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Systems	maps		
MENTAL CAPITA	AL AND WELLBEING PROJECT		

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 Capital¹ and Wellbeing². Some of these diagrams also appear in particular Project reports³.

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.

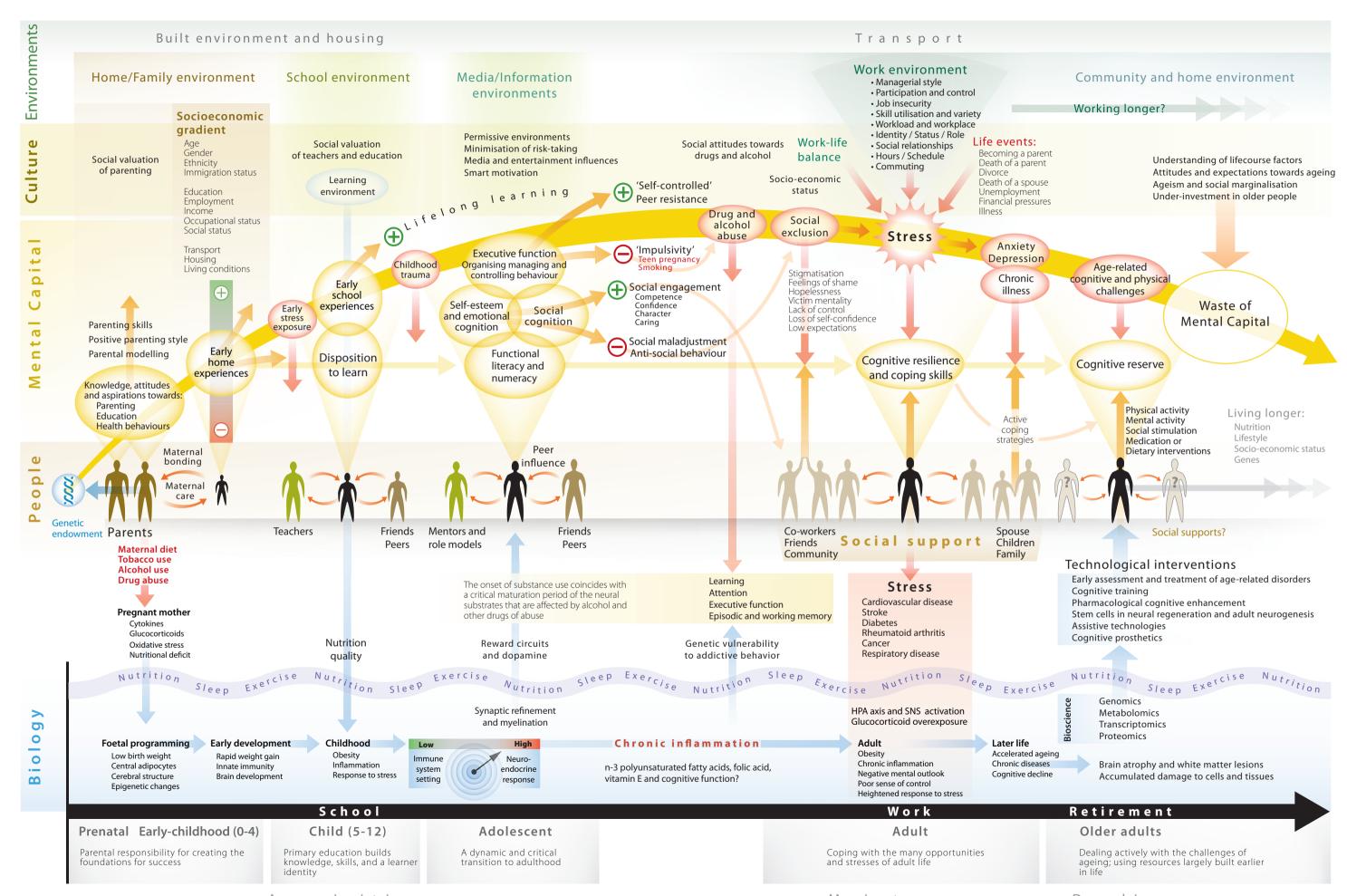
Page	Systems diagram
3	Mental capital through life – conceptual overview The trajectory of mental capital through life, detailing some of the many factors that influence mental capital and how they are connected across the lifecourse
4	Learning through life – conceptual overview A visualisation of the 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.

