

# Reviving social class with latent profile analysis for cross-sectional research

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# **Outline**

**Ambition**

**Theory**

**Method and results**

**Conclusions**

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### **Ambition**

Social class is a widely discussed (Goldthorpe, 2002; Grusky & Weeden, 2002; Scott, 2002; Birkelund, 2002; Therborn, 2002) sociological concept in need of some revision going beyond Marxist and Weberian traditions.

As theoretical concept, Bourdieu (1984) seems to inspire new ways mainly by considering additional forms of capital (Flemmen, 2013).

As measurement, multi-dimensional concepts were often out of focus as social class was perceived as stratification concept.

**Fig.2: Erik Olin Wright (2000, S. 208):**

1 Capitalists	4 Expert managers	7 Skilled managers	10 Nonskilled managers
2 Small Employers	5 Expert supervisors	8 Skilled supervisors	11 Nonskilled supervisors
3 Petty bourgeoisie	6 Experts	9 Skilled workers	12 Nonskilled workers

Differentiation along capital, power and authority and skills.

**Fig.3: Erikson, Goldthorpe und Portocarero (2010, S. 189):**

	Original ninefold	Sevenfold	Fivefolded	Threefolded
I	Higher-grade professionals, administrators and officials; managers in large industrial establishments; large proprietors	I + II 'service class'	I + II + III 'white-collar'	I + II + III + IVa + b 'non-manual'
II	Lower-grade professionals, administrators and officials; higher-grade technicians; managers in small business and industrial establishments; supervisors of non-manual employees			
III	Routine non-manual employees in administration and commerce; sales personnel; other rank-and-file service workers	III		
IVa	Small proprietors; artisans, etc., with employees	IVa + b 'petty bourgeoisie'	IVa + b 'petty bourgeoisie'	IVc + VIIb 'farm'
IVb	Small proprietors, artisans, etc., without employees			
IVc	Farmers and smallholders; self-employed fishermen	IVc	IVc + VIIb 'farm'	
V/VI	Lower-grade technicians; supervisors of manual workers; skilled manual workers	V/VI	V/VI	V/VI + VIIa 'manual'
VIIa	Semi- and unskilled manual workers (not in agriculture)	VIIa	VIIa	
VIIb	Agricultural workers	VIIb		

**Fig.4: Daniel Oesch (2006, S. 269):**

Self-employed Independent work logic	Employees			Marketable skills:
	Technical work logic	Organizational work logic	Interpersonal work logic	
Large Em- Self- employers employed (>9) profession- als	Technical experts	Higher-grade man- agers and adminis- trators	Sociocultural pro- fessionals	Professional/ managerial
Petite bourgeoisie with employees (<9)	Technicians	Associate man- agers and adminis- trators	Sociocultural semi- professionals	Associate pro- fessionals/ man- agerial
Petite bourgeoisie with- out employees	Skilled crafts	Skilled office	Skilled service	Generally/ vo- cationally
	Routine opera- tives      Routine agricul- ture	Routine office	Routine service	low unskilled

**Fig.5: Savage et al. (2013, S. 230)**

**Table 6.** Seven latent classes.

	Elite	Established middle class	Technical middle class	New affluent workers	Traditional working class	Emergent service workers	Precariat
Household income	£89,082	£47,184	£37,428	£29,252	£13,305	£21,048	£8,253
Household savings	£142,458	£26,090	£65,844	£4,918	£9,500	£1,138	£793
House value	£325,000	£176,834	£163,362	£128,639	£127,174	£17,968	£26,948
Social contact score	50.1	45.3	53.5	37.8	41.5	38.3	29.9
Social contact number	16.2	17.0	3.6	16.9	9.8	14.8	6.7
Highbrow cultural capital	16.9	13.7	9.2	6.9	10.8	9.6	6.0
Emerging cultural capital	14.4	16.5	11.4	14.8	6.5	17.5	8.4

Source: GfK nationally representative survey (with GBCS respondents included and weighted at 161,400th of a case).

### **Stratification and Values?**

- Social class needs some revision beyond occupation, which will still be applicable for cross-sectional research.
- Most critique on the social class concept is based on the lack of accountability for individualism.
- Values as subjective measure of evaluation could revitalize the idea of heterogeneous groups in societies.
- Combining the objective and subjective measure leads to a measure of distinction/group defined cleavages.



### **Aim of the measurement / hypotheses**

Capturing a two-dimensional space of stratification (status) and subjective motivations (values) to explain variance inside countries across groups and similarities across countries along similar groups.

