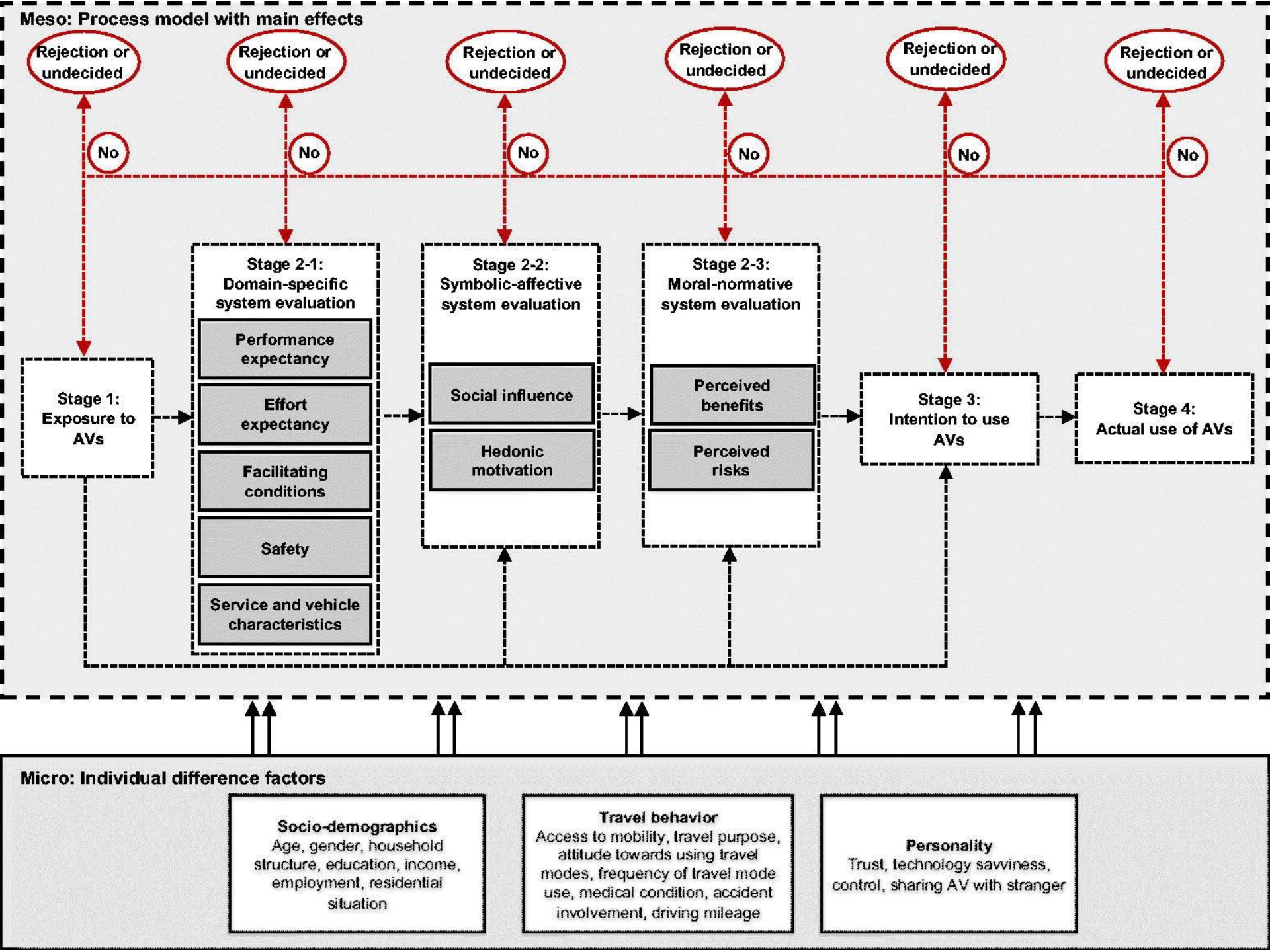
Investigating the social situation in autonomous shuttles

