

Poverty and decision-making

How behavioural science can improve
opportunity in the UK

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October 2016

Supported by

JRF JOSEPH
ROWNTREE
FOUNDATION

Acknowledgements

Many people contributed to this report. Particular thanks go to David Halpern, Andy Hollingsworth, Raj Chande, Tiina Likki, Ben Curtis and Susannah Hume from the Behavioural Insights Team who provided expert advice on the literature and policy context. Many people inside government also provided review, and several leading academic were an invaluable source of insights and knowledge, particularly Eldar Shafir, Jonathan Morduch and Evrim Altintas. Finally, we thank the Joseph Rowntree Foundation for providing useful guidance along the way and for their enthusiasm and support for our intellectual ambition.

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Glossary of terms

Anchoring	Using an initial piece of information to make subsequent judgments, even when the initial piece of information is irrelevant or arbitrary.
Bandwidth	Cognitive resources - working memory and executive control - that allow us to reason, to focus, to learn new ideas, to make creative leaps and to resist our immediate impulses.
Framing effects	The effect that the way a choice is presented has on an individual's decision-making.
Friction costs	Seemingly irrelevant details that impose a small effort cost to perform a behaviour but disproportionately discourage action.
Locus of control	A person's perception of their control over events that affect them.
Loss aversion	People strongly prefer to avoid losses than acquire gains of an equivalent amount.
Present bias	The tendency to place greater value on immediate rewards and discount those in the future.
Self-efficacy	An individual's belief in their own abilities to complete a task, achieve a goal or overcome an obstacle.
Status quo bias	The preference towards maintaining the current state of affairs, whether that be through avoiding behaviours that could alter the status quo, favouring decisions that sustain it, or doing nothing.
Stereotype threat	When an individual's cognitive resources are consumed by dealing with a negative stereotype about a social group they belong to, instead of being dedicated to performing a task.

Executive summary

A third of the UK population spent at least one year in relative income poverty between 2011 and 2014.

The Joseph Rowntree Foundation (JRF) and other organisations working to reduce and prevent poverty in the UK have traditionally focused on addressing the structural drivers of poverty such as low pay and education quality. While interventions in these areas have yielded important gains in opportunity for many Britons, new research in behavioural science has led to questions about how the decisions individuals take – from the job they choose, to whether they take out high cost credit – also influence their experience of poverty, and what drives these decisions.

The purpose of this report is to understand how behavioural science can inform JRF's anti-poverty strategy and guide policymakers working to reduce disadvantage. Behavioural science – the fields of social psychology and behavioural economics – has revealed that we can all fail to make optimal decisions in life because we have limited mental capacity for carefully weighing up the pros and cons of every decision. Instead we rely heavily on environmental cues and simple psychological shortcuts to make decisions quickly. These 'behavioural biases' can sometimes lead us astray, but there is now good evidence about how to design policies to support better decision-making. Until now, this research has never been comprehensively brought together and applied to addressing UK poverty.

Key questions

This report seeks to answer two questions:

1. How does poverty affect individual decision-making, and how do decisions taken by individuals influence their poverty status?
2. What can policymakers learn from behavioural science to prevent and reduce poverty in the UK?

The report puts forward a model of decision-making and applies it to three strategies for improving the lives of those living in or near poverty: minimising costs (choosing low cost credit; accumulating savings), maximising resources (moving into work from unemployment; accessing entitlements), and preventing intergenerational poverty (responsive parenting; applying to post-secondary education).

The model proposes that there are a set of resources which contribute to an individual's chances of experiencing and escaping poverty. We call these resources 'capital'. The six forms of capital we discuss are:

- ◆ **Economic:** income, wealth and government entitlements
- ◆ **Human:** child brain development and educational attainment
- ◆ **Environmental:** housing quality, safe neighbourhood and green space
- ◆ **Social:** social networks, social trust and freedom from stigma/stereotype threat
- ◆ **Character:** self-control, self-efficacy and motivation
- ◆ **Cognitive:** mental bandwidth and freedom from behavioural biases

Economic and human capital have historically been seen as direct causes of poverty but we propose that they also affect the decisions people make. For example, there is emerging research which shows that financial worries absorb mental capacity - or 'bandwidth' - needed for attention and problem solving. In addition, we bring together a wide range of studies from behavioural science to highlight that there are other types of capital that impact on poverty both directly and indirectly (via decision-making). We argue that understanding how these less tangible forms of capital influence decision-making is useful in two respects: First, it can help to explain why some well-intentioned interventions may fail; and second, it can open up a greater number of tools to address poverty.

Key take-aways

In addition to presenting 18 specific policy recommendations (see below), the report concludes that there are two key take-aways for those working to reduce and prevent poverty in the UK:

1. **Policymakers should aim to minimise the time and mental costs of engaging in government services to make it easy for people on low incomes to make good decisions for themselves.** Behavioural best practice points to bundling application processes and eligibility requirements across programmes. Defaults, reminder messages, and transparent, behaviourally-informed presentation of costs and benefits are

other examples of small design tweaks that can sometimes yield disproportionate gains.

2. **Anti-poverty interventions that account for positive and negative feedback loops between the different forms of capital, over different time horizons, will be more effective and efficient.** For example, supportive social networks improve the quality of parent-infant interactions, which underpins child brain development with *long term* effects on learning. Whereas financial worries can affect cognitive performance in the *immediate term*. This dynamic view of decision-making presents exciting opportunities to tackle poverty more comprehensively but it puts greater demands on policy coordination when designing and evaluating interventions. This could be done through expanded support to the relevant Cabinet Committee, through a dedicated resource in the Cabinet Office, or through assigning a clear lead to one Minister.

Future research

In many respects the field of behavioural science is still relatively new. As such, we have identified three areas for further research:

1. Very little behavioural research analyses how interventions to improve short term decisions, in areas such as consumer credit and work, influence long term poverty outcomes. Few studies even assess whether interventions impact people across the income spectrum differently. For example, are people in poverty more or less likely to succumb to behavioural biases in the first place? More research along these lines can help us design and target interventions most effectively.
2. Early childhood is a formative period: it is when neurological foundations are set down that influence decision-making throughout life. However, more research is needed to understand if interventions in adulthood can compensate for missed opportunities at younger ages.
3. A significant portion of behavioural science research focuses on improving the decisions of end-users - in this case people in poverty. But what about the decisions of service providers and policymakers? How can we improve the quality of their decisions to support people escape poverty? And how can we build their empathy with those whose opportunities are at stake?

By assembling evidence and presenting a new model of decision-making, this report gives those seeking to reduce and prevent poverty in the UK a different perspective on poverty, which should lead to different policy conclusions – and hopefully better outcomes.

Summary of recommendations

MINIMISING COSTS	Consumer credit	<ol style="list-style-type: none"> 1 Make it easier to access low cost credit through extending access to interest-free Budgeting Advances; assisting credit unions to expand online services; and providing tax relief to individuals taking out payroll loans. 2 Further restrict practices by high cost credit providers that play on consumer biases, and test remedies that will improve consumer credit decision-making. 3 Continue to evaluate financial capability programmes through initiatives like the Money Advice Service What Works Fund.
	Savings	<ol style="list-style-type: none"> 1 Test ways of automating rainy day savings through employer enrolment, default savings accounts with banks, and Universal Credit payments. 2 Evaluate the effectiveness of financial apps for helping people save. 3 Optimise the Help to Save matching scheme, through testing auto-enrolment and prizes for regular saving, to encourage low-income groups to save.
	Work	<ol style="list-style-type: none"> 1 Use identity-building activities in Jobcentres to cultivate intrinsic motivation for work in order to improve the quality and sustainability of jobs that people find. 2 Collect longer-term and more holistic outcome measures of labour market interventions to understand their full impact on poverty. 3 Develop a simple tool for Jobcentres to identify capital deficits in order to match interventions to individual job seeker needs.
MAXIMISING RESOURCES	Entitlements	<ol style="list-style-type: none"> 1 Develop a common 'cognitive load stress test' that measures how easy it is for eligible groups to access government entitlements. 2 Use annual entitlement summaries to prompt existing welfare recipients to apply for other assistance they may be eligible for, and to help them budget. 3 Experiment with the design of welfare conditionality to boost claimant's cognitive capacity and self-efficacy, such as having claimants set their own payment conditions.
	Parenting	<ol style="list-style-type: none"> 1 Provide families in or near poverty with free access to evidence-based online parenting programmes. 2 Develop community-based platforms for parents' mutual learning and peer support to strengthen social ties between parents from different backgrounds. 3 Conduct research into whether small and inexpensive adjustments to housing conditions can reduce cognitive load and improve parental decision-making.
PREVENTING INTERGENERATIONAL POVERTY	Post-secondary education	<ol style="list-style-type: none"> 1 Make the application process for post-secondary education as simple as possible, for example, by pre-populating application forms. 2 Use personalised assistance and prompts to encourage students and parents to apply to post-secondary education. 3 Link formal information about returns to post-secondary education with informal information (from peers) about what post-secondary education will be like.

Chapter 1 – Introduction: applying behavioural science to the study of poverty

Eve, who, at the time we spoke in 2009, was living in a council flat in North London with her three young girls and was now to a large extent, dependent on welfare support. She had built up large debts, having used credit cards at least in part to pay for her day to day expenses and to supplement the income she received from low paid irregular work, or to tide her over in periods of unemployment. She describes a typical entry of a [debt] collections letter into the home:

[A]s soon as it comes I have to open it...at least it's for me to know what is in there, I start preparing my mind or whatever towards it. The first thing, as soon as I open the door [and] I see any letter, the first thing, before I even take off my coat anytime, I just open the letter and see what it's all about. If it's one I have to panic [about], I start panicking. If it's one I just have to put away... If it's one I have to make a phone call, immediately I just make a phone call (Deville, 2014, p.15).

We make hundreds of decisions on a daily basis – from the trivial, like what to have for breakfast, to the more consequential, like whether to pay for day-to-day expenses with a high interest credit card. What drives these decisions? And what can policymakers do to help people, like Eve, make better decisions to reduce and prevent poverty?

Section 1.1 Background and principal audiences for the report

This report was commissioned by the Joseph Rowntree Foundation (JRF) to start a conversation, both internally and externally, about the relationship between individual decision-making and poverty in the UK. It reflects JRF's interest in looking beyond traditional, structural drivers of poverty. The audience for this report is both JRF and organisations involved in reducing poverty in the UK, including those in government seeking to advance this agenda.

Section 1.2 Report aims and research questions

This report explores whether a more nuanced understanding of human behaviour and decision-making can advance our thinking about the causes and

consequences of poverty in the UK, and point to potentially more effective solutions. There is a diverse literature that we can draw on to achieve this, but this report is not intended to act as a comprehensive review (see Annex 1 for our methodology). Instead, it aims to provide the reader with an overview of how behavioural science can help to answer two interrelated questions:

1. How does poverty affect individual decision-making and how do decisions taken by individuals influence their poverty status?
2. What can policymakers learn from behavioural science to prevent and reduce poverty in the UK?

We explore these questions in relation to three anti-poverty strategies: minimising costs, maximising resources, and preventing intergenerational poverty. Under these broad headings, we examine individual decision-making in six principal policy areas: consumer credit, savings, work, government entitlements, parenting, and post-secondary education. We define decisions as being choices an individual can make within the range of available options.

Section 1.3 The psychology of decision-making

Orthodox economic models typically assume that humans are self-interested, they weigh up the costs and benefits of every decision to get the best outcome, they have perfect self-control, and their preferences are consistent across contexts. This 'homo economicus' model of human behaviour has proven exceptionally powerful, both as a framework of analysis and as a tool for policy design. There is increasing awareness that taken on its own, it falls short of accounting for how we see people behave in the real world.

A growing body of psychological research divides our decision-making into two systems. System 1 thinking is fast, effortless, automatic and largely involuntary – the kind of thinking that we use to take our daily commute or to react when we hear a loud noise. By contrast, System 2 is more deliberative, effortful, attentive, and voluntary. System 2 thinking is used to undertake complex thought processes like writing a job application or deciding which school to send our children. Both systems are important for getting through life effectively and efficiently but we are increasingly learning that System 1 thinking can sometimes lead us astray and we have limited capacity for System 2 thinking (Kahneman, 2012).

System 1 - 'thinking fast' - uses cues in the environment to help us make decisions. For example, booking the most popular hotel on TripAdvisor is a more efficient way of finding a good hotel than researching the website of every hotel in the area yourself. However, following the behaviour of others can sometimes lead to poor outcomes. For example, when we follow the social norm to litter because we see other people littering, we collectively destroy the environment.

Governments are increasingly incorporating System 1 cues ('nudges') into the design of public policies to help people make the rational, healthy, personally beneficial choices that orthodox economics wrongly assumed they were already consistently making. For example, people tend to stick with the default option when faced with complexity. Hence, changes to workplace pensions savings to an 'opt-out' system from 2012 has led to millions more Britons saving for their old age compared to the previous default in which employees had to actively choose to sign up for a pension scheme ('opt-in').

Given the traps of System 1 thinking, which are often termed 'behavioural biases', some policymakers may be inclined to push people towards System 2 thinking to improve individual and collective outcomes. However, there is growing awareness that System 2 - 'thinking slow' - uses up cognitive bandwidth (mental processing capacity) which is a limited resource with many competing demands, including attention, self-control and long-term planning (Schilbach, Schofield, & Mullainathan, 2016).

The poverty implications of having limited 'bandwidth' is a new and transformative area of enquiry. Researchers are finding that, just as your computer's performance is reduced when you run too many programmes at the same time, the multiple dimensions of poverty and disadvantage - including financial worries, time pressures, coping with stereotypes, and emotional distress - sap our mental processing capacity, which in turn affects our judgement and decisions (Kaplan & Berman, 2010; Mullainathan & Shafir, 2013). For this reason, policymakers and service providers need to think carefully about the extent to which programmes and services impose additional cognitive costs on low-income groups, and what can be done to restore depleted bandwidth.

Research has shown that the context in which people on low incomes often live means that they have fewer opportunities to replenish or rest their cognitive resources compared to people on high incomes. This includes: 1) the physical context in which they live, such as noisy urban environments without green space which has been shown to increase mental fatigue (Kuo, 2001); 2) the emotional

context, such as having to stifle negative feelings associated with job loss and stigma; and 3) the decision-making context, such as having to make many more critical decisions in a day compared to someone with financial and time buffers, from complying with the conditions of welfare payments to coordinating irregular shift-work with childcare (Damingier, Hayes, Barrows, & Wright, 2015).