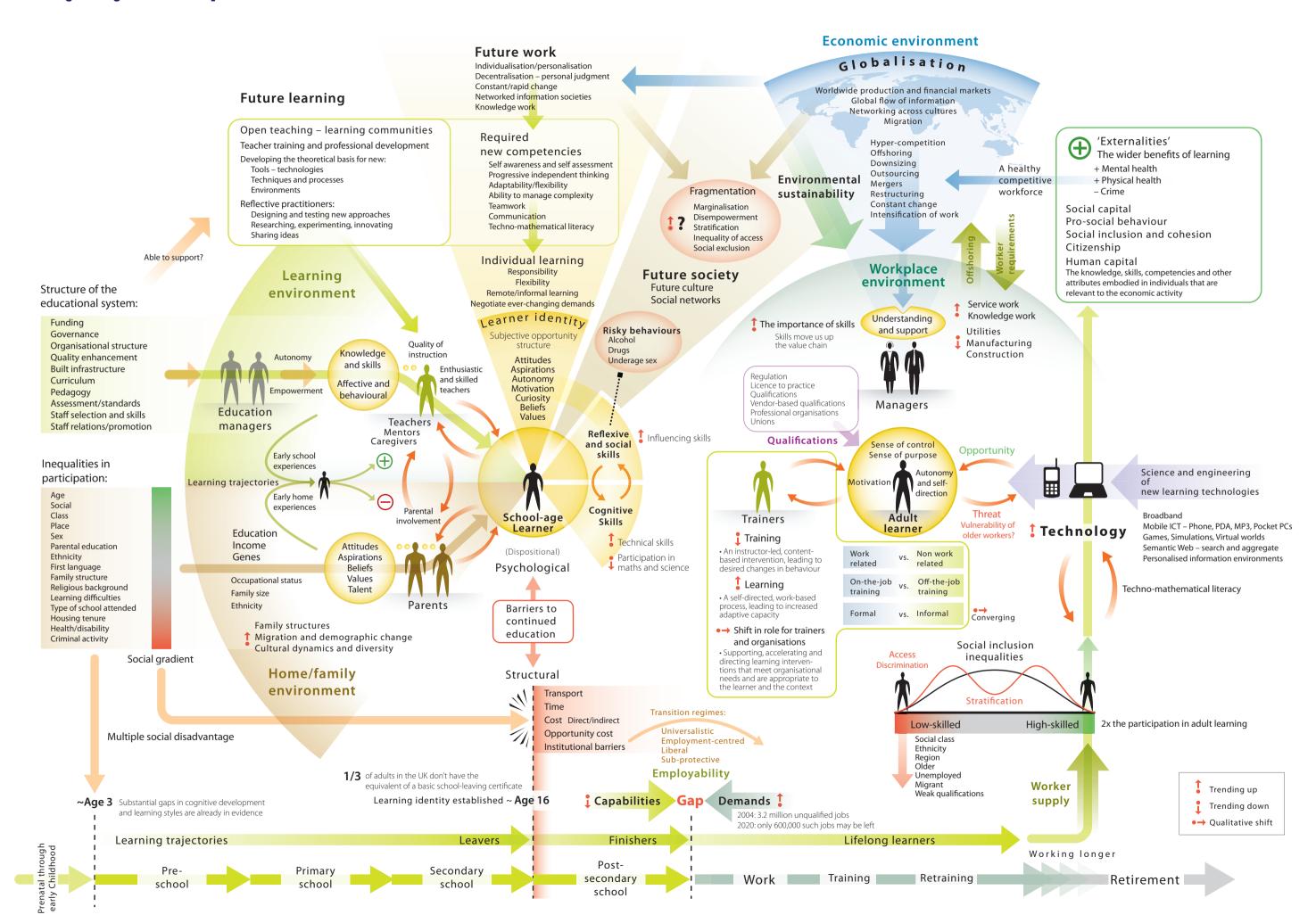
^{2 &}quot;Wellbeing" throughout this report refers to "mental wellbeing". Mental wellbeing is a dynamic state in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community. It