



Measuring Subjective Experience at Work

Comparing the Flow Simplex and the Challenge-Skill Ratio Using a Multilevel Approach

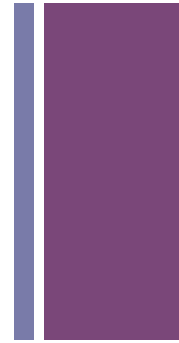
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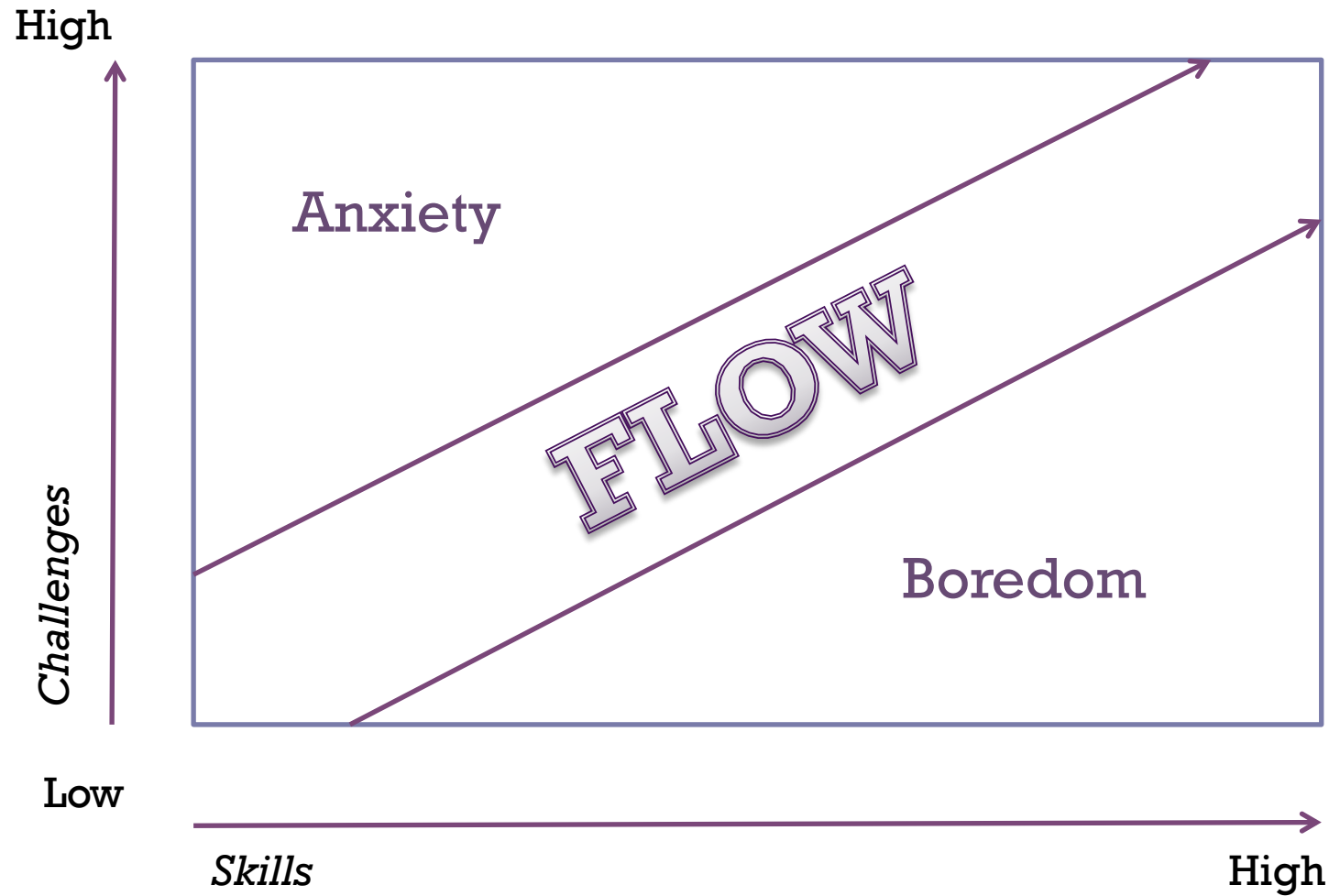
5th European Conference on Positive Psychology, Copenhagen 2010