- H1** The number of groups extracted is expected to be similar across all samples.
- H2** The constitution of the patterns along values and ISEI is expected to be similar across different societies.
- H3** These patterns are not random but show a stability in their relative position over time.

### Data and method

ESS 1-5 including all (124) samples available (33 different countries).

**obj.:** International Socio-Economic Index (ISEI) of occupation status (Ganzeboom, Graaf, Treiman, & De Graaf, 1992). (min=16 to max=88)

**subj.:** Parts of the the Human Value Scale (HVS, see Schwartz, 1992; Schwartz & Boehnke, 2004) - namely, Hedonism, Openness to Change and Conservation (12 items)

Latent class analysis (LCA) in R version 3.0.2 with the package polCA by Linzer and Lewis (2011).

### Strategy

1. Run for each of the 124 samples multiple LCAs under the condition of 1-8 classes. Each of the 8 models per sample was estimated 10 times to avoid local minima.
2. Define the preliminary best fitting model by the minimum BIC across the estimated models per sample.
3. Assess profile plots to interpret patterns
4. Issues to tackle:
  - Invariance across samples
  - Testing predictive power

## Results of latent class analysis

Table 1: Groups by ESS round based on minimum BIC

Groups by round	2	3	4	5	6	7	8	Countries
ESS1	0	0	7	13	0	0	0	20
ESS2	1	1	10	13	0	0	0	25
ESS3	0	2	6	13	2	0	0	23
ESS4	0	1	7	15	3	2	1	29
ESS5	0	0	10	11	5	1	0	27
Sum	1	4	40	65	10	3	1	124
(Share in %)	(.8)	(3.2)	(32.3)	(52.4)	(8.1)	(2.4)	(.8)	(100)

### **HVS wording Openness to change and Hedonism**

- HE10 Having a good time is important to him. He likes to "spoil" himself.
- HE21 He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.
- ST6 He likes surprises and is always looking for new things to do. He thinks it is important to do lots of different things in life.
- ST15 He looks for adventures and likes to take risks. He wants to have an exciting life.
- SD1 Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.
- SD11 It is important to him to make his own decisions about what he does. He likes to be free and not depend on others.

## HVS wording Conservation

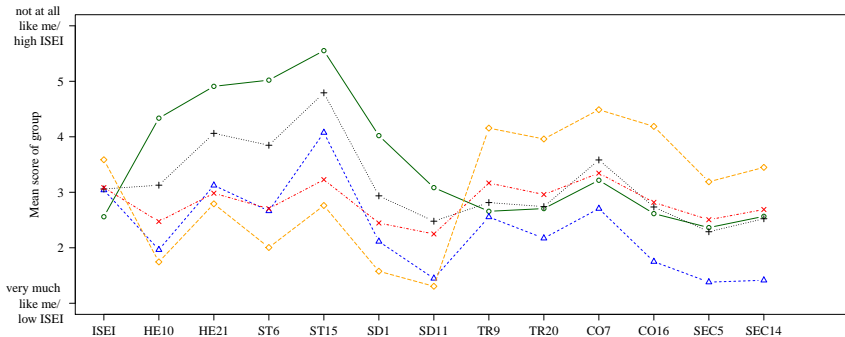
- TR9 It is important to him to be humble and modest. He tries not to draw attention to himself.
- TR20 Tradition is important to him. He tries to follow the customs handed down by his religion or his family.
- CO7 He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching.
- CO16 It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.
- SEC5 It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.
- SEC14 It is important to him that the government ensures his safety against all threats. He wants the state to be strong so it can defend its citizens.

