Bakers' sons aren't butchers: Analysis of microclass immobility in the 19th Century

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Microclasses

- Microclass concept a recent innovation advocating measuring large numbers of smaller, dissaggregated classes ('microclasses'), rather than larger, 'big class' units
  - Grusky, Jonsson and colleagues argue that contemporary societies characterised by reproduction according to specific occupations ('microclass immobility'), not into larger classes

- Widely discussed in sociological circles (here, RC28, numerous blogs), but little published work
  - Grusky and colleagues have published various papers
  - Erikson, Goldthrope and Hällsten (2012; Goldthorpe 2002) critiqued the work
  - Published research using the concept rare to find (Griffiths & Lambert, 2012)

- Hitherto microclasses only analysed for contemporary, industrialised societies
  - Might microclasses have been present during early stages of industrialisation?

Industrialisation thesis

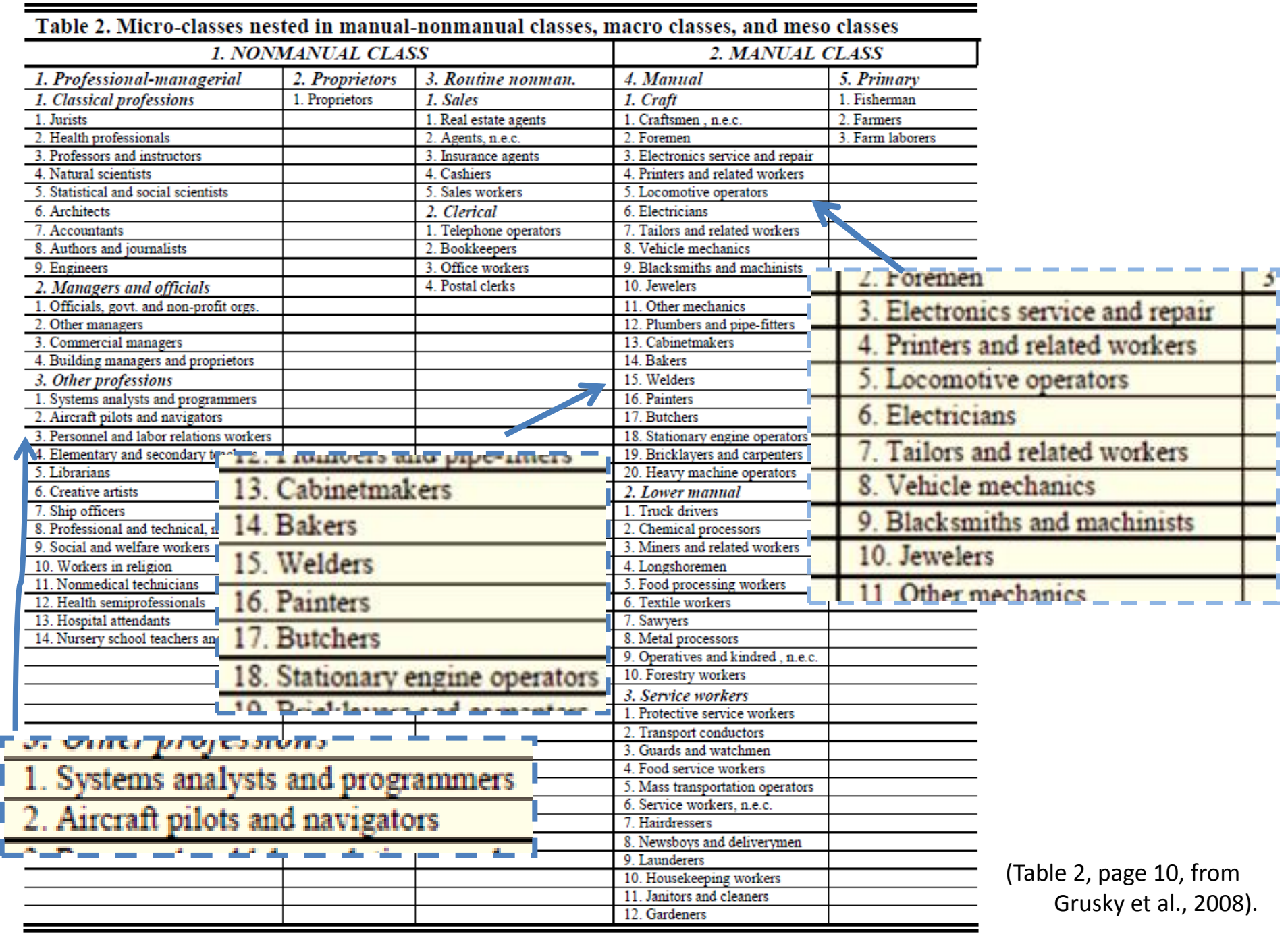
- Treiman's 1970 classic paper suggests industrialisation:
  - Involves decline in proportion of agricultural workers
  - Creates a wider variety of occupations
  - Generates more advantaged jobs and also more educated workers
  - Strengthens relationship between education and own job
  - Weakens relationship between fathers and own job