+ Aims

- To present the Challenge-Skill Ratio (CSR), the Experience Fluctuation Model (EFM) and the Flow Simplex (FS) as different ways of measuring experience
- To present the idea of *Channel-Distance* as an extension of the EFM fitted to multilevel analysis
- To investigate how well fitted these approaches are in capturing a variety of feeling states in work-related situations

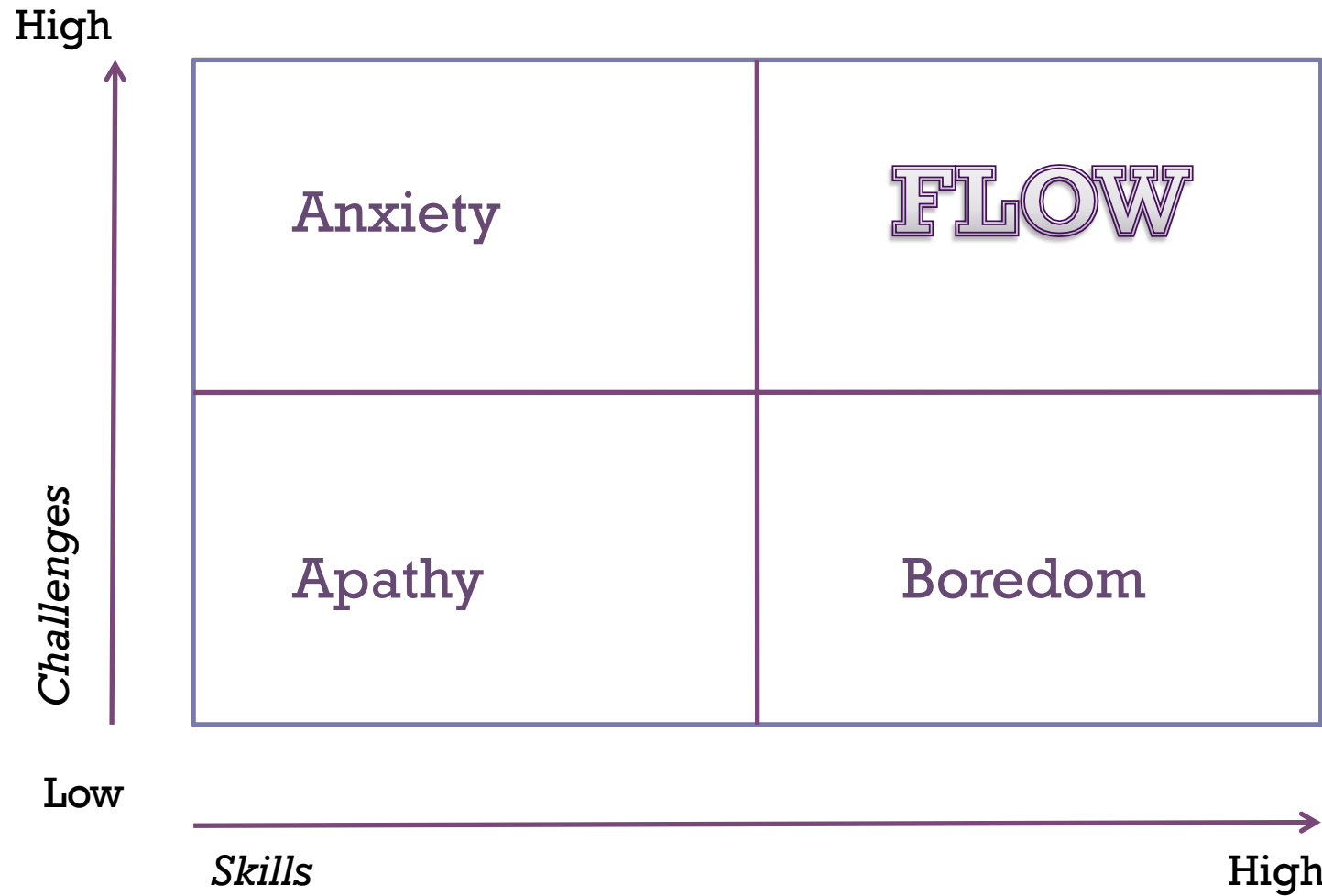


+ The Challenge-Skill Ratio (CSR)