Ole Aasvik
PhD-candidate & Researcher

Ruter#

VIKEN FYLKESKOMMUNE

Statens vegvesen


Meso: Process model with main effects
Rejection or undecided
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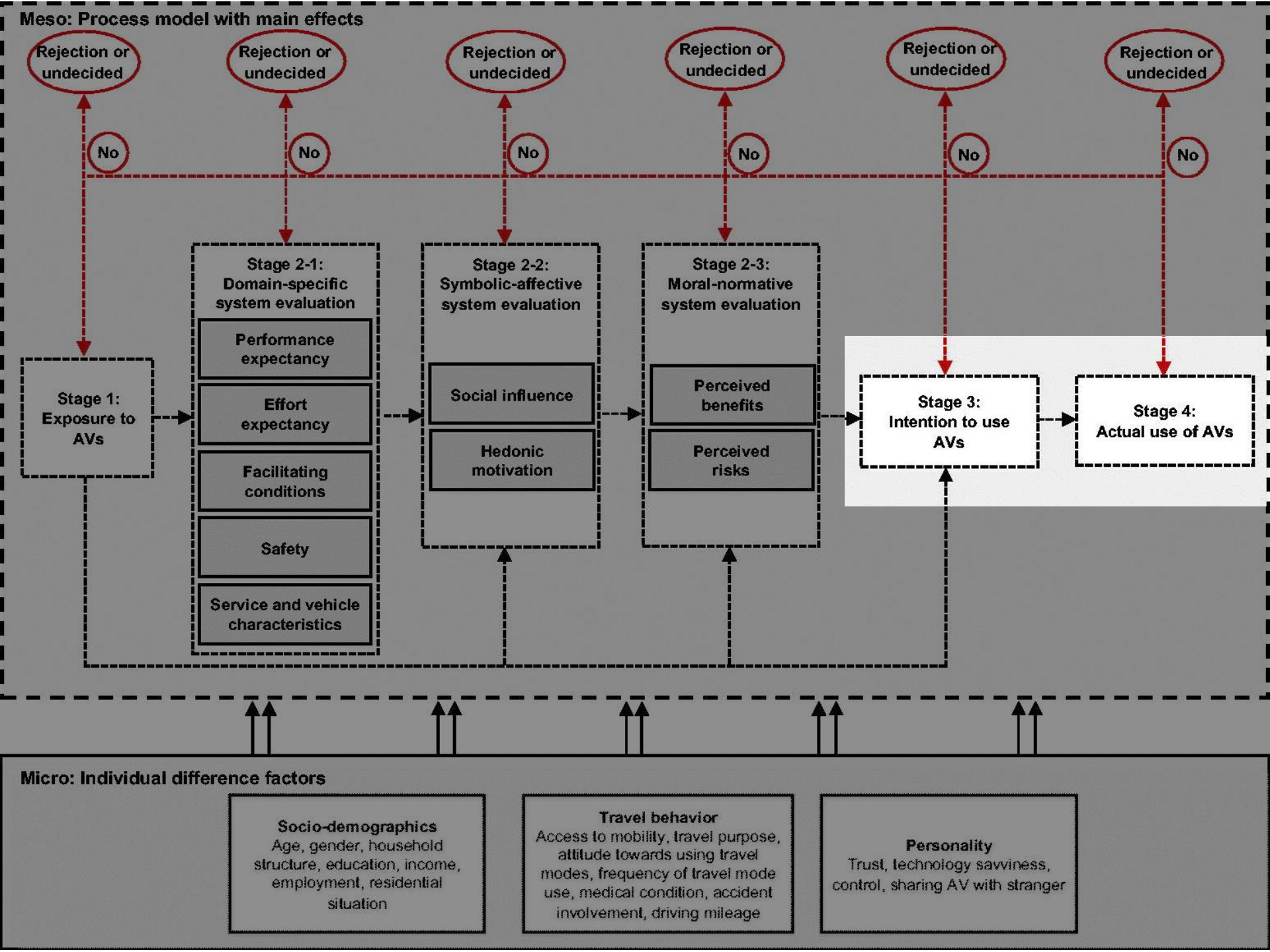
Stage 1: Exposure to AVs
Stage 2-1: Domain-specific system evaluation
Performance expectancy
Effort expectancy
Facilitating conditions
Safety
Service and vehicle characteristics
Stage 2-2: Symbolic-affective system evaluation
Social influence
Hedonic motivation
Stage 2-3: Moral-normative system evaluation
Perceived benefits
Perceived risks
Stage 3: Intention to use AVs
Stage 4: Actual use of AVs
Micro: Individual difference factors
Socio-demographics
Age, gender, household structure, education, income, employment, residential situation
Travel behavior
Access to mobility, travel purpose, attitude towards using travel modes, frequency of travel mode use, medical condition, accident involvement, driving mileage
Personality
Trust, technology savviness, control, sharing AV with stranger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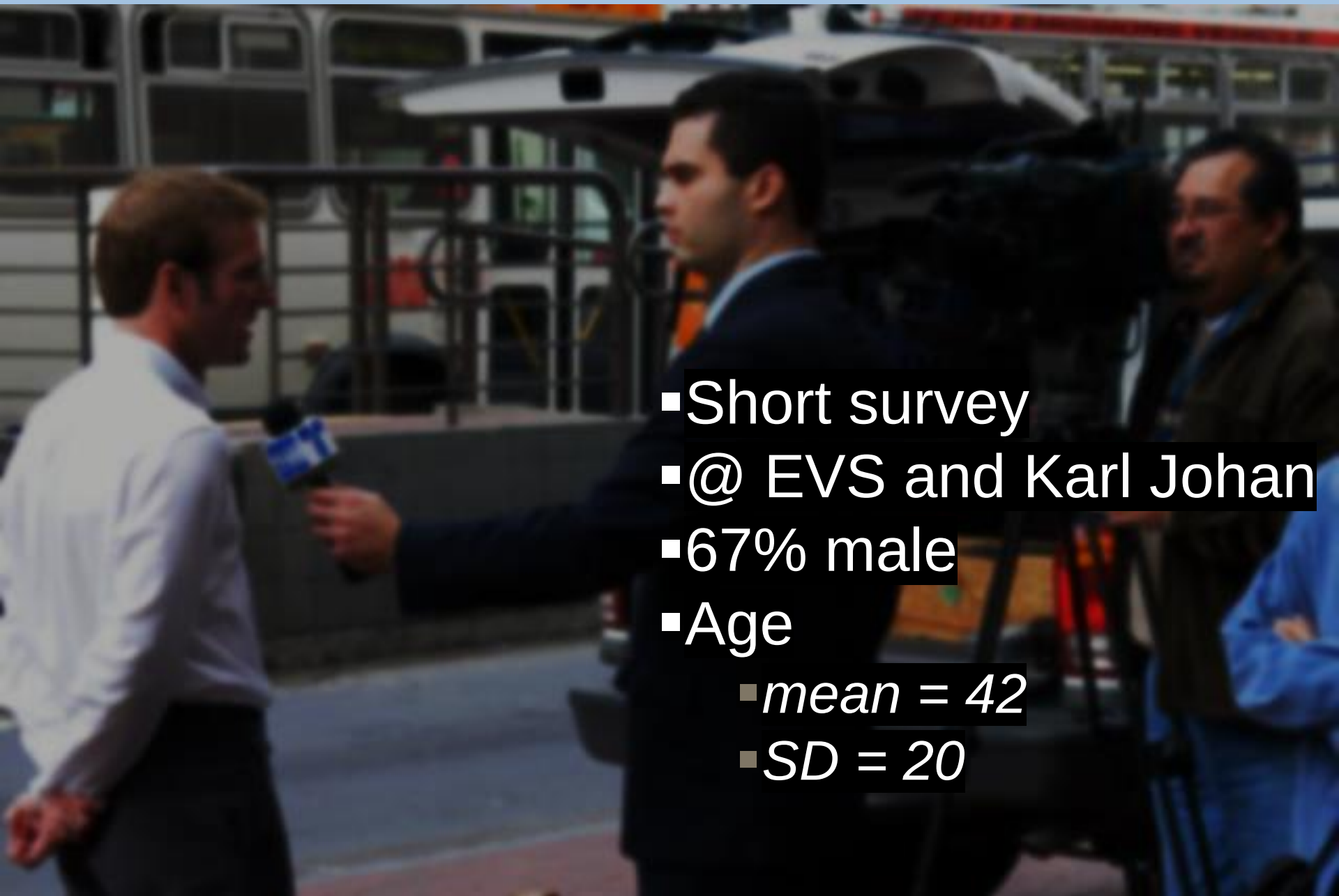
ZERO EMISSIONS VEHICLE