is enhanced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

³ See Appendix A for a list of the Project reports..

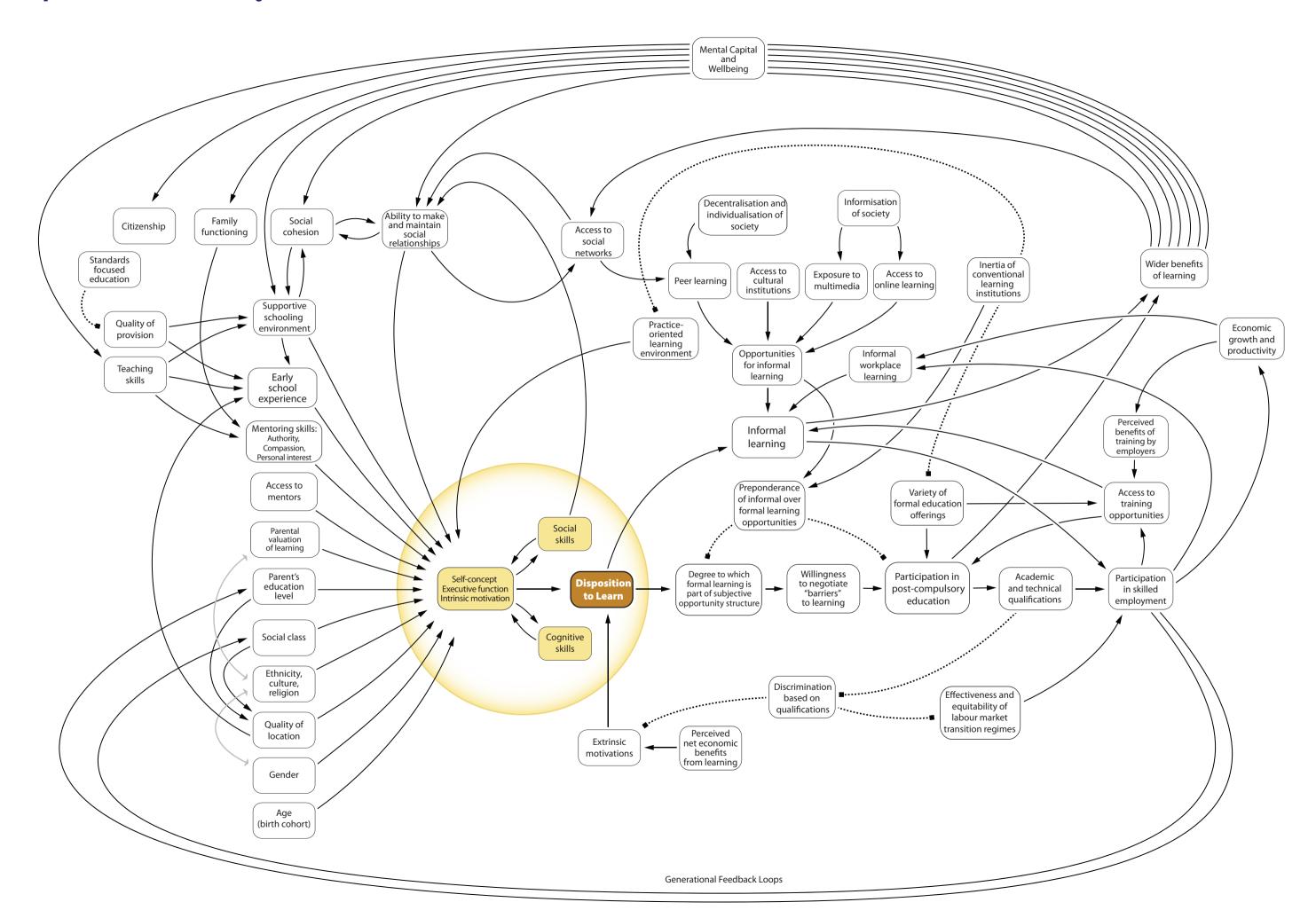
Mental capital through life - conceptual overview

