

This report has been produced as part of the UK Government's Foresight Project, Mental Capital and Wellbeing.

The views expressed do not represent the policy of any Government or organisation.

# Mental Capital and Wellbeing: Making the most of ourselves in the 21st century

**Systems maps** 

### This report is intended for:

Policy makers and a wide range of professionals and researchers whose interests relate to mental capital and wellbeing.

### This report should be cited as:

Foresight Mental Capital and Wellbeing Project (2008). Systems maps.
The Government Office for Science, London



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### 1 Introduction

This report provides a catalogue of important systems diagrams that have been produced within the Foresight Project on Mental Capital<sup>1</sup> and Wellbeing<sup>2</sup>. Some of these diagrams also appear in particular Project reports<sup>3</sup>.

This report is not intended as a stand alone document. Rather, it should be read in conjunction with the final Project report, which describes the Project and its key findings, and the following reports which synthesise the science and evidence base:

- Mental capital through life: Future challenges;
- Learning through life: Future challenges;
- Mental health: Future challenges;
- Wellbeing and work: Future challenges; and
- Learning difficulties: Future challenges

The interested reader can also obtain detailed information on these diagrams in a report that has been produced by the firm shiftN, which undertook the systems work for the Project. In particular, that report details how the various diagrams were built up from their component parts, and provides other explanatory information. That contractual report can be obtained via www.foresight.gov.uk.

#### The production of the diagrams and their use within the Project

The systems diagrams mostly detail the many factors that affect aspects of mental capital and wellbeing. They were used within the Project to gain a clearer understanding of the complex interactions and interrelationships of these factors.

Their production involved extensive consultation with leading experts. However, the systems that they seek to capture visually are extremely complex, and therefore the detail which the diagrams contain is inevitably controversial: for example, some readers may argue for the inclusion of other factors, or for different linkages. Nevertheless, whilst the diagrams do not purport to be definitive, it is hoped that others will find them useful.

## 2 Catalogue of diagrams

The following table lists the systems diagrams that are reproduced here, together with a brief description.

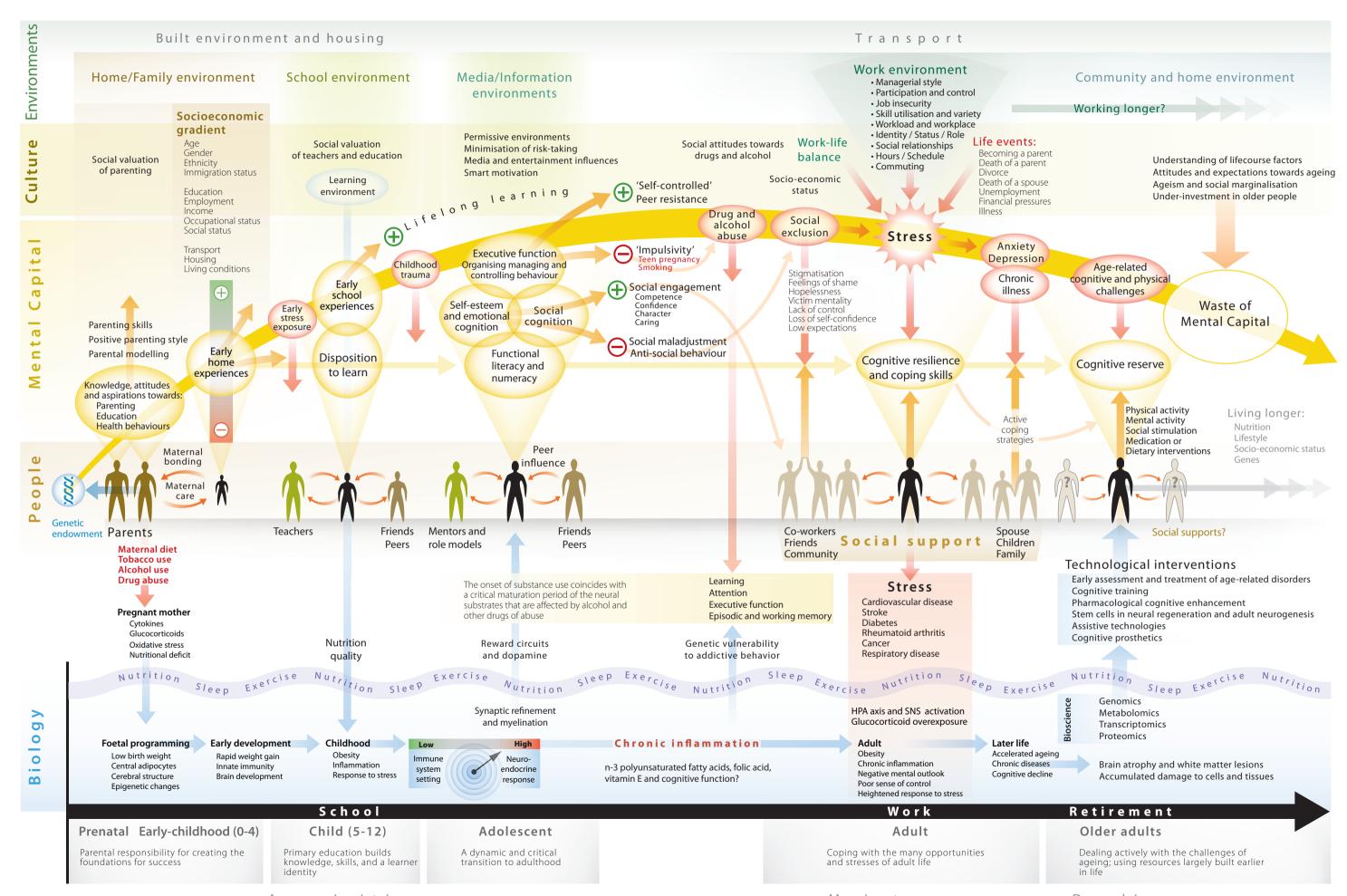
Page	Systems diagram
3	Mental capital through life – conceptual overview  The trajectory of mental capital through life, detailing some of the many factors that influence mental capital and how they are connected across the lifecourse
4	Learning through life – conceptual overview A visualisation of the issues associated with learning through life
5	Disposition to learn – influence diagram A diagram of the many factors that interact to affect disposition to learn
6	Learning difficulties – conceptual overview A visualisation of the many factors that affect learning difficulties
7	Functional literacy – influence diagram A diagram of the causal factors that drive the development of functional literacy
8	Functional numeracy – influence diagram  A diagram of the causal factors that affect the development of functional numeracy
9	Executive function – influence diagram A diagram showing the causal factors involved the development of executive function
10	Mental health – conceptual overview A visualisation of the principal factors that affect mental health and mental ill-health, and their inter-relationships
-11	Stigma associated with mental ill-health – influence diagram A diagram of the many factors affecting the stigmatisation of, and discrimination against, people with mental illness
12	Stigma associated with mental ill-health – actors An illustration of some of the people and settings that can influence stigma and discrimination
13	Wellbeing at work – conceptual overview  A visualisation of the factors that affect wellbeing at work and the associated positive and negative outcomes of healthy versus unhealthy workplace environments
14	Stress at work – influence diagram A diagram of the many factors that interact to affect stress at work

I "Mental capital" refers to the totality of an individual's cognitive and emotional resources, including their cognitive capability, flexibility and efficiency of learning, emotional intelligence (e.g. empathy and social cognition), and resilience in the face of stress. The extent of an individual's resources reflects his/her basic endowment (genes and early biological programming), and their experiences and education, which take place throughout the lifecourse.

