

PSYCHOLOGICAL IMPLICATIONS OF AGEING



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(EAAP)

Selection of pilots - ab-initio and type rated pilots.

FRM and pilots personality profiling.

European Association for Aviation Psychology (EAAP)



Performance, Safety and Well being in Aviation

EAAP - History

- WEAAP, Western European Association for Aviation Psychology founded in 1956 by nine European psychologists
- Registered in the Netherlands
- Renamed into EAAP in 1994
- EAAP is an international, independent, non-profit organisation

EAAP - Mission and Vision

Mission

- The mission of EAAP is to promote the study and education of psychology and the pursuit of applied psychology and human factors in the field of aviation.

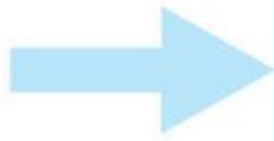
www.eaap.net



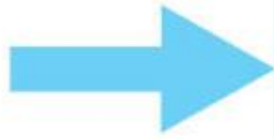
PSYCHOLOGICAL IMPLICATIONS OF AGEING

AGE 60 Rule Workshop

Biological
forces



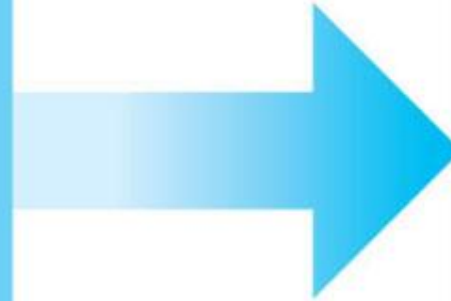
Psychological
forces



Sociocultural
forces



Life-
cycle
forces



Person





Percentage of Population Over 65 in 2000

The world's older population continues to grow at an unprecedented rate. Today, 8.5 percent of people worldwide (617 million) are aged 65 and over.