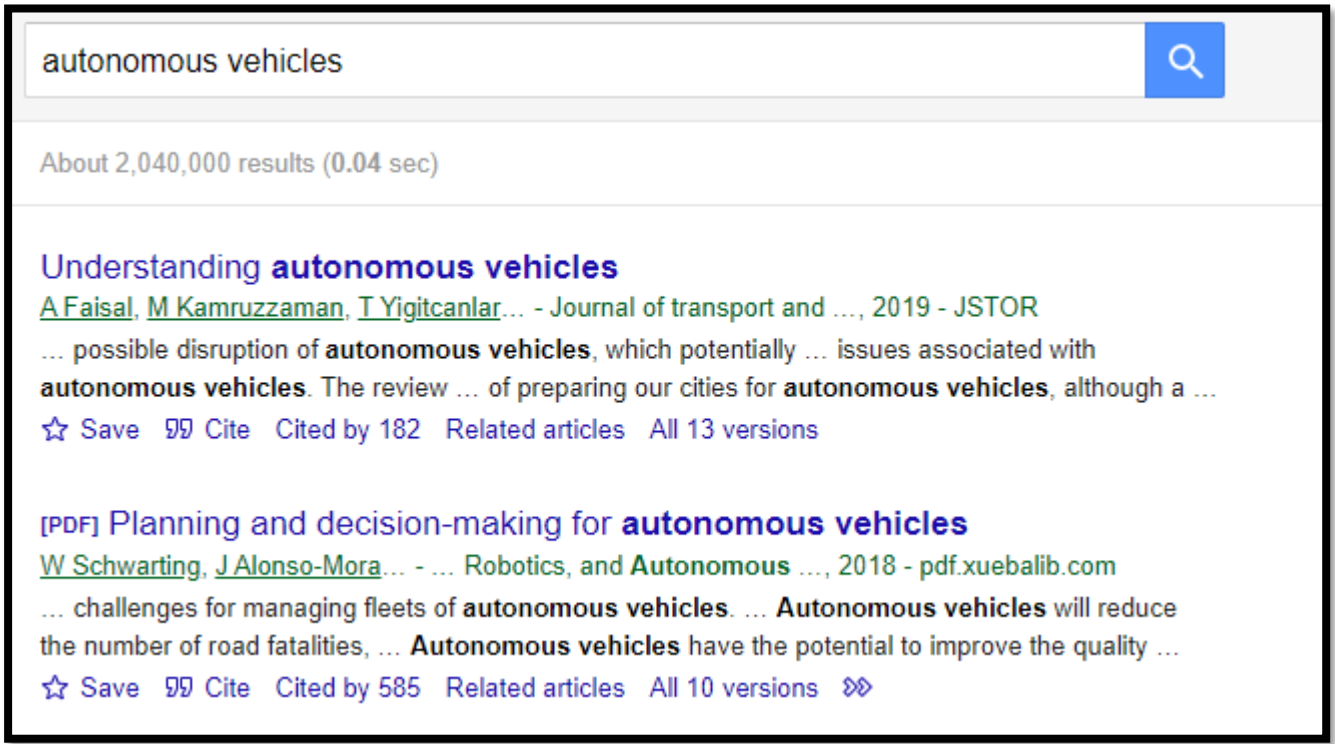
- Short survey
- @ EVS and Karl Johan
- 67% male
- Age
  - *mean = 42*
  - *SD = 20*