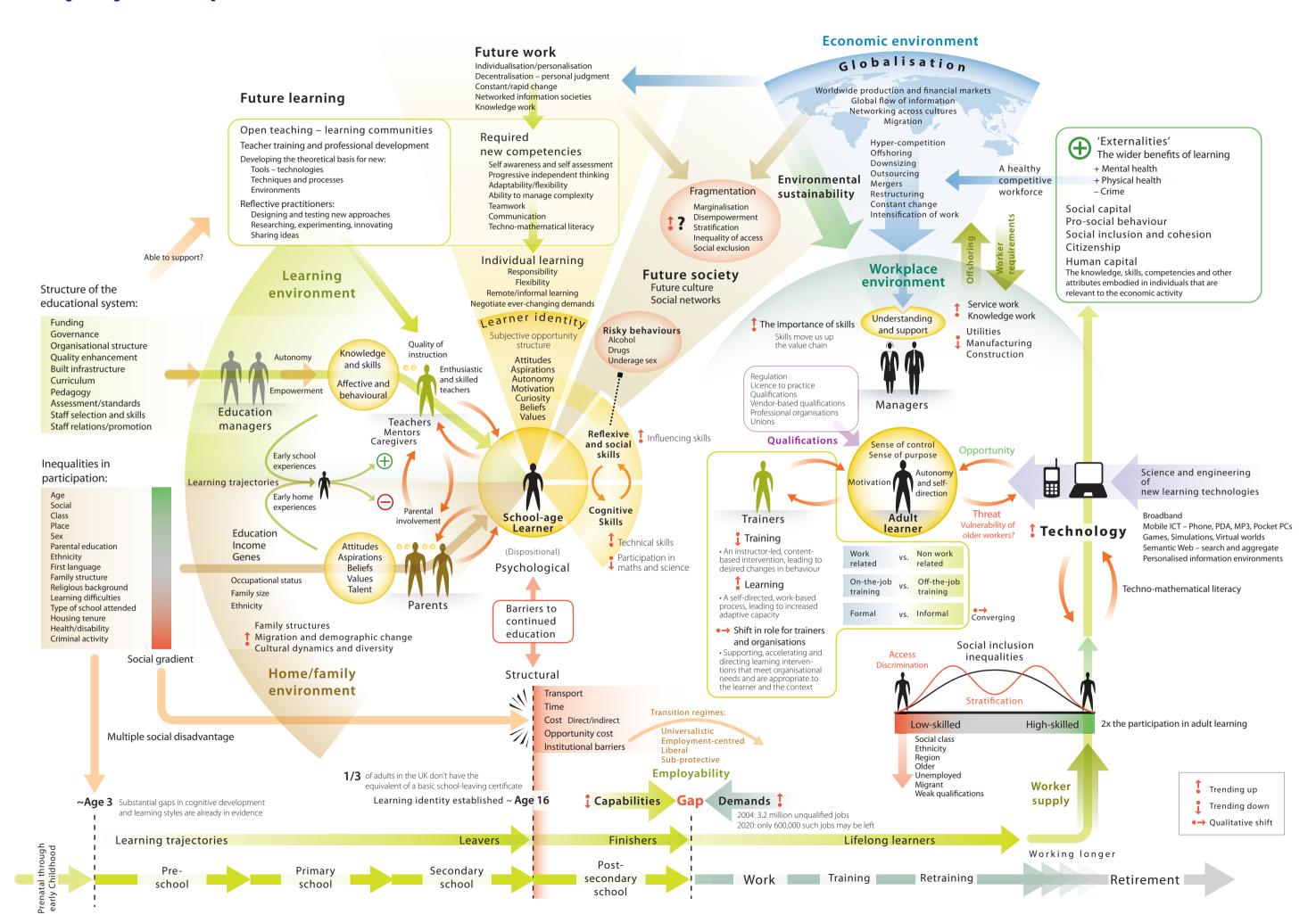
<sup>2 &</sup>quot;Wellbeing" throughout this report refers to "mental wellbeing". Mental wellbeing is a dynamic state in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community. It is enhanced when an individual is able to fulfil their personal and social goals and achieve a sense of purpose in society.

<sup>3</sup> See Appendix A for a list of the Project reports..

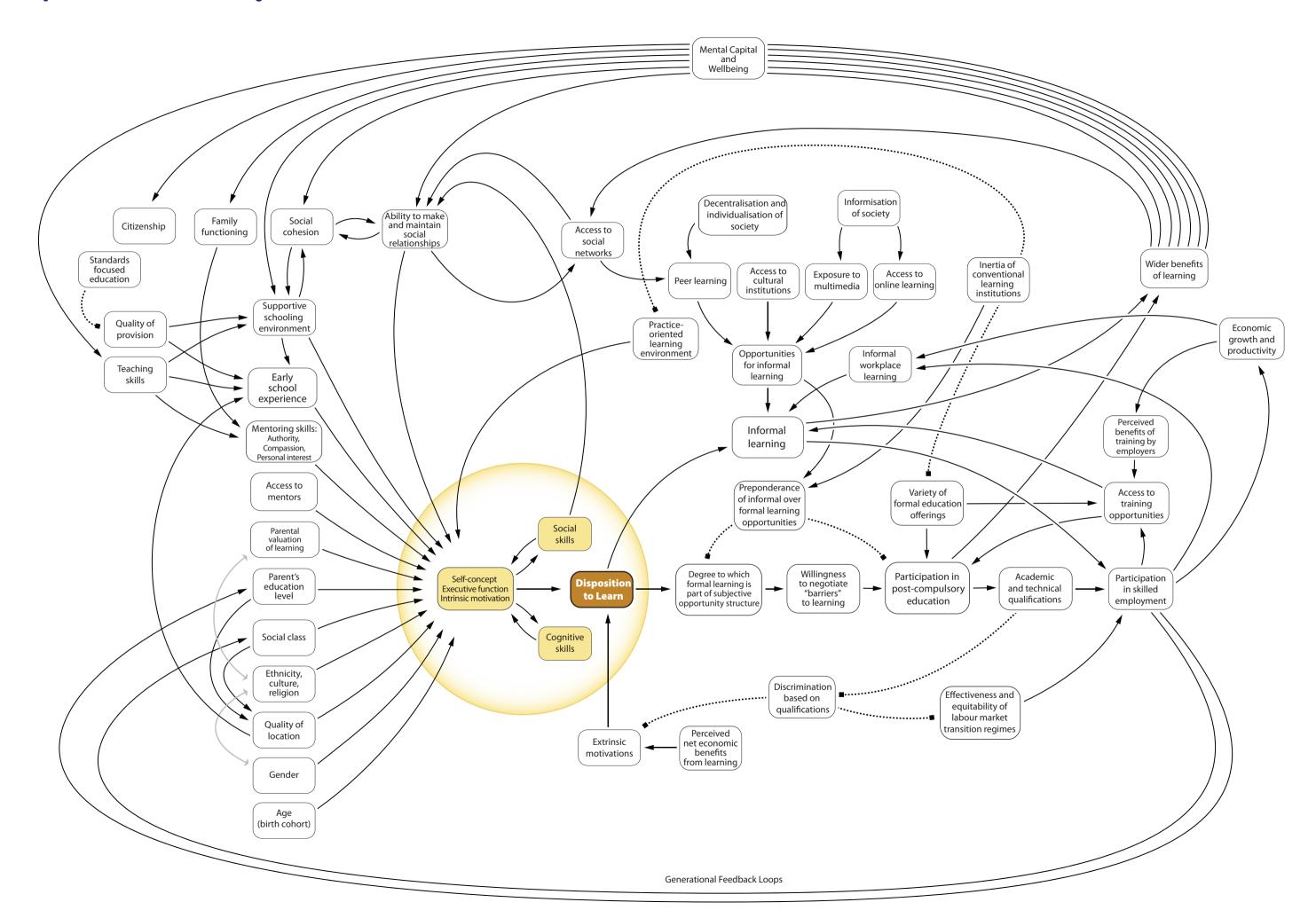
#### Mental capital through life - conceptual overview