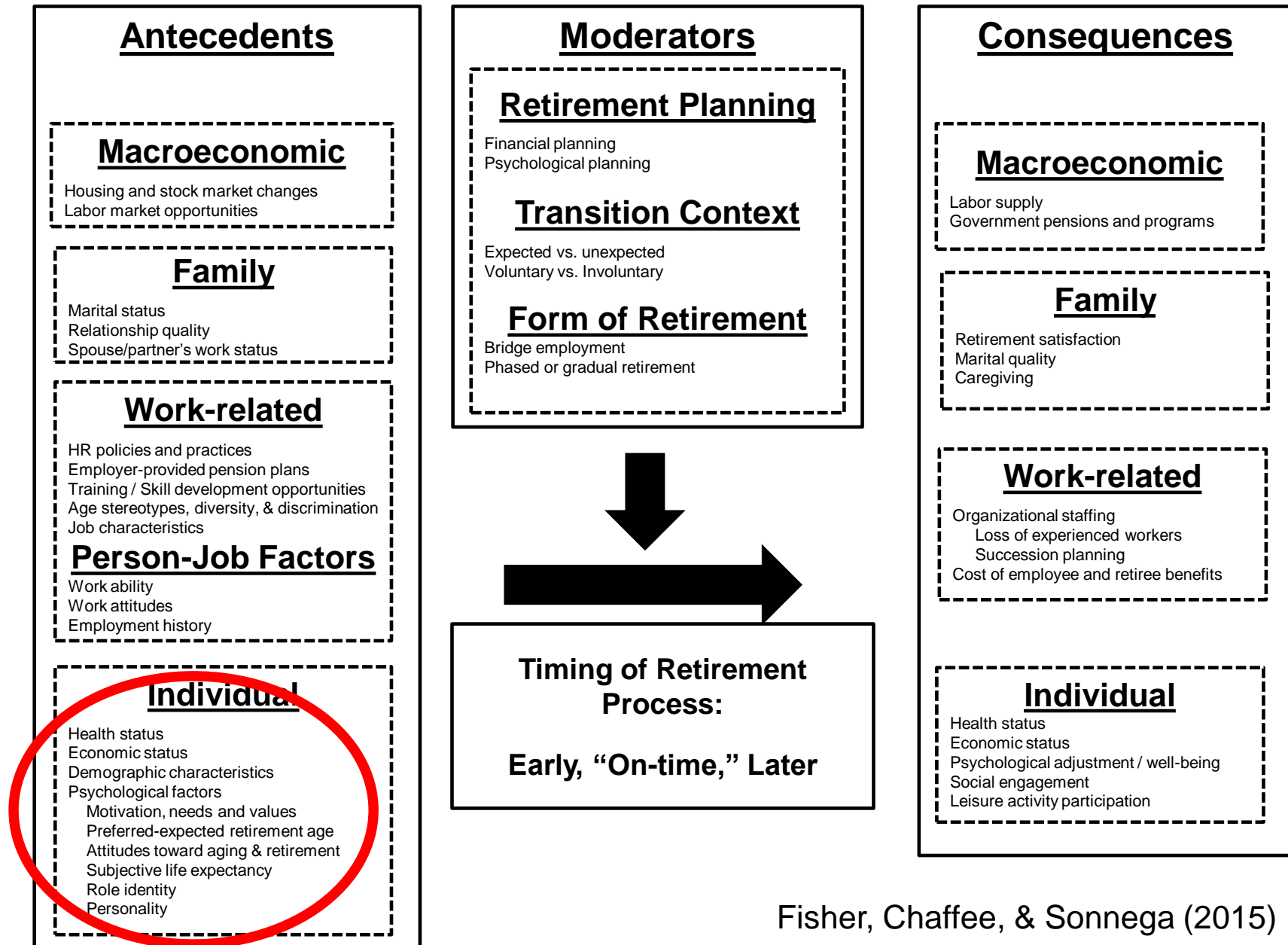


Projected Percentage of Population Over 65 in 2030

“For the first time in human history, people aged 65 and older will outnumber children under age 5,” according to report, “An Aging World: 2015”.



Model of Retirement



Fisher, Chaffee, & Sonnegga (2015)