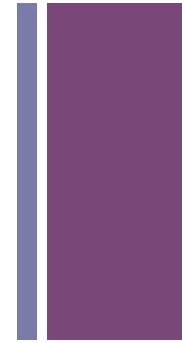
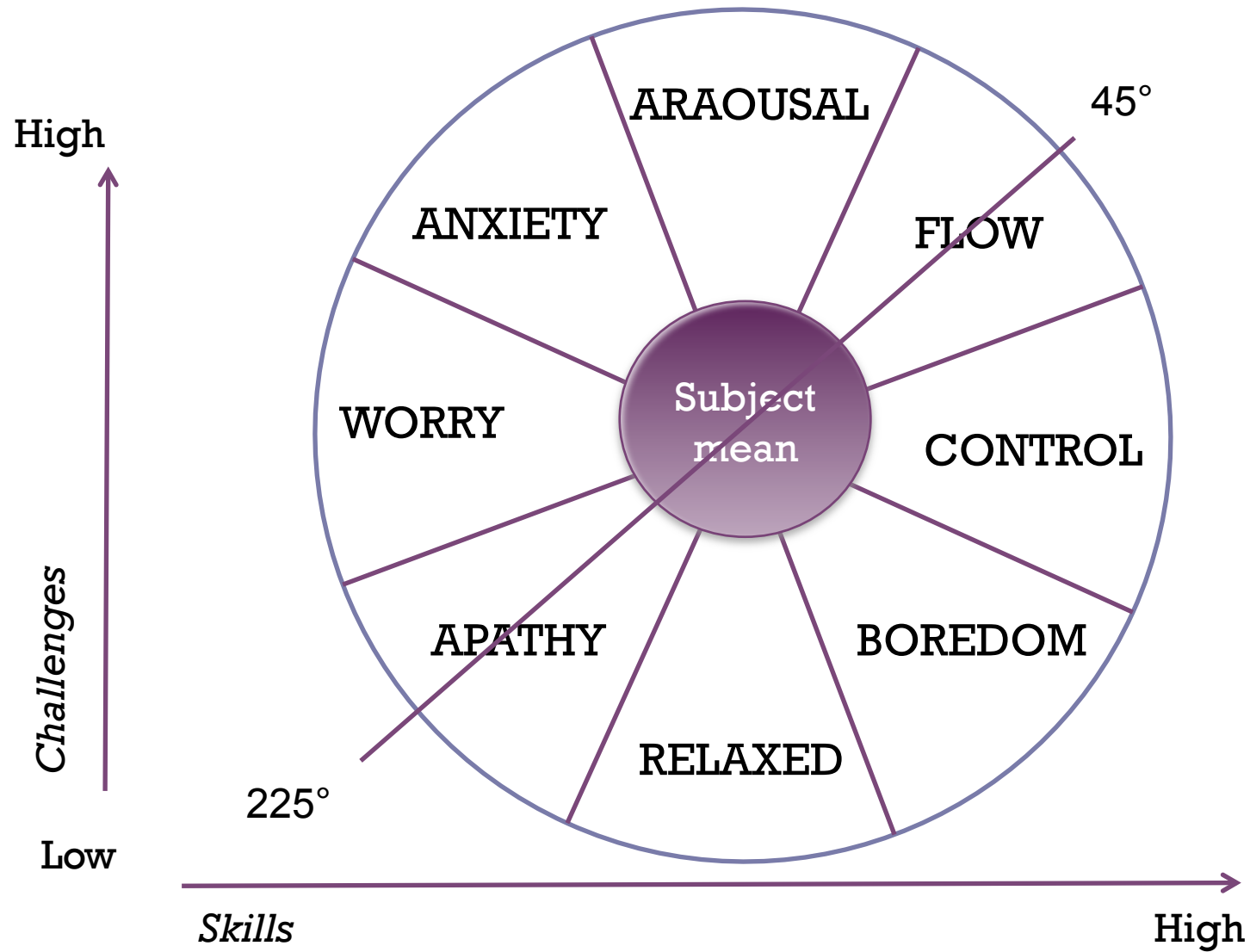
Adopted from Csikszentmihalyi, 1975b