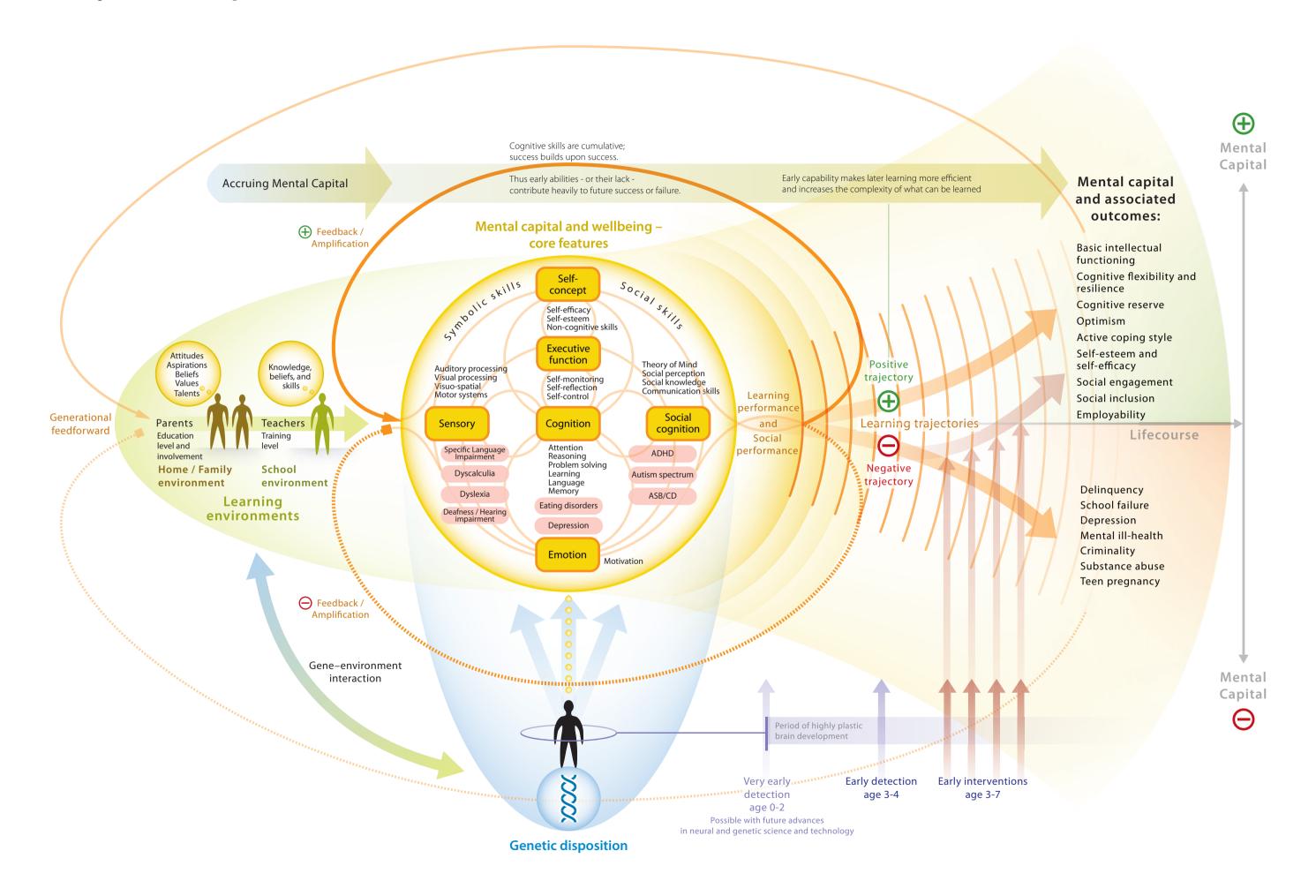


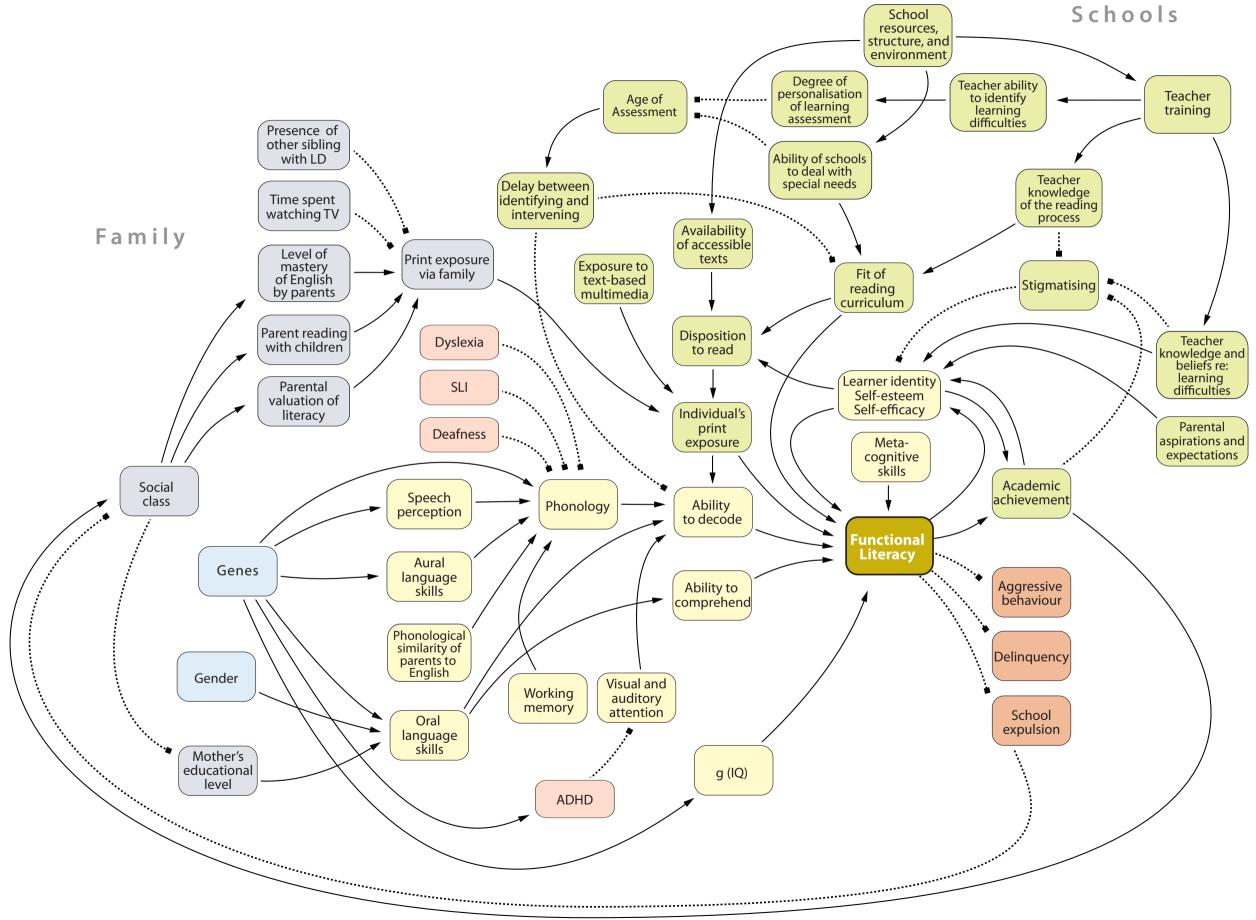
#### Learning through life – conceptual overview