Model of Retirement

Individual Factors

Physical Health status

Economic status

Pensions

Social Security eligibility

Wealth and income

Health insurance

Demographic characteristics

Psychological factors

Cognitive functioning

Mental health

Motivation, needs and values

Preferred-expected retirement age

Attitudes toward aging & retirement

Subjective life expectancy

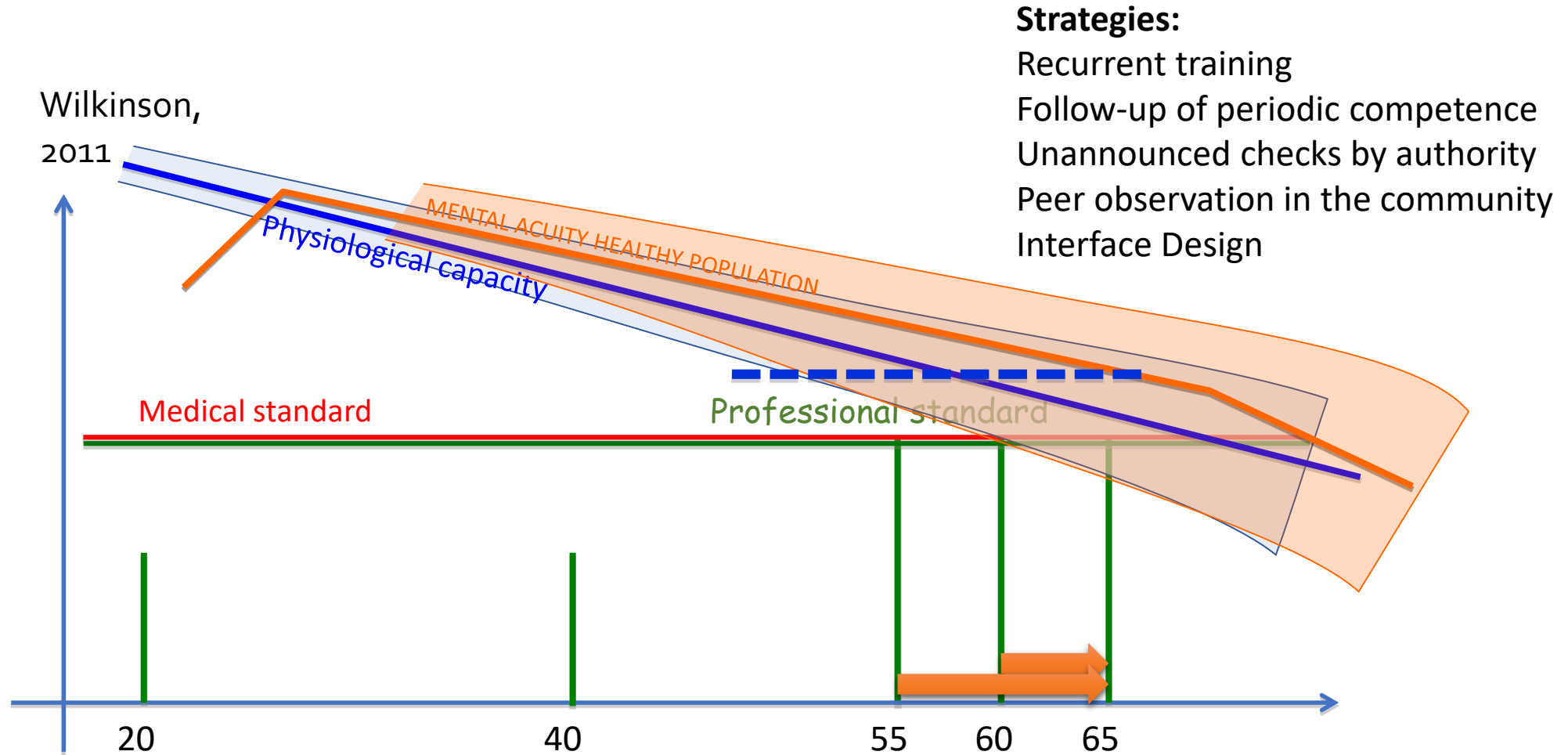
Role identity

Personality

Fisher, Chaffee, & Sonnega (2015)

Psychological factors - Cognitive functioning

Numerous studies show that cognitive and physiological declines are compensated by **compensatory strategies** that allow them to remain above the occupational requirements.



Strategies:

- Recurrent training
- Follow-up of periodic competence
- Unannounced checks by authority
- Peer observation in the community
- Interface Design

Psychological factors - Cognitive functioning

TABLE 1. Neuropsychological performances regressed on age ($n = 32$) (* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$)

Variables	r	R^2	Corrected p -value
Update in WM	-.65	.42	<.001***
Set-shifting	+.40	.16	.042*
Inhibition	+.57	.32	.002**
Reasoning	-.31	.09	.0829
Speed of processing	-.72	.52	<.001***

- Table 1 shows aging effects on all assessed cognitive variables.
- With the exception of reasoning performances, all the neuropsychological abilities declined with age.
- Reasoning performances solely showed a trend to diminish.
- Similarly, set-shifting strongly declined after 55.

(MICKAËL CAUSSE ET AL., 2011)



experience-experience-experience





Expertise mitigates the affects of aging on pilot performance.

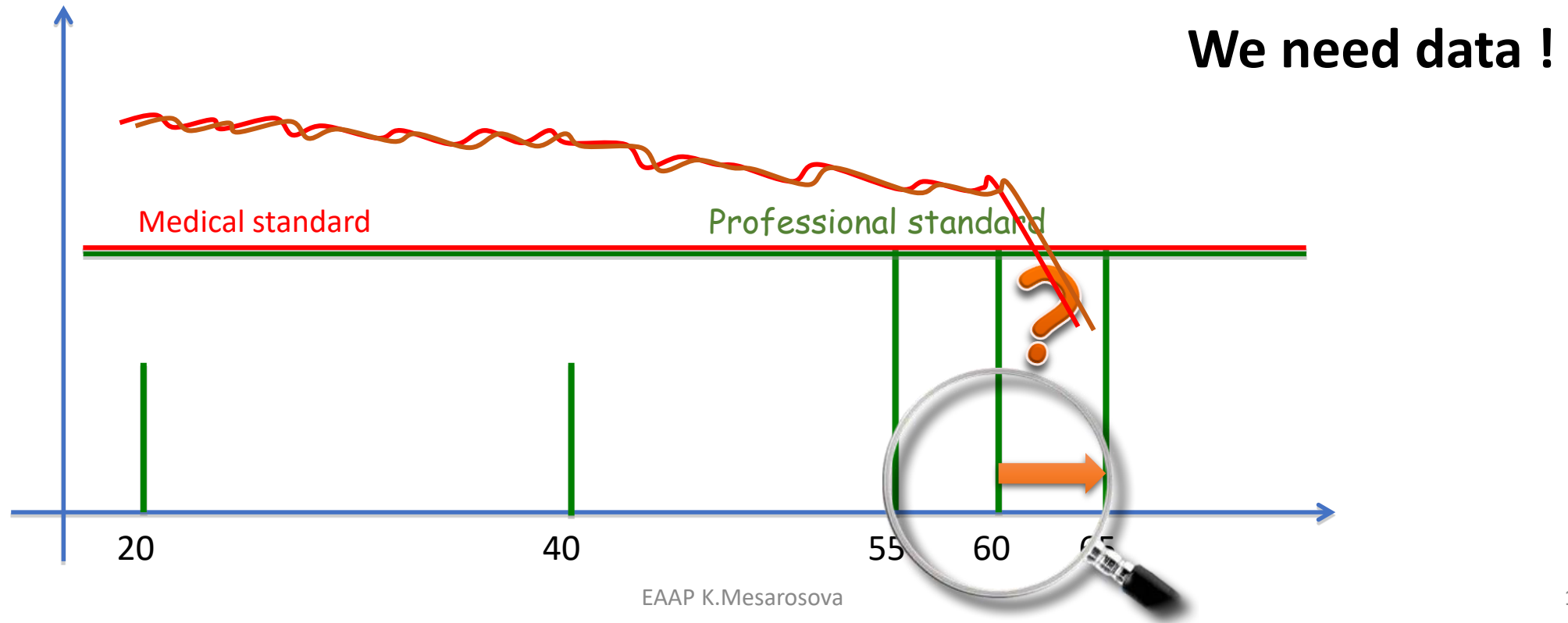
- Study by Lassiter et al,. 1996 expertise and increase workload.
- younger subjects with more expertise were affected by increases in workload.
- the accuracy of older subjects with less expertise was affected as workload increased.
- younger subjects with less expertise and older subjects with more expertise wereaffected by the increase in workload.