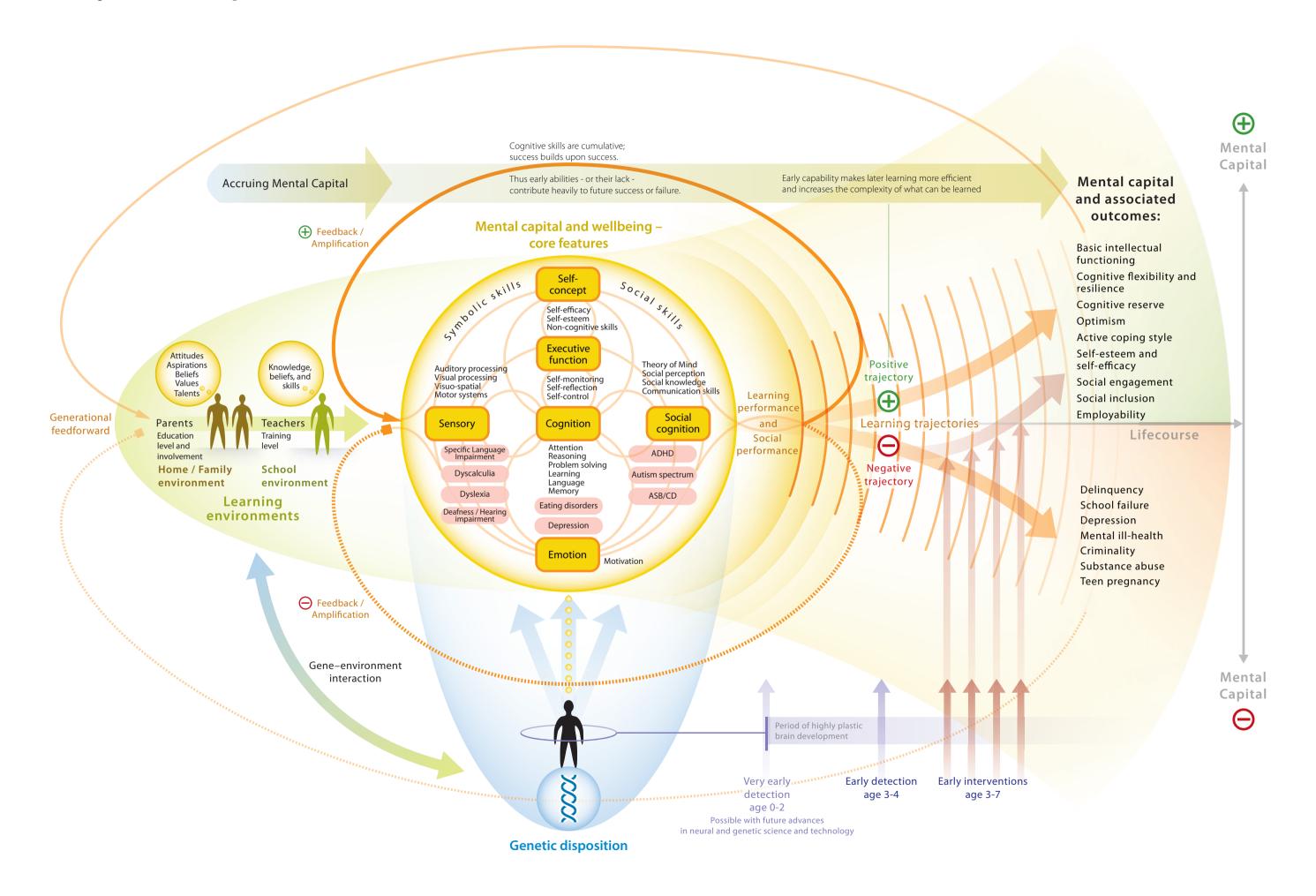


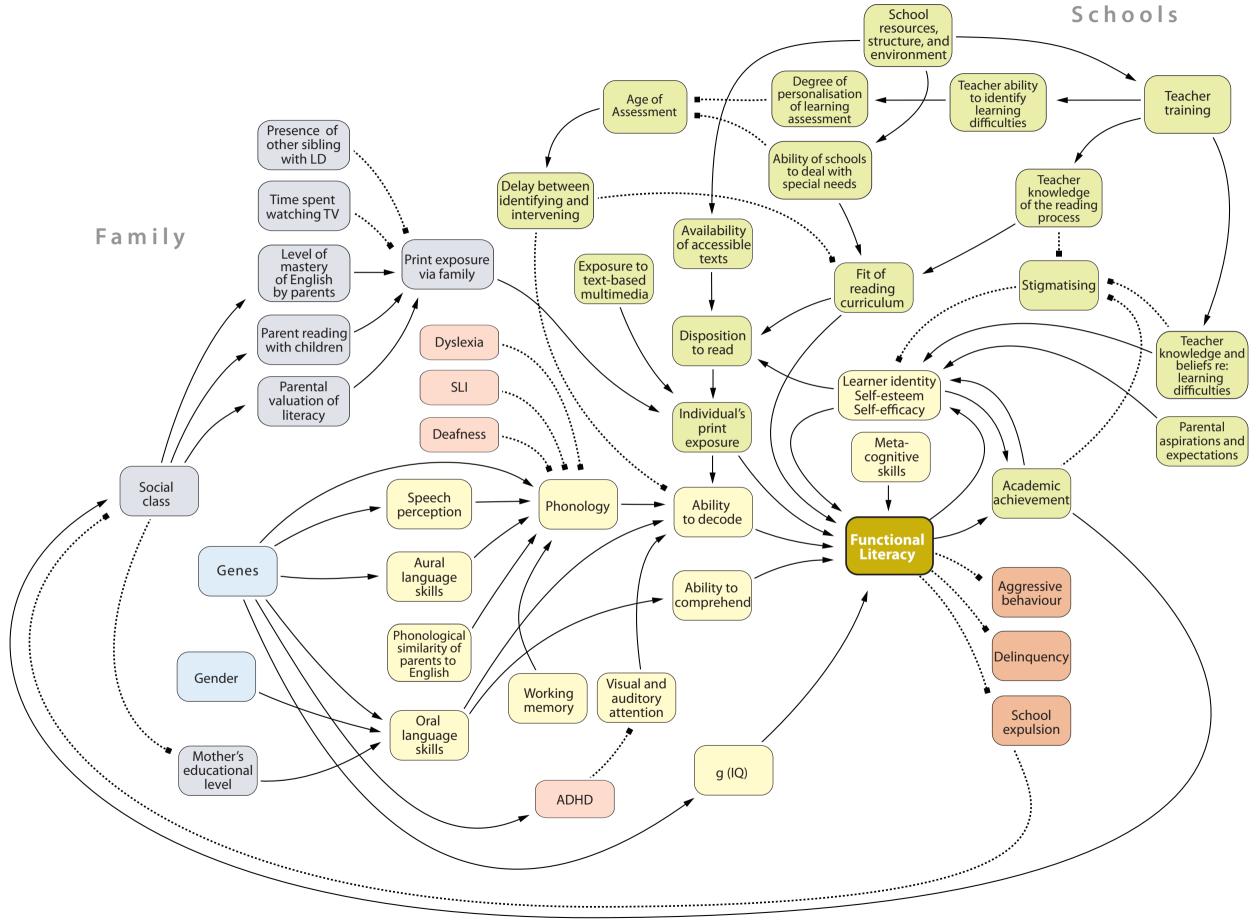
Learning through life – conceptual overview