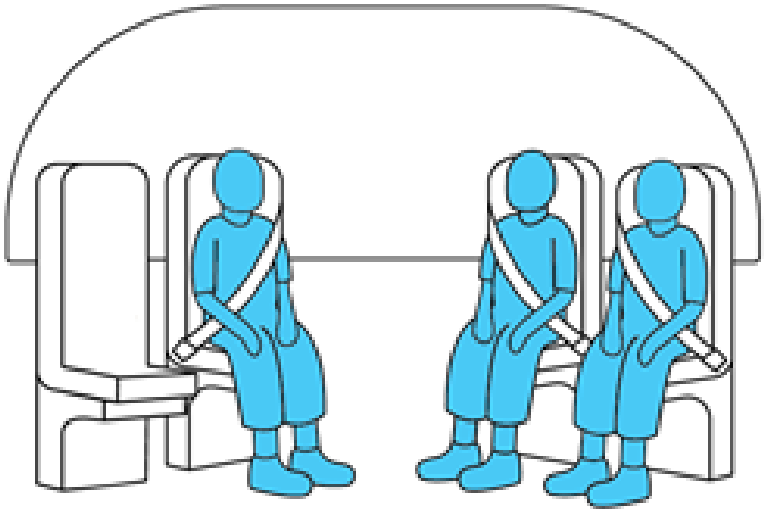
https://www.bloomberg.com/news/articles/2021-06-15/gm-s-cruise-unit-starts-preproduction-on-autonomous-shuttle

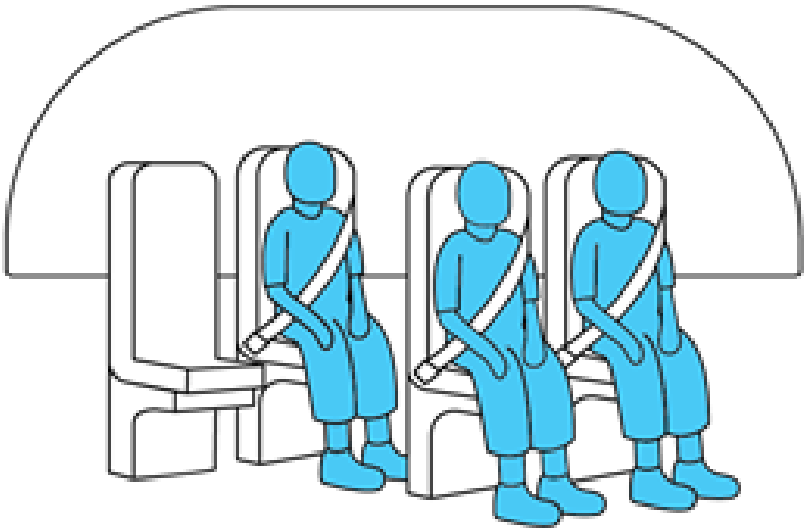
Know of the pilots		
	N	%
Never heard	87	37
Heard about	87	37
Seen	39	17
Tried	23	10