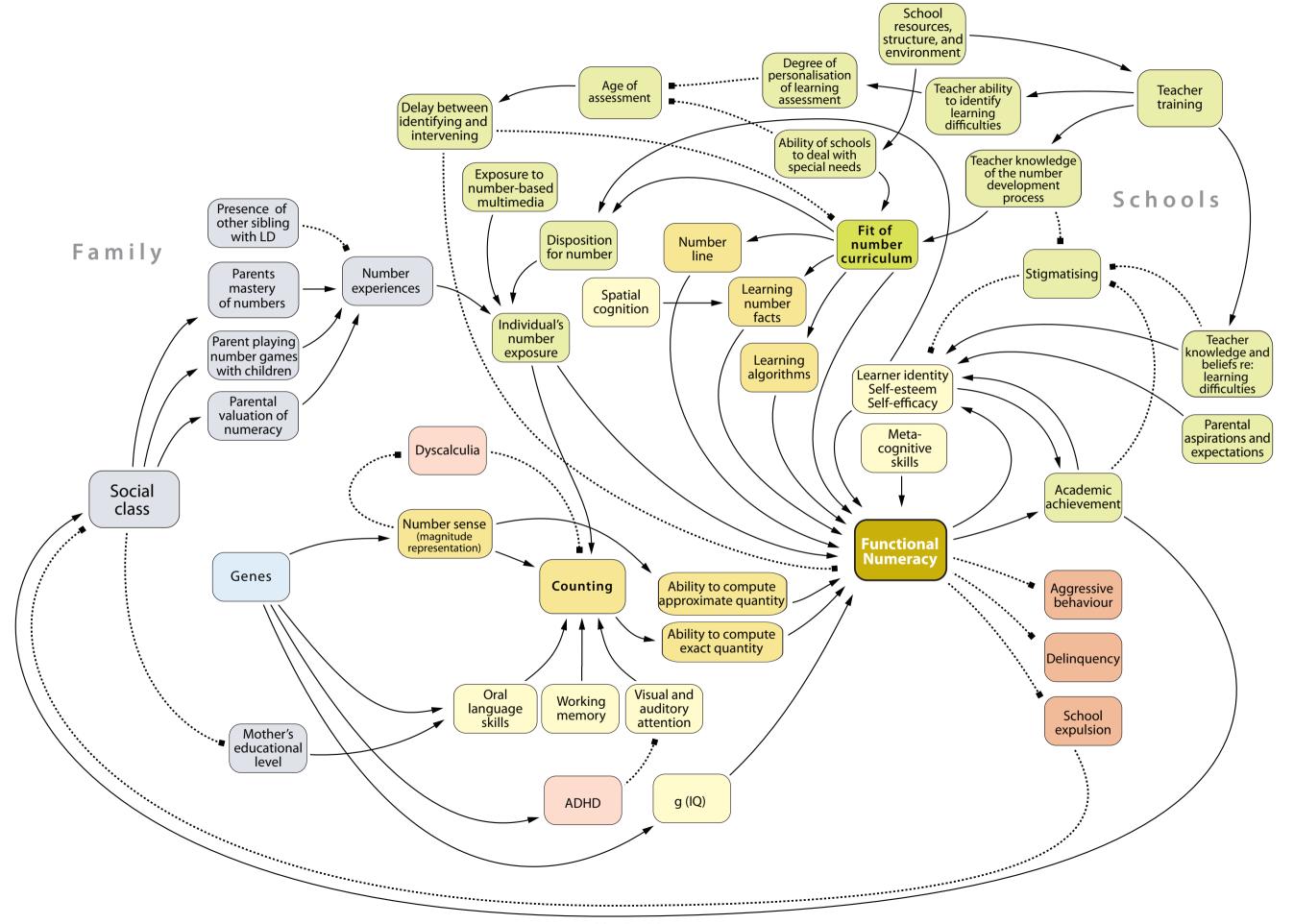


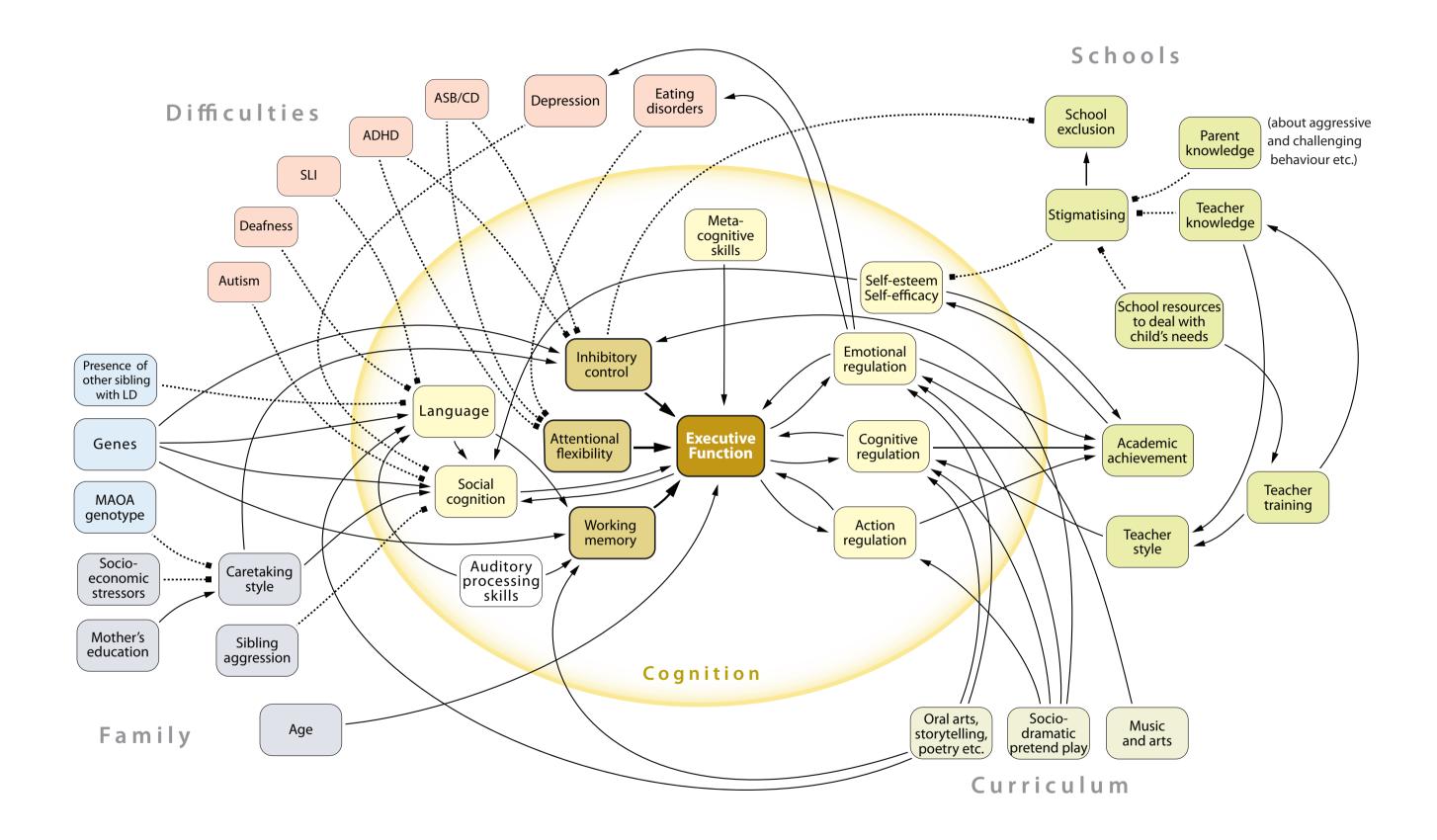
#### Disposition to learn - influence diagram