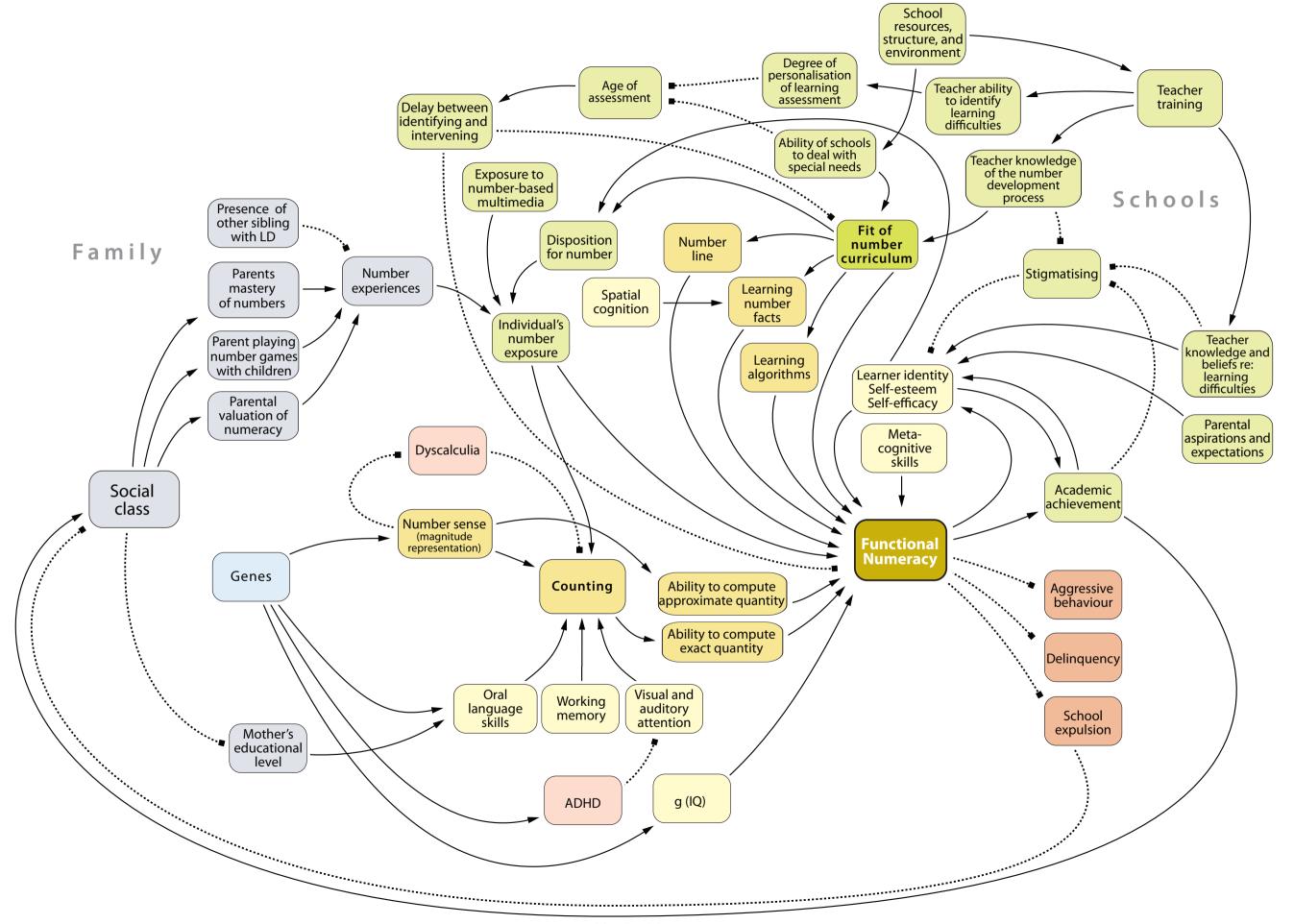


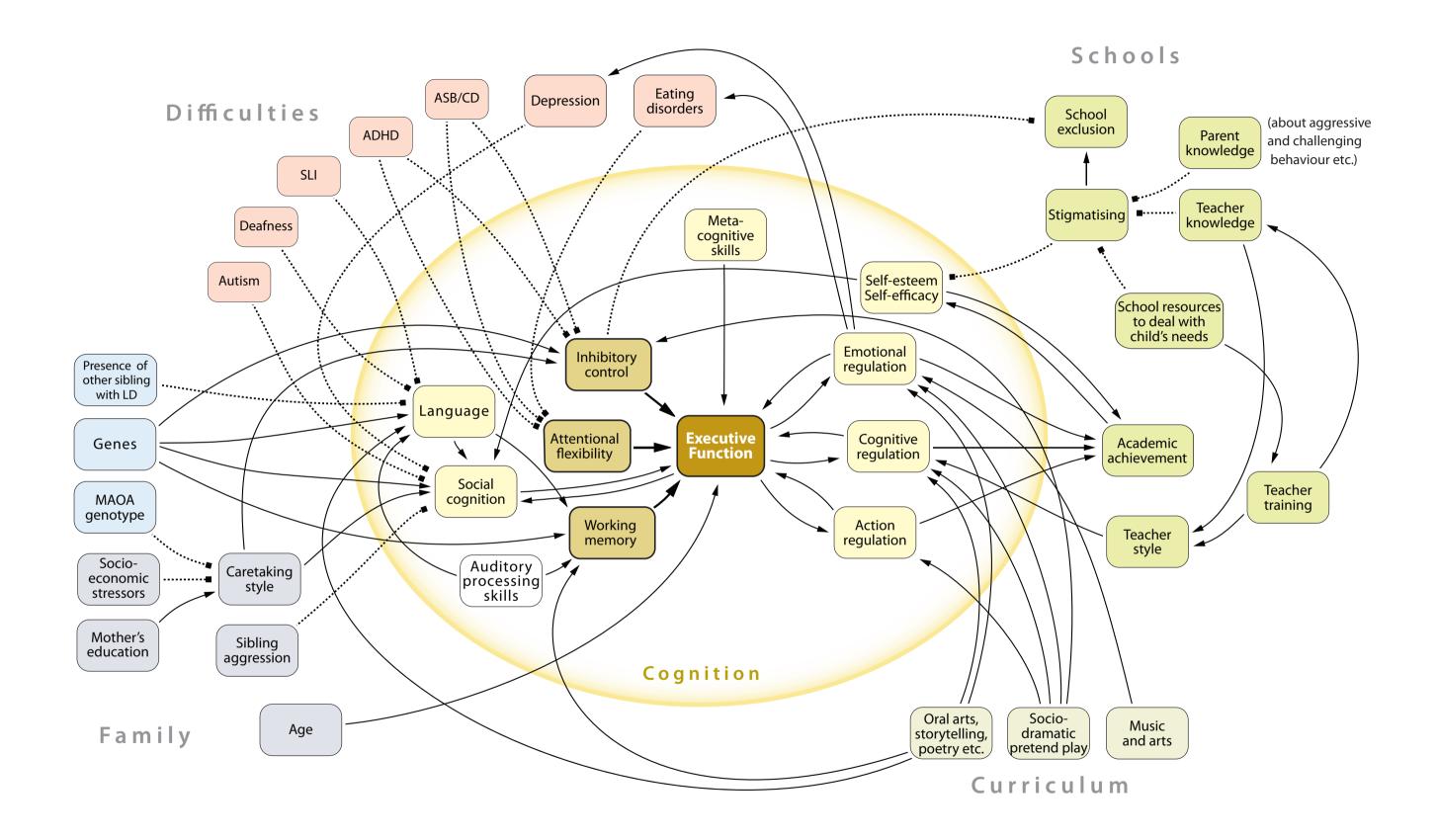
Disposition to learn - influence diagram