Results I/III

Single Country: Variance across class and  
time

## Assessment of profile plots ESS1-AT (H2)

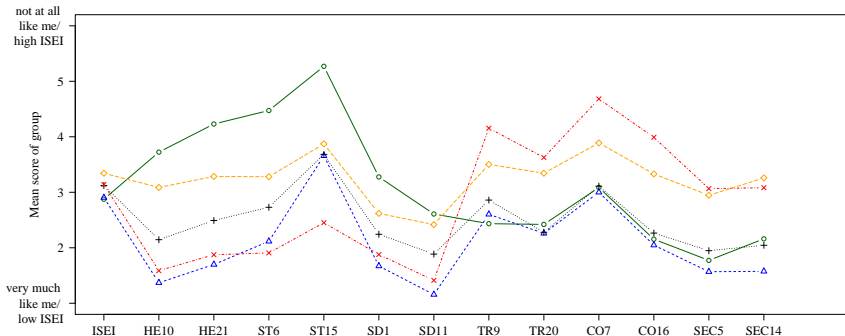
Profile Plot ess1.AT





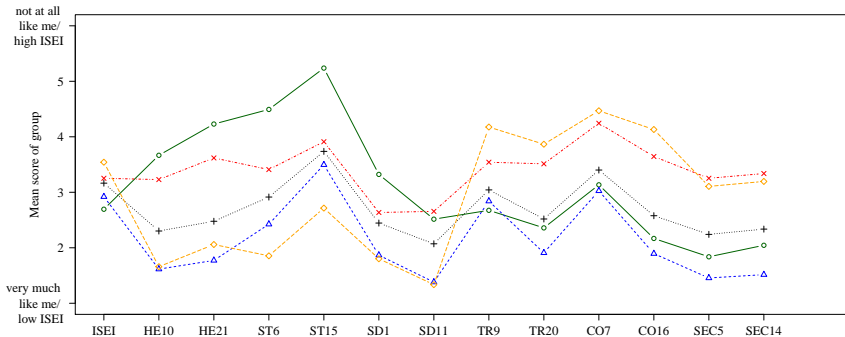
## Assessment of profile plots ESS2-AT (H2)

Profile Plot ess2.AT



## Assessment of profile plots ESS3-AT (H2)

Profile Plot ess3.AT



## Lessons from the Austrian case

### Good news

- There seems to be some stable pattern.
- Two clearly identifiable groups: Material deprived & progressive performers.
- A group of rationalists?!

### Problems

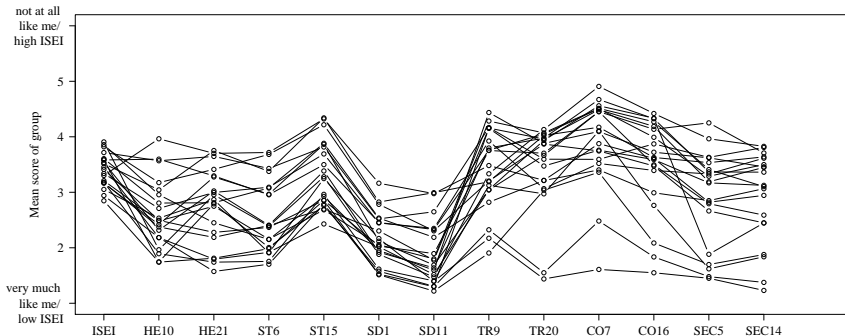
- The middle groups are less clear cut.
- ISEI as anchor is not always perfect.

## Results II/III

### Single ESS-Round: Variance across countries and class

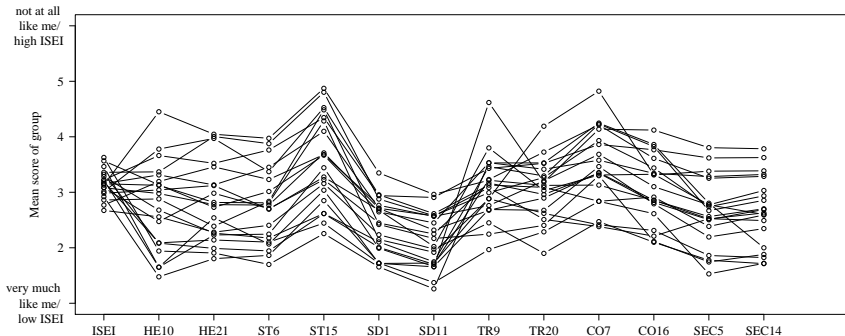
## Assessment of profile plots across countries (H2)

Profile Plot ESS1 and ISEI5



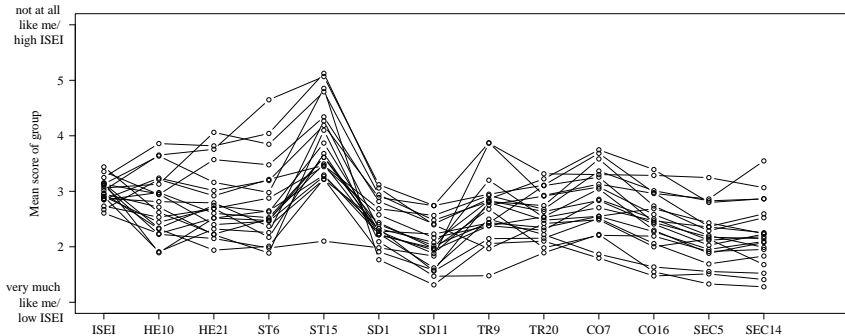
## Assessment of profile plots across countries (H2)