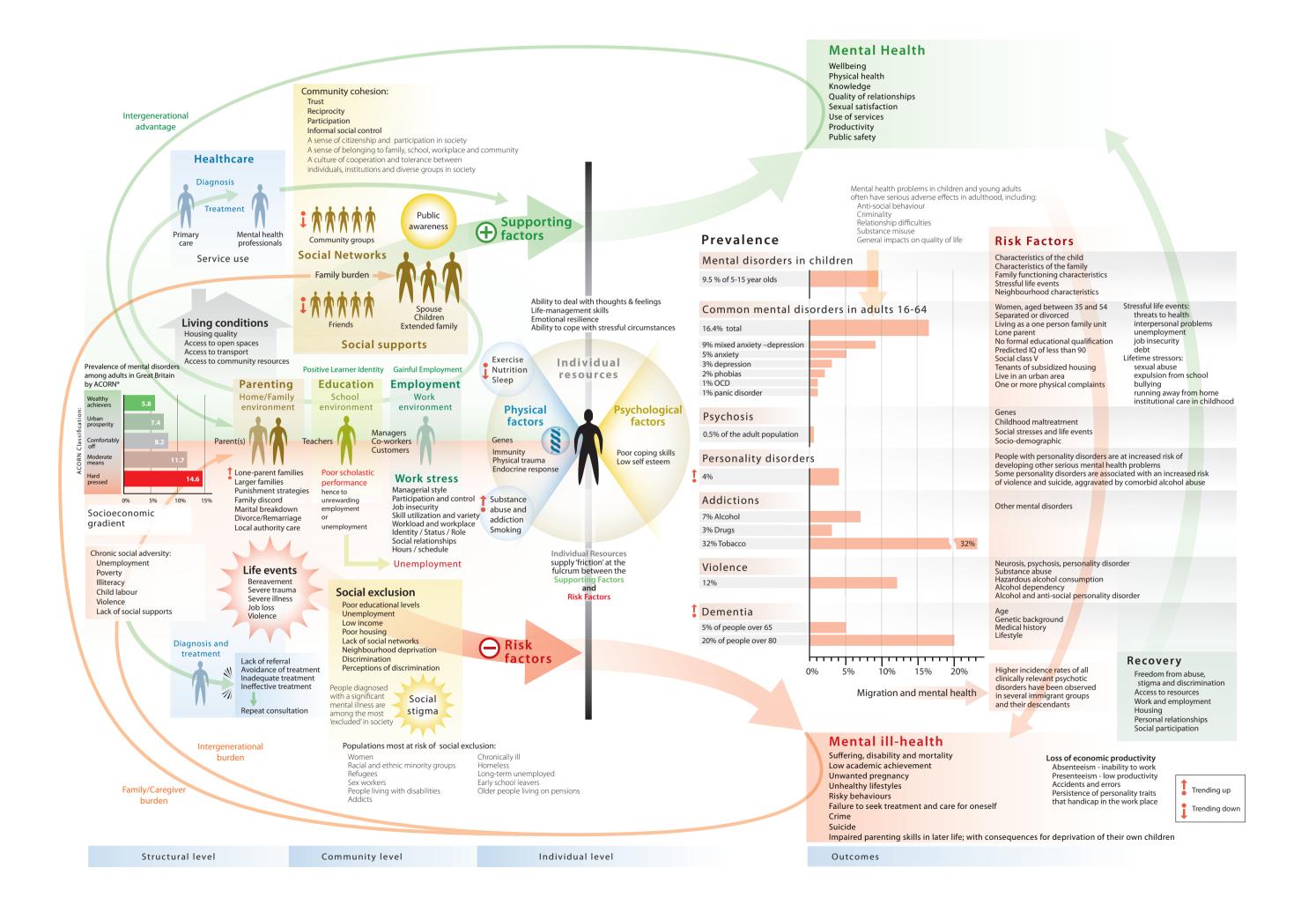


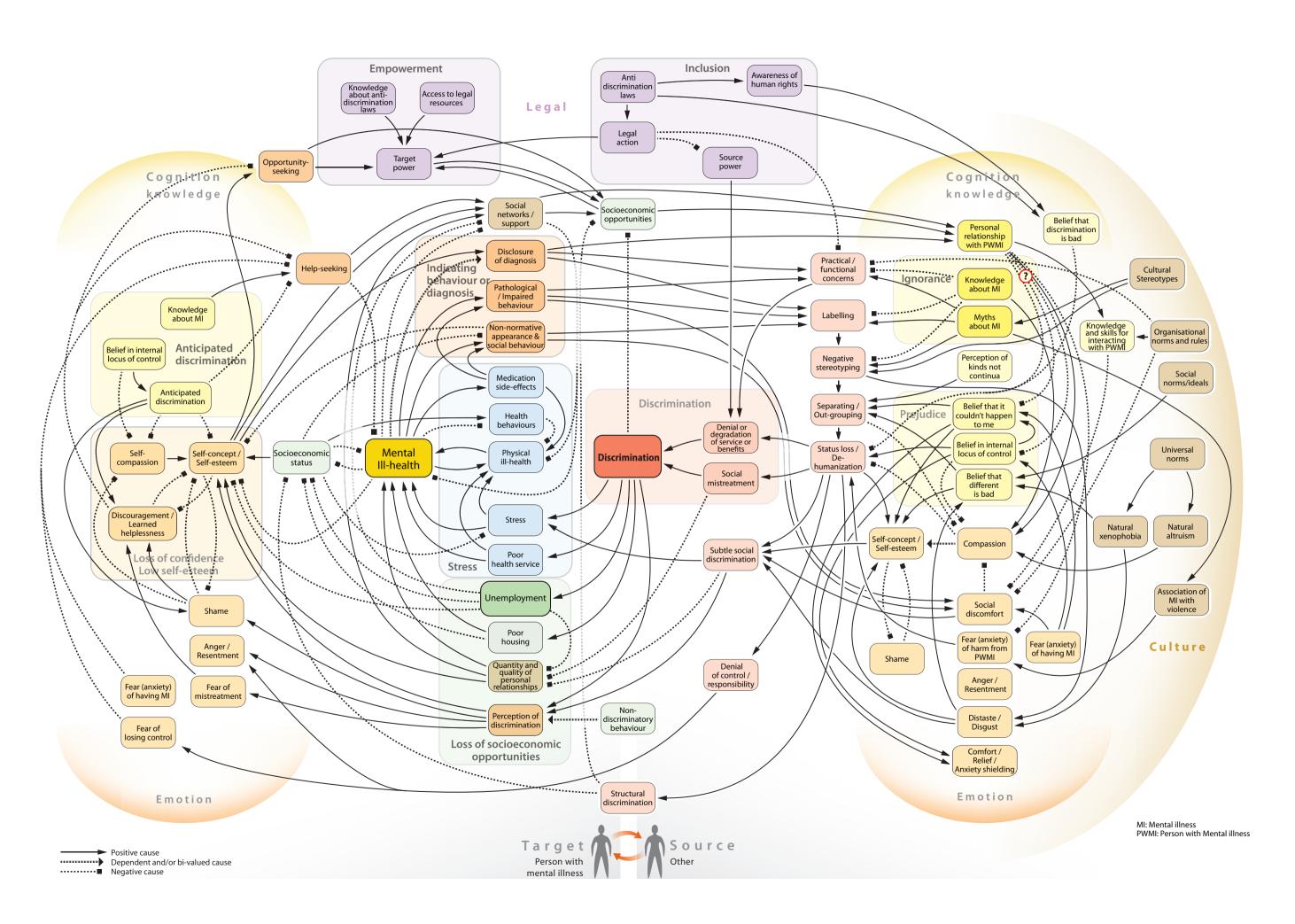


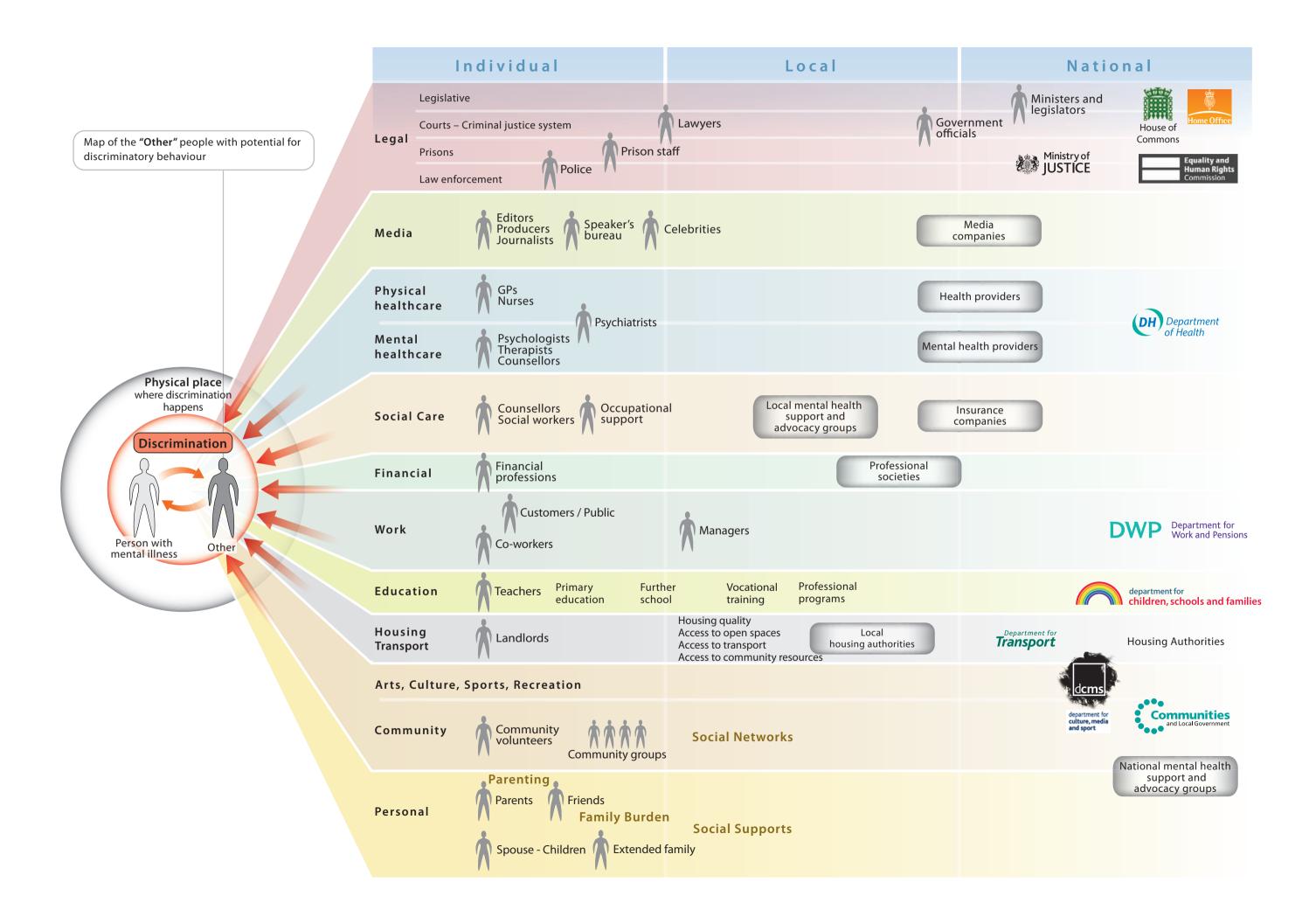




#### Mental health - conceptual overview





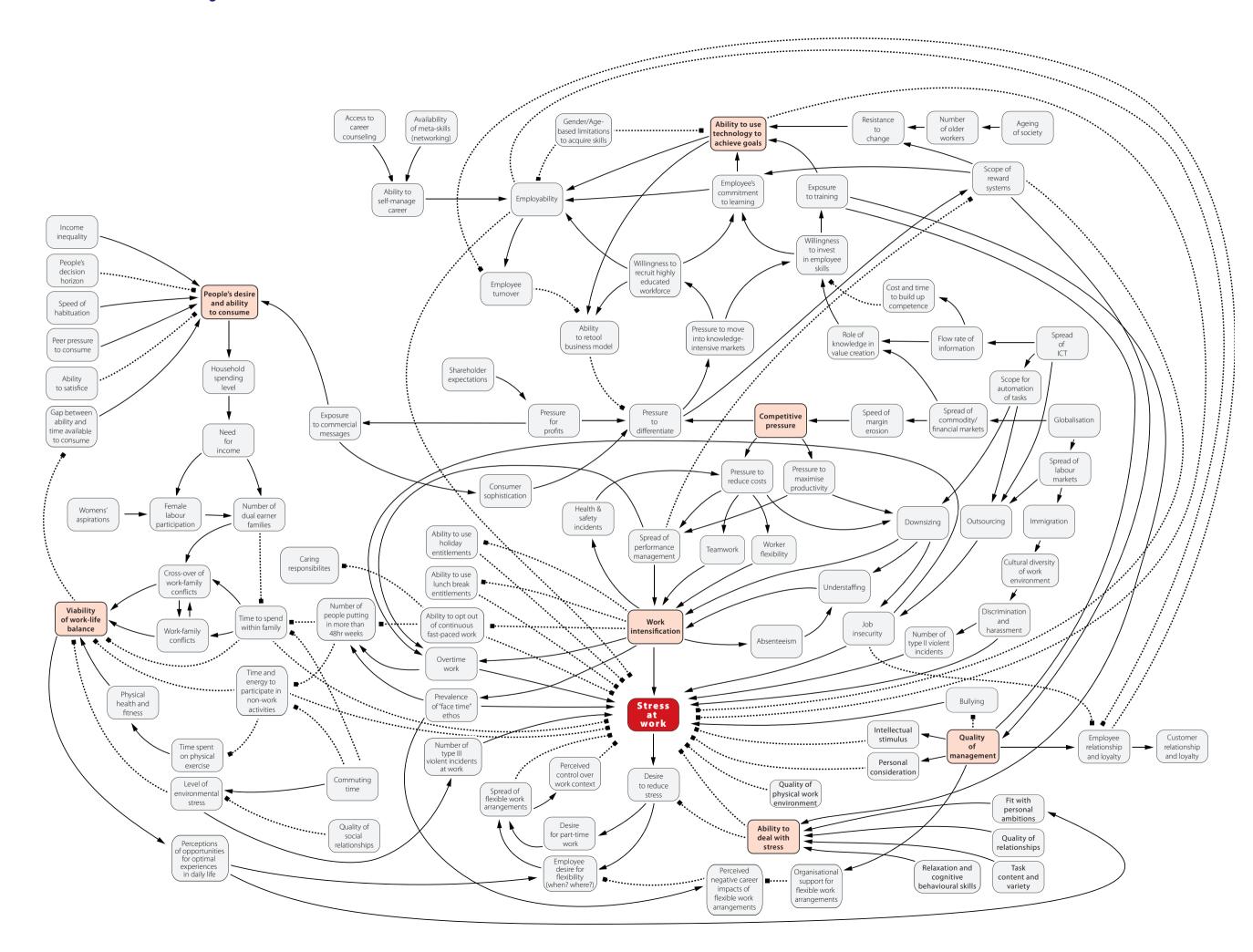


Systems maps

Wellbeing at work – conceptual overview

#### **Economic environment** Globalisation Worldwide production and financial markets Global flow of information Global **Environmental** Networking across cultures sustainability Workplace environment Demographic shifts Country Compassion Managerial style Trust Ageing workforce Respect Deregulation Mutual support **Immigration** of the labour market Participation Region Delegation **Economic outcomes** Communication Role clarity Service work Conflict management Knowledge work Performance appraisal Governance **Participation** Enhance worker potential Organisation Manage by praise and reward A happy workforce is a Macro-economic costs and control Hyper-competition productive and competitive Constant change workforce? Managerial competence Age Intensification of work Lack of participation in decision-making Selection, Training, Feedback, Mergers Discrimination Lack of control over work methods, Reward and Punishment Restructuring Act workplace work schedule Offshoring Micro-economic costs **Positive Wellbeing:** Organisation climate Downsizing Outsourcing Relationships Excitement Career development **Skill utilisation** Belonging Challenge Discrimination (age, race, sex) and variety Lack of promotion potential Managers Creativity Fulfilment Medical and employee liability **Job Insecurity** Boring, monotonous tasks Under- or over-promotion Wellbeing Identity Lack of variety in the job **Employee Assistance programmes** Work of "low social value" Under utilisation of skills and Flourishing Meaning Regulatory Health and lifestyle programmes Unfair performance evaluation Individual abilities Unpleasant, aversive tasks **Power** (and unemployment is positively dangerous) environment resources Work content Perception of stress Coping abilities Techno-stress Constant change Affective style Too much or too little work Locus of control Understaffing Organisational stress outcomes: Workload ime/Deadline pressures and workplace Inadequate tools or equipment Absenteeism Stress = High demands + Low support + Individual susceptibility demands Machine-pacing