	Type of reproduction	
Type of resources	***Big-class***	***Micro-class***
Human capital	General or abstract skills (e.g., cognitive or verbal abilities)	Occupation-specific skills (e.g., acting skills, carpentry skills)
Cultural capital	Abstract culture and tastes (e.g., "culture of critical discourse")	Occupation-specific culture and tastes (e.g., aspirations to become a medical doctor)
Social networks	Classwide networks (typically developed through neighbor- hood or job-related interactions)	Occupation-specific networks (typically developed through on-the-job interactions)
Economic resources	Liquid resources (e.g., stocks, bonds, income)	Fixed resources (e.g., business, farm)

(Table 1, page 6, from Grusky et al., 2008).

Table 2. Micro-classes nested in manual-nonmanual classes, macro classes, and meso classes

1. NONMANUAL CLASS			*2. MANUAL CLASS*	
1. Professional-managerial	*2. Proprietors*	*3. Routine nonman.*	*4. Manual*	*5. Primary*
1. Classical professions	1. Proprietors	*1. Sales*	*1. Craft*	1. Fisherman
1. Jurists		1. Real estate agents	1. Craftsmen , n.e.c.	2. Farmers
2. Health professionals		2. Agents, n.e.c.	2. Foremen	3. Farm laborers
3. Professors and instructors		3. Insurance agents	3. Electronics service and repair	
4. Natural scientists		4. Cashiers	4. Printers and related workers	
5. Statistical and social scientists		5. Sales workers	5. Locomotive operators	
6. Architects		*2. Clerical*	6. Electricians	
7. Accountants		1. Telephone operators	7. Tailors and related workers	
8. Authors and journalists		2. Bookkeepers	8. Vehicle mechanics	
9. Engineers		3. Office workers	9. Blacksmiths and machinists	
2. Managers and officials		4. Postal clerks	10. Jewelers	
1. Officials, govt. and non-profit orgs.			11. Other mechanics	
2. Other managers			12. Plumbers and pipe-fitters	
3. Commercial managers			13. Cabinetmakers	
4. Building managers and proprietors			14. Bakers	
3. Other professions			15. Welders	
1. Systems analysts and programmers			16. Painters	
2. Aircraft pilots and navigators			17. Butchers	
3. Personnel and labor relations workers			18. Stationary engine operators	
4. Elementary and secondary t			19. Bricklayers and carpenters	
5. Librarians			20. Heavy machine operators	
6. Creative artists			*2. Lower manual*	
7. Ship officers			1. Truck drivers	
8. Professional and technical, n			2. Chemical processors	
9. Social and welfare workers			3. Miners and related workers	
10. Workers in religion			4. Longshoremen	
11. Nonmedical technicians			5. Food processing workers	
12. Health semiprofessionals			6. Textile workers	
13. Hospital attendants			7. Sawyers	
14. Nursery school teachers an			8. Metal processors	
			9. Operatives and kindred , n.e.c.	
			10. Forestry workers	
			3. Service workers	
			1. Protective service workers	
			2. Transport conductors	
			3. Guards and watchmen	
			4. Food service workers	
			5. Mass transportation operators	
			6. Service workers, n.e.c.	
			7. Hairdressers	
			8. Newsboys and deliverymen	
			9. Launderers	
			10. Housekeeping workers	
			11. Janitors and cleaners	
			12. Gardeners	