+ CSR extended

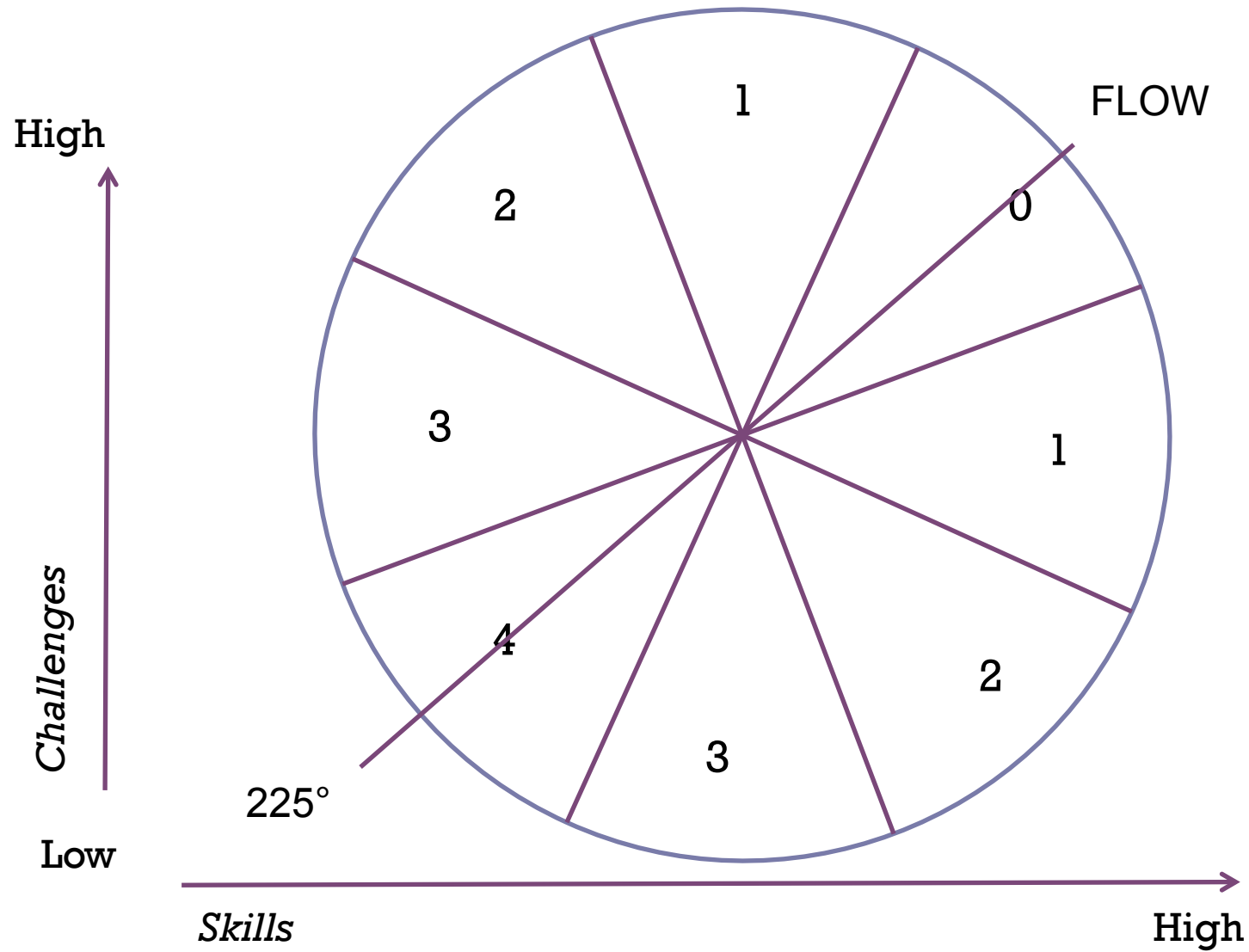


Adopted from Massimini and Carli, 1988

+ Experience Fluctuation Model (EFM)