Profile Plot ESS1 and ISEI4



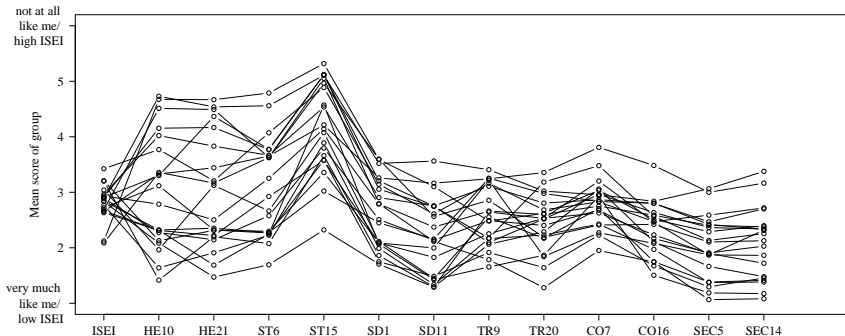
## Assessment of profile plots across countries (H2)

Profile Plot ESS1 and ISEI3



## Assessment of profile plots across countries (H2)

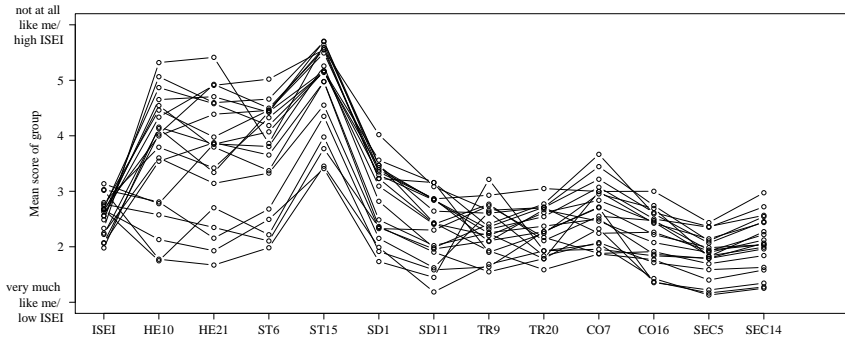
Profile Plot ESS1 and ISEI2





## Assessment of profile plots across countries (H2)

Profile Plot ESS1 and ISEI1



## Lessons from cross-country differences

### Good news

- The different group patterns seem to reproduce in a good share of countries

### Problems

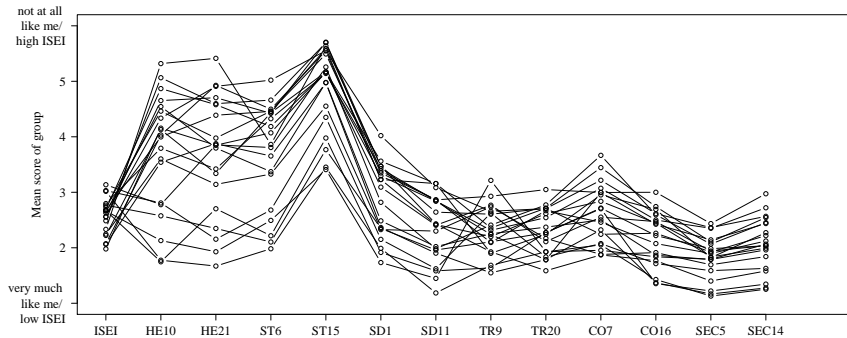
- The variance across countries is partially (HE) very high.
- Exclude countries or consider alternative pattern in modeling?.

**Results III/III**

**Single Class: Variance across time and countries**

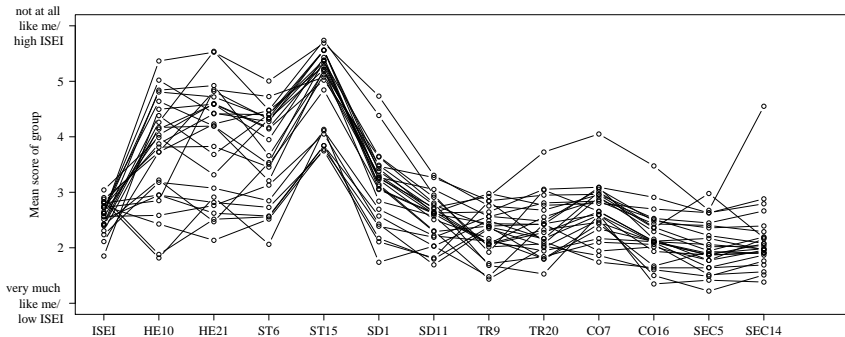
## Assessment of profile plots across time (H3)

