

## SOCIAL DISTANCE AND SOCIO-ECONOMIC STATUS: Different dimensions or different indicators of occupational status?

Deborah De Luca (University of Milan)

Cinzia Meraviglia (University of Eastern Piedmont)

Harry B.G. Ganzeboom (Vrije Universiteit Amsterdam)

Social Stratification Seminar  
Utrecht (NL), 10 September 2010

## Different measures, different constructs?

- The debate on the dimensions of social stratification is a long lasting one, starting with Weber's distinction among status, class and party.
- Measures developed to represent the (hierarchical) ordering of (occupational) stratification include prestige scales, SEIs, social distance measures (and class schemes)
- Empirical findings concerning the existence of one or multiple dimensions of stratification provide mixed evidence (or evidence that is differently interpreted)
  - SES vs prestige
  - SES vs social distance
  - (Status vs class).

2

## SES vs prestige

- SEI originally derived by Duncan (1961) to approximate prestige scores
- Evidence shows that SEI is a better measure of status attainment than prestige scales (Featherman, Jones, Hauser 1975; Featherman, Hauser 1976)
- As a consequence F(J)H hold that:
  - There is a single underlying construct of which SEI indices are a better indicator than prestige scales
  - Prestige measures are thought to be only "an imperfect measure of the unobserved construct"
- These conclusions have been found using both local/national and international versions of SES indices (SEI, ISEI)
- Some critics (eg. Jencks 1990) claim that prestige scales and SEI do not cover the same dimension (see also Siegel 1971)

3

## SES vs social distance

- Less is known about the similarity/difference between SES indices and social distance measures
- Chan & Goldthorpe (2004) correlate their social distance measure (31 categories) with income and education (with INC:  $r = 0.31$  and  $0.36$  for M and W; with EDCAT6:  $\text{Tau} = 0.34$ )
- However C&G's status measure has not been directly correlated with a SES index
  - In the Italian case (De Luca, Meraviglia & Ganzeboom, forthcoming) the Camsis-IT scale correlates 0.90 with ISEI, but only 0.63 with EDUCYRS and 0.31/0.32 with (HH)income respectively for R and spouse

4

## Research questions

1. To what extent do social distance measures and SES indexes express two distinct (but correlated) dimensions of occupational status?
2. Do these different measures explain different parts of the status attainment process?
3. Or is the underlying dimension common, i.e. are social distance and SES indexes imperfect indicators of the same latent construct, i.e. (occupational) status?

5

## The ICAM scale

- We have developed a new international relational social distance scale of occupational status: ICAM (International CAMsis Scale).
- The ICAM scale is modeled after the Camsis approach:
  - Husbands' occupation  $\times$  wives' occupation (square) table
  - A fairly large number of detailed occupational categories
  - Aggregation of small occupational groups which show similar scores (ie. social distance patterns)
  - Estimation through RC-II scaled association model (LEM)
  - Modeling diagonal and 'pseudo-diagonal' cells (specific pattern of interaction among different but somehow related groups, eg. hsb farmer - wife agricultural worker)
- Unlike in the Camsis approach, we develop a single scale (one dimension) equal for husband and wives

6

## Building the ICAM scale

- We used the ISSP data set 2002-2007, 42 countries (different countries used according to details of ISCO-88 available code)
- Male and female respondents, nearly 110 000 couples with two occupations
- Occupations coded in ISCO-88 as found in the deposited data file
- Husband x wives table, 193 x 193 (after aggregation)
- RC-II models (one dimension) at all 4 levels of ISCO-88, then merged in a single measure
  - Not all 4-digit ISCO-88 categories were present in the data
  - Scores for 16 categories not present in the original data file and those 4-digit categories that we aggregated to other neighboring categories were imputed using either the nearest upper-digit score, or the same-level (and closest in meaning) category score, when available.

7

## Interpreting the ICAM scale

- We interpret a social distance scale like ours as a status measure *sensu* Weber (see Grusky 2008):
  - Status groups are communities whose situation is determined by the social estimation of honor;
  - Status honor is expressed through a specific style of life expected by those who wish to belong to a certain status group;
  - Status honor leads to distance and exclusion;
  - Restrictions on social relationships (like homogamy) reveal the distance;
  - Occupations are status groups, with associated social honor and life styles; occupational homogamy reveals their social distance.
- Both the Camsis group and Chan and Goldthorpe (2004) would disagree with this interpretation, but for very different reasons!