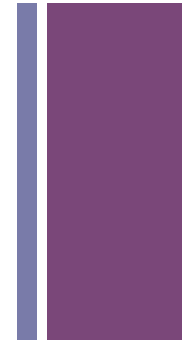
+ Channel DISTANCE from flow

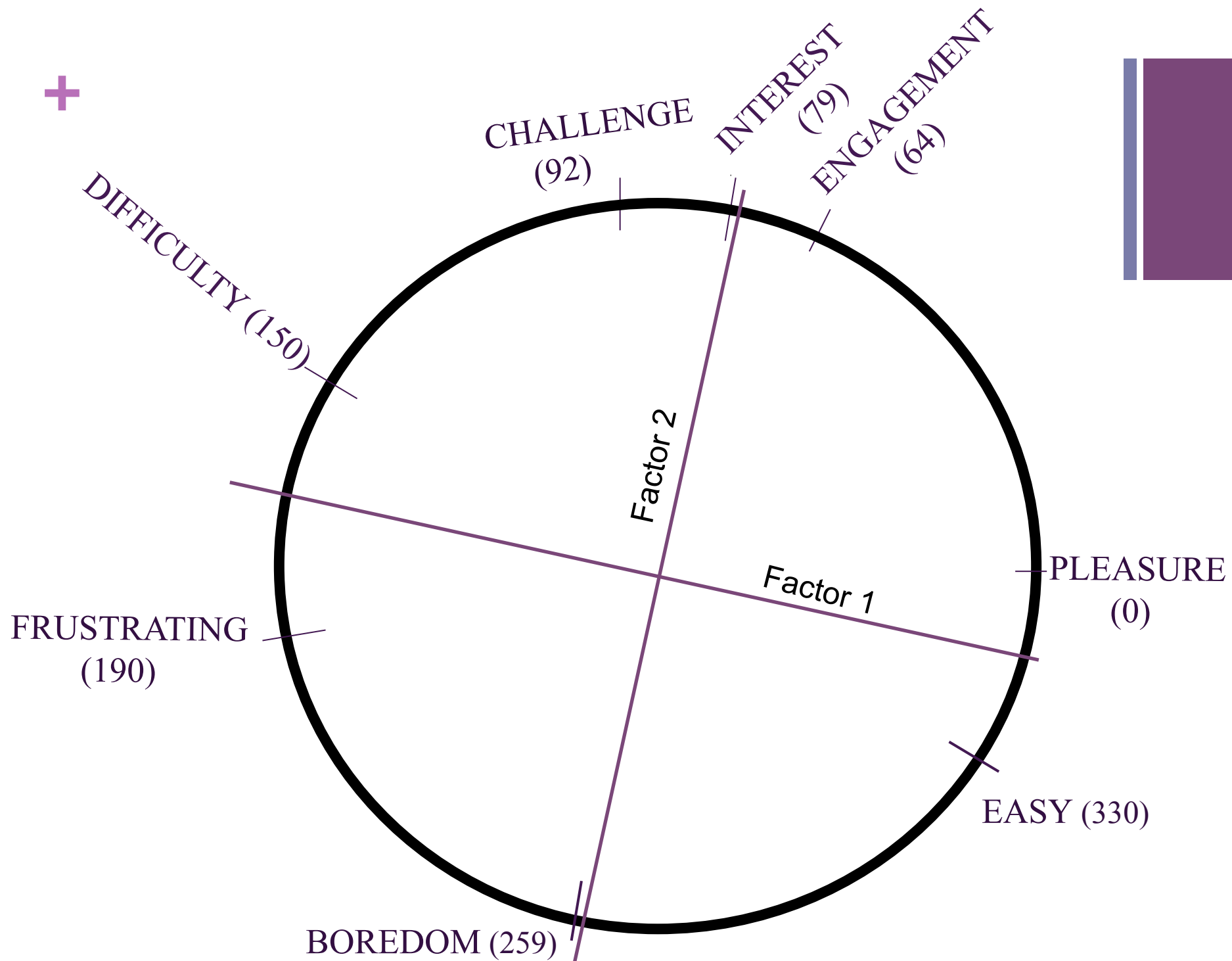