Profile Plot ESS1 and ISEI1



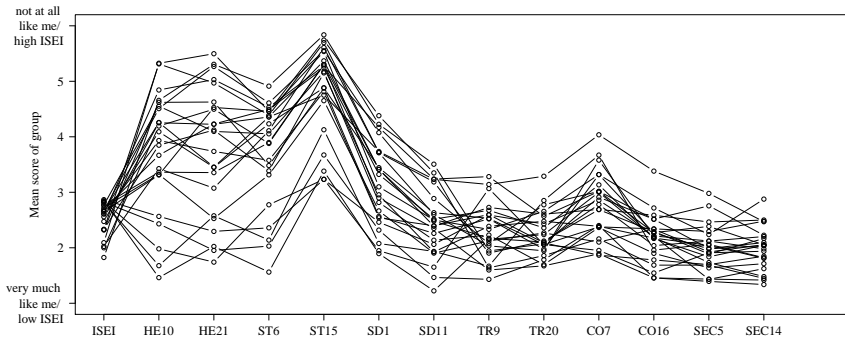
## Assessment of profile plots across time (H3)

Profile Plot ESS2 and ISEI1



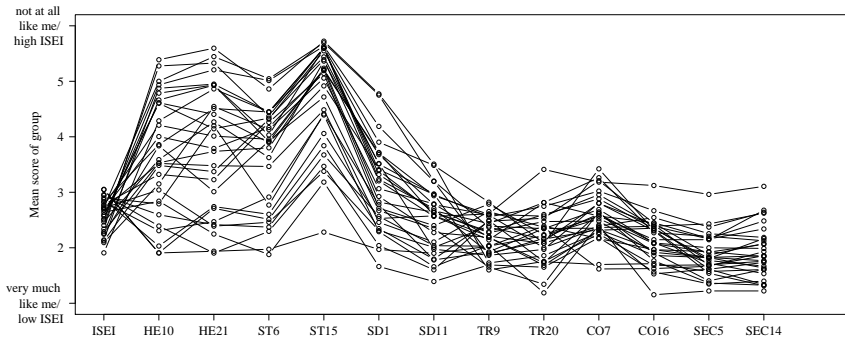
## Assessment of profile plots across time (H3)

Profile Plot ESS3 and ISEI1



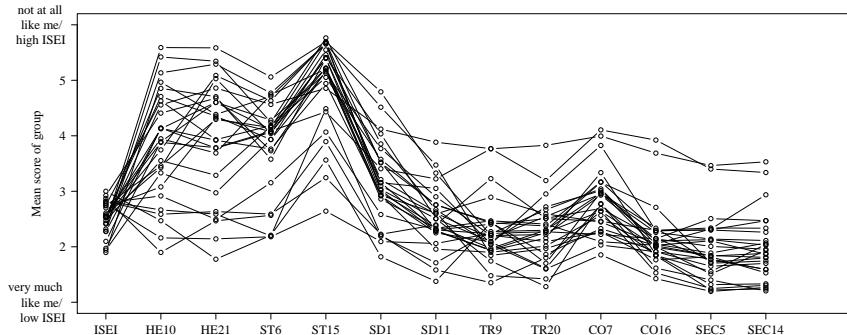
## Assessment of profile plots across time (H3)

Profile Plot ESS4 and ISEI1



## Assessment of profile plots across time (H3)

Profile Plot ESS5 and ISEI1





## Lessons from about cross-time differences

### Good news

- The pattern seems stable over time for a majority of countries.

### Problems

- Again a few outliers (excluding vs. modeling).

### Conclusions

- Evidence that strata and value patterns go hand in hand.
- The patterns seem reproducible across time and a majority of countries.
- Anchoring needs an alternative mechanism besides ISEI or at least a cross-check.
- Big elephant in the room: How to test invariance?

### How to test invariance?

- Consider all 124 samples and estimate time and country as covariate of class membership in one model.
- Two-step approach by estimating time and country as covariate on class membership based on single sample latent profile estimations.
- Cut it down and start with most similar countries at one time point.

methodological  
rigorous



country specific

universalist approach

cultural approach

**Thank you for your attention  
&  
any comments are welcome!**

## References

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