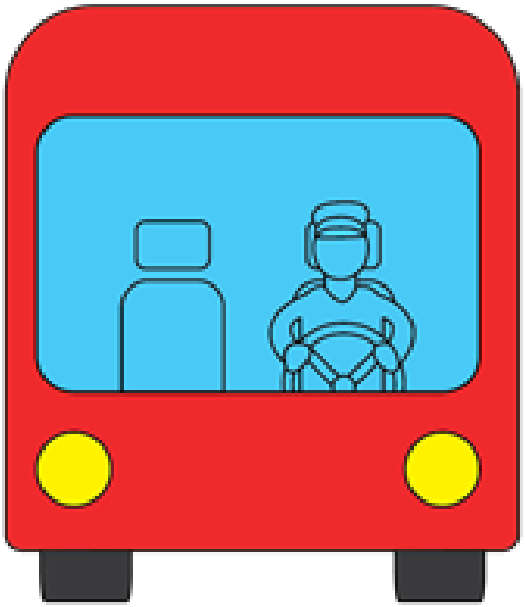
Previous research

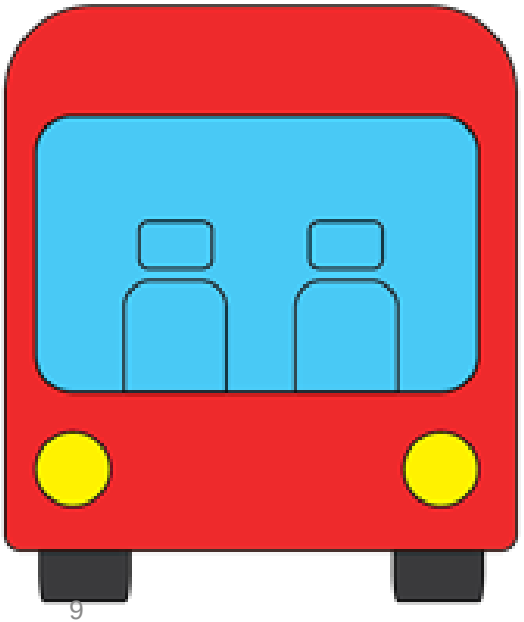
1. Technical
2. Car-focus
3. Scattered

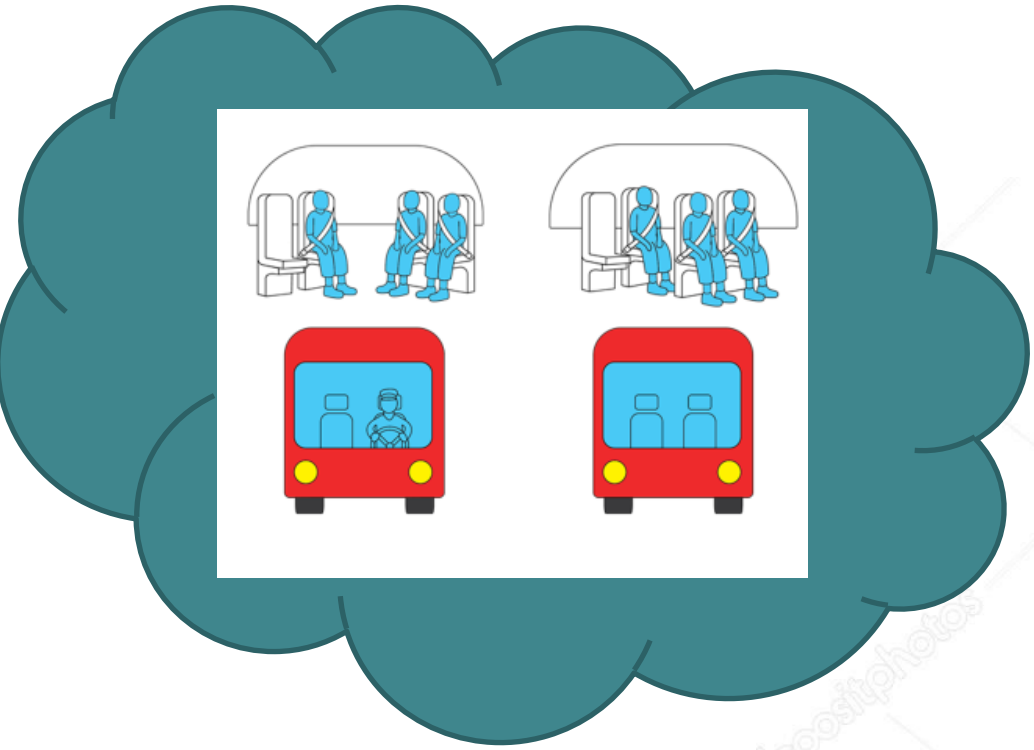




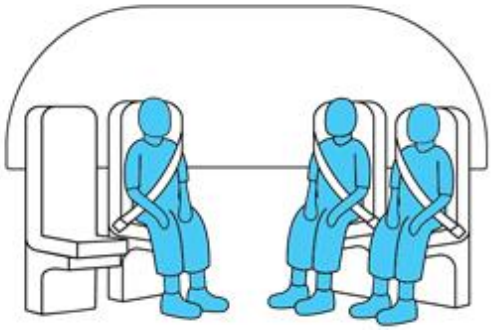




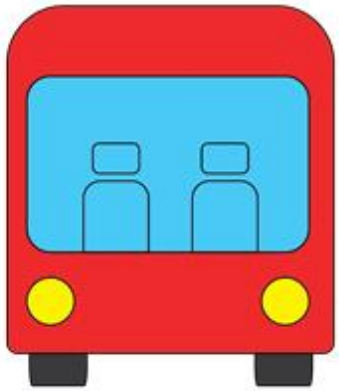




Irrelevant	6%
Facing each other	23%
Facing driving direction	70%



Irrelevant	7%
With driver	34%
Without driver	59%



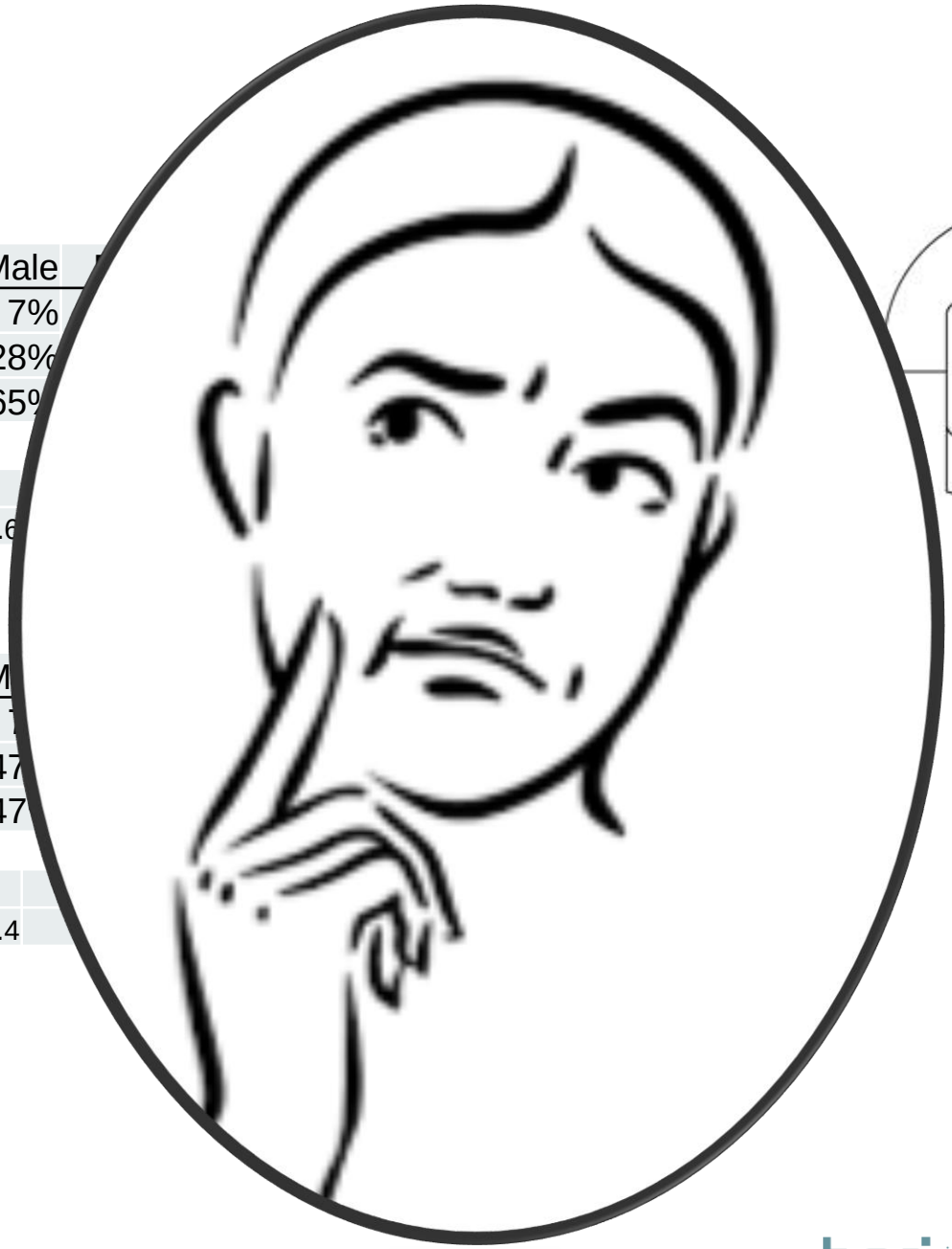
n = 236

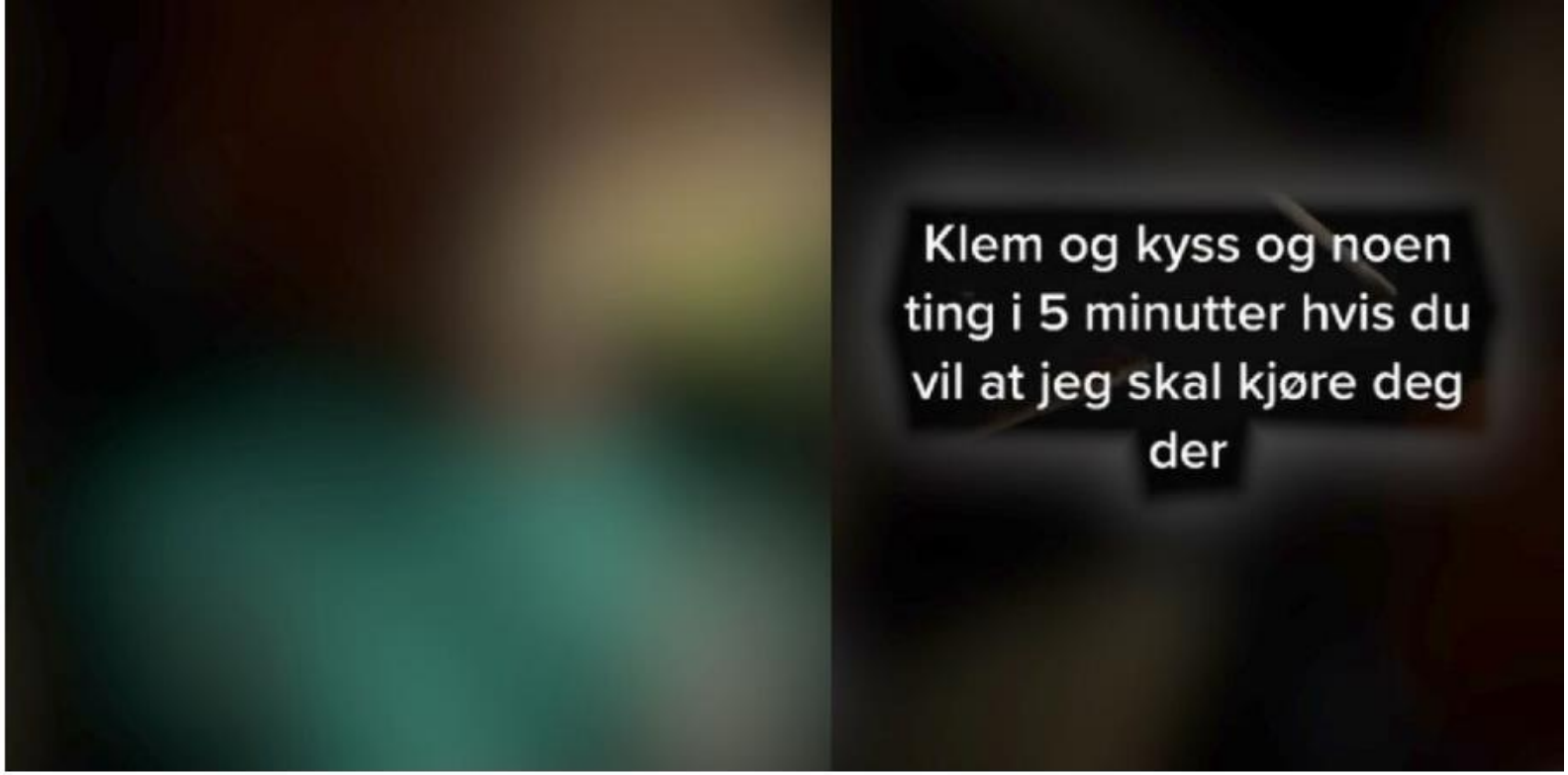
	Male
Irrelevant	7%
Facing each other	28%
Facing driving direction	65%

χ^2 Tests	7.6

	M
Irrelevant	
With driver	47
Without driver	47

χ^2 Tests	36.4





Taxi-sjef etter at sjåfør spurte ung kvinne om sex: – En skam for hele næringen

I forrige uke la studenten (22) ut en film på TikTok fra i fjor sommer hvor en taxisjåfør kom med seksuelle tilnærmelser helt til hun løp fra bilen. Torsdag beklager sjefen for taxiselskapet hendelsen, som kan ende i anmeldelse.