By understanding how our ability to make good decisions is partly a product of our environment, not something we can always rationally learn, policymakers can begin to design programmes and services that support people in or near poverty to improve their life chances. This understanding requires a new form of empathy. In effect, decision-making by people in or near poverty can be thought of as like swimming against the ocean current, while the wealthy are swimming with it - those on low incomes are exhausting themselves to avoid being dragged out to sea. Fortunately, leading researchers are turning their attention to this issue.

As Esther Duflo, puts it:

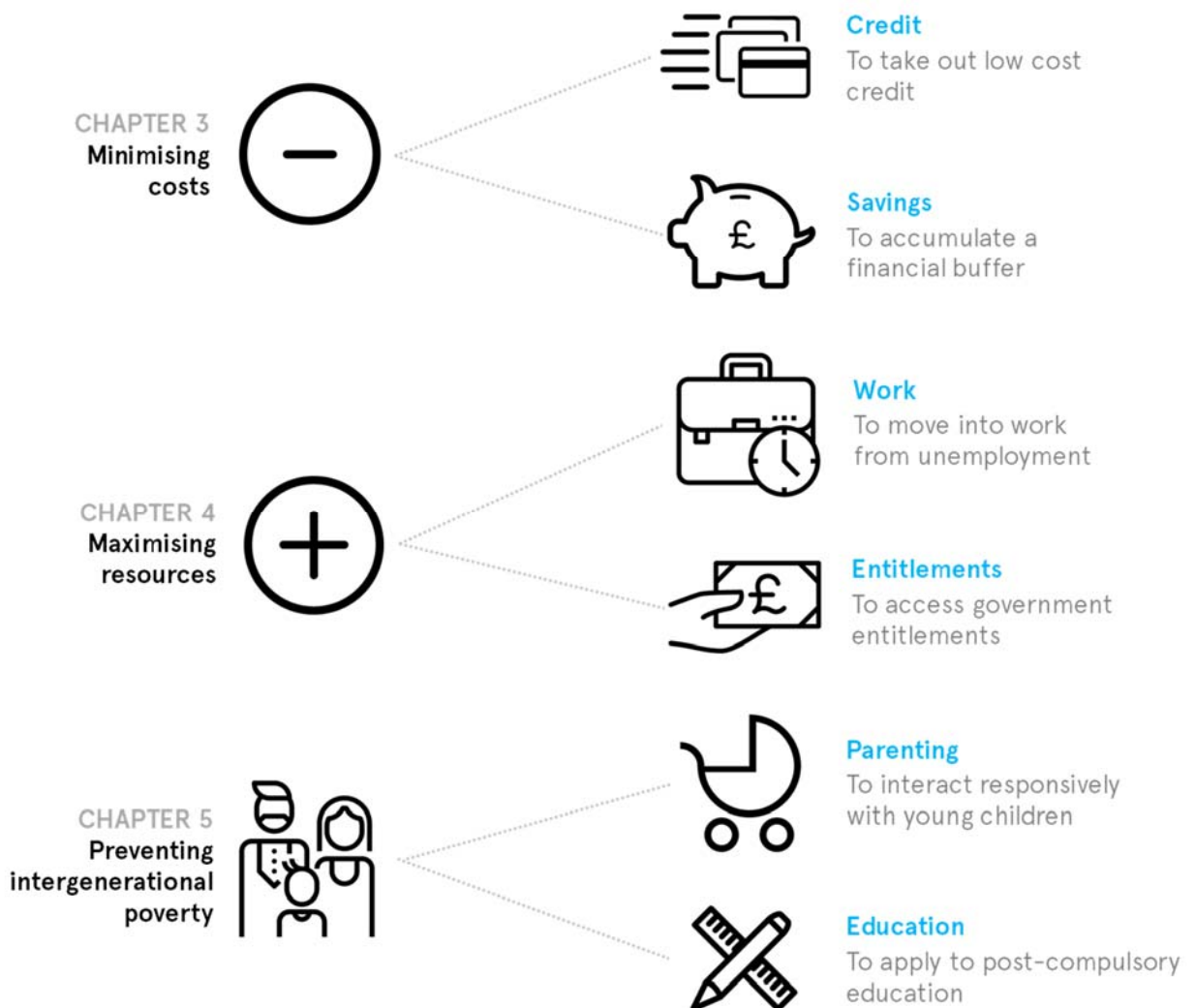
'We tend to be patronizing about the poor in a very specific sense, which is that we tend to think, 'Why don't they take more responsibility for their lives?' And what we are forgetting is that the richer you are the less responsibility you need to take for your own life because everything is taken care for you. And the poorer you are the more you have to be responsible for everything about your life....My lesson is to stop berating people for not being responsible and start to think of ways instead of providing the poor with the luxury that we all have, which is that a lot of decisions are taken for us. If we do nothing, we are on the right track. For most of the poor, if they do nothing, they are on the wrong track' (cited in Parker, 2011).

Section 1.4 Structure of the report

This report is split into four main chapters. The next chapter (Chapter 2) outlines the state of poverty in the UK, highlighting that for most people, poverty is not a permanent state but is something they experience either temporarily or in recurring cycles. It also explains our conceptual model of the relationship between poverty and decision-making. This model describes poverty as lacking different forms of capital, including cognitive, character, social, environmental, human and economic capital. Without these resources, decision-making is impaired and more difficult, and this can lead to further depletion of these resources.

Chapters 3, 4 and 5 constitute the body of the report. These chapters are structured around three strategies for preventing or overcoming poverty: minimising costs, maximising resources and preventing intergenerational poverty (see Figure 1). For each strategy we have selected two relevant policy domains and focused on important decision points that individuals face within these domains. We have taken this approach to illustrate the breadth of policy areas and decision points that impact on poverty and to highlight behavioural research that can help generate new policy recommendations for combatting poverty.

Figure 1: Decisions covered by the three core chapters



For reasons of scope, this report focuses on decisions made by individual citizens at or near the poverty line, rather than policymakers, service providers (such as teachers, employment advisers and judges), organisations, or society at large. We have not explored additional specialist issues affecting people with complex needs such as homelessness and drug addiction. The report looks at poverty in the UK, but it draws out relevant findings from across the world, with a particular emphasis on evidence deriving from randomised controlled trials (RCTs) or other forms of rigorous evaluation.

The report argues that decisions made by individuals can make a difference to their poverty status and that these decisions are significantly influenced by how choices are presented and the context in which they are made. In this respect, the report considers not only how we can help people avoid some of the traps that come with System 1 thinking by adjusting the 'choice architecture' but also, how we can strengthen and revitalise people's capacity for System 2 thinking by deploying traditional policy levers (regulations, incentives and information) in more effective ways. It is here that the paper considers how behavioural science intersects with the structural drivers of poverty and tries to look beyond 'nudging' people in the direction they were going to move anyway, to potentially helping them change direction altogether.

Chapter 2 – Understanding poverty in the UK

This chapter sets out our working definition of poverty in the UK and the risk factors for poverty. JRF defines poverty as when a person's resources are insufficient to meet their basic needs, including fully participating in society. The solution to poverty is therefore to increase the resources available to individuals and households, or to reduce the costs of meeting their needs (Joseph Rowntree Foundation, 2014).

Section 2.1 Measuring poverty

This report conceives of poverty along two dimensions: depth and time.

Depth of poverty

- ◆ Relative poverty - where households have less than 60 per cent of contemporary median income. This is the standard measure of poverty used in the UK.
- ◆ Absolute poverty - where households have less than 60 per cent of the median income in 2010-11, uprated by inflation.
- ◆ Material deprivation - where people cannot afford certain essential items and activities.
- ◆ Educational attainment gaps between those on Free School Meals and those that are not.
- ◆ Overcrowded homes and homelessness.
- ◆ Unemployment and low pay.

Time in poverty

- ◆ Transient (one-off) poverty is a single spell of poverty, lasting no more than a year (Smith & Middleton, 2007).
- ◆ Recurrent poverty is cycling in and out of poverty - defined as more than one discrete period of poverty during the past five years.

- ◆ Persistent poverty is long periods of poverty – officially defined as experiencing relative low income in the current year, as well as at least two out of the three preceding years (Office for National Statistics, 2016).

Box 1: Wellbeing and other approaches to poverty

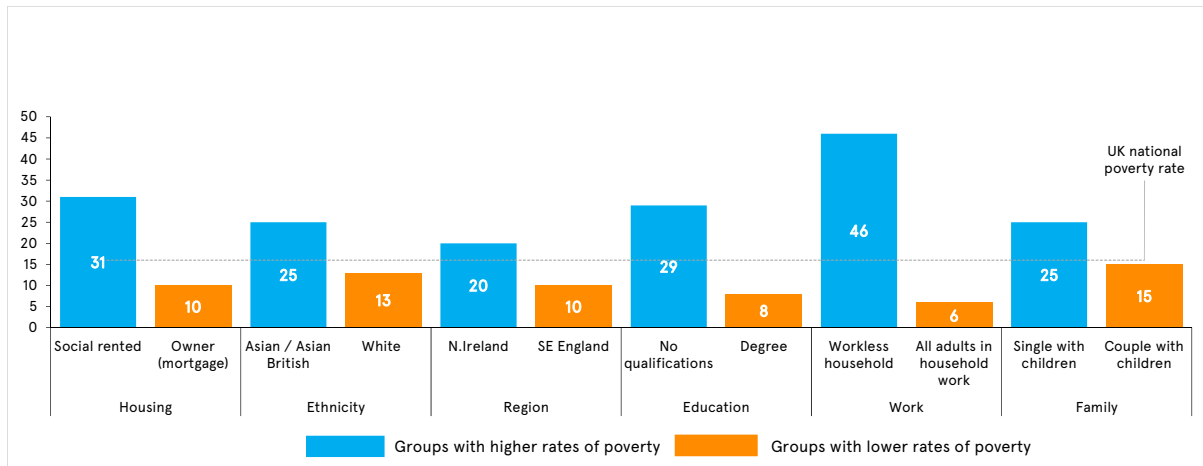
While we have structured this report around an income-based measure of poverty, we acknowledge that other measures of poverty exist and can deepen the debate about tackling disadvantage. The Nobel Prize-winning economist and philosopher Amartya Sen and the philosopher Martha Nussbaum have been at the forefront of redefining poverty in line with a ‘capabilities approach’. This approach characterises a person as being in a state of poverty when they lack the opportunity to make choices that they value, rather than to achieve pre-defined material outcomes (Nussbaum, 2011). This has in turn helped fuel interest in non-economic measures of wellbeing and happiness, with researchers identifying that our life satisfaction appears to be heavily influenced by how our situation compares to others, rather than our wealth per se (Graham, 2015).

What is notable is that although capabilities, wellbeing, and inequality have heavily influenced international poverty alleviation efforts, it is still very rare for policymakers in the UK to measure the success of programmes in happiness or wellbeing terms (cf. O’Donnell, Deaton, Durand, Halpern, & Layard, 2014). This is unfortunate since these concepts have the potential to unlock lessons about how to build more resilient communities that are less reliant on increasingly scarce fiscal resources. We commend recent efforts to move the needle on this, including by the Office for National Statistics, the Organisation for Economic Co-operation and Development (OECD), and the Social Metrics Commission.

Section 2.2 Risk factors for poverty in the UK

In the UK, 16 per cent of the population was in relative income poverty in 2014–15 (before housing costs) and this has been fairly stable for the past 20 years (Department for Work & Pensions, 2016). However, after housing costs are considered, this figure jumps to 21 per cent. Furthermore, the 16 per cent figure masks very high rates of poverty for certain groups. The risk of experiencing poverty varies significantly depending on housing type, age, ethnicity, region, education, working status and family status. Figure 2 highlights some of the factors which put individuals at greater risk (Department for Work & Pensions, 2016).

Figure 2. Proportion of working-age adults in relative income poverty in the UK (before housing costs)



Section 2.3 Poverty dynamics

Poverty is often measured at a point-in-time, which can create a misleading picture of ‘the poor’ as a group distinct from the ‘non-poor’. In fact, when poverty dynamics have been studied using longitudinal data, it has been found that 33 per cent of the UK population spent at least one year in relative income poverty between 2011 and 2014 – double the point-in-time poverty rate of 16 per cent (Office for National Statistics, 2016).

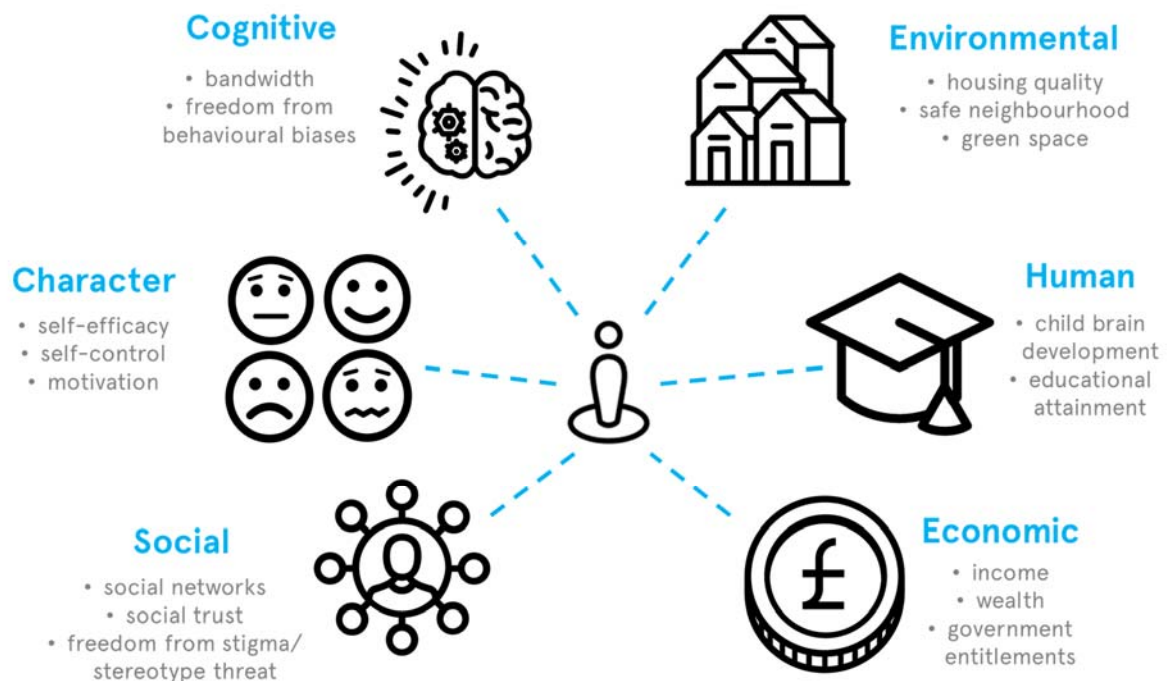
The UK also has one of the highest rates of people entering and exiting poverty compared to other European countries, with recurrent poverty accounting for about a fifth of the overall experience of poverty in the working age population (Office for National Statistics, 2016; Goulden, 2010). Recurrent poverty often occurs because a person’s income increases only enough to get them just over the poverty threshold where they are at high risk of re-entering poverty.