of work Presenteeism (80% of lost productive hours?) Regulations Physical environment ↑ Technology Stress Sick leave and directives ICT: Information / **Negative Wellbeing:** Early retirement Communications Turnover costs Nervousness Technology Resistance to change Burnout Ambiguity about one's role Irritability Interpersonal conflict Individual Conflicting roles in the job Low morale Anxiety Sophistication Responsibility for people Helplessness Reverse Depression Boundary roles (customer contact) Damage to equipment Customers Alienation Identity / causation? contagion Hostility Grievances, disputes and compensation Job dissatisfaction Status / Fatigue Decreased productivity – due to accidents and errors Work-family conflict Sleep problems Role Diversity Decreased performance and productivity Absenteeism Work satisfaction Poor nutrition Decreased quality of products or client service Lack of support from supervisor High turnover Substance abuse Lack of support from co-workers Loss of company reputation Early retirement Co-workers Lack of exercise Isolated or solitary work Loss of intellectual capital Inadequate conflict resolution Organisation-focused Bullying, harassment, violence Fear of bullying Perceived safety Low Prevalence: Life satisfaction stress management Social support 30-39% support Active involvement of the and relationships Careful analysis of specific problems workforce Elderly Dual earner Young Inflexible work hours **Quality** implementation dependents couples dependents Long hours Focused on: Person-focused Mandatory overtime Unpredictable hours Early diagnosis stress management Rotating shift schedules Empowerment Active leisure Active ageing Relaxation techniques Effective delegation Leisure options - access and cost of Progressive muscle relaxation Meditation / Mindfulness Better people management Children Parents and Partner Physical health consequences Hours / Schedule Flexible work arrangements Work-family extended family Environmental consequences Job redesign Cognitive behavioural skills training Commuting Wellbeing consequences: conflict Identify triggers Analyse stress response Reduce depression and anxiety Social – Spatial – Temporal Produce positive moods 3. Modify response The current structure Enhance self-esteem and self-concept Specific training of work is often at Facilitate social