Age and Ability

Professional and medical standards define the capacities to practice the profession.

The monitoring process ensures that they are present.

BUT this is quite individual.



Psychological factors - Mental health



Measure	Males		Females		All	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Goldberg Anxiety Scale						
Age group (years)						
20–24	3.20	2.60	4.44	2.67	3.84	2.71
40–44	3.29	2.67	3.72	2.73	3.52	2.71
60–64	2.00	2.25	2.50	2.38	2.24	2.33
All	2.80	2.58	3.56	2.72		
Goldberg Depression Scale						
Age group (years)						
20–24	2.58	2.28	3.18	2.44	2.89	2.38
40–44	2.28	2.31	2.55	2.43	2.42	2.38
60–64	1.58	1.83	1.78	1.93	1.67	1.88
All	2.12	2.18	2.50	2.35		
Psychological distress						
Age group (years)						
20–24	4.97	4.03	6.67	4.29	5.85	4.25
40–44	4.80	4.20	5.51	4.32	5.17	4.28
60–64	2.92	3.39	3.52	3.54	3.21	3.48
All	4.17	3.98	5.24	4.27		

It can be seen that distress declined with age for each measure.

Females reported significantly higher levels of distress relative to males.

Females showing a consistent decrease across age groups, while males showed a plateau from 20–24 to 40–44 years and then a decrease.

(Jorm et al., 2005)

Dimension	High scorers are ...	Low scorers are ...
Extroversion	Outgoing, enthusiastic and active; you seek novelty and excitement.	Aloof, quiet and independent; you are cautious and enjoy time alone.
Neuroticism	Prone to stress, worry and negative emotions.	Emotionally stable but can take unnecessary risks.
Conscientiousness	Organised, self-directed and successful, but controlling.	Spontaneous, careless, can be prone to addiction.
Agreeableness	Trusting, empathetic and compliant, you are slow to anger.	Uncooperative and hostile, find it hard to empathise with others.
Openness	Creative, imaginative, eccentric and open to new experiences.	Practical, conventional, sceptical and rational.

Psychological factors - Personality

- Connection Between Personality and Mental Illness?



Is age “under control” in the system?