8

## Friends or spouses?

- Chan & Goldthorpe (2004) do not consider scales based on the correlation of spouses' instead of friends' occupations to be valid social distance measures
- However:
  - Literature cited by Bottero and Prandy (2003) shows a different picture
  - So far, Chan & Goldthorpe have not shown yet any correlation between their own social distance measure and (either version of) the Camsis scale to prove that their claim is empirically supported
  - Note that the method Chan & Goldthorpe use to develop their measure is MDSCAL and, to check the results, a (version of) RC-II models - the same technique used for building a Camsis scale – obtaining the same results with both techniques

9

## The CAMSIS approach

- Bottero & Prandy (2003), Prandy & Lambert (2003) claim social distance measures are a distinctive approach to social stratification:
  - No a priori assumption on the criterion from which to derive a stratification (continuous / discrete) measure
  - Different types of social relationships (R-friends, R-spouse, R-father) exhibit the same social distance pattern (though with decreasing strenght), which points a common underlying ordering in society
  - This underlying dimension is "not reducible to status or prestige", but it is a "phenomenon *sui generis*" and "reveals the way in which combinations of particular resources are socially aggregated into generalized advantage"
  - A social interaction distance scale – like the Camsis scale – reflects in its hierarchical ordering of occupations the "combined material and social inequality, or advantage and disadvantage"

10

## The ICAM status scale

- Clear ordering along the manual / nonmanual divide:
  - 8 out of the 11 first ranks (2-digits ISCO-88) are held by professionals and associate professionals;
  - Managers in large firms (1200) come 6th, while those in small firms (1300) hold the 10th rank;
  - The middle ranks are held by clerical jobs and occupations in the service sector;
  - Skilled craft workers (7300) are the only manual category amidst of nonmanual jobs;
  - The lower part of the scale is occupied by (unskilled) manual jobs in manufacturing and services;
  - The two lowest ranks of the scale are held by unskilled agricultural workers (6200, 9200)

11

## ICAM ranks 1-16 (ISCO-88 2dgt)

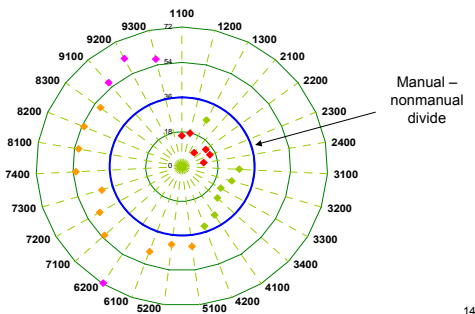
	ISCO-88 2dgt	ICAM	ISEI
}	1. 2100 Physical, mathematical & engineering science professionals	75.42	72.03
	2. 2400 Other professionals	74.02	67.22
	3. 2200 Life science & health professionals	70.25	71.36
	4. 2300 Teaching professionals	69.75	69.69
	5. 1100 Legislators & senior officials	69.02	69.15
	6. 1200 Corporate managers	67.59	65.62
	7. 3300 Teaching associate professionals	62.76	53.92
	8. 3400 Other associate professionals	60.89	52.88
	9. 3200 Life science & health associate professionals	59.23	49.87
	10. 1300 General managers	57.81	53.41
	11. 3100 Physical & engineering science associate professionals	56.68	53.75
}	12. 4100 Office clerks	55.33	42.35
	13. 4200 Customer services clerks	52.33	39.10
	14. 5200 Models, salespersons & demonstrators	44.41	38.01
	15. 7300 Precision, handicraft, printing etc trades workers	43.86	38.01
	16. 5100 Personal & protective services workers	43.44	32.81

## ICAM ranks 17-27 (ISCO-88 2dgt)

		ICAM	ISEI
17.	6100 Market-oriented skilled agricultural & fishery workers	38.31	21.68
18.	7200 Metal, machinery etc trades workers	37.97	40.95
19.	8300 Drivers & mobile-plant operators	34.75	36.87
20.	8100 Stationary-plant etc operators	33.31	36.36
21.	7100 Extraction & building trades workers	32.92	37.33
22.	8200 Machine operators & assemblers	32.71	29.78
23.	7400 Other craft etc trades workers	32.57	30.35
24.	9100 Sales & services elementary occupations	28.70	23.84
25.	9300 Labourers in mining, construction, manufacturing & transport	28.16	25.72
26.	9200 Agricultural, fishery etc labourers	22.45	17.53
27.	6200 Subsistence agricultural & fishery workers	13.19	12.91

13

## The ICAM status scale space



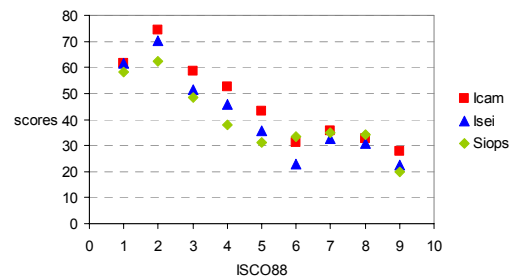
14

## ICAM, ISEI and SIOPS

- In order to unfold the nature of the new status measure, we ran a set of descriptive analyses for comparing it to the available international stratification measures
- ICAM, ISEI and SIOPS show high bivariate correlations
- Though ICAM is more correlated to ISEI than to SIOPS