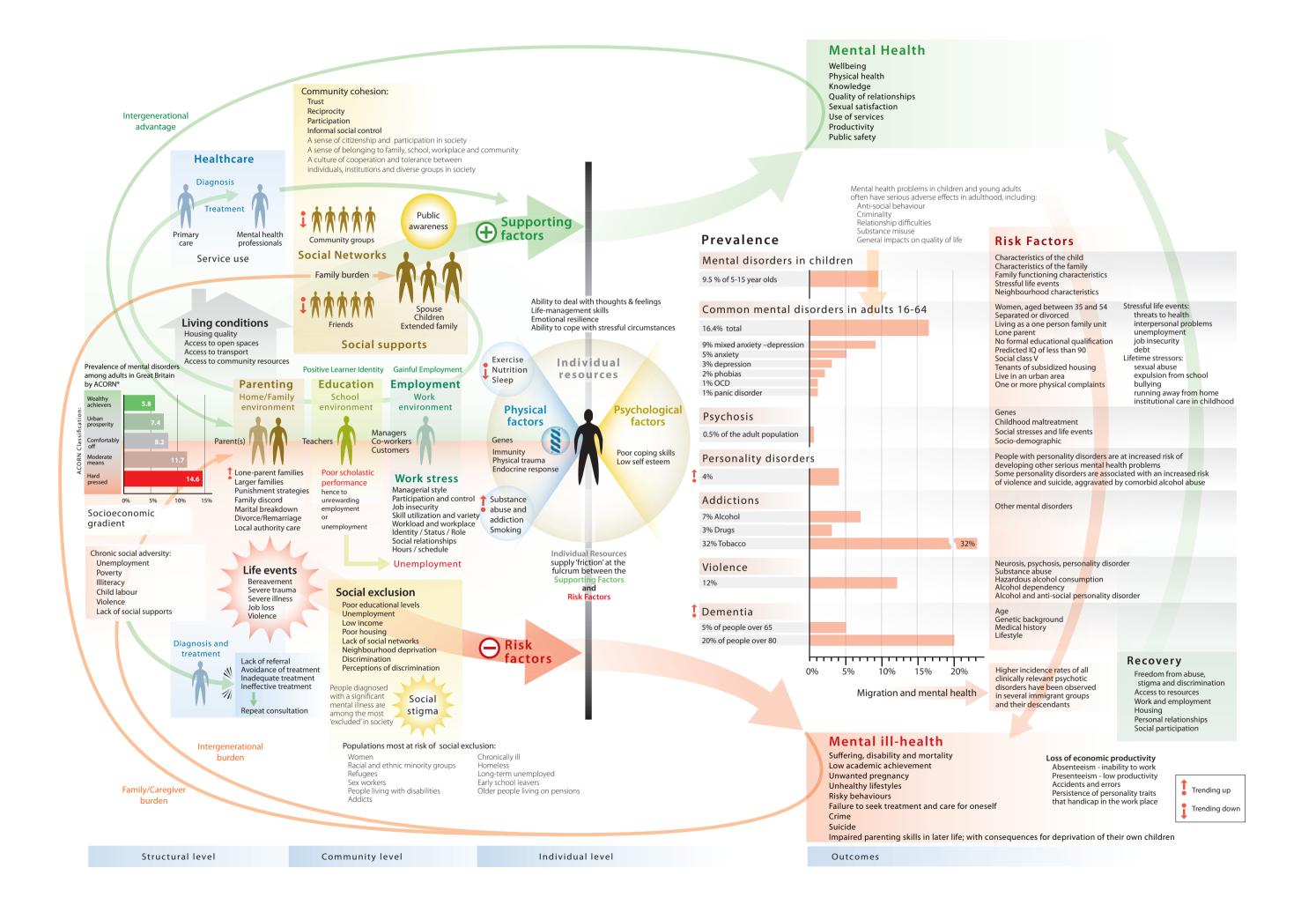


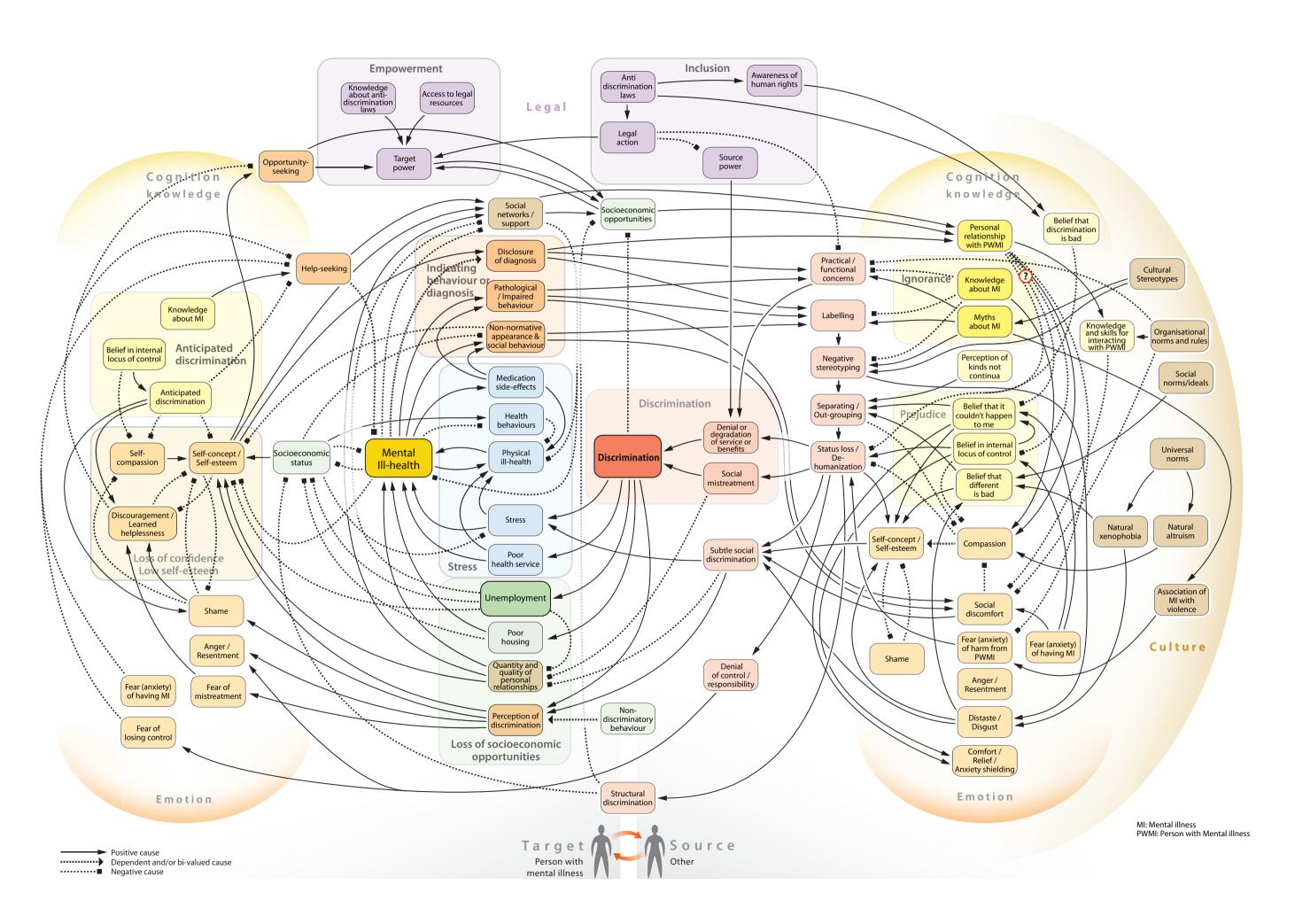


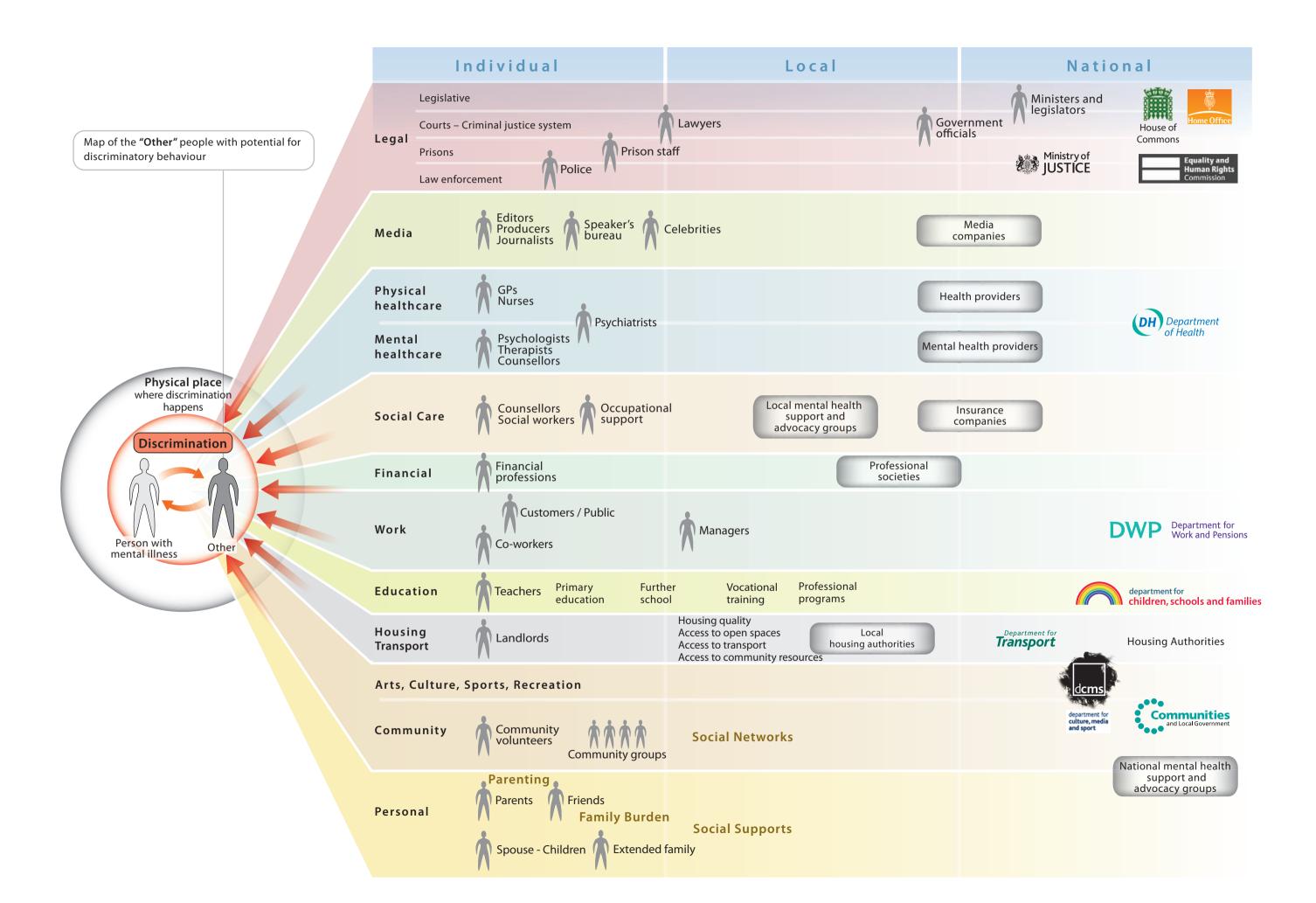




Mental health - conceptual overview





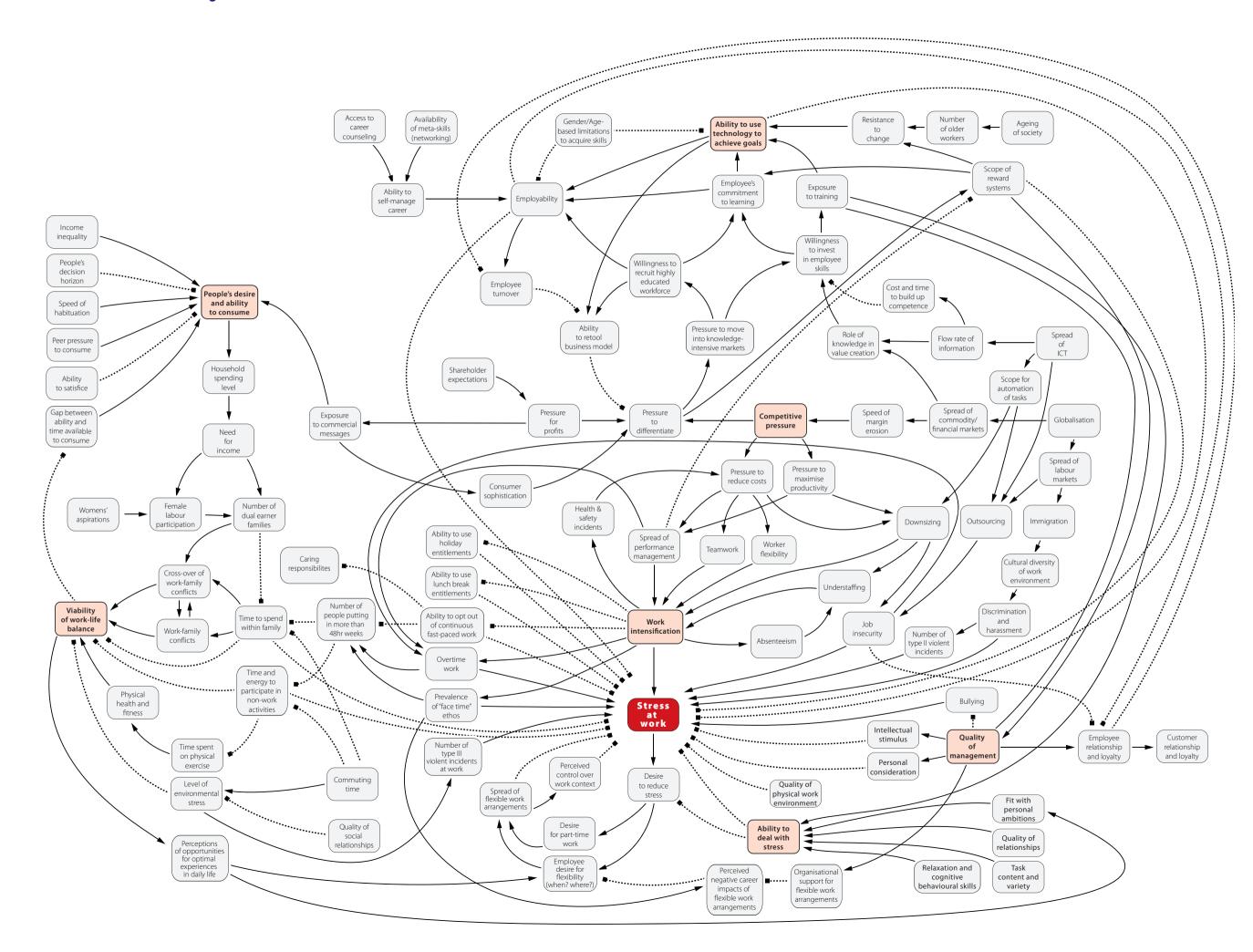


Systems maps

Wellbeing at work – conceptual overview

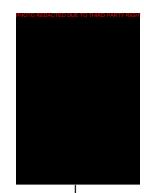
Economic environment Globalisation Worldwide production and financial markets Global flow of information Global **Environmental** Networking across cultures sustainability Workplace environment Demographic shifts Country Compassion Managerial style Trust Ageing workforce Respect Deregulation Mutual support **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-E10: 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

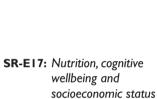
SR-E12: Anxiety disorders

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



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