Unsafe before and underways

	Male	Female
Irrelevant	4%	9%
Yes	13%	17%
No	83%	74%

		p
χ^2 Tests	3.67	0.159

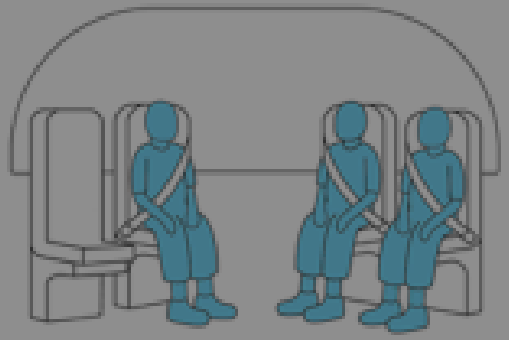
«Private»

«Social»

«Car sickness»

	Male	Female
Irrelevant	7%	5%
Facing each other	28%	13%
Facing driving direction	65%	82%

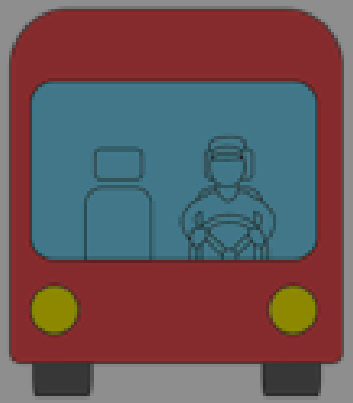
		p
χ^2 Tests	7.6	0.022

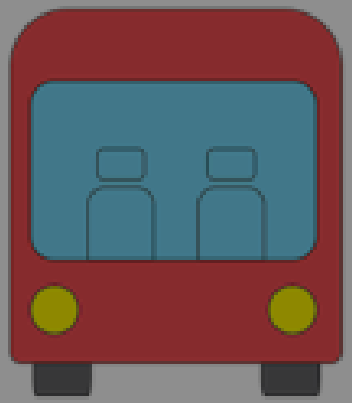


«Safety»

	Male	Female
Irrelevant	7%	6%
With driver	47%	8%
Without driver	47%	86%

		p
χ^2 Tests	36.4	< .001





«Security – both ways»

«Trust»

«Supporting drivers»

Male=159
Female=77

Dislike being close to others

	Male	Female
Yes	32%	38%
No	67%	62%

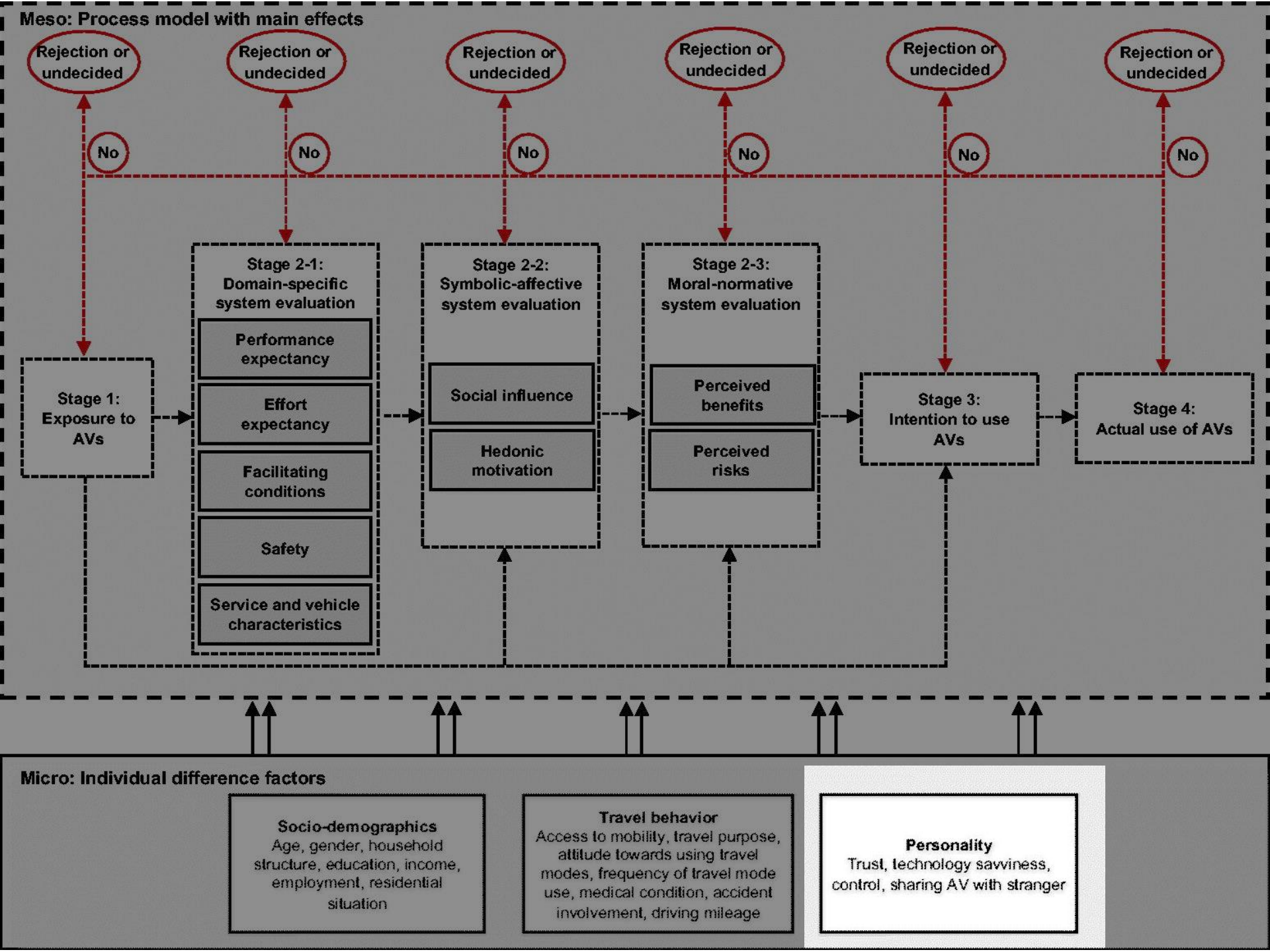
Will use shuttle when available

	Male	Female
Yes	94%	86%
No	6%	8%
Irrelevant	0%	6%

Prefer ‘bus’ or ‘car’