15

## ICAM vs ISEI and SIOPS (ISCO-88 1 dgt)



16

## Correlations w/ ISEI and SIOPS

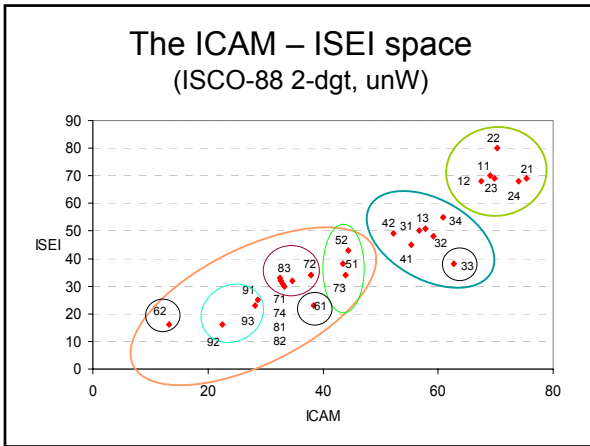
	ISCO-88 3-dgt titles			ESS 2003-04 Respondent's OCC		
	ICAM	ISEI	SIOPS	ICAM	ISEI	SIOPS
ICAM	1	.91	.85	1	.89	.86
ISEI		1	.87		1	.89
SIOPS			1			1

17

## ICAM and ISEI

- If we think of ICAM and ISEI as being two measures of the same construct (ie. status), at ISCO-88 2nd digit, we see three major clusters:
  1. Elite occupations (1,2)
  2. Lower professionals and routine nonmanual (3,4)
  3. The 3rd cluster shows some internal differentiation, and a less clearcut structure:
    - Sales + handicraft workers (5 + 73).
    - Skilled and semi-skilled manual (71, 92, 74, 8)
    - Elementary occupations (9)
    - Two outliers (61 and 62)

18

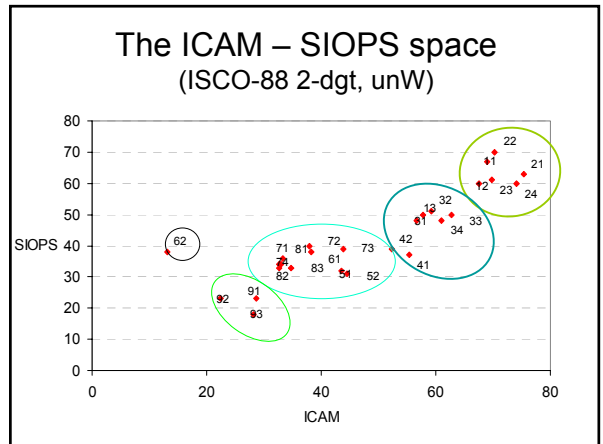


### LCA 3 clusters

#### ICAM-ISEI

	Cluster1	Cluster2	Cluster3
<b>Overall Probability</b>	<b>0.53</b>	<b>0.30</b>	<b>0.17</b>
<i>Indicators</i>			
<b>ICAM</b>			
13.19 - 31.58	1.00	0.00	0.00
31.66 - 38.27	1.00	0.00	0.00
38.29 - 53.17	0.66	0.34	0.00
53.53 - 62.76	0.00	0.97	0.03
62.86 - 85.27	0.00	0.17	0.82
<b>ISEI</b>			
16 - 28	1.00	0.00	0.00
29 - 33	1.00	0.00	0.00
34 - 45	0.69	0.31	0.00
46 - 57	0.00	0.95	0.04
58 - 90	0.00	0.19	0.81
<i>Covariates</i>			
<b>ISCO88 1 dgt</b>			
1000	0.00	0.57	0.42
2000	0.00	0.03	0.97
3000	0.00	1.00	0.00
4000	0.05	0.95	0.00
5000	0.83	0.17	0.00
6000	1.00	0.00	0.00
7000	1.00	0.00	0.00
8000	1.00	0.00	0.00
9000	1.00	0.00	0.00

- ### ICAM and SIOPS
- A first inspection shows that the relationship between ICAM and SIOPS forms 4 clusters, with one outlier (62)
  - The top 2 clusters coincide with those described by the ICAM-ISEI space
    - Elite occupations (1, 2)
    - Lower professionals and routine nonmanual (3,4) with small business managers (13)
    - Skilled and semi-skilled manual workers (52, 61, 7, 8)
    - Unskilled manual workers (9)