(Table 2, page 10, from Grusky et al., 2008).

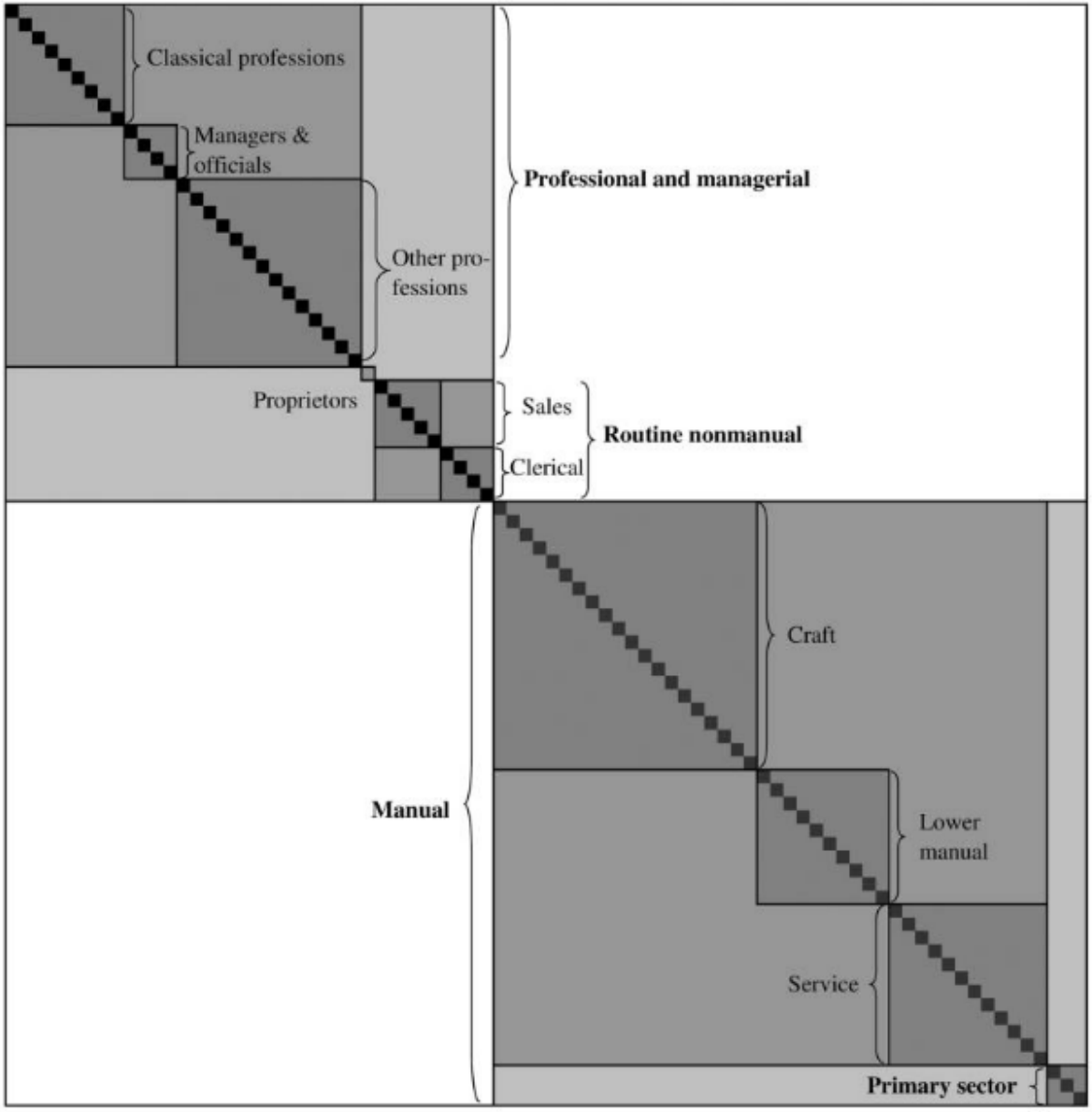


FIG. 2.—Overlapping inheritance terms in mobility model. The *y*-axis pertains to occupational origins and the *x*-axis to occupational destinations. The unlabelled microdiagonal squares represent occupational immobility (see app. table A2 for more information on the class schemes).

Mobility / immobility argued to involve a mix of 'micro', 'meso' and 'macro' level influences.

Image taken from Jonsson et al. (2009), pp. 998.

Microclass mobility in historical perspective?

1) *Can Microclasses be operationalised on historical data at all?*
2) *If so, is it relevant to operationalise microclasses for late 19th century societies?*
3) *If so, do the same microclass mechanisms observed for 20th century apply to 19th?*
4) *When did microclass divisions accentuate in social history?*

Operationalising historical data into microclasses

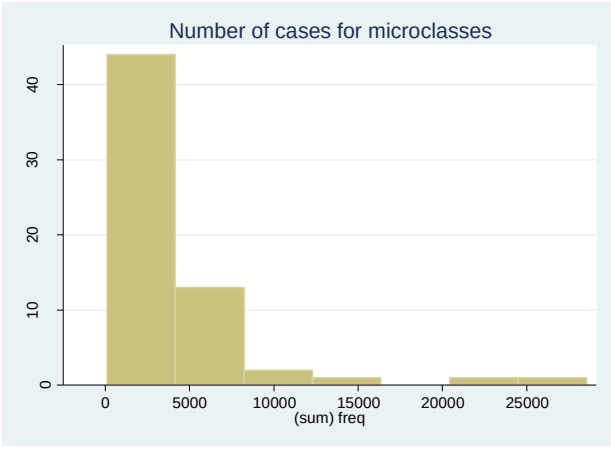
- Resources such as NAPP offer large volumes of detailed occupational data coded to various schemes
- Files generated to convert NAPP codes to standardised codes of HISCO (Zijdeman, Griffiths)
- Contemporary microclass translation macros under development (to selected national schemes – Grusky & colleagues; to ISCO and UK schemes – Griffiths, Lambert)
- Developed a HISCO-microclass algorithm, using slightly different microclass units, for this analysis (Griffiths, Zijdeman)
  - Exploiting previous HISCO-HISCLASS routines (Maas, van Leeuwen)
  - Part of ongoing development of occupation-based schemes for historical data – see also HISCAM (www.camsis.stir.ac.uk/hiscam)

Data conversion

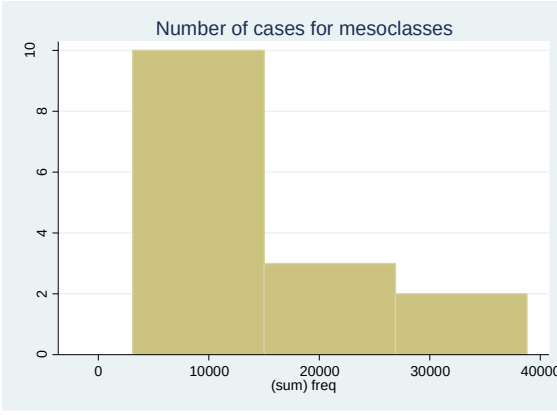
- 471 Norwegian job titles (NAPP HISCO) and 250 USA job titles (US 1950 census)
- 466 HISCO occupations
  - with 359 unique HISCAM scores
- 13 HISCLASS categories
  - 6 macroclasses (5 non-agricultural)
  - 17 mesoclasses (15 non-agricultural)
- 68 microclasses (62 non-agricultural)

Non-manual			Manual	
1. Professionals	**2. Lower professionals**	**3. Lower non-manual**	**4. Skilled manual**	**5. Semi and unskilled**
11.Higher professionals	***21. Lower professionals***	***31. Clerks***	***41. Makers and operators***	***51. Construction and Industry***
111. Lawyers	211. Artists	311. Clerks	411. Foremen	511. Stoner cutters
112. Health professionals	212. Bookkeepers	312. Store clerks	412. Blacksmiths	512. Metal processors
113. Teachers	213. Sales professionals	***32. Other non-manual***	413. Mechanics	513. Construction
114. Architects and engineers	214. Proprietors	321. Watchmen	414. Sheet metal workers	514. Miners
115. Other higher professionals	215. Religious workers	322. Janitors	415. Stone masons	515. Sawyers
12. Higher managers	216. Police officers	323. Other non-manual	416. Joiners	516. Painters
121. Governmental managers	217. Other lower professionals		417. Plumbers	***52. Textiles***
122. Business managers	***22. Lower managers***		418. Other makers and operators	521. Textile workers
	221. Governmental managers		***42. Artisans***	522. Knitters
	222. Business managers		421. Printers	***53. Service***
	223. Ship's officers		422. Tailors	531. Barbers
			423. Shoemakers	532. Domestic service
			424. Cabinetmakers	533. Waiters
			425. Cartwrights	534. Messengers
			426. Coopers	535. Other service
			427. Jewellers	***54. Transport***
			428. Other artisans	541. Brakemen
			43. Food producers	542. Seamen
			431. Bakers	543. Train guards
			432. Butchers	544. Motor vehicle drivers
			433. Other food producers	***55. Other semi-skilled***
				551. Stationary engine operators
				552. Other semi-skilled workers
				56. Unskilled workers
				561. Labourers
				562. Other unskilled

- Proposed scheme for microclasses in 19th century using HISCO units
- Translation code to HISCO at www.camsis.stir.ac.uk/sonocs



- Microclasses:
  - 28,543 in largest (proprietors)
  - 108 cases in smallest (watchmen)
  - Mean of 3,950 (s.d=4,769)
- Mesoclasses:
  - 38,810 in largest (lower professionals)
  - 3,133 in smallest (higher managers)
  - Mean of 14,840 (s.d. of 11,497)



Reconstructing father-son mobility on historical datasets

- Previous analyses have often used marriage registers (groom's occupation plus father of groom / bride)

- NAPP and census datasets link co-resident adults (e.g. adult son living with father) but this could introduce age-related bias

- NAPP for USA and Norway (other countries forthcoming) has linked census data for samples of cases, that can allow linkage between fathers of children in one decade with the children as adults some decades later

Data – linked NAPP census data for father-son combinations in 19th/early 20th century USA and Norway

	USA	Norway
Cases (including farming)	104,887	203,049
Cases (excluding farming)	34,961	41,838
… % agricultural workers' son working in agric.	68%	77%
… % agri/non-agri relations moving from agric.	79%	83%
Manual/manual immobility*	73%	80%
Macroclass immobility*	50%	56%
Mesoclass immobility*	40%	44%
Microclass immobility*	35%	37%
HISCO immobility*	34%	32%

* Non-agricultural combinations only

Number of cases, by year and country

USA	cases
1850	1,990
1860	4,093
1870	6,835
1900	9,628
1910	6,432
1920	3,436
1930	2,547

Linked to father or son in 1880

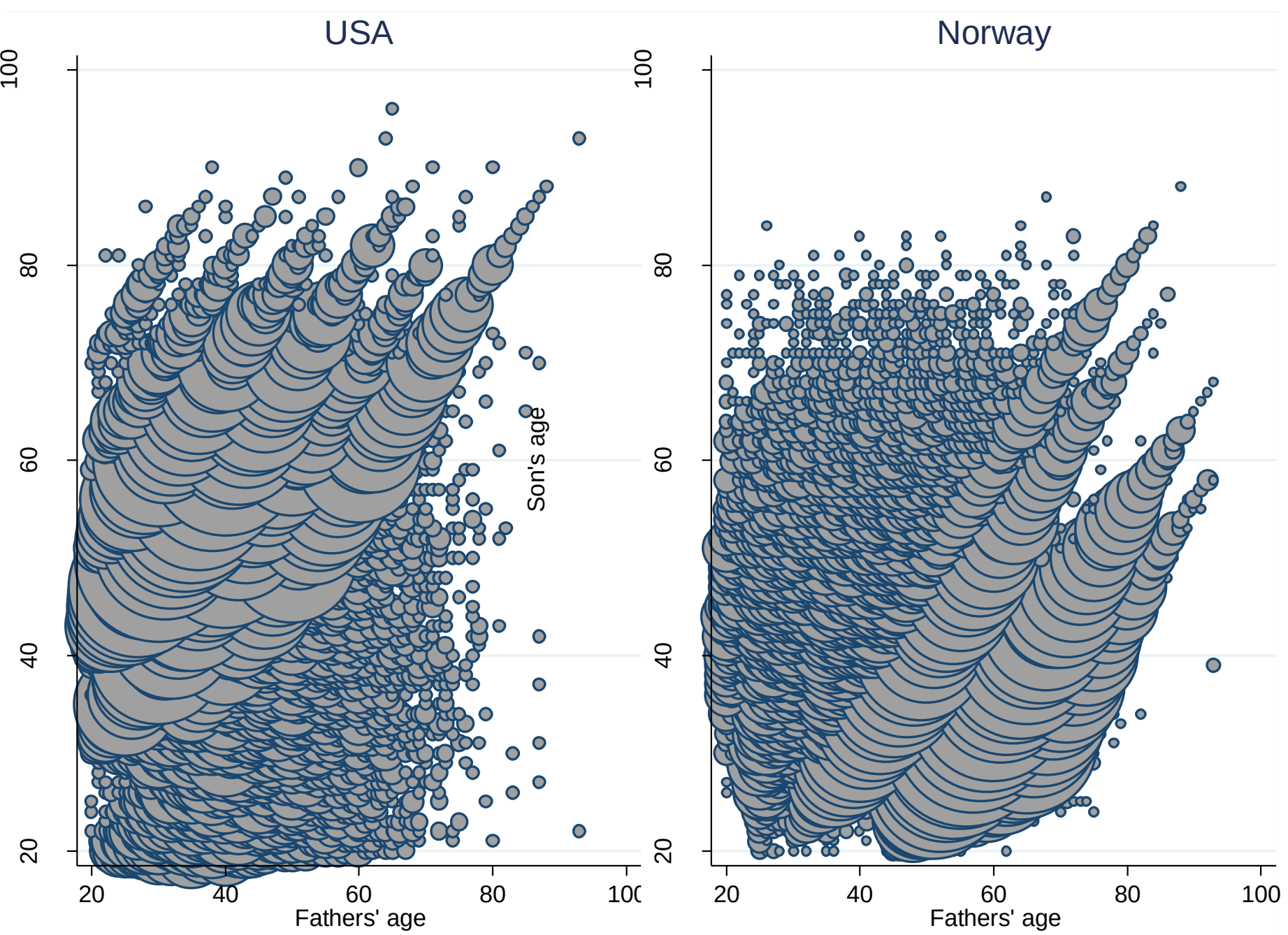
Norway	cases
1875	6,407
1900	35,431

Son's occupations (linked to 1865 or 1875 fathers)

Number of cases of both working and non-agricultural father and sons combinations relatively low, but sufficient to analyse.