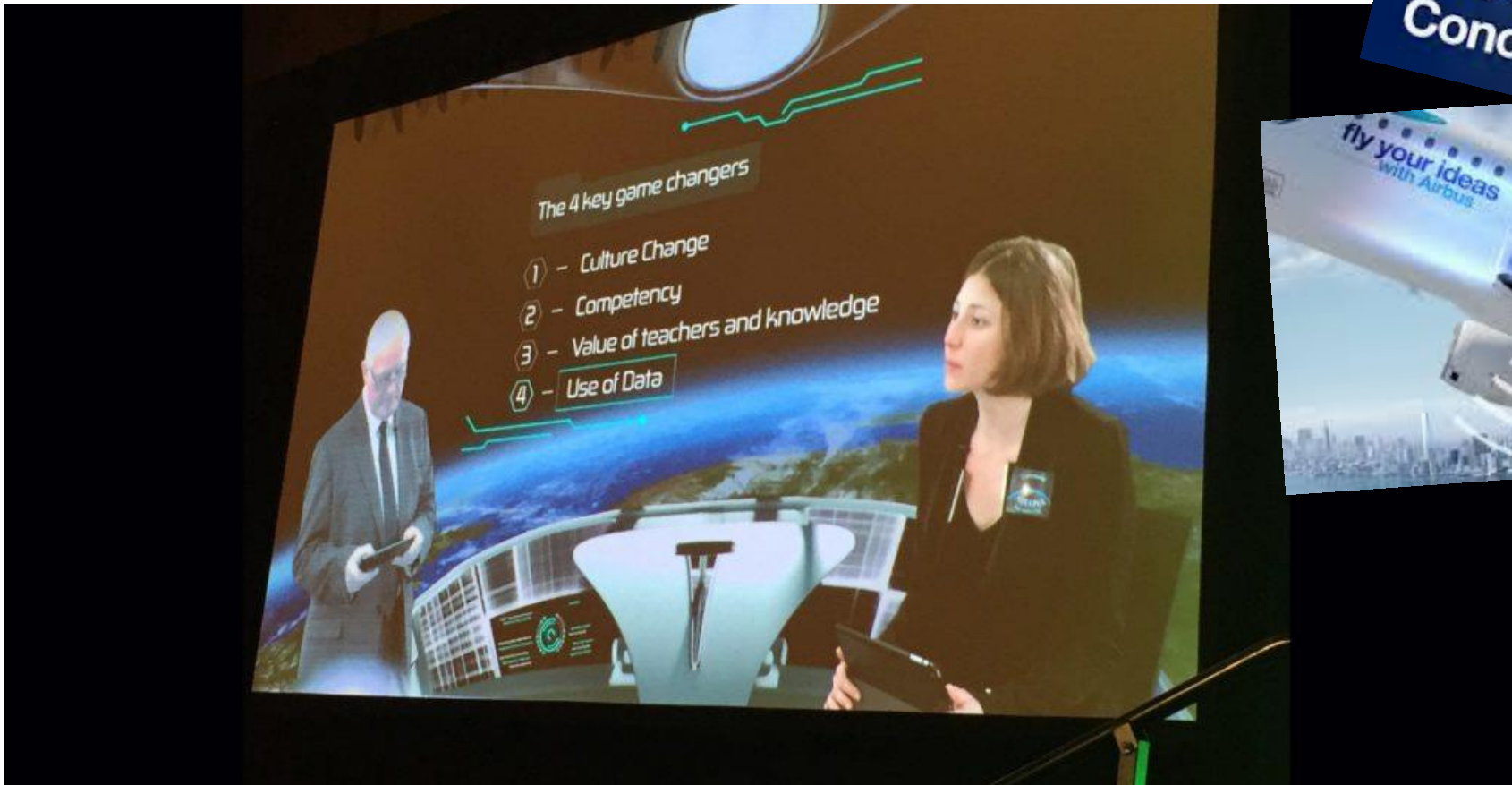
- No evidence based knowledge about flight crew ageing effects on safety (TNO, 2017 research)
 - Age data are collected only for accidents and critical incidents
 - Airlines don't monitor the effects of ageing
 - Currently there is no sharing of data to gather a holistic picture
 - Major changes are coming
 - Shift of age limit (65), overall ageing of western pilots
 - Growing productivity pressure
 - Low cost airlines
 - Extension of flight duration (18H) ; Longer time of duty
 - Reduced Training
 - Fast technological changes (automation)
 - Reduced criteria for medical fitness
- ← Decreasing the attractiveness of the aviation career

Future Growth is in Data Analytics

- predictive analytics,
- effective risk factor profiling,
- collecting and utilizing, individualized patient data



When health monitoring really means people's health?



Culture – are we ready

- We have 28 members states.
- Is that realistic within the EU, with 28 different countries with different cultural backgrounds?
- Airlines using upper limits as they targets.
- Are we ready not to misuse the data?
- Do we have that cultural awareness and reporting culture?
- Adopting the statutory reporting obligation?

Summary

- The past research is inconclusive
- How can we incorporate different individual factors?
 - Combination of hard rule and exception to the rule
- Are we ready for the change?
- Do we have that cultural awareness and reporting culture?



Thank You

EAAP Conference 2020

- The next EAAP Conference will be held from **21-25 September 2020 (Location to be confirmed)**.
- All details and information will be published on the EAAP Conference Website.
- www.eaap.net

- .."The Philippines has studied the extended retirement age for commercial airline pilot since June 30, 2014 to June 30, 2016 and finally the Civil Aviation Authority of the Philippines (CAAP) decided to extent the retirement age for commercial airline pilots on domestic operations from 65 to 67 for a two-year study period
- Why? to address the decreasing number of pilots in the country"