interaction Working Time Assertiveness Conflict resolution Health circles odds with people's Increase general psychologica regulations Participatory Action research needs and aspirations Problem solving wellbeing and life satisfaction **Nutrition Exercise Sleep** Time management Improve cognitive functioning Anger management Work Home / Family / Community / Leisure

Work-life balance



# Appendix A: Structure of the **Project reports and** supporting papers

**Mental Capital and** Wellbeing: Making the most of ourselves in the 21st century Final Project Report





#### Mental capital through life: Future challenges

SR-EI: Neuroscience of education

**SR-E2:** Human reward

**SR-E3:** Neuroeconomics

SR-E4: Cognitive reserve

SR-E5: The adolescent brain

**SR-E6:** Behavioural economics

SR-E7: Resilience

SR-E8: Adolescent drug users

SR-E9: Pharmacological cognitive enhancement

SR-EIO: Stem cells in neural regeneration and neurogenesis

**SR-EII:** Early detection of mild cognitive impairment and Alzheimer's disease: An example using the CANTAB PAL

**SR-E12:** Anxiety disorders

SR-E13: Neurocognition and social cognition in adult drug users

**SR-E14:** Normal cognitive

**SR-E15:** Social cognition in teenagers - inclusion

SR-E16: HPA axis, stress, and sleep and mood disturbance



wellbeing and socioeconomic status

**SR-E18:** Nutrition and cognitive health

SR-E20: Effect of chronic stress on cognitive function through life

SR-E21: Depression and its toll on mental capital

**SR-E22:** Fitness and cognitive

SR-E24: Effects of exercise on cognitive function and mental capital

SR-E25: Technology solutions to prevent waste of mental capital

**SR-E27:** Housing as a determinant of mental capital

SR-E29: Cognitive neural prosthetics

SR-E31: Cellular and molecular logic of neural circuit assembly



Learning through life: Future challenges

**SR-A2:** Learning at work

SR-A3: Skills

SR-A4: Participation in learning

SR-A5: Evidence-informed principles from the Teaching and Learning Research Programme

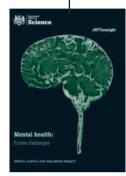
SR-A7: Estimating the effects of learning

SR-A9: Self-regulation and executive function

SR-A10: Lifelong learning across the world

SR-AII: Non-cognitive skills

SR-AI2: Future technology for learning



Mental health: **Future challenges** 