Section 2.4 Poverty as a lack of capital

Policymakers have typically sought to reduce poverty in the UK by boosting people’s economic capital. That is, they have used changes to regulation (such as increasing the minimum wage), better information (such as informing people about available government entitlements) and incentives (such as matched savings schemes) to maximise people’s resources and minimise their costs. Seeking to enhance human capital, in the form of skills and qualifications, has also been a major policy focus.

In this report, we argue that while economic and human capital are clearly critical to poverty alleviation, other forms of capital also underpin the risk factors for poverty. These include environmental capital, social capital, character capital and cognitive capital (see Figure 3). Furthermore, across all six types of capital, a combination of social structures and individual decisions determine a person's experience of poverty.

Figure 3: Types of capital resources (including examples)



While many readers will already be familiar with the notion that a lack of capital directly causes poverty, our particular intent is to demonstrate the value of understanding how the link between capital and poverty is often channelled through individual decisions. With this understanding, policies and programmes that invest in different forms of capital, such as government spending on schools and housing, can be designed to be more effective by helping people make better decisions.

In addition, we seek to widen the definition of capital and introduce readers to the concepts of character capital and cognitive capital. This allows us to draw on new and potentially transformative research, which makes the case that being high in these less tangible resources, such as self-control (character capital) and

bandwidth (cognitive capital), can help to mitigate the chances of falling into poverty and cushion against its negative effects. However, these resources need the right conditions to develop, and they can also become depleted if over-used.

Furthermore, not only are character and cognitive capital important in their own right, they intersect with the other forms of capital and should therefore be a key focus for anyone working to reduce and prevent poverty in the UK. The following section provides a brief definition of the various types of capital and their evolution. These concepts will be investigated more deeply in subsequent chapters.

Box 2: What do we mean by capital?

In this report we use the term 'capital' to refer to resources (be they economic, human, environmental, social, character or cognitive) that a person uses to meet their needs and make decisions. For example, an individual may use trusted social connections (social capital) to identify labour market opportunities; or use a portion of their income (economic capital) to save for their child's education (human capital). A lack of any form of capital can lead to poverty, but poverty can also reduce a person's stock of capital.

The relationship between poverty and capital is both direct (material deprivation and exclusion) and indirect (through decision-making). Crucially, the different forms of capital create feedback loops that either increase or decrease a person's risk of experiencing poverty. For example, being low in environmental capital (such as overcrowded housing) may reduce opportunities for parents to talk with their child in ways that build their human capital (such as speech development).

Traditionally the focus has been on very long feedback loops, such as low educational attainment affecting lifetime earnings. However, it has become clear that some of these reinforcing loops operate in much shorter time frames, such as how money worries lead to worse cognitive performance in the days or hours following. The good news is that this opens up potentially much faster-acting policy interventions.

Economic capital

Economic capital includes the things that determine individual financial status, such as income, financial assets, inherited wealth and government entitlements. Traditionally these were the key factors associated with poverty and disadvantage.

Human capital

Human capital includes educational attainment, knowledge, skills and IQ. Human capital is often linked to structural inequality – and research increasingly shows just what a devastating effect poverty can have on the part of the brain that is critical for attention and problem solving (the prefrontal cortex). For example, children from lower socio-economic backgrounds are more likely to show brain physiology patterns similar to someone who actually had damage in the frontal lobe as an adult, such as stroke victims (Kishiyama, Boyce, Jimenez, Perry, & Knight, 2009). However, there is a growing body of related research showing that if parents are supported to ensure their child receives the right kind of emotional attachment and intellectual stimulation during the early years of life, they can significantly improve their child's human capital (Tough, 2016; Carneiro & Heckman, 2003; Heckman & Masterov, 2007).

Environmental capital

Environmental capital includes private environments such as housing, as well as public environments, such as parks and safe communities. It is also linked to structural inequality, but usually only as a consequence of poverty, rather than a potential cause. We are increasingly learning that a lack of environmental capital may have serious implications for people's ability to overcome and prevent poverty. For example, natural experiments in the US and UK have found that, after controlling for socioeconomic status, randomly assigned social housing tenants that had trees near their property had greater capacity for directed attention, were more effective in managing major life issues (Kuo, 2001), had better mental health (Winson, 2011) and exhibited lower levels of aggression (Kuo & Sullivan, 2001). By contrast, school children chronically exposed to aircraft noise show poor persistence on challenging tasks (Hygge, Evans, & Bullinger, 2002).

Social capital

Social capital, commonly understood as social connections or networks, and the trust and reciprocity they generate, has been studied in relation to economic outcomes for at least 40 years (Halpern, 2005). Those embedded in a community

or network of high social trust benefit from information that flows freely and from contractual obligations that can be sealed by a handshake.

Social capital also affects people's willingness to help those less fortunate than themselves (Aarøe & Petersen, 2014). For example, research shows that wealth creates more independence, which in turn reduces empathy and prosocial behaviour (Piff, Kraus, Côté, Cheng, & Keltner, 2010). Lack of empathy with people living in poverty has even been demonstrated with brain scans: showing people pictures of people in poverty can light up the part of the brain associated with feelings of disgust (Fiske, 2009).

Research has demonstrated that an individual's intellectual performance can be affected by internalising negative stereotypes about their social group, including ethnic groups and social class (Croizet & Claire, 1998). For example, telling an individual before they take a test that black and minority ethnic (BME) test-takers do poorly has been shown to decrease performance almost immediately (Steele & Aronson, 1995). Similarly, a study found that when low-income students were asked to answer demographic questions about their parents' income and occupations before a test, they performed worse than the low-income students who were not asked these questions (Spencer & Castano, 2007).

This effect is known as stereotype threat and it occurs because a person's concerns about their identity overload their cognitive capacity and working memory (Beilock, Rydell, & McConnell, 2007; Croizet et al., 2004). Stereotype threat has been shown to affect children from low socio-economic backgrounds as young as six (Désert, Préaux, & Jund, 2009; Strauss, 2013), highlighting how a lack of social capital can set up a child for a life of poverty.

Character capital

Character capital is usually defined as 'soft skills' or 'non-cognitive skills' and includes concepts such as self-efficacy (self-belief), self-control, and grit (passion and perseverance). One of the most famous behavioural experiments to look at character skills is known as the 'marshmallow test' (Mischel, 2014). Children were given a choice between eating one marshmallow now or two marshmallows in fifteen minutes' time. Those who failed to wait the fifteen minutes to gain an additional marshmallow were later found to perform worse in school, were more likely to commit crime or use drugs, and were more likely to be unemployed and

earn less. The conclusion was that self-control is determined at a young age and it affects life outcomes.

However, rather than being something that is solely inherent in a child's personality, poor self-control is also a rational response to living in poor environments where deferring gratification can mean missing out altogether. Indeed, researchers have found that poor children that show neurological signs of staying calm under stress are more likely to behave impulsively, whereas wealthy children that stay calm under stress are more likely to delay gratification. Crucially, in a related longitudinal study of 140 mother-and-child pairs, this divergence in behaviour at age 5 was predicted by measures of nerve activity (vagal tone) at 18 months of age (Sturge-Apple et al., 2016), pointing to the importance of creating trusting and stable environments that build character capital in infancy.

Cognitive capital

Cognitive capital is a term we will use in this report to talk about two mental processes:

1. Cognitive bandwidth or mental processing capacity, such as working memory, to make complex and considered decisions (System 2 thinking); and
2. Freedom from the traps of behavioural biases or cognitive shortcuts (heuristics), which all people use to make intuitive decisions (System 1 thinking). For example, most people would spend time shopping around to save £20 when buying a £60 belt but not when buying a £6,000 car. Orthodox economics suggests that we should care about £20 for its inherent value but in fact our spending decisions are heavily influenced by the context in which they are taken (Hammond, 2016).

Cognitive capital as we have defined it here is produced 'on-the-spot' and is a function of the context, whereas the other types of capital take time to develop as a resource. However, bandwidth and human capital intersect: human capital includes our stock of intelligence and knowledge (our computer's hardware and software) whereas bandwidth is our capacity in a given context to deploy that intelligence and knowledge usefully (our computer's capacity to run programmes). Scarcity of time or money has been shown to dramatically reduce bandwidth and have implications for other cognitive activity (Mani, Mullainathan, Shafir, & Zhao,

2013). This helps to explain why people in disadvantaged circumstances may make decisions that seem 'irrational' and counter-productive.

In a ground breaking experiment, researchers gave people fluid intelligence tests in a US shopping mall (Mani, Mullainathan, Shafir, & Zhao, 2013). They found only a modest difference between people on high and low incomes. However, if they prompted subjects to think about money worries before the test, by asking how they would cope if their car broke down and needed \$1,500 of repairs, the subsequent scores of the low-income subjects dropped dramatically. The researchers went on to test this effect in a real world situation with Indian sugarcane farmers who are paid for their crop once per year. The farmers tend to be poor just before a harvest and relatively well off a few weeks after the harvest. Over this period their effective IQ scores increased by over 10 points (the equivalent of going from an average to an exceptional intellect, or borderline intellectually challenged to average).

Unlike time and financial scarcity, behavioural biases (of which there are many and the list keeps growing) are largely thought to be universal. However, there is some evidence that certain groups may be more affected by behavioural biases. For example, 'the youngest, poorest, most urban and least educated individuals are the most likely to be hyperbolic discounters' - meaning that they prefer smaller rewards sooner over larger rewards later (Eisenhauer & Ventura, 2006). More research is needed to identify if and how poverty puts people at risk of various behavioural biases, or if poverty is potentially protective against particular behavioural biases (Shah, Shafir, & Mullainathan, 2015).

Our conceptual model aims to highlight that people with similar levels of economic capital can face very different poverty outcomes because of variation in other types of capital. Furthermore, deficits in these other forms of capital can negatively impact decision-making in ways that reduce economic capital - creating a vicious cycle. Throughout this report we will argue that this understanding can help to explain why some well-intentioned interventions may fail. It can also open up a greater number of tools to address poverty.

Chapter 3 – Minimising costs: decisions about credit and savings

People on low incomes often need to save, borrow from family members, and use consumer credit to pay for day-to-day expenses. Suboptimal financial decisions have the potential to drive people into poverty, and worsen the situation of those already experiencing poverty. This chapter examines the influence of cognitive, character, social and human capital on decisions around taking out credit and accumulating savings.

Section 3.1 Why credit and savings decisions matter for poverty

Households are at risk of poverty when they do not have enough savings and are over-committed on credit. Survey data show that around a quarter of the UK population do not have £200 set aside to cover an unexpected cost (Rowlingson & McKay, 2015; NS&I, 2015) and 71 per cent of UK households report having less than £10,000 in savings (The Money Charity, 2016). In addition, 1.5 million UK adults did not have a bank account in their name in 2012–13 (Rowlingson & McKay, 2015).

Although low-income groups in the UK report lower savings activity in surveys, qualitative evidence suggests that, while they may not be saving large sums for the long term, most are holding back money, often in small, intermittent amounts for their short term needs (Kempson & Finney, 2009). This reflects research carried out in developing countries and the US which tracked the daily finances of low and moderate-income households over a year. This research found that those on low incomes often engaged in high levels of savings activity, but with less accumulation because their intention is to use the money to smooth volatile income in the short-to-medium term (Collins, Morduch, Rutherford, & Ruthven, 2009; Hannagan & Morduch, 2015). However, without the chance to build up a savings buffer, low-income groups can quickly get into financial difficulties if they experience a fall in income or an increase in demands on expenditure.

Another way low-income groups smooth volatile income is by taking out credit. Use of credit is widespread across the UK, with the average total debt per UK household, including mortgages, reaching £54,261 in February 2016 (The Money Charity, 2016). Those with low incomes are at greatest risk of accumulating problem debt – when they become unable to make contractual payments on consumer credit or household bills (Dearden, Goode, Whitfield, & Cox, 2010;

University of Bristol, 2013). This is because, people on low incomes are more likely to be targeted by predatory (high cost) loan companies (Ru & Schoar, 2016); they have less access to mainstream (low cost) forms of credit; and they have less slack in their income to overcome the financial consequences of making a poor decision.

There is also evidence that, contrary to the predications of orthodox economics, some people in poverty consciously choose high interest loans as a way of imposing discipline on themselves to pay it back faster. They may even choose to take out a loan instead of drawing on their savings because re-building savings can be extremely difficult, especially when family members undermine savings strategies by asserting their own needs (Morduch, 2009).

Section 3.2 Factors that influence decisions around consumer credit

Cognitive capital

Present bias

Psychologists and behavioural economists have consistently found that individuals tend to overweight immediate rewards and heavily discount costs in the future when making decisions (Laibson, 1997; Samuelson & Zeckhauser, 1988; Thaler, 1991). When deciding to take out credit, individuals are likely to exhibit this 'present bias' by focusing on the immediate reward of taking out credit (such as paying off an overdue bill), whilst placing less consideration on future repayments (Laibson, 1997; Shui & Ausubel, 2004).

A US survey found that individuals who exhibited present bias were more likely to have credit card debt, and have significantly higher levels of credit card debt (Meier & Sprenger, 2010). However, it is unclear whether individuals who have high levels of debt become more present biased, or whether their present bias led them to take out credit.

There is little evidence on whether low-income groups in the UK are more likely to suffer from present bias. Survey data assessing levels of present bias in a representative sample of Turkish individuals found that 29 per cent of low-income individuals exhibited present bias compared to 6 per cent of high-income individuals (Can & Erdem, 2013). Some research suggests that having a high income

may make you feel more in control of your future and therefore less present biased (Joshi & Fast, 2013).