### LCA 3 clusters

#### ICAM-SIOPS

	Cluster1	Cluster2	Cluster3
<b>Overall Probability</b>	<b>0.57</b>	<b>0.25</b>	<b>0.18</b>
<i>Indicators</i>			
<b>ICAM</b>			
13.19 - 31.58	1.00	0.00	0.00
31.66 - 38.27	1.00	0.00	0.00
38.29 - 53.17	0.85	0.15	0.00
53.53 - 62.76	0.00	0.98	0.02
62.86 - 85.27	0.00	0.12	0.88
<b>SIOPS</b>			
6 - 29	1.00	0.00	0.00
30 - 36	0.97	0.03	0.00
37 - 44	0.75	0.24	0.01
45 - 54	0.10	0.79	0.11
55 - 78	0.00	0.20	0.80
<i>Covariates</i>			
<b>ISCO88 1 dgt</b>			
1000	0.02	0.49	0.48
2000	0.00	0.00	1.00
3000	0.03	0.97	0.00
4000	0.40	0.60	0.00
5000	0.98	0.02	0.00
6000	1.00	0.00	0.00
7000	1.00	0.00	0.00
8000	1.00	0.00	0.00
9000	1.00	0.00	0.00

- ### Manual and nonmanual
- Splitting the ISCO-88 in two parts (groups 1 to 4, and 5 to 9), to account for the clustering, shows that:
    - ICAM is more closely related to both ISEI and SIOPS in the nonmanual range of the occupational classification
    - Hwvr ICAM is still closer to a ISEI than to SIOPS

## Correlations in the manual & nonmanual ranges (unW data)

	ISCO-88 Groups 1100-4900			ISCO-88 Groups 5100-9300		
	ICAM	ISEI	SIOPS	ICAM	ISEI	SIOPS
ICAM	1	.77	.73	1	.57	.44
ISEI		1	.80		1	.47
SIOPS			1			1

25

## Why built and use an ISEI-like measure?

- In some empirical analyses, ICAM proves to be better than ISEI (see later)
- On a conceptual ground their similarity tells an important story, since they are built on very different assumptions, and come from very different research and study traditions
  - ISEI stands upon education and income, two key resources put into play in the stratification process
  - ICAM uses patterns of social interaction and derives from the social status tradition of studies

26

## Cultural consumption results here

27

## Validation of the ICAM scale

- We compare the ICAM scale to the new ISEI using a fresh data-set (ESS R1-R4), that is fully balanced with respect to the basic processes that inform the two measures:
  - Occupational homogeneity,
  - How education leads to (household) income via occupation.
- A new version of ISEI based on ISCO-08 using ISSP data has been constructed by Ganzeboom (2010) and used here.
- The balance of the variables between spouses can be used for pooled estimation.

28

## Data, variables, model

- Data
  - ESS rounds 1 to 4
  - 32 countries (N = 51000)
- Independent variables
  - Resp's and spouse's occupation coded in ISCO-88 as present in the original data files
  - ICAM and ISEI scores computed from ISCO-88
  - Resp's and spouse's EDUCYRS
- Dependent variable
  - HH income
- Structural equation model (lisrel)

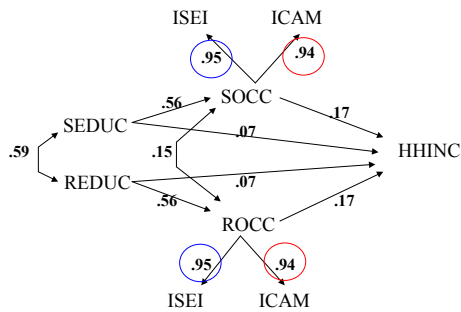
29

## Correlations in ESS R1-4

	educyr	SP educyr	ICAM	newISEI	SP ICAM	SP newISEI	lnhinc
educyr	1.00	0.57	0.60	0.61	0.42	0.43	0.31
SP educyr		1.00	0.42	0.43	0.60	0.60	0.29
ICAM			1.00	0.89	0.43	0.44	0.32
newISEI				1.00	0.44	0.43	0.34
SP ICAM					1.00	0.88	0.32
sp newISEI						1.00	0.33
lnhinc							1.00

30

## Validation model (ESS data, N=51000)



31

## Results

- ICAM and ISEI are found to be equally strong indicators (0.94 vs 0.95) of (the same) occupational status.
- There is no evidence of two-dimensionality:
  - Residual correlations between parallel indicators of spouses are negligible (< .01);
  - ICAM and ISEI are equally correlated with education (0.60) and household income (0.33).

32

## Conclusions

- From an empirical point of view, ICAM and ISEI can be regarded as fully interchangeable
- On a conceptual ground, this tells an important story, since ISEI and ICAM are built on very different assumptions, and constructed using different criteria and methods:
  - ISEI models how education generates income via occupations, i.e. how two key resources are connected in the stratification process;
  - ICAM is a status (reproduction) measure, i.e. how people in different occupations are connect to one another.
- Our evidence shows that these two (analytically) different processes refer to the same underlying hierarchy
- In addition, ICAM can be built on historical data, allowing analysis of long-term trends (what ISEI cannot do).

33