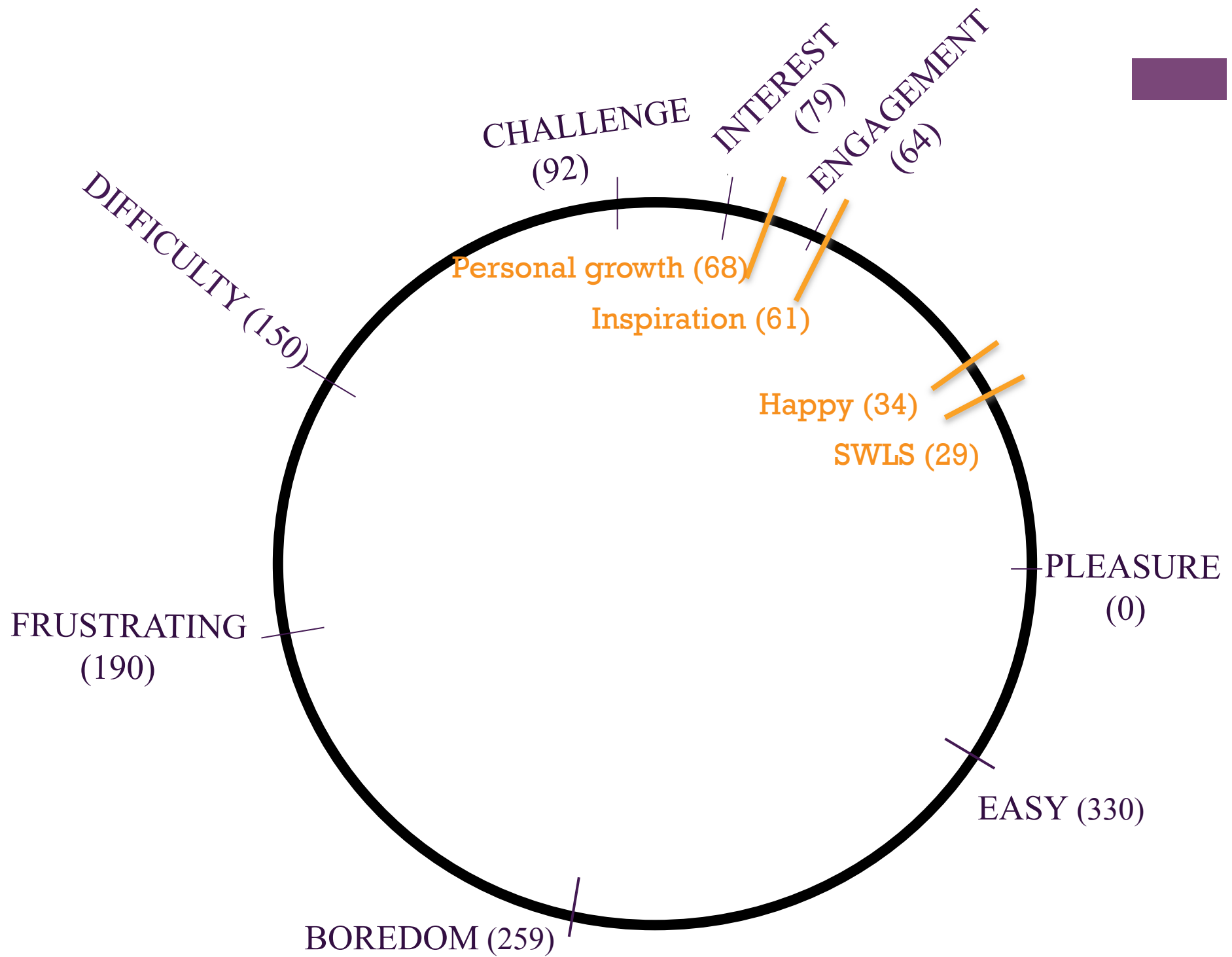
New variable: Linear from 0 to 4

+ Flow Simplex (FS)

- Six bipolar variables that must confirm to a simplex structure
 - (pleasure, engagement, interest, challenge, difficulty, frustration)
- Theory of ordered factors (Guttman, 1954) – refers to a SIMple structure of comPLEXity between variables belonging to the same dimension
- Principal component analysis gives two factor scores - makes it possible to assess how the variables relates to one another
- Presented in a polar plot (i.e., based on angular distances around the circumference of a circle)
- Correlations between variables converted into angles
- Predictors on the inside, simplex-variables on the outside

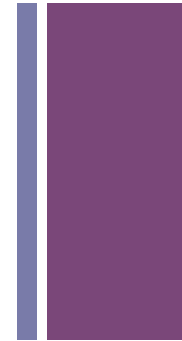




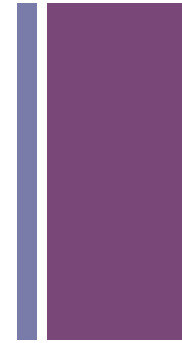


+ Method

- **SAMPLE:** Memembers of Norwegian Occupational Health Services (N = 465 / 1800*)
- **QUESTIONNAIRE:**
 - Day Reconstruction Method (Kahneman, Krueger, Schkade, Swartz & Stone, 2004)
 - Simplex variables
 - Happiness and inspiration
 - Challenges and skills
- **STATISTICAL ANALYSIS:** Multilevel Modelling using M-plus



+ MEASURES OF FLOW

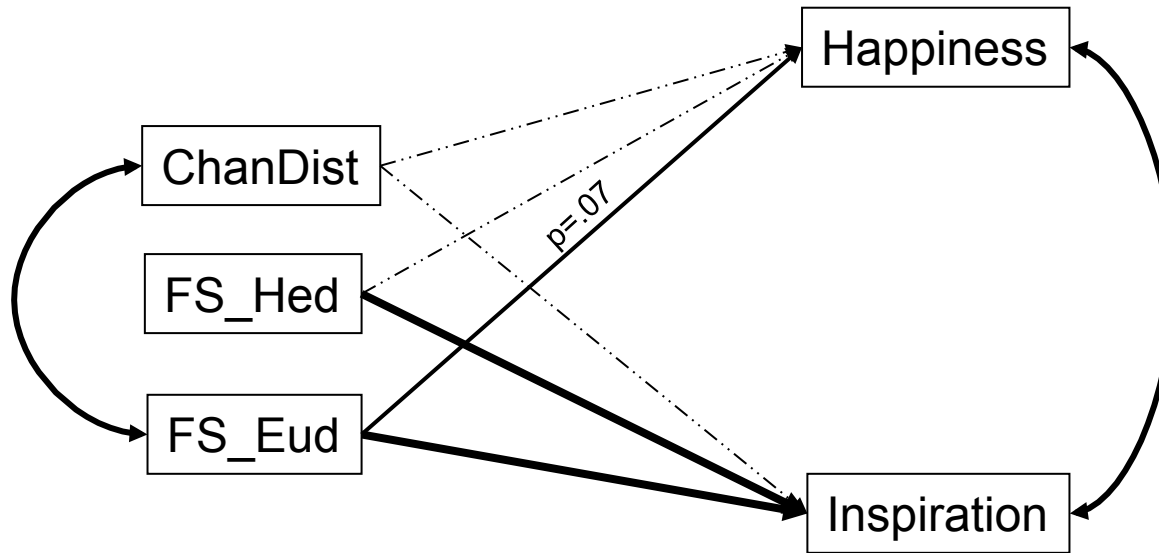
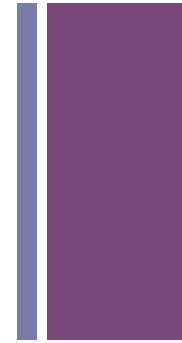


- Flow simplex:
 - Six variables → two factors
 - (pleasure, engagement, interest, challenge, difficulty, frustration)
- Challenge-Skills Ratios:
 - Two approaches
 - Experience fluctuation model (categorical variable with 8 channels)
 - Channel distance (continuous variable scored 0 to 4)

+ Table 1 – Explained variance
(Adjusted R²)