Assessing future costs in order to overcome present bias may be particularly difficult when credit products have fluctuating interest rates, such as mortgages and credit cards with introductory offers (Eisenstein, 2006). A large RCT in the US (n=600,000) found that consumers were 13 per cent more likely to accept a credit card offer with a low introductory interest rate for a short period of time, even though they would have paid less interest over the next two years if they had accepted a slightly higher introductory interest rate lasting for a longer period (Shui & Ausubel, 2004).

Intervention #1: Transparent pricing of credit

Commercial suppliers of credit are incentivised to take advantage of consumer biases or weaknesses in order to sell credit at the highest volumes and interest rates (Akerlof & Shiller, 2015).

Researchers in the US explored different ways of presenting information to customers of a payday lending company, to see if it would reduce their likelihood of taking out another payday loan in the following months. Those randomly assigned to receive an envelope which compared the repayment amounts on a loan from a payday lender versus a credit card (pictured below), were 6 percentage points less likely to take out another (more expensive) payday loan (Bertrand & Morse, 2011).

Figure 4: Intervention to show the real cost of payday lending

How much it will cost in fees or interest if you borrow \$300			
PAYDAY LENDER (assuming two-week fee is \$15 per \$100 loan)		CREDIT CARD (assuming a 20% APR)	
If you repay in:		If you repay in:	
2 weeks	\$45	2 weeks	\$2.50
1 month	\$90	1 month	\$5
2 months	\$180	2 months	\$10
3 months	\$270	3 months	\$15

Source: Bertrand and Morse, 2011

Timeliness and salience

Unsolicited offers of credit via text messages, mail or email are likely to tempt consumers to take out these forms of credit over products that are not heavily advertised. Research by the UK Financial Conduct Authority (FCA) found that UK borrowers often prioritise factors such as certainty of approval, flexibility and familiarity, over the absolute cost of credit (FCA, 2014a). High interest loans are often advertised in the UK as available 'within 10 minutes of approval'¹ or 'loans in 10 Minutes, 24/7'². In contrast, credit unions offering loans at lower interest rates may require an individual to sign up to be a member during opening hours and take much longer to deposit once approved.

'I'm bombarded with stuff asking me if I want it. Halifax are sending me stuff almost weekly offering me £10,000. I'd be better off if they didn't ask me.'

29-year-old partnered man, one child, long-term low-waged

(Dearden et al., 2010, p.35)

Intervention #2: Restricting availability and marketing of credit

Restricting access to certain types of credit products may benefit consumers. FCA analysis found that two months after applying for high cost short term credit (HCSTC), individuals whose application had been narrowly accepted were more likely to be exceeding their authorised overdraft limit and missing repayments of other (non-HCSTC) credit compared to those whose application for HCSTC had been narrowly rejected (FCA, 2014c). However, modelling suggests that one in four unsuccessful HCSTC applicants borrow from friends and family instead which may or may not be beneficial for the consumer in the long term, depending on the nature of the credit arrangement.

¹ <https://www.quickquid.co.uk/payday-loans-uk/10-minutes.html>

² <https://www.poundstopocket.co.uk/10-minute-transfer-loans.html>

Intervention #3: Offering alternative products

Another approach to preventing consumers from taking out high cost loans is to provide access to alternative credit. In the UK, interest free Budgeting Loans can be applied for through local Jobcentres (The Money Advice Service). For those receiving Universal Credit, budgeting advances can be applied for and paid back through lower Universal Credit payments (Citizens Advice; Department for Work & Pensions, 2011b). Over 1 million Budgeting Loans were issued in 2013-14, but there is little research into the effectiveness of these alternative loan products for reducing problem debt.

Credit unions also provide a source of lower-cost credit in the UK. The Government's Credit Union Expansion Project is projected to save consumers up to £1 billion in loan interest repayments by March 2019 (Purtill, Cray, & Mitchell, 2012). Housing associations have also launched schemes to help their tenants access affordable credit. However, the evidence is limited regarding whether the take-up of affordable loans from Credit Unions and Housing Associations replace the use of high cost credit (Hartfree, Friedman, Ronicle, Collard, & Smith, 2016).

There may also be a role for employers to offer low cost credit, with start-ups such as SalaryFinance and Neyber launching in the UK market to help employers offer loans to their staff that are paid off directly from their salary.

Framing effects

The way credit offers are presented, such as the suggested uses for a loan (e.g., 'you can use this cash to buy an appliance'), may have an effect on consumer take-up and willingness to pay for higher cost credit (Bertrand, Karlan, Mullainathan, Shafir, & Zinman, 2010). Behavioural scientists use the term 'framing effects' to describe the phenomenon of an individual's preferences shifting when the same choice is presented in different ways (Tversky & Kahneman, 1981).

Emerging research suggests that low-income individuals may be less susceptible to certain framing effects. Researchers have previously found that people were willing to pay more for a beer in the context of an expensive hotel compared to in a grocery store (Thaler, 1985). When this experiment was re-run with high and low-income groups, the researchers found that low-income groups were more consistent across contexts in what they would be willing to pay for a beer. This appears to be because their financial situation focuses their attention on spending trade-offs (i.e., what else could that money buy me?) and this gives them a stable

(and more 'rational') framework for judging value-for-money (Shah, Shafir, & Mullainathan, 2015).

Social capital

Stereotype threat

The link between poverty and social status could negatively affect financial decisions. Stereotype threat is a well-studied phenomenon where people who belong to negatively stereotyped groups, subconsciously experience anxiety about the stereotype which decreases their performance on related tasks.

A lab experiment in the US (n=71) tested participants' maths ability before and after hearing a negative stereotype about people on low incomes. The researchers read out a script which stated that the purpose of the research is to understand why maths performance is affected by socio-economic background. They found that the maths scores for low-income participants dropped after hearing the script, while the scores for high-income participants improved and middle-income participants stayed the same (Tine & Gotlieb, 2013). These results suggest that negative stereotypes about people on low incomes could have implications for financial decision-making, although this has not been studied in a real life setting.

Evidence from another lab experiment suggests that priming middle class people to believe they are lower on the socio-economic scale than they actually are leads them to perform worse in a task of picking out the best credit card offer from a choice of three. These findings point to the potentially detrimental impact of inequality (real or perceived), not just absolute poverty, on financial decisions (Sheehy-Skeffington, 2015).

Human capital

Financial literacy

Financial literacy - a form of human capital - may provide some protection against limitations in cognitive capital. However, in the UK, levels of financial literacy are a cause for concern. The UK Financial Capability Survey 2015 found that a third of respondents were unable to correctly calculate the impact of a 2 per cent annual interest rate on £100 in savings (Money Advice Service, 2015b). Further qualitative research by the Money Advice Service found that many of the participants they spoke to did not recognise the real cost of credit and that 'they often did not realise how much credit would cost them over the year and generally failed to

make the connection between the cost of credit interest and the overall amount they would have to spend’ (Money Advice Service, 2015a). An analysis of UK survey data found that borrowers with poor financial literacy held higher shares of high cost credit (such as home collected credit, mail order catalogue debt and payday loans) than those with higher financial literacy (Disney & Gathergood, 2013).

Intervention #4: Financial education programmes

Financial education programmes have been rolled out in the UK and abroad by both charities and governments to try to improve financial decisions. However, the effectiveness of these programmes has been questioned (Hastings, Madrian, & Skimmyhorn, 2013), with one meta-analysis finding that evidence from RCTs is ‘limited at best’ (Miller, Reichelstein, Salas, & Zia, 2014).

Rather than trying to formally teach financial literacy, boiling down financial advice into simple principles may be a more effective approach to improving financial decision-making. An RCT in the Dominican Republic tested two distinct training sessions for small businesses to improve financial decision-making: one standard accounting training, and another rule-of-thumb training that teaches basic financial heuristics such as using drawers or jars to separate money for the business and the household.

Businesses in the rule-of-thumb training were more likely to implement the material that was taught and keep accounting records (Drexler, Fischer, & Schoar, 2014). The researchers theorised that rule-of-thumb training may be more effective because it is easier to understand than technical accounting training, and easier to implement. In the UK, appropriate rules of thumb for personal financial management could be developed and taught in schools such as, ‘always apply to a credit union first before seeking to borrow from commercial lenders’.

Policy recommendations and suggestions for further research

Recommendation 1: Make it easier to access low cost credit	
Context	Specific recommendation
<i>Currently, it is much easier to access high cost credit than low cost credit.</i>	<p>We recommend that the UK Government:</p> <ul style="list-style-type: none"> ◆ Trial further extending access to interest free Budgeting Advances through Universal

	<p>Credit. In particular, online access could be trialled to enable faster and easier access to credit.</p> <ul style="list-style-type: none"> ◆ Further assist credit unions to offer online services through the existing Credit Union Expansion Project, so that individuals can easily access their credit services. There is also a role for government to signpost credit unions more widely and promote them through existing government communications. ◆ Provide tax relief to individuals taking out payroll loans, which are a promising way of accessing lower cost credit (for example, through start-ups like SalaryFinance and Neyber).
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Recommendation 2: Further restrict practices by high cost credit providers that play on consumer biases

<p><i>Suppliers of credit are incentivised to play on consumer biases to sell high cost and high volumes of credit. Regulators should be designing market remedies with behavioural insights in mind to improve consumer decision-making in financial markets. For more on this approach, see The Behavioural Insights Team’s (2016) report ‘Applying Behavioural Insights to Regulated Markets’.</i></p>	<p>We recommend that the FCA should:</p> <ul style="list-style-type: none"> ◆ Continue to assess if restricting high cost loan access and marketing (particularly unsolicited offers) of these products improves outcomes for consumers through routine testing of market remedies. ◆ Continue to test remedies that aim to improve consumer credit decision-making e.g. presenting the cost of payday loans in pounds if the loan lasts 90 days, rather than only presenting the representative Annual Percentage Rate (APR) figure.
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Recommendation 3: Evaluate financial capability programmes

Very little is known about 'what works' to improve consumer financial capability.

We recommend that the UK Government continues to fund rigorous evaluations of interventions to improve financial capability, such as through the Money Advice Service What Works Fund (Money Advice Service).

Section 3.3 Factors that influence decisions around accumulating savings

Cognitive capital

Present bias

Present bias may explain why individuals in the UK under-save. A representative survey of the US population found that individuals who reported preferring to receive lower amounts of money in the present compared to higher amounts in the future were likely to have 19 per cent less predicted retirement savings than those that did not display this bias (Goda, Levy, Manchester, & Sojourner, 2015).

Intervention # 1: Matched saving schemes

One way governments have sought to encourage individuals to save is to provide incentives to do so. Tax relief on pension savings and savings income are two examples of how the UK government currently encourages individuals to save.

However, the evidence suggests that conventional incentives are extremely ineffective, especially among low-income individuals. Researchers have estimated that a conventional tax subsidy of £1 leads to just one pence of extra saving, with most of the subsidy going as a deadweight gain picked up by the wealthiest (Chetty, Friedman, Leth-Petersen, Nielsen, & Olsen, 2014).

The UK Government recently announced a new savings scheme called 'Help to Save' that will offer those in work or in receipt of Universal Credit or Working Tax Credits the opportunity to save up to £50 a month and receive a 50 per cent bonus after two years (Gov.uk, 2016). Similar matching schemes have helped low-income groups to save across North America. Evidence from one North American

scheme suggests two years is the optimum time period to provide savings incentives in order to build a habit (Loibl, Kraybill, & DeMay, 2011).

However, pilots of an earlier matched savings scheme in the UK found that five of the six pilots did not produce statistically significant evidence that enrolled individuals increased their net worth. Nonetheless, they did find a reduction in food purchases consumed outside the home among low-income individuals according to self-reports (Ipsos MORI & Institute for Fiscal Studies, 2007). This suggests that this group altered their spending behaviour when incentivised to save monthly.

Status quo bias

Rather than making active decisions about complex choices, many individuals will simply follow the path of least resistance (Beshears, Choi, Laibson, & Madrian, 2009; Madrian & Shea, 2001). Creating defaults that support long term savings could help to reduce or prevent poverty.

Researchers in the US found that employees stuck with defaulted pension contribution settings, even when they could amend the settings (Madrian & Shea, 2001). This has in turn influenced policy in the UK. From 2018 all employers must automatically enrol their workers into a pension, with the opportunity for employees to opt-out. A recent report from the National Audit Office found that, among companies that have already started, opt-out rates have been between 8 and 14 per cent, which was much lower than expected (National Audit Office, 2015). The Department for Work and Pensions (DWP) estimates that 9 million more people will start to save or save more for retirement because of automatic enrolment into workplace pensions (National Audit Office, 2015).

At present in the UK, minimum employee pension contributions are 1 per cent of their salary, with employers adding a further 1 per cent. This is set to rise to 3 per cent and 5 per cent respectively after April 2019. However, the Independent Review of Retirement Income (Pensions Institute, 2016) has called for a 15 per cent total savings rate. Although low-income individuals are less likely to opt-out of pension defaults compared to higher income individuals (Choi, Laibson, Madrian, & Metrick, 2004; Madrian & Shea, 2001), more research is needed to understand what effect such a high minimum contribution rate would have on pension savings and poverty. A study at one UK firm (n=671) with a 12 per cent default employee contribution rate found that after 12 months of employment, only 25 per cent of employees had stuck with this default while about 60 per cent had shifted to a

lower contribution rate (Beshears, Choi, Laibson, & Madrian, 2010). If default settings are not broadly in line with individual preferences they may not be an effective approach for reducing poverty.

Intervention # 2: Saving defaults

An obvious mechanism for defaulting individuals into saving for a rainy day is their workplace payroll. Credit Unions already offer payroll saving and new providers such as Neyber and SalaryFinance are starting to offer payroll saving as well as lending. However, automatically taking a percentage of pay and putting it into a savings account may not work for everyone. Different options for withdrawing money need to be evaluated to see if payroll saving can help people on very low or volatile incomes save regularly.

In the US, tax time is seen as an opportune moment to encourage savings accumulation because low-income households often receive large refunds when they file their tax return. However, an RCT (n=259) found that defaulting tax filers into buying savings bonds with their tax refund had no significant impact on take-up or on the amount they saved (Bronchetti, Dee, Huffman, & Magenheim, 2011). The researchers concluded that defaulting low-income individuals into savings schemes may not work when they have large debts that they plan to pay off or other plans to spend the money.

Digital solutions may help people to save more flexibly when they can afford it. An app called Even uses defaults to facilitate income smoothing for those with volatile incomes. On a good week when a user earns above their average salary, the company defaults the surplus into an Even-managed savings account. On a bad week when their income falls short, their salary is automatically topped up from their savings or interest-free credit from Even. Further research is needed to understand whether income smoothing devices can free up cognitive bandwidth and lead to savings accumulation, but it is a promising approach.

Intervention #3: Goal setting and reminders

Multiple studies across the globe have shown how simple and timely reminders, in conjunction with savings goals, can increase savings activity. Field experiments in Bolivia, Peru and the Philippines found that monthly reminders sent by local banks helped individuals to increase their savings (Karlán, McConnell, & Mullainathan, 2016). Another RCT in Chile (n=873) found that text message reminders to encourage individuals to deposit money into a savings product increased savings

rates (Kast, Meier, & Pomeranz, 2012). However, these types of interventions have not been tested in the UK. As digital banking applications emerge, trialling in the UK context will become highly feasible. In addition, encouraging individuals to create a savings goal could be prompted at key moments when their financial situation improves, such as when a bank identifies that a person has received their first Universal Credit payment.

Character capital

Self-control

The gap between intention and actual behaviour is important to consider when analysing savings behaviour. Across many domains (from health to consumption behaviour), it has been observed that intentions do not always lead to action (Sheeran, 2002). Individuals may intend to save money for the future, but may lack the self-control to follow their own rules (Loewenstein, 1996).

Various theories have been proposed to explain the relationship between poverty and self-control when trying to save money for the future. Bernheim, Ray and Yeltekin (2015) theorise that because those in poverty have less to lose from financial slip-ups in absolute terms, monetary self-discipline is harder to maintain. In contrast, Banerjee and Mullainathan (2010) argue that the relative consequences of financial slip-ups are large for someone in or near poverty and all people experience, and give into, temptation to a similar extent. For example, when buying sugary treats, the same slip-up of spending \$0.25 on a doughnut has very different consequences for someone living on \$2 a day compared to someone living on \$30 a day. However, neither of these theories have been validated in the field and we know from other domains that acting impulsively is often a rational response under conditions of poverty (Kidd, Palmeri, & Aslin, 2013).

Intervention # 4: Self-control mechanisms

Rather than trying to increase people's self-control, it may be more effective to reduce temptation. In the US, Richard Thaler and Shlomo Benartzi developed a pension plan called 'Save More Tomorrow' which enables employees to pre-commit to increasing their pension contributions in the future, especially when they receive pay increases. This defers the need for self-control to the future. When this new programme was rolled out in a mid-sized manufacturing company in the US it quadrupled pension contributions from 3.5 per cent of income to 13.6 per cent of income over the course of 40 months (Thaler & Benartzi, 2004).

A very different self-control mechanism was trialled in the Philippines to encourage saving. An RCT (n=3,125) tested the impact of offering customers a savings account that enabled them to restrict their right to withdraw money until they reached either a specific month or a savings target (which the individual was free to choose). Although these customers were only offered the same interest rate as the bank's existing savings account, after one year they increased their savings by 81 per cent more than the control group (Ashraf, Karlan, & Yin, 2006).

Instead of restricting access to funds that individuals have set aside, some researchers have tested simply partitioning savings into a different physical location. By partitioning savings into a separate space, this can reduce the temptation to spend the money and encourage saving. An RCT in India (n=146) gave some workers their pay split into two separate envelopes and other workers their pay in one envelope. Of those who received two envelopes, half of them then experienced an additional twist to the experiment: the researchers also added photos of their children onto the 'savings envelope' to test if adding these photos made them less likely to open the envelope. The researchers found that savings amounts were 64 per cent higher for workers whose savings were partitioned into two envelopes rather than put all into one envelope, and the effect was greater still when the envelopes had pictures of the workers' children affixed on them (Soman & Cheema, 2011).

Social capital

Social norms

Social norms may influence how much people save. For example, library workers at a university campus in the US were found to have similar retirement savings behaviour to that of their colleagues. But precisely why this occurred is not known. For example, it may be that colleagues talk to each other about their retirement plans (Duflo & Saez, 2002).

As savings behaviour is not very visible to others, individuals may assume that other people are not saving, which then may influence their own behaviour. A survey conducted by the Behavioural Insights Team (BIT) and Ipsos MORI found that the British public think that 65 per cent of the population are not saving enough for retirement, when government studies suggest this figure is around 43 per cent (Ipsos MORI, 2015).

Social trust

Living in a community which has strong social bonds may facilitate saving behaviour. Across the globe, communities often encourage savings through Rotating Savings and Credit Associations (RoSCAs). RoSCAs work when participants agree to make regular contributions to a fund which is given, in whole or in part, to each contributor in rotation (Ardener, 1964). The clubs work because the group members trust each other to pay into the fund regularly and exert social pressure on each other to do so. Although this method is used by many communities globally, it has fallen out of favour in the UK (Ardener, 2014). This may be because negative news stories about Christmas Savings Club funds being stolen, and transient populations in cities like London, erode the social trust needed for these clubs to operate effectively.

Intervention # 5: Social monitoring

While it may be difficult to scale up savings clubs at the community level in the UK, interventions that use a person's social network to encourage savings could be effective. An experiment in India (n=1,300) randomly assigned villages to a savings intervention, which involved allocating a monitor to those who wanted to save. Monitors were people from their village. By having someone else oversee and monitor their savings, individuals were able to save 35 per cent more than those who were not allocated a person to monitor their savings (Breza & Chandrasekhar, 2015). The effect was strongest when the saver and monitor knew each other well but there was also a positive spill-over effect: non-monitored savers in treated villages saved more than non-monitored savers in control villages. This suggests a potential shift in social norms. Social monitoring could be trialled in the UK, where savers could nominate a friend or a relative to be able to see their bank savings and be notified if they make withdrawals.

Box 3: Intergenerational savings that increase social mobility

People prefer to give to those they know, and the default for most of us is to pass on our savings and assets to our children. Policymakers often worry that encouraging these kinds of transfers could hinder social mobility.

But what if inheritance skipped a generation, or even two? Encouraging people to bequeath assets to their grandchildren and great-grandchildren through easy-to-set-up descendant or legacy trusts might be a solution. There are two reasons why. First, most children have a reasonably similar income profile to their parents, but with every generation this relationship weakens. Statistically speaking, your great-grandchildren's socio-economic status will look much more like the general population than will your children's. Second, descendants grow in exponential numbers. This means that if, say, one third of the population were to leave assets to such trusts, it would achieve coverage of around 90 per cent of the population of great-grandchildren. Similarly, models show that even with modest to high levels of 'assortive mating' (the rich marrying the rich), such legacy trusts nonetheless lead to dramatic reductions in economic capital inequality.

To encourage middle income earners to participate, the UK Government could create a simple legal vehicle for passing on money to future generations which taxes receivers rather than givers and prompts or defaults this option at the point of taking out a will.

Policy recommendations and suggestions for further research

Recommendation 1: Automate rainy day savings through existing structures and services	
Context	Specific recommendation
<p><i>Individuals could be helped to save money through automating small amounts of pay or government entitlements into a separate savings account</i></p>	<p>We recommend that the UK Government:</p> <ul style="list-style-type: none"> ◆ Work with a large employer to trial whether automatically enrolling staff in a rainy day savings account could help more people to build up a savings buffer. Employees could save into an account held in trust by the employer which was invested on their behalf. ◆ Help people to open a savings account. For example, banks providing basic accounts could extend this service to include a savings account by default. Simply having an account labelled for savings could encourage people to save. ◆ Pilot allowing Universal Credit payments to be deposited into two different accounts, with a certain percentage defaulted into a savings account and the rest in a current account. Individuals could also choose to have the savings mechanism automatically switched off once they accumulate say £250, and then automatically switched back on again if their savings drop below this level.
Recommendation 2: Evaluate new financial technologies	
<p><i>As new apps are developed to aid consumers to make improved financial</i></p>	<p>We recommend that the UK Government fund a large scale field trial to determine if apps such as Pariti, Mint or Qapital (and the different features of</p>

<p><i>decisions, research is needed to validate if these apps do make a difference and how they can be optimised.</i></p>	<p>these apps) are effective at helping people save in the long term and how they impact poverty.</p>
<p>Recommendation 3: Optimise the Help to Save matching scheme</p>	
<p><i>In March 2016, the UK Government announced a Help to Save scheme where individuals in work and in receipt of Universal Credit or Working Tax Credits will be able to save up to £50 a month and receive a 50 per cent bonus after two years – worth up to £600.</i></p>	<p>We recommend that the UK Government and delivery partners of Help to Save test behaviourally-informed and digital variations of the scheme to optimise the programme and find out what works to encourage low-income groups to save. Examples include: auto enrolment into the scheme through social housing providers; use of commitment devices, such as notifying a nominated family member if withdrawals from the savings account are made; and prizes for saving regularly.</p>

Section 3.4 Conclusion

This chapter shows that cognitive, character, social and human capital affect the decisions people make around credit and savings which then affects their costs. The interplay between these forms of capital also improve or worsen a person’s experience of poverty. For example, low levels of financial literacy (human capital) potentially exacerbate the effects of depleted cognitive capital among low-income groups when choosing between credit options.

In the areas of credit and savings, there is a role for government to deploy traditional policy levers (such as information and regulation) more effectively with the application of behavioural science. For example, the government should regulate the availability of different types of credit and how credit offers are framed to protect customers from predatory practices. Rigorous evaluations of payroll savings mechanisms would also help to inform the design of government policy to better enable people to smooth income and build up a financial buffer.

Chapter 4 – Maximising resources: decisions about work and entitlements

Two key sources of income for those at risk of poverty in the UK are work and government entitlements. Although most people want to work, choosing the right job, completing job training and coordinating caring responsibilities can make the process difficult. Similarly, despite the seemingly obvious financial benefits, take-up rates for UK entitlements by those eligible vary between 55 per cent (Jobseeker's Allowance) and 95 per cent (Child Benefit) (Department for Work & Pensions, 2015b; HMRC, 2015). This chapter examines the influence of cognitive, character and social capital on decisions around moving into work from unemployment and accessing entitlements.

Section 4.1 Why work and entitlement decisions matter for poverty

The world of work is possibly the single most important policy area for maximising individual and household resources to prevent and overcome poverty. Just under half of those in poverty in the UK live in a workless household (Joseph Rowntree Foundation, 2014). In addition, unemployment during youth can have scarring effects. After accounting for background differences, a year of youth unemployment has been found to reduce earnings 10 years later by about 6 per cent (Harkness, Gregg, & MacMillan, 2012).

However, simply being in work is not sufficient to prevent or overcome poverty. Nearly two-thirds of children in poverty live in working families (Belfield, Cribb, Hood, & Joyce, 2015). Poverty in these cases is largely due to low pay and underemployment - which is defined as doing work that is below skill level or working fewer hours than the person desires.

A series of JRF studies about recurrent poverty concluded that 'employment of the "wrong" sort - low paid and insecure - could in some cases be worse than no employment at all because of the instability it brings to a family's finances' (Goulden, 2010). Forty-two per cent of Jobseeker's Allowance claims are made within 6 months of the previous claim (Aldridge, Kenway, MacInnes, & Parekh, 2012), highlighting the significance of the so called 'low pay, no pay cycle' in the UK, which is strongly associated with recurrent poverty (Goulden, 2010).

There are a range of financial and non-financial entitlements in the UK which can maximise a person's income when they are not in work or in low paid work. Examples include welfare 'benefits' (such as Universal Credit), disability parking permits, and free school meals. The bottom income quintile of households receive 45.3 per cent of their gross income from cash entitlements, compared with 1.8 per cent for the top quintile (Office for National Statistics, 2016). Therefore, ensuring that the design of entitlements encourages take-up is important for reducing poverty in the UK.

Section 4.2 Factors that influence decisions around moving into work from unemployment

Cognitive capital

Present bias

The more an unemployed person searches for work, the greater their chances of reemployment (Kanfer, Wanberg, & Kantrowitz, 2001). However, searching for work can be time consuming and difficult. An individual may experience present bias because the costs of searching are upfront, and the benefits may not be realised until some time in the distant future when they receive their first pay cheque. This can lead to procrastination.

Intervention #1: Financial sanctions

Imposing financial sanctions on people who do not search hard enough for work (such as reducing their welfare payments) has been found to have some positive short term impacts on job entry. However, there is some evidence that financial sanctions may cause individuals to take up lower quality jobs and experience wage loss and reduced job duration, which may worsen poverty in the long term (Arni, Lalive, & Van Ours, 2013; Roed & Westlie, 2007). Indeed, US welfare reform evidence shows that any employment gains as a result of mandatory work requirements that were not accompanied by gains in income for mothers actually had a detrimental impact on children's educational outcomes in high school (Grogger, Karoly, & Grogger, 2009).

Anchoring

Information that comes to mind, whether it is self-generated or random, can 'anchor' our subsequent decisions. A famous study involving New York cab drivers

revealed how this behavioural bias can influence decisions around work and pay (Camerer, Babcock, Loewenstein, & Thaler, 1997). The researchers found that, contrary to the predictions of orthodox economics, on days when cab drivers earned more per hour (e.g., on wet days they spent less time looking for customers), they finished their shift earlier. Drivers appeared to set a target for the amount of money they wanted to earn in a day (an anchor) which blinded them to the benefit of working longer shifts on days with a higher marginal pay rate. This illustrates how certain mental shortcuts may lead workers who do not have regular hours or predictable shifts to earn less than might be expected from an orthodox, 'rational' viewpoint.

Intervention #2: Anchoring, implementation intentions and goal orientation

A recent meta-analysis found that interventions which increase job search behaviour are only effective at promoting employment when they also teach job search skills and enhance motivation (Liu, Huang, & Wang, 2014). BIT ran a trial in this vein with 12 Jobcentres in Essex (n=110,838). BIT bundled several interventions, which simplified the process for job seekers to engage with employment services and encouraged them to increase their job search activity.

BIT discovered that job seekers were anchored to the minimum requirement to conduct three job searches per week as a condition for receiving unemployment benefits. Therefore, Work Coaches were encouraged to help job seekers set more ambitious goals. For example, Work Coaches were told that if a job seeker says they can complete five job applications in a week, they should say 'do you think you can do ten?'

Another intervention involved creating a commitment device, known as 'implementation intentions', to overcome procrastination when searching for jobs. Job seekers were asked to write down their job search commitments for the coming week by specifying exactly when (e.g., after breakfast on Monday) and how many jobs they would search for.

A third intervention, based on the 'goal gradient hypothesis', gave job seekers a checklist of activities that would help their reemployment prospects, such as: 'I have updated my CV, I have written a covering letter, I have researched local transport'. By ticking off each activity, job seekers were expected to gain a sense of progress to keep them oriented towards the goal of employment (Kivetz, Urminsky, & Zheng, 2006).

After 13 weeks, the proportion of people in work was 3 per cent higher in the treatment group compared with the control group and this was statistically significant. This finding was based on an analysis of people coming off unemployment benefits (The Behavioural Insights Team, 2015a).

'I sometimes find job web sites a bit confusing... They're not very descriptive and they're really not very helpful... it'll give you a generic description on loads of the same jobs for different companies, so I find that frustrating. Sometimes that, for myself anyway, can be quite off-putting because, after a few pages, I'll give up.'

Age 25-39, employed

(Gloster et al., 2013, p.91)

Loss aversion

People dislike losses more than they like equivalent gains. Babcock, Congdon, Katz, and Mullainathan (2012) hypothesise that people may experience loss aversion if they consider taking a job paying below past earnings. Therefore, they may stay on unemployment benefits longer than they should. Unrealistic wage expectations may be reinforced when the social status and personal identities of workers are strongly tied to their previous job. In the past, this was a particular problem for steel workers and auto manufacturers, but in the future it may become a problem for people with middle class jobs, such as accounting and legal writing, due to the spread of robotics and automation in these sectors. Research by Oxford University and Deloitte found that around 35 per cent of jobs in the UK are at high risk of computerisation over the coming 20 years (Stylianou et al., 2015).

Character capital

Locus of control

Character capital may increase a job seeker's search effort even when their life is chaotic or their employment prospects are uncertain. Researchers in the US have looked at the effect of locus of control on job search behaviour and

reemployment and found mixed effects. Locus of control refers to the extent to which individuals believe they can control events affecting them.

A lab study (n=347) compared the search behaviour of individuals who believe that outcomes depend primarily on their own efforts (internal locus of control) to individuals who believe that outcomes are primarily matters of fate or chance (external locus of control). To mimic job search behaviour, the researchers asked participants to complete search activities which were linked to offers of cash payments. When participants were not told how much they would be paid for each correct answer, those with an internal locus of control searched around 10 per cent more than those with an external locus of control. Encouragingly, when participants were told how hard prior participants searched, those with an external locus of control were less likely to abandon searching (McGee & McGee, 2015). The findings suggest that it may be possible to reduce a job seeker's likelihood of quitting simply by providing them with information about how many searches other people did to find a comparable job.

Despite this promising finding, when one of the same researchers conducted a separate analysis of longitudinal survey data (n>3,000), they did not find a significant relationship between locus of control and the probability of exiting unemployment or re-employment wages (McGee, 2014).

Work values and motivation

Whereas locus of control is related to where people place the responsibility for what they achieve, motivation is related to what inspires people to achieve their goals or behave in a certain way. Motivation is often categorised as being either intrinsic (for enjoyment) or extrinsic (for incentives).

A longitudinal study in Finland found that school leavers with intrinsic work values at age 20 were more likely at age 23 to be in work that matched their abilities and interests. The researchers also looked at the effect of two sub-types of extrinsic motivation. They found that those with 'rewards' work values (wanting to get ahead) at age 20 were *less* likely to be unemployed at age 23 but those with 'security' work values (wanting convenient and safe work) at age 20 were *more* likely to be unemployed at age 23. Security work values were also associated with coming from a poor family (Sortheix, Chow, & Salmela-Aro, 2015), highlighting that character capital is linked to economic capital.

Other research has found that although extrinsic motivation (such as wanting to earn more), can get people into work faster, the trade-off is that people tend to move into poorer quality jobs, have higher intention to turn-over, negative job satisfaction and potentially more work-family conflict (Vansteenkiste & Van den Broeck, 2015).

Intervention #3: Motivation and organisation prompts via text message

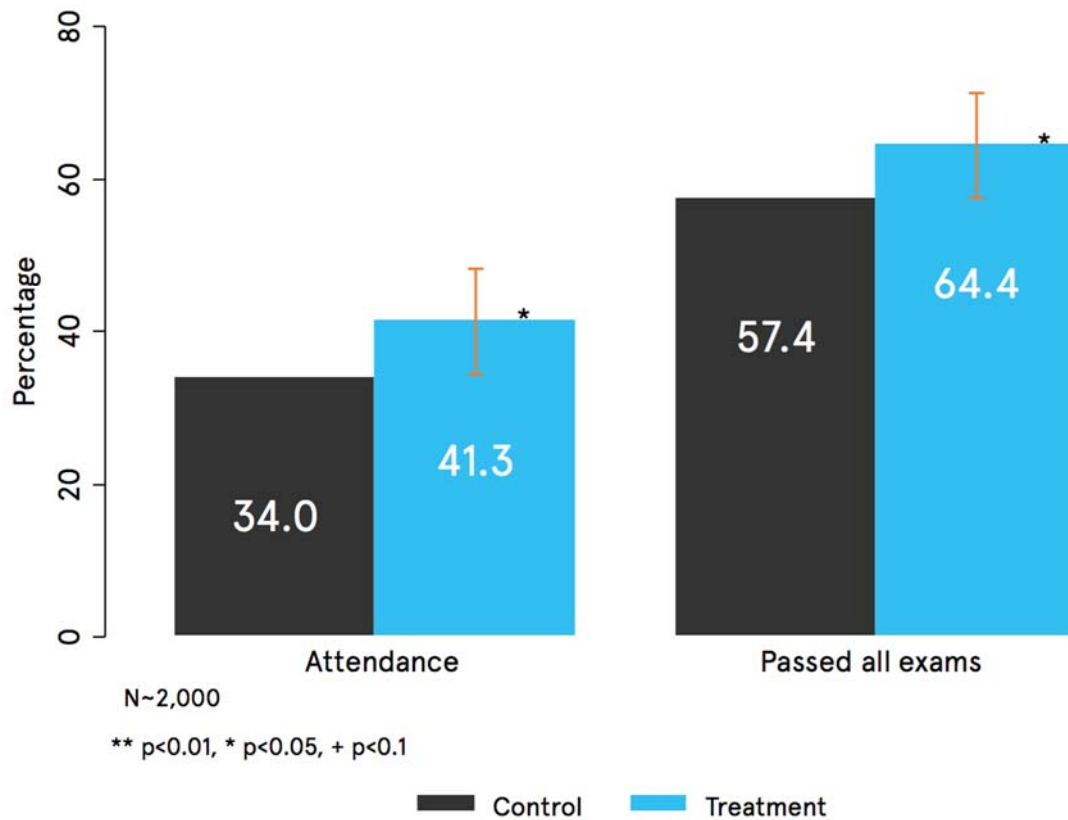
Around a fifth of adults in the UK do not have the numeracy and literacy levels expected of an 11-year old (OECD, 2013). This significantly hampers people's ability to move into well paid and secure work. In partnership with the Department of Business, Innovation and Skills, BIT conducted an RCT (n~2,000) to test whether sending weekly text messages to maths and English learners at further education colleges in the UK (roughly equivalent to community colleges in the US) could reduce attrition and improve exam performance.

The messages tried to build character and social capital by focusing on four underlying beliefs which have been found to predict academic success: 1) I am part of the college academic community; 2) my ability improves with effort; 3) I can succeed; and 4) I am learning something useful. For example, the exact wording of one of the text messages was:

'Jenny, we hope you sometimes find Maths hard. We learn by studying and practising the tricky stuff, so keep it up! Leicester College'

Although the average attendance rate declined over time in both treatment and control groups, at the end of the year the group receiving the text messages recorded on average 21 per cent higher attendance. Even more encouragingly, the proportion of students who passed all exams was 12 per cent higher in the treatment group compared with the control group (Figure 5).

Figure 5: Effect of weekly text message on attendance and exam performance



Social capital

Social support

Having social support can improve people’s reemployment chances. In Mark Granovetter’s famous 1973 paper, he showed that a person’s weak ties (their network of acquaintances) and their strong ties (their closer friends and family) influence reemployment in interesting ways (Granovetter, 1973). For high status individuals, information about jobs that led to employment was more likely to come from weak ties than from closer friends. However, for people who had been out of work for longer, they were more likely to find jobs via their strong ties. More recent research explains that weak ties are useful for finding out about jobs but you need skills and confidence to capitalise on those links. By comparison, strong ties are useful for practical support when applying for a job, such as checking a CV, as well as emotional support (Smith, 2012; Varekamp, Knijn, der Gaag, & Bos, 2015).

Weak ties may also be a proxy for social class and therefore reflect aspects of employability which are based on social structures. For example, recent work by the Social Mobility and Child Poverty Commission (2015) has revealed the strong presence of 'poshness tests' on labour market outcomes, particularly in elite professions.

'I had a very good friend who worked in HR, she was high up in HR. She said, "well the art is in the paperwork", she said, "the art is in the filling in forms because then you get it..." so I said, "I'd like something secure like local government, or something like that", and they had a security job going in the local government, for the civic centre, for the building itself. And she said, "why don't you apply for that?" I said, "well I've got no experience and that". She said, "you'll be surprised". So, she took me through the form and helped me with it... She came round the house and she trained me.'

Age 40+, unemployed

(Gloster et al., 2013, p.86)

Intervention # 4: Expanding social networks

A small field experiment in Canada found that encouraging job seekers to expand their social network, particularly contacts who could provide information about job opportunities, increased their chances of re-entering the labour market (Hatala, 2004). Participants in both the treatment group (n=40) and the control group (n=92) were already involved in an employment training programme for social assistance recipients. However, the treatment group was given an extra intervention, which encouraged them to make new social contacts that could help them find work, including role-play exercises to practice introducing themselves in networking situations.

Only 10 people found employment during the study period, so the sample is too small to have complete confidence in the results. However, the analysis showed that those who became reemployed built 64 per cent more new contacts during the study period, and this result was statistically significant (Hatala, 2004).

Intervention # 5: Values Affirmation

Stereotype threat can reduce a person's chances of reemployment or progressing at work. Indeed, stereotype threat has been shown to reduce negotiating performance which is critical for people to obtain well paid work and achieve salary progression (Kray & Shirako, 2011). Encouraging people to focus on positive aspects of their identity, such as their values, can help them to overcome stereotype threat and improve task performance (Harackiewicz et al., 2014).

'I did a few work experience placements at barrister chambers and I found that really daunting and intimidating because everyone was uber-successful, had a 2:1 and was very confident, very controlled with their lives. That just threw me off even more! ... Maybe I needed to be more gutsy at the time but I found it too intimidating.'

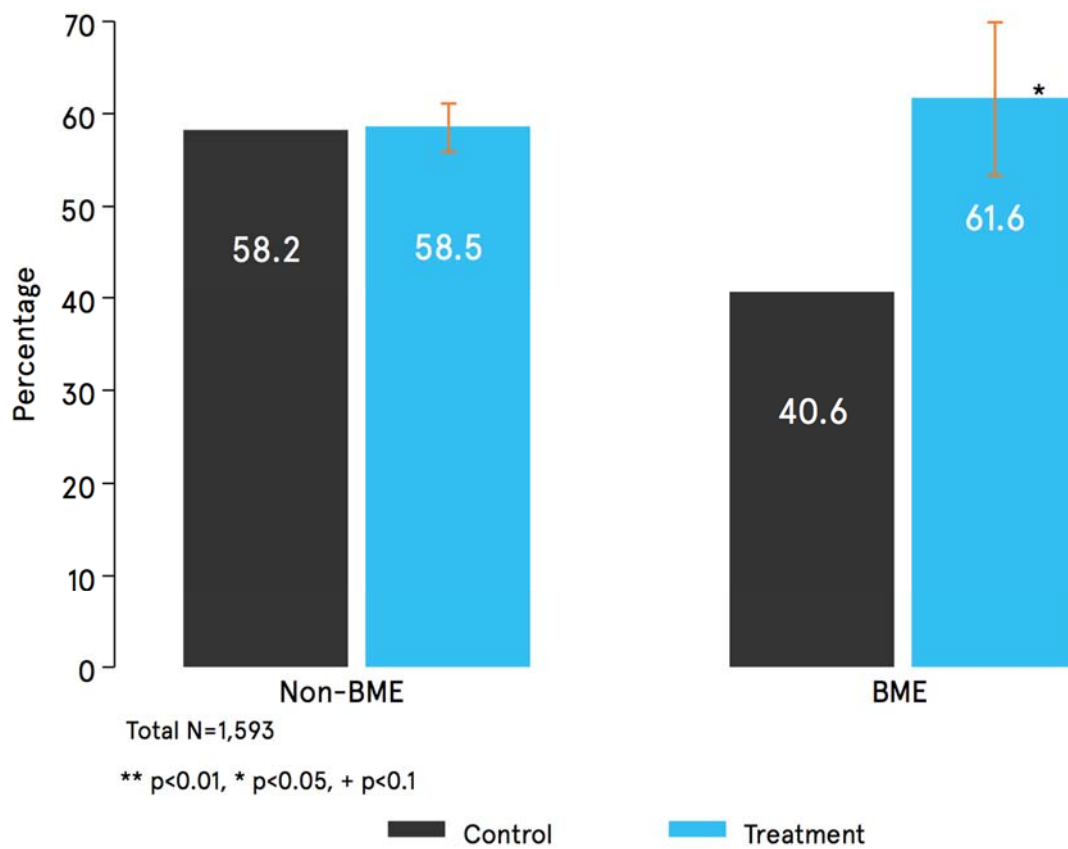
Age 25-39, unemployed

(Gloster et al., 2013, p.66)

BIT conducted an RCT (n=1,593) in partnership with Avon and Somerset Constabulary to increase the success rate of applicants from a black or minority ethnic (BME) background during the police recruitment process (The Behavioural Insights Team, 2015b). Applicants to the police are required to take a Situational Judgment Test online. They were randomised to two different cover emails. The control group received the standard email. The treatment group received the same email with a few additional sentences which primed applicants to think about their values before taking the test.

The intervention increased both the raw scores and the pass rate for BME applicants but had no impact on white candidates. This effectively closed the gap in the probability of passing the test between BME and non-BME applicants (Figure 6).

Figure 6: Effect of values affirmation on recruitment test pass rate for black and minority ethnic applicants



Policy recommendations and suggestions for further research

Recommendation 1: Trial identity-building interventions in Jobcentres to cultivate intrinsic motivation for work

Context	Specific recommendation
<p><i>Intrinsic motivation for work leads to better quality and more sustainable employment. One source of intrinsic motivation is a person's career identity, e.g., I am a nurse (Stryker & Serpe, 1982). The insecure nature of many low-skilled jobs in the 'gig economy' can make it difficult for people to find meaning in their work beyond pay (Fugate, Kinicki, & Ashforth, 2004).</i></p>	<p>We recommend DWP trial identity-building interventions in Jobcentres. For example, Work Coaches could use a form to create a coherent narrative about a job seeker's career history linked to their skills and interests, as opposed to particular jobs or organisations (McArdle et al., 2007). To complete the form, job seekers could provide information about: 1) their passions and interests from childhood, before they had financial responsibilities; 2) aspects of their last three jobs which they felt proud of; and 3) their strengths and talents identified by people close to them. This could be used to get job seekers excited about their next job and improve happiness at work (Asplund, 2012; Wrzesniewski et al, 2013).</p>

Recommendation 2: Collect longer-term and more holistic outcome measures of labour market interventions

<p><i>We don't know how behavioural interventions which help people move into work in the short term impact on recurrent poverty in the long term.</i></p>	<p>We recommend longer-term and more holistic outcome measurement of behaviourally-informed labour market interventions to investigate: 1) if people who churn in and out of Jobcentres become immune to interventions, and are therefore less likely to escape poverty over time; and 2) if interventions such as implementation intentions, which push people to continue performing arduous cognitive tasks when their bandwidth is depleted, worsen poverty outcomes over time by taking mental energy away from other important decisions, such as spending time reading to children (Kaplan & Berman, 2010).</p>
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Recommendation 3: Develop a simple tool to identify capital deficits in order to match interventions to individual job seeker needs

People have different reserves of capital based on their lifetime of experiences. DWP's worklessness co-design report underlines, 'the importance of taking different approaches to different customers according to the barriers they face' (Department for Work & Pensions, 2011a).

We recommend that Jobcentres deploy capital-based labour market interventions in a targeted fashion. This could be achieved by creating a capital assessment tool – such as a short survey – for Work Coaches to quickly identify a job seeker's capital deficits. The questions could focus on identifying financial and time scarcity, as well as measures of character capital (e.g., locus of control) and social capital (e.g., strong ties) (Varekamp et al., 2015).

Section 4.3 Factors that influence decisions around accessing entitlements

Cognitive capital

Friction costs

Behavioural science research demonstrates that seemingly small barriers to programme access known as friction costs – such as lengthy or complex applications – can affect an individual's decision to apply and may be sufficient to deter those individuals in greatest need (Currie, 2004). Even an extra mouse click in an online form can reduce response rates (The Behavioural Insights Team, 2014). In addition, when people on low incomes are uncertain about their eligibility to receive an entitlement, they may choose not to apply in order to avoid the risk of having to return an overpayment.

To apply for Tax Credits in the UK, claimants must declare complex financial details, such as earnings details from two years prior to the application, to check their eligibility (King & Crewe, 2014). In addition, if an individual's circumstances change throughout the year that they receive Tax Credits, they must declare these changes to ensure they are paid the right amount. In the first year that Tax Credits were launched, one third of claims were overpaid (Bacon & Hope, 2013).

Application processes such as these are likely to place a disproportionate burden on lower income individuals who both experience more frequent income fluctuation and have less access to financial services, such as assistance from accountants (Blank & Barr, 2009). This problem is exacerbated for lone parent families who are likely to have some of the highest rates of income variability. One study showed that 50 per cent of lone parents underwent more than a dozen changes in circumstances in one year (Millar, 2008).

Cognitive load

We are not aware of any research into whether applying for and complying with the UK entitlements system imposes a cognitive load on claimants which could contribute to sub-optimal decision-making. However, we know from the work of Mullainathan and Shafir (2014) that time scarcity, such as feeling overwhelmed with the number of tasks one must complete, induces a kind of short-sightedness that, 'makes us less insightful, less forward-thinking, less controlled'.

Conditions that are currently attached to Jobseeker's Allowance, and that are proposed for in-work benefits under Universal Credit, such as attending regular meetings with a Work Coach, may contribute to time scarcity. In addition, the sanctions regime - which imposes a pause or reduction in payments on claimants that do not meet entitlement conditions - may contribute to financial scarcity. The combination of these bandwidth taxes may, in theory, worsen a person's attention, self-control, and long-term planning, which could lead to or worsen poverty. More research is needed to understand how the entitlements system can be designed to take scarcity into account, because the individual costs of depleting a person's psychological resources may be greater than the financial benefits the system provides.

Timeliness

People are more likely to make an application for an entitlement if triggered by a significant event, such as losing a job, retirement, or having a child (Corden, 1999). For example, in the UK, Child Benefit is one of the few programmes with a take-up rate of nearly 100 per cent. New mothers receive the application materials for this programme from a midwife (Currie, 2004).

The take-up of one entitlement may also have spill-over effects onto the take-up of other entitlements. For example, families with children are more engaged with the welfare system in general through Child Benefit (Employability in Scotland). In

the US, Yelowitz (2000) found that the expansion of Medicaid benefits increased take-up of the Food Stamp Program (which was left unchanged). For every 10 newly eligible families who took up Medicaid benefits, there were four extra Food Stamp claimants. This could have been because families learned about their Food Stamps eligibility when they went to the welfare office to apply for Medicaid.

A UK study which examined the impact of GPs offering advice to older people about their welfare entitlements found no real improvement in health outcomes but 58 per cent of participants gained a welfare benefit (Mackintosh et al., 2006). Some benefits were non-financial, such as a disability parking permit, but the median financial award was £58 per household per week. This highlights that there may be many timely opportunities for trusted service providers to encourage people to take-up entitlements, for example at the Post Office. More research is needed to understand the long-term cost-effectiveness of this approach for reducing poverty.

Intervention # 1: Making the application process easier

In the US, the Free Application for Federal Student Aid (FAFSA) is the starting point for college students from low- and moderate-income backgrounds to receive financial aid from the federal government. The eight page application - which has over 100 questions to determine the type of grant or loan the student is eligible for - may deter some disadvantaged students from applying and going to college.

An RCT by Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012) reduced the friction costs of initially applying for financial aid by integrating it into the income tax return process for customers of H&R Block. Families with incomes of less than \$45,000 a year with at least one person between the ages 17 and 30 without an undergraduate degree were randomly assigned to one of three groups (n=26,162).

In the control group, tax professionals provided families with a brochure on the importance of post-secondary education and general information on college costs. In the first treatment group (information only) families received an estimate from a tax professional about their eligibility for financial aid, based on the family's tax return, and the costs of nearby colleges. In the second treatment group (FAFSA intervention) a tax professional pre-populated the FAFSA form with the family's tax information, provided guidance for the remaining form and estimated the amount of aid the student was eligible for and the net tuition costs at nearby public colleges. Once the information was complete, the tax professional offered to

submit the FAFSA electronically to the Department of Education. The FAFSA intervention cost approximately \$88 per participant (in 2012 dollars).

The information only intervention had no significant impact on filing a FAFSA or attending college. In contrast, the pre-filing intervention had a significant positive effect, which particularly benefited families with financially-dependent high school seniors and recent graduates. Youth in these families were 39 per cent more likely to file a FAFSA than the control group, 36 per cent more likely to enrol in college and receive a grant the following year (on average worth \$375) and 29 per cent more likely to persist and complete two years of college during the follow-up period.

Intervention # 2: Sending reminders

Another FAFSA study by Castleman and Page (2016) looked at increasing annual FAFSA renewals among first year college students. Failure to renew is negatively associated with persisting in college or eventually earning a degree. This RCT (n=808) involved sending the treatment group 12 personalised text messages about the important steps in the FAFSA re-filing process. The cost was approximately \$5 per student served.

Due to limited information, the researchers were not able to observe actual FAFSA re-filing behaviours. However, they found that first year students enrolled in community colleges who received the messages were 26 per cent more likely to persist into the spring of their second year. The intervention did not improve persistence among first year students enrolled in 4-year institutions, where the rate of persistence is already high. This suggests that FAFSA renewal is the mostly likely mechanism for this result.

Box 4: Child maintenance payments in single parent families

Child maintenance payments – the system of income transfers between separated parents – play a significant role in preventing poverty in single parent families. In the UK, child maintenance is mostly seen as a private obligation, with only a small percentage of cases being associated with a court order. However individuals can choose to use the government’s Child Maintenance Service (new applications), formerly the Child Support Agency (existing cases), to facilitate payment transfers (usually from the non-resident parent to the resident parent).

Non-compliance rates are high. The Child Support Agency has total arrears standing at £3,708 million, which is comprised of 1,127,200 cases, over half of which have never completed a single payment.

Evidence suggests that although some non-resident parents may lack the financial resources to pay (CABS, 2016), in many other cases they may simply forget to pay or procrastinate. A trial in the US found that sending payment reminder notices (by text message or mail) increased the number of parents who made at least one child support payment over four months by around 6 per cent. However, there was no statistically significant increase in total collections per person, suggesting that these additional payments were small (Baird et al, 2015).

Another problem in the UK may be that the design of the payment system removes the emotional connection between the payment and the child. Some parents see child maintenance payments as merely ‘paying the CSA’, rather than linking it with financial support for their child (Department for Work & Pensions, 2015a). Soman and Cheema’s (2011) study on promoting savings behaviour in India found that giving people savings envelopes with a picture of their child on the front nearly doubled savings rates. The Child Support Agency and Child Maintenance Service could similarly investigate whether adding the child’s name or picture to the non-resident parent’s online payment account improves compliance.

Social capital

Welfare stigma

One third of welfare claimants in the UK report some degree of stigma around their claim (Baumberg, 2016). Welfare stigma is derived from the view that, 'being poor constitutes a form of social deviance because pulling oneself out of poverty is believed to be both positive and praiseworthy' (Rainwater, 1982).

Welfare stigma may have detrimental impacts at an individual and societal level. To protect their self-worth, individuals may be less likely to take up a benefit that they are entitled to (Hernanz, Malherbet, & Pellizzari, 2004). At a societal level, welfare stigma may reduce social capital within disadvantaged communities, as people distance themselves from others receiving benefits or people in poverty more generally (Lin & Harris, 2009).

'I was a single mum and I was back on benefit, and it is about what folk think about you, there is always folk that call you a sponger and things like that.'

Amy, lone parent with two children, unemployed

(McQuaid, Fuertes, & Richard, 2010, p.14)

Welfare stigma is much more closely associated with means-tested entitlements, such as Housing Benefit, than universal entitlements, such as Universal Infant Free School Meals (provided to all children in Key Stage 1) (Walker, 2015). It can also be exacerbated by a lack of anonymity, stringent eligibility requirements and administrative rules, such as programmes that require people to continuously identify themselves versus a one-off application (Hernanz et al., 2004).

Misperceptions of welfare spending may also contribute to welfare stigma. A 2013 Ipsos MORI (2013) poll found that the public think that £24 out of every £100 spent on government entitlements is claimed fraudulently, compared with official estimates of £0.70 per £100.

'Of course it's got a dirty name means testing... They used to check what food they had in the cupboard in the old days.'

Female, retired

(Sherr, Sherr, Richard, & Singh, 2004, p.99)

Intervention #3: Framing entitlements

Not everything works. Bhargava and Manoli (2015) conducted a field experiment (n=35,050) in the US to increase the take-up of the Earned Income Tax Credit (EITC) – a tax rebate to support low- and moderate-income workers raising children. EITC is one of the largest federal anti-poverty programme in the US.

The intervention involved modifying a letter from the tax office to tax filers from California who failed to claim their 2009 credit despite presumed eligibility and the receipt of a first reminder notice. The letter offered recipients an additional opportunity to claim and several variants of the letter were tested.

A number of variants looked at simplifying the information and increasing the salience of the benefits. Two variants attempted to lower programme stigma, either by emphasising that the credit is an earned reward for hard work (n=1,844) (*'you may have earned a refund due to your many hours of employment'*), or by communicating that similarly situated peers are also claiming (n=1,753) (*'Usually, four out of every five people claim their refund'*).

The results showed that neither of the anti-stigma interventions increased take-up and the peer message had a slightly negative impact. The researchers explained these findings with a supplemental survey (using Amazon Mechanical Turk) which showed that baseline rates of perceived stigma for EITC were already quite low, possibly because the word 'earned' is already in the title.

Intervention # 4: Self affirmation

Stereotype threat may decrease mental capacity needed to consider taking up entitlements. An experiment that took place in a New Jersey soup kitchen in the US asked participants to privately record a personal story with a tape recorder before doing a variety of problem-solving tests (Hall, Zhao, & Shafir, 2014).

Compared to a control group who were asked to describe their daily meal routine, participants who were randomly assigned to recount a proud moment or past

achievement not only performed better on the tests (equivalent to a ten-point increase in IQ), they were also more likely to seek out information on government financial assistance for which they were eligible.

When the researchers used the same self-affirmation intervention on individuals with an annual income greater than \$94,800, they found no improvement in test performance. This suggests that these types of affirmation interventions can alleviate the mentally overwhelming stigma that is associated with poverty, and in turn improve people’s reasoning so that they consider making use of programmes that would benefit them.

Policy recommendations and suggestions for further research

Recommendation 1: Make it easier to access government entitlements	
Context	Specific recommendation
<p><i>Policymakers are required to pass all new policies through the DWP Family Test to ensure they are 'family friendly'. Likewise, Government Digital Service Standards require government services to publish performance metrics such as user satisfaction. At present, there is no specific test to measure the impact of policies on cognitive bandwidth, nor a measure of how easy it is for users to access government entitlements. This is particularly important when we know that complex processes have a significant impact on take-up, and</i></p>	<p>We recommend that the government develop a 'cognitive load stress test' for all government entitlements to ensure that they are easy to access. In practice, this could incorporate a series of questions like: 'How long does it take an average user to make an application?'; 'How long does it take someone from application to accessing the service?'; 'Is the service asking the applicant for reasonable and easy-to-calculate financial information?'; and 'Could any information fields be pre-populated using existing user data?'</p> <p>These questions could form an internal checklist for service designers to pass before launching a new service. This would encourage policymakers to design services that free up people’s bandwidth which would in turn support welfare recipients to make decisions that reduce the risks of poverty.</p> <p>A more comprehensive test could even include the structural factors that affect entitlement take-up, such as whether there is adequate public</p>

<p><i>place a disproportionate burden on those in poverty.</i></p>	<p>transport or childcare for individuals to attend meetings with Work Coaches.</p>
<p>Recommendation 2: Prompt people at timely moments to apply for eligible entitlements</p>	
<p><i>People have limited bandwidth, which means that they are unable to pay attention to all the different decisions they could, or should, be making at a given time. They therefore react positively to reminders. In addition, recipients of one entitlement are more likely to take-up additional entitlements when they engage with the system.</i></p>	<p>We recommend that DWP test whether sending annual entitlement summaries to existing claimants increases take-up of additional eligible entitlements. These summaries could contain:</p> <ul style="list-style-type: none"> ◆ Information about what entitlements an individual is currently receiving, and the frequency of payments (to help people budget); and ◆ Prompts to other entitlements that the individual could be eligible for, and the relevant direct links to apply. <p>DWP could also trial sending these prompts at different times of the year, to understand when people are most receptive. Some timely moments may include the end of the tax year, and January, when people are likely to be thinking about adopting new behaviours. The cost-effectiveness of this solution would also need to be examined given the data-matching requirements.</p>
<p>Recommendation 3: Conduct research into how the entitlements system can be designed to boost cognitive capacity and self-efficacy</p>	
<p><i>There is evidence that welfare conditionality in the UK - mandatory behaviour requirements such as attending meetings with Work Coaches or providing repeated evidence of</i></p>	<p>We recommend that DWP conduct experiments to understand the impact of entitlement conditionality (and associated sanctions) on fluid IQ and self-efficacy. As goal-setting can be empowering and motivating when goals are self-chosen and have a simple structure (Goerg, 2015; Ariely & Werterbroch, 2002), we recommend</p>

<p><i>disability in order to receive benefits - is associated with anxiety and feelings of disempowerment (Welfare Conditionality, 2016). However, as far as we know, no one has examined whether welfare conditionality has cognitive depleting effects similar to stereotype threat.</i></p>	<p>comparing outcomes from conditionality where claimants are asked to design their own conditions (perhaps from a pre-specified list), versus conditions imposed by the government.</p> <p>Initiatives such as StickK and other social commitment devices (where people ask their friends to monitor their goal progress) have proven effective motivational tools and could be adapted to the welfare system.</p>
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Section 4.4 Conclusion

This chapter shows that cognitive, character and social capital are important drivers of decisions around work and entitlements, which in turn affect a person's income. Although we do not have evidence to specify the precise ways in which all of these forms of capital interact, the research presented in this chapter points to a potentially vicious or virtuous cycle depending on how support is provided. For example, a lack of social capital (stigma associated with low income and welfare entitlements) appears to have a detrimental impact on a person's economic capital (salary negotiation) and could deplete cognitive capital (working memory) needed to boost human capital (adult education).

There are promising interventions to support individuals in or near poverty return to work and take-up entitlements, but there remain gaps in our understanding about how a person's decisions might be affected if they were to receive multiple competing interventions at the same time. For example, we do not know whether the positive effects of prompts and commitment devices to search for jobs and apply for entitlements are diminished when the same individual is also prompted to perform other behaviours such as reading to their children and saving money.

Given that individuals have limited bandwidth, a clear responsibility for the government is to ensure that services do not exhaust users' cognitive resources but rather optimise their ability to make good choices for themselves. This means taking a holistic view of poverty and decision-making across different services, not just focusing on outcomes in one narrow policy domain. It also means ensuring that both the design and framing of services minimises stigma and stereotype threat.

Chapter 5 – Preventing intergenerational poverty: decisions about parenting and post-secondary education

Compared to other OECD countries, earnings mobility in the UK is relatively low (D’Addio & Anna, 2007). For example, there is a stronger correlation between fathers’ and sons’ earnings in the UK compared to Germany, France and the US (HM Government, 2010). There is evidence that responsive parenting in early childhood and completing post-secondary education can help to prevent intergenerational poverty. This chapter examines the influence of cognitive, character, social and environmental capital on family decisions in these areas.

Section 5.1 Why parenting and post-secondary education decisions matter for intergenerational poverty

Before housing costs, 2.6 million children in the UK, or approximately one in five, were living in relative poverty in 2014-15 (Department for Work & Pensions, 2016). Structural inequality undoubtedly reduces the likelihood that these children will achieve a better economic position in adulthood than that of their parents. For example, government research shows that children from low-income backgrounds who show signs of *high* academic ability at age five are 35 per cent less likely to be high earners as adults than children from high-income families who show signs of *low* academic ability (Gov.uk, 2015). Nevertheless, family decisions that promote healthy child brain development and encourage entry to post-secondary education are instrumental in preventing intergenerational poverty.

A child’s experiences before age six, especially the quality of parental interaction and stimulation, create a neurological foundation for their human, social and character capital development throughout life (Bradley, Convyn, Burchinal, McAdoo, & Coll, 2001; Davis-Kean, 2005; McCain, Mustard, & Shanker, 2007; Putnam, 2016). For example, ‘serve and return’ interactions between infants and parents – where the infant serves a babble, facial expression or gesture, and the parent responds in a meaningful way – shape brain architecture, which influences learning and behaviour (Center on the Developing Child). Children who grow up in home environments in which stimulating, receptive, and dynamic child-parent interactions are maintained, and development and learning are fostered, are more likely to sustain high scores on motor, social, character, literacy and numeracy tests (Bradley et al., 2001; Melhuish et al., 2008).

Studies have found that, on average, parents from low-income backgrounds engage in less developmental childcare than parents from high-income backgrounds (York & Loeb, 2014; Altıntaş, 2016; Hart & Risley, 1995). A longitudinal study in the UK found that even by 22 months there were significant differences between the educational performance of British children from low and high income backgrounds, which became more extreme throughout school, and were correlated with educational outcomes at age 26 (Feinstein, 2003).

Once children complete compulsory education, a further protection against intergenerational poverty is continuing with education (Department for Work & Pensions, 2014). Those with no formal qualifications are almost five times as likely to be in poverty as those with a degree (Serafino & Tonkin, 2014). In addition, having a degree, relative to not having a degree, equates to 28 per cent higher net lifetime earnings for men (approximately £168k) and 53 per cent for women (approximately £252k) on average (Walker & Zhu, 2013).

Students from the top 20 per cent household income bracket are 2.7 times more likely to apply to university than the bottom 20 per cent (Anders, 2012).

Encouraging more low-income students to apply to post-secondary institutions, including technical institutions, is therefore an important contribution to reducing poverty in the UK.

Section 5.2 Factors that influence decisions around responsive parenting in early childhood

Cognitive capital

Cognitive load

Busy or irregular work schedules, family instability, parental stress, financial strains and poor mental health can impair parents' ability to dedicate time to interact with their children. Many of these issues can be particularly prevalent in low-income families (Department for Work & Pensions, 2000; Green et al., 2005; Haveman & Wolfe, 1995; Kiernan & Mensah, 2011; Ryan, Claessens, & Markowitz). The complexity of juggling these demands with parental responsibilities can lead to cognitive overload, limiting parents' attention and self-control, and making it hard for them to make effective decisions, let alone set aside time to support their child's learning and development.

Intervention #1: Timely literacy activities

The Reach Out and Read programme in the US leverages the dead time parents have in GP waiting rooms to promote early childhood literacy activities. In more than 12 studies, the programme was found to be effective when outcomes such as children's language skills and parental support for reading aloud were assessed (Klass, Dreyer, & Mendelsohn, 2009).

In one study (n=122), volunteer readers brought books to waiting rooms full of children and modelled the behaviour of reading out loud to parents who may be unfamiliar with the practice. They used different voices and exaggerated expressions to make the stories come to life and encouraged children to call out suggestions and point to pictures – showing parents that reading aloud could be a powerful participatory adventure for children. The vocabulary development of children was compared between a clinic which had the programme for three years and with a similar clinic which had only recently introduced the programme. Children who had been visiting the first clinic achieved significantly higher scores on both receptive and expressive language tests than those visiting the second clinic (Mendelsohn et al., 2001).

Present bias

In balancing demands, parents manage a multitude of intertemporal choices. When a child disobeys instruction, parents who feel stressed from work and relationship strain may face the choice between reacting calmly, which teaches the child to regulate their emotions in the long term, or reacting harshly because it feels easier in the moment. Likewise, when faced with the choice between spending extra time playing with their child or completing household chores, parents may undervalue the future benefits of fostering their children's development over the time costs they face in the present.

Some research suggests that low-income mothers underestimate the impact of developmental time and its returns on future educational attainment. Providing mothers with the correct information about the benefits of their investment could increase time spent on child development by 4-24 per cent. This could equate to a subsequent 1-5 per cent increase in cognitive skills at 24 months (Cunha, Elo, & Culhane, 2013).

'I did not know that your child's learning process starts now, 0 to 3 years. I always thought it started at 5, once they start school . . . it was kind of bizarre to me to think of teaching my child so early in life.'

Mother, 25, taking part in the Thirty Million Word Initiative, a parent-directed programme aimed at encouraging early interaction with children.

(Zakaria, 2015)

Intervention #2: Prompting small easy-to-achieve behaviours

Given the busy lives parents lead, it is perhaps not surprising that simply prompting parents has proven to be an effective method of encouraging parental engagement, and has led to subsequent improvements in children's learning outcomes (Miller et al., 2016). Breaking down the complexity of responsive parenting into small steps that are easy to achieve also reduces the bandwidth requirements for engaging in developmental care.

An RCT in the US sent text messages to parents of four year olds for eight months (n=440 families). The parents in the control group received one text message every two weeks with simple information about kindergarten enrolment or vaccinations. The parents in the treatment group received three text messages a week which gave them advice and encouragement to engage in literacy activities with their child, such as: *'By saying beginning word sounds, like "t" in taco & tomato, you're preparing your child 4K. Now, have your child make the "t" sound'*. The cost of the programme was less than \$1 per child.

Parents that received the literacy prompts were more likely to engage regularly in home literacy activities compared to parents in the control group. Furthermore, when their children were given tests of letter and sound recognition, their scores indicated that they were about two to three months ahead of those children whose parents were in the control group. These effects were statistically significant and the authors stressed the efficacy of targeted, highly specific messages, rather than general advice in guiding parents to adopt the beneficial practices (York & Loeb, 2014).

Box 5: The power of text prompts: lessons from a study with secondary school students

Prompting better parenting practices doesn't only help young children. A recently completed RCT involving almost 16,000 students across UK secondary schools showed the powerful impact that simple text messages can have on student outcomes. In the intervention, parents were sent an average of 30 texts over one school year (roughly one per week) with content ranging from dates of upcoming tests and warnings about missed homework, to conversation prompts on what their child had learnt that day. Results showed that students whose parents received the texts made an additional month's progress in maths compared with a similar group whose parents did not receive the texts. Absenteeism was reduced too. The intervention was estimated to cost just £6 per student per year (or even less for schools that already use texting or app software) (Miller et al., 2016).

Status quo bias

Children in low-income families are less likely to live in a home environment where education is highly valued and parental expectations and involvement are high (Flouri & Hawkes, 2008; Goodman et al., 2011). This is because parents from lower socio-economic positions are themselves less likely to have grown up in these home environments and to have integrated positive parenting practices into their System 1 thinking (Kalil, 2015). When serve and return interactions, or reading to your child before bed, are as automatic as brushing your teeth, they feel less effortful and are easier to maintain.

Intervention #3: Positive reinforcement

A number of studies have examined the effects of home visits by healthcare professionals on child development outcomes such as cognition and language skills (Chang et al., 2015; Walker, Chang, Powell, & Grantham-McGregor, 2016). The most successful programmes build on existing parenting practices rather than introduce lots of new information. By observing how parents interact with their child, home visitors can highlight to parents when and how they are already engaging in a warm and responsive way. This positive reinforcement can help

parents modulate pre-existing family routines so that these behaviours become more automatic (Tough, 2016).

A trial in Jamaica (n=129) showed powerful effects from home visits on reducing rates of poverty in adulthood. During the two year intervention period, community health workers made weekly home visits and encouraged parents of toddlers to spend more time playing actively with their children. Throughout childhood, participants in the treatment group scored better on tests of IQ, aggressive behaviour and self-control. Twenty years later as adults (n=105) they were earning 25 per cent more than those in the control group (Gertler et al., 2014).

Character capital

Self-efficacy

A parent's belief in their own capabilities can have a significant effect on how they parent, and has been shown to affect their child's educational attainment. Parental self-efficacy is associated with greater parental warmth, responsiveness and a stimulating home learning environment. It also helps parents to stay resilient and persevere when coping with the challenges of parenting (Carroll, 2013; Machida, Taylor, & Kim, 2002).

Parenting self-efficacy is bolstered by parental education and social support (Seefeldt, Denton, Galper, & Younoszai, 1999; Young 2011). Conversely, stressors linked with living in poverty, such as financial strain, have been shown to undermine a parent's self-efficacy, diminishing their belief in their abilities and perceived control (Carroll, 2013; Machida, Taylor, & Kim, 2002).

Intervention #4: Home health visits

A number of RCTs in the US found support for the Nurse-Family Partnership which began in 1977. This is a home visit programme in which registered nurses visit poor, first-time single mothers between early pregnancy and their child's second birthday (Nurse-Family Partnership). The visits, which take place every 1-2 weeks, are intended to reduce anti-social behaviour in children by providing mothers with health advice and tips on child development.

The results of these studies show improvements in a number of short term and long term outcomes, including greater sensitivity and responsiveness between mother and child and increased maternal employment (Olds et al., 2004). Even more impressive, a 15-year follow-up (n=500) showed that, compared to the

control group, adolescents whose mothers were in the treatment group were 60 per cent less likely to have run away, 55 per cent less likely to have been arrested, and 80 per cent less likely to have been convicted of a crime, including a violation of probation (Olds et al., 1998).

The programme's main mechanism is to provide mothers with advice on birth control, quitting smoking, and 'reading' their baby's signals. Therefore, when the programme was recently trialled in the UK with teenