Biology of social inequalities

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The session

- Gap theory
- Psychosocial/biological stress pathways and health inequality
- Closing the gap

(British) Social Classes

1913 RGSC occupation: 'standing in the community' (moral measure)

1970s E-G schema/NS-SEC occupation: employment posn.

1984 Bourdieu social, cultural, economic capital → class distinctions are multi-dimensional

2013 Savage, Devine et al GB Class Survey n=161,400

- **SOCIAL**: Camb soc interactn & stratificn (CAMSIS)
- **CULTURAL**: type/freq engagement with high & 'emerging' cultural activities e.g. music, eating, holidays
- **ECONOMIC**: household income + hh savings + house price → assets
- 6 variables → latent class/profile analysis

Table 5. Summary of social classes.

	% GfK	% GBCS	Description
Elite	6	22	Very high economic capital (especially savings), high social capital, very high highbrow cultural capital
Established middle class	25	43	High economic capital, high status of mean contacts, high highbrow and emerging cultural capital
Technical middle class	6	10	High economic capital, very high mean social contacts, but relatively few contacts reported, moderate cultural capital
New affluent workers	15	6	Moderately good economic capital, moderately poor mean score of social contacts, though high range, moderate highbrow but good emerging cultural capital
Traditional working class	14	2	Moderately poor economic capital, though with reasonable house price, few social contacts, low highbrow and emerging cultural capital
Emergent service workers	19	17	Moderately poor economic capital, though with reasonable household income, moderate social contacts, high emerging (but low highbrow) cultural capital
Precariat	15	<1	Poor economic capital, and the lowest scores on every other criterion

GBCS classes and capital scores

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).

Savage et al 2013

Authors' conclusions

Savage et al:

- 'no clear affiliation between specific occupations and our latent classes'
- 'elite' class (6%) evidence for 'accentuation of social advantage at the top'
- 'precariat' (15%) 'lack of any significant amount of economic, cultural, or social capital'
- 'polarisation of social inequality (elite/precariat), and fragmentation of traditional sociological middle and working-class divisions into more segmented forms'

Social inequalities life course research

Does a (unidimensional) social status hierarchy still exist?

How could/should the multidimensional conceptualisation of social class impact on health inequalities research?

Salary range (1 August 1992) in Whitehall II

Civil Service employment grade	Salary range (£)	Whitehall II study grade
Unified Grade 1–6	28 904–87 620	1
Unified Grade 7	25 330–36 019	2
Senior Executive Officer	18 082–25 554	3
Higher Executive Officer	14 456–20 850	4
Executive Officer	8 517–16 668	5
Clerical and Support Staff, e.g. messengers, porters, telephonists, typists	7 387–11 917	6

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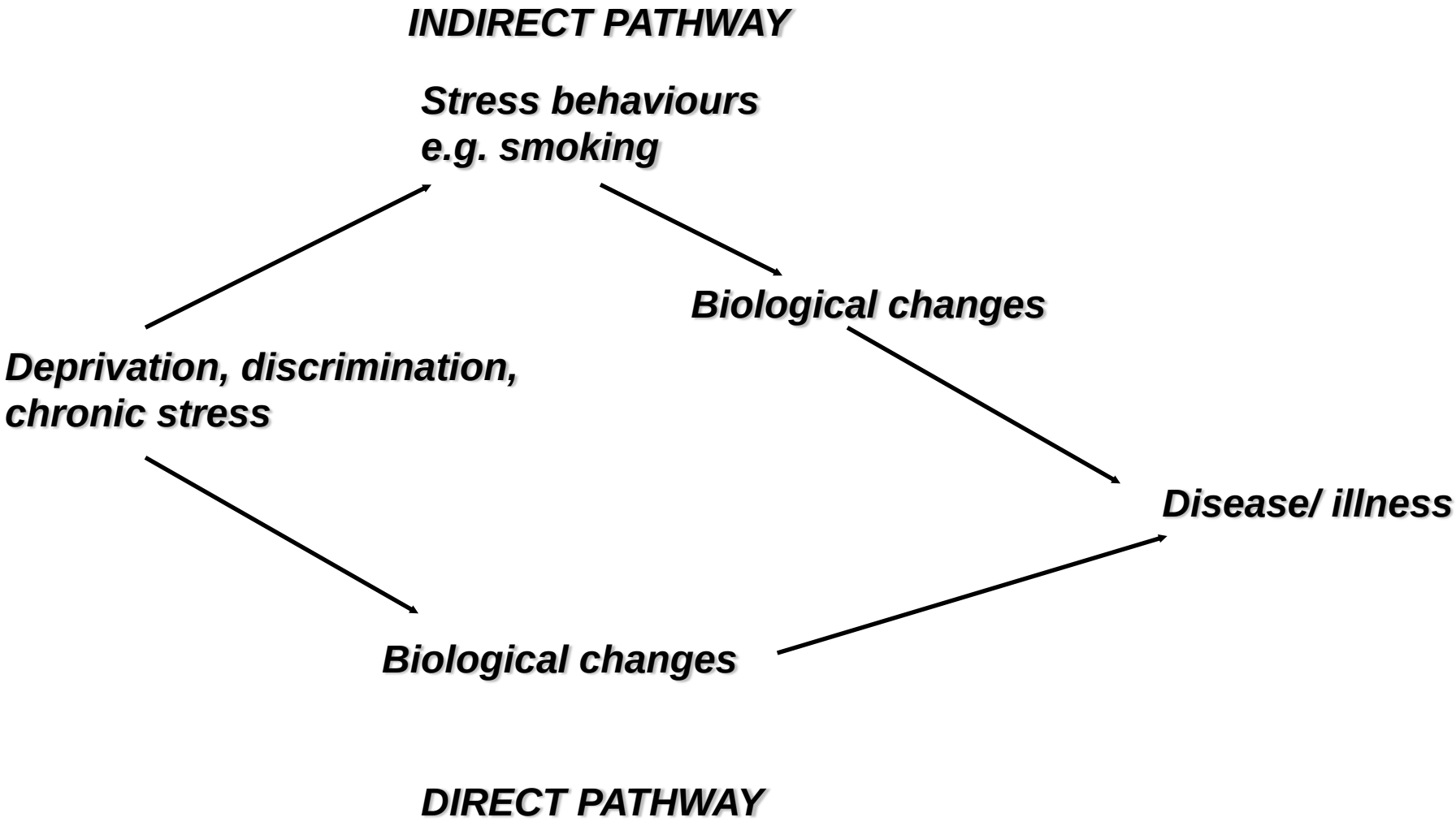
Two pathways



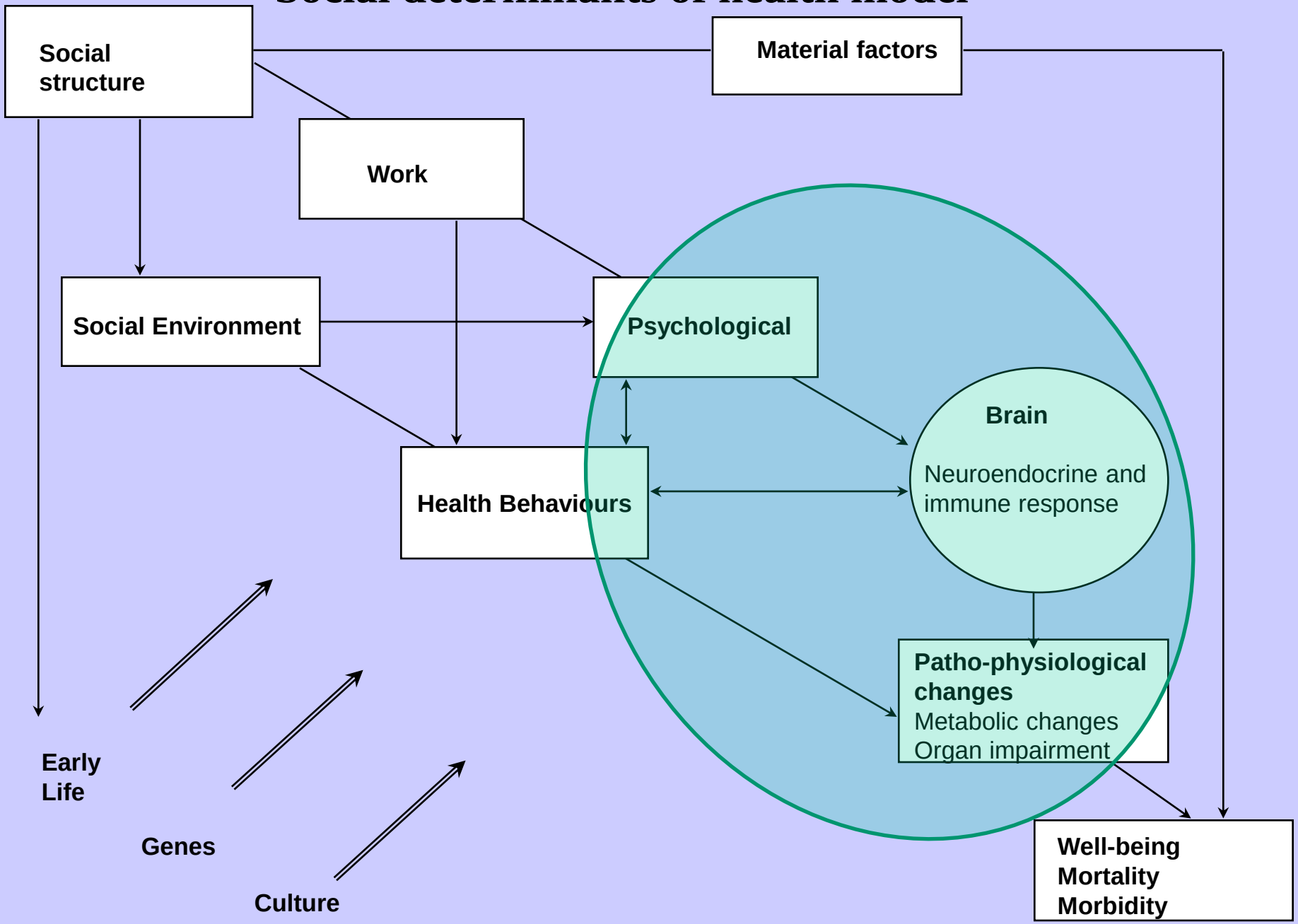
Other biological exposures: chemicals, microorganisms

Embodiment

"we literally incorporate, biologically, the material and social world in which we live, from in utero to death; a corollary is that no aspect of our biology can be understood absent knowledge of history and individual and societal ways of living."

Krieger JECH 2001

Social determinants of health model



Brunner & Marmot OUP 1999 2006

HPA axis

Links with psychological and physical (vascular) health are evident

For each health outcome, it remains unclear to what extent HPA axis dysregulation is on the pathway or a marker of homeostatic/metabolic disturbances

Role of HPA and other neuroendocrine/autonomic pathways in social inequalities in health under-researched, particularly in birth cohorts

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- Include biological and behavioural variables as explanatory factors
- Time varying covariate modelling
- Relative approach (control/standardisation) versus absolute (risk factor reduction)
- Life course (causes of the causes) modelling

Relative approach (control/standardisation) versus absolute (risk factor reduction)

- Adjustment method - not a realistic counterfactual
- Alternative approach is to apply absolute reduction e.g. ‘best medical practice’ and examine effect on social inequality in disease incidence
- Choose scenarios, e.g. reductions in risk uniform or socially stratified?

Absolute and relative approach to inequality

- Different questions and different answers
- Preference is driven by public health values

Limitations of models relying exclusively on adult exposures

No life course context in the model

Statistical explanation ≠ adequate explanation

In terms of public health policy, taking smoking as the example

The causes of the causes question remains:

why is there a social gradient in smoking?

Conclusion

- Social inequalities in health can largely be accounted for in epidemiological studies but conceptual and statistical thinking must be balanced

    e.g. Life course studies are critical in furnishing evidence that explanation of health inequality reliant on adult health behaviour is incomplete

- Many modes of analysis and statistical techniques for us to apply in this field
- Inclusion of biological variables in social epidemiology is valuable. Methodological issues e.g. measurement error, causation provide plenty of challenges