**SR-BI:** Genetics and social factors

SR-B2: Mental health of older people

**SR-B3:** Positive mental health

**SR-B4:** Mental disorders in the young

**SR-B5:** Prisoners

**SR-B6:** The homeless

**SR-B7:** Children in local authority care

**SR-B8:** The costs of mental disorders

SR-B9: Serious and enduring

mental illness **SR-BIO:** Personality disorders

SR-BII: Violence

SR-B12: Ageing

SR-B13: Migrants

SR-B14: Substance abuse

SR-B15: Depression



Wellbeing and work: Future challenges

**SR-CI:** Workplace stress

**SR-C2:** Mental wellbeing at work and productivity

**SR-C3:** Management style and mental wellbeing at work

SR-C4: Flexible working arrangements and wellbeing

**SR-C5**: New technology and wellbeing at work

25 years

workplace

SR-CII: Violence at work

**SR-C9:** Training in the

SR-C10: Careers

**SR-C6:** Stress management and wellbeing

behaviour SR-C7: Working longer

SR-C8: Leisure: the next school exclusion

spectrum disorders

SR-D12: New technologies and

**SR-D13:** Trajectories of development and

**SR-D14:** Early neural markers

SR-D15: Childhood depression

**SR-D16:** Eating disorders



Learning difficulties: Future challenges

**SR-DI:** Specific language imbairment

SR-D2: Dyslexia

**SR-D3:** Adult learning disabilities

SR-D4: Dyscalculia

SR-D5: Deafness

SR-D7: Genetics and diagnosis of learning

difficulty

SR-D8: Conduct disorder and anti-social

SR-D9: Social cognition and

SR-D10: Autism and autism

SR-DII: Attention Deficit Hyperactivity Disorder

interventions

learning difficulties

of learning difficulty



S1: Systems maps

SR-X2: Science of wellbeing

SR-X3: Neurobiology of wellbeing

Cross-Project papers

SR-X5: Neural circuit assembly

DR-I: ICT as a driver of change

Physical environment **DR-2**: and wellbeing

**ER-I:** Ethics

Note I: Some reference numbers were assigned to topics; however, the reports/papers were not subsequently commissioned.

Note 2: The Project commissioned some additional "discussion papers" as referred to in the text of the final report.

> These will be made available through www.foresight.gov.uk in due course.

All the reports and papers produced by the Foresi	gnt Mental Capital and vveilbeing Project may be down Requests for hard copies may be made through this w	nloaded from the Foresight website ( <u>www.foresight.gov.uk</u> ). vebsite.