Approx 11k USA cases for 1880 sons (linked to fathers 10-30 years earlier) and 22k cases for 1880 fathers (linked to sons 20-50 years later).

Norway has data linking 1865-1875; 1865-1900; and 1875-1900. Therefore gaps can be 10, 25 or 35 years apart.


USA
Norway
Son's age
Fathers' age
Fathers' age
20
40
60
80
100

Absolute rates of immobility by fathers manual/non-manual status

	Fathers – country and job type			
	USA non-manual	USA manual	Norway non-manual	Norway manual
Manual/manual immobility	76%	71%	80%	80%
Macroclass immobility	48%	51%	51%	59%
Mesoclass immobility	43%	38%	43%	44%
Microclass immobility	36%	34%	35%	38%
HISCO immobility	35%	34%	28%	35%

Results: Models of immobility in 19th century America and Norway

N=76,799	L^2	df	Δ	BIC
Full model	24,429	14,801	.175	-142,066
(excluding HISCAM)	24,982	14,800	.177	-141,502
(excluding Microclass)	61,640	14,863	.322	-105,553
(excluding Meso and macroclass)	27,780	14,823	.192	-138,963
(with log-muliplicative scaling replacing HISCAM)	21,688	14,679	.162	-143,435

Model:
(origin*country*era) + (destination*country*era) + (manual/non-manual immobility) + (macroclass immobility) + (mesoclass immobility) + (microclass immobility) + (HISCAM scaling)

Results consistent with Grusky et al. analysis for contemporary data: microclasses have the greatest influence on (im)mobility patterns

Propensity towards macroclass immobility, given manual/non-manual reproduction

	Beta	Odds ratio
Higher professionals	-.3575	.70
Lower professionals	-.4803	.62
Lower non-manual	-.1249	.88
Skilled manual	-.1253	.88
Semi and unskilled manual	.0818	1.09

People generally likely to move to a different macroclass if in manual/non-manual reproduction, aside from the least skilled workers.

Signs of mobility amongst those aggregated studies have declared ‘immobile’ (Long and Ferrie, 2013)

	Beta	Odds ratio
Higher professionals	.5657	1.76
Higher managers	-.3604	.70
Lower professionals	.3533	1.42
Lower managers	.0920	1.10
Clerks	.3062	1.36
Other non-manual workers	-.1045	.90
Makers and operators	.1797	1.20
Artisans	.0971	1.10
Food producers	-.0719	.93
Construction and industry	.1734	1.19
Textiles	.7263	2.07
Service	1.2998	3.67
Transport	.3664	1.44
Other semi-skilled	.4600	1.58
Unskilled	.5755	1.78

Mesoclass immobility, given macroclass reproduction

Patterns of immobility into mesoclass moderate, aside from certain semi-skilled occupations.

Again, no sign of big class reproduction, although some observable patterns (the sons of higher professionals generally gain a profession, not enter management).

	Beta	Odds ratio
Higher professionals	2.627	14.1
Higher managers	2.466	12.4
Lower professionals	1.586	8.1
Lower managers	2.175	8.9
Clerks	1.213	3.5
Other non-manual workers	2.369	27.1
Makers and operators	2.934	25.5
Artisans	3.832	51.9
Food producers	4.620	104.5
Construction and industry	3.211	26.6
Textiles	.871	5.5
Service	2.241	15.3
Transport	2.140	10.8
Other semi-skilled	2.468	12.0
Unskilled	1.489	4.9

Microclass immobility, given mesoclass reproduction

High patterns of microclass reproduction when in the same mesoclass (principally, a subdivision of HISCLASS).

(2) Do the same microclass mechanisms observed for 20th century apply to 19th?

- Grusky, Jonsson and others argue that microclasses are more important in contemporary nations than big classes
- Goldthorpe, Erikson and others argue that microclasses give the impressions of being more important to less advantaged workers, but only due to fewer available options for employment
- Both sets of researchers agree, however, that microclass reproduction in stronger for non-manual workers

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Macro, Meso and Micro (from top) immobility for Non-Manual workers

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Little evidence of immobility at big class level; mesoclass perhaps suggests using advantage to learn a profession; microclass shows, clerks aside, sons prefer to go into father's occupation.

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Again, little evidence of big class inheritance. Service workers only mesoclass strongly reproducing.

Microclasses largely reproducing.

Microclass reproduction in non-manual occupations

Lawyers	14.7
Health professionals	14.9
Teachers	11.4
Architects and engineers	22.8
Other higher	12.2
Public sector managers	7.6
Private sector managers	15.5
Artists	28.7
Bookkeepers	8.8
Sales professionals	10.6
Proprietors	2.9
Religious workers	23.3
Police officers	47.4
Other lower professionals	18.7
Public sector lower managers	9.7
Private sector lower managers	6.5
Ship's officers	9.5
Clerks	4.6
Stock clerks	2.4
Watchmen	371.8
Janitors	38.9
Other non-manual workers	5.3

Relatively consistent patterns of odds of being in same microclass, given mesoclass reproduction.

Proprietors appears much lower, perhaps due to parents encouraging children into particular professions.

Clerks appear to have much movement, perhaps implying they are not as different as the other categories.

Watchmen are the obvious outlier – they are much less like other non-manual workers.

Microclass reproduction in manual occupations

Foremen	6.2
Blacksmiths	47.2
Mechanics	11.3
Sheet metal workers	54.6
Stone masons	84.9
Joiners	12.6
Plumbers	82.2
Other makers and operators	22.6
Printers	43.0
Tailors	28.2
Shoemakers	44.7
Cabinetmakers	52.8
Cartwrights	39.0
Coopers	97.1
Jewellers	122.3
Other artisans	75.6
Bakers	96.8
Butchers	136.7
Other food producers	66.8

High levels of reproduction in most occupations – signs that people learn the family trade, or that people use their parents contacts for work?

Bakers and butchers seem highly independent of each other, and food producers. Evidence that those microclasses existed in the period?

Stone cutters	58.9
Metal processors	34.3
Construction workers	18.4
Miners	24.9
Sawyers	16.9
Painters	37.6
Textile workers	22.3
Knitters	1.4
Barbers	49.6
Domestic servants	4.1
Waiters	20.2
Messengers	8.3
Other service workers	5.9
Brakemen	25.7
Seamen	5.4
Train guards	58.9
Motor vehicle drivers	11.0
Stationary engine operators	18.0
Other lower skilled workers	11.0
Labourers	6.5
Other unskilled workers	2.6

When did microclass divisions accentuate in social history?

- Evidence that microclasses were present during industrialisation in the USA and Norway
- Effects largely same as in contemporary societies, although different interpretations possible
- Therefore, could microclasses have become relevant in pre-industralised times?

Results: Era-related coefficents for immobility

	Beta	Odds ratio
USA 1880	.1805	1.20
USA post 1880	-.1819	.84
Norway 1875	-.2489	.78
Norway post 1875	.2368	1.27

Results inconclusive. USA saw less reproduction after 1880 – signs of industrialisation?

Norway saw a reduction in reproduction after 1875 – signs that industrialisation didn't exist?

Given similar patterns of movement from agricultural workers and rural populations, inconclusive when microclasses when formed, or inconclusive where formed?

Summary

- Microclasses were evident during the period of industrialisation in the USA and Norway
- Developments in historical occupational analysis (HISCO, HISCAM, HISCLASS) enable development of historical microclass schemes
- Microclasses offer potential for more fine grained analysis of immobility patterns in historical settings
- Possible factor that microclasses were used in historical times to consolidate social advantage, whereas currently they are seen as consolidating disadavantage.

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