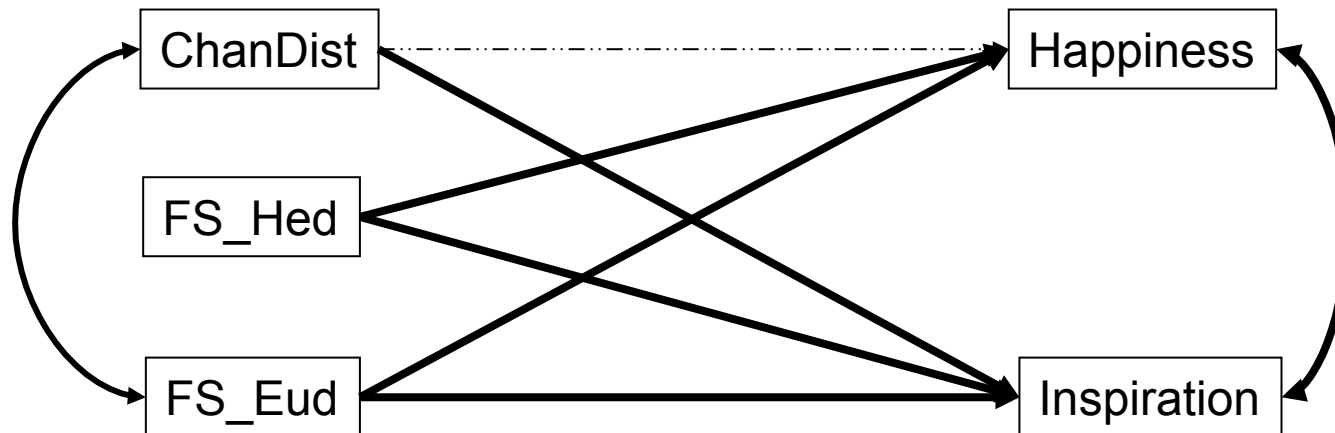
	8 Channels	Channel-dist	FS
Inspiration	.23	.17	.45
Happiness	.05	.02	.14
MEAN	.14	.10	.30

+ The multilevel model



BETWEEN

WITHIN



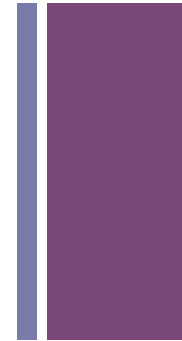
+ Tabel 2. Standardized Regression Coefficients (betas) from a Multilevel Analysis

	Happiness (Dep. var)	Inspiration (Dep. var)
WITHIN		
Chan_dist ¹	-.05	-.11***
FS_Hed	.41***	.18***
FS_Eud	.27***	.57***
BETWEEN		
Chan_dist ¹	-.04	.09
FS_Hed	.03	.20*
FS_Eud	.25 ^{p=.07}	.72***

Note. ¹) = a 0-4 linear scale capturing channel distance from the flow channel. FS_hed = The hedonic dimension from the Flow Simplex; FS_eud = The eudaimonic dimension from the Flow Simplex; * = $p < .05$; *** = $p < .001$;

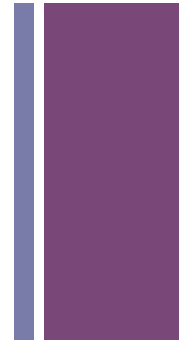
+ Intra Class Correlations

	ICC
Happiness	.59
Inspiration	.26
Flow Simplex_Hed	.19
Flow Simplex_Eud	.27
Channel-Distance (0-4)	.21



+ Short sum-up

- EFM and FS are
 - Different in that the FS uses 6 variables to construct two factor scored variables and the EFM uses two variables (challenges and skills) to construct eight channels.
 - Different theoretical foundation
 - Similar in circular presentation – coefficients converted into angles



+ Concluding remarks

- The FS appear to be a better instrument for measuring emotional feeling states in a work context as compared with the CSR
- Strengths & limitations
 - DRM and longitudinal
 - More sensitive and need less samplings
 - Multilevel analysis
 - Technical connection between the theory behind Flow Simplex and the methods used to analyse it (which also makes it more complicated to use)
- Implications
 - Change situation – inspiration – flow?
 - We need to learn more about how the CSR actually relates to flow experience