	Male	Female
Bus	56%	52%
Car	8%	9%
Irrelevant	36%	39%


dreamstime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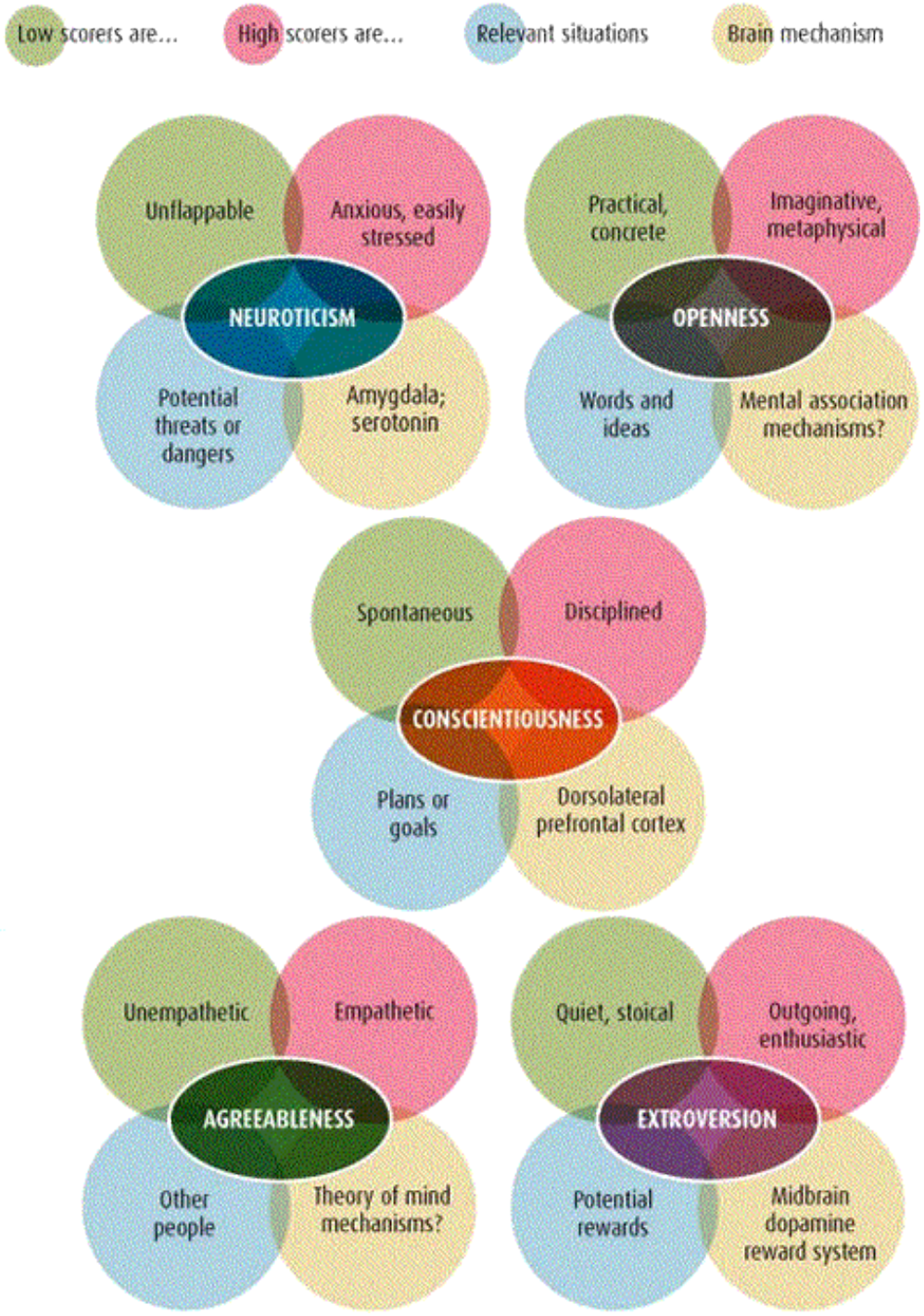
Low scorers are...
High scorers are...
Relevant situations
Brain mechanism
Unflappable
Anxious, easily stressed
NEUROTICISM
Potential threats or dangers
Amygdala; serotonin
Practical, concrete
Imaginative, metaphysical
OPENNESS
Words and ideas
Mental association mechanisms?
Spontaneous
Disciplined
CONSCIENTIOUSNESS
Plans or goals
Dorsolateral prefrontal cortex
Unempathetic
Empathetic
AGREEABLENESS
Other people
Theory of mind mechanisms?
Quiet, stoical
Outgoing, enthusiastic
EXTROVERSION
Potential rewards
Midbrain dopamine reward system

Social Dominance Theory

- **(Milfont et al., 2018) Norwegian (Ole Jacob Madsen)**
- Likhet mellom grupper bør være vårt ideal. (Equality between groups should be our ideal)
- Overlegne grupper bør dominere underlegne grupper. (Superior groups should dominate inferior groups.)


The End