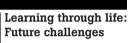
SR-E24: Effects of exercise on cognitive function and mental capital

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



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

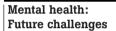
SR-A7: Estimating the effects of learning

SR-A9: Self-regulation and executive function

SR-A10: Lifelong learning across the world

SR-AII: Non-cognitive skills

SR-A12: Future technology for learning



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

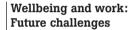
SR-B9: Serious and enduring mental illness

SR-BIO: Personality disorders

SR-BII: Violence SR-B12: Ageing

SR-B13: Migrants

SR-BI4: Substance abuse SR-B15: Depression



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-D8: Conduct disorder **SR-C6:** Stress management and wellbeing

SR-C7: Working longer SR-D9: Social cognition and school exclusion SR-C8: Leisure: the next

> SR-D10: Autism and autism spectrum disorders

Learning difficulties:

SR-DI: Specific language

SR-D3: Adult learning

SR-D4: Dyscalculia

SR-D7: Genetics and

difficulty

behaviour

and anti-social

SR-D5: Deafness

imbairment

disabilities

diagnosis of learning

Future challenges

SR-D2: Dyslexia

SR-DII: Attention Deficit Hyperactivity Disorder

SR-D12: New technologies and interventions

SR-D13: Trajectories of development and learning difficulties

SR-D14: Early neural markers of learning difficulty

SR-D15: Childhood depression

SR-D16: Eating disorders



Cross-Project papers

SR-X2: Science of wellbeing SR-X3: Neurobiology of

wellbeing **SR-X5:** Neural circuit

assembly **DR-I:** ICT as a driver of

change

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

ER-I: Ethics



S1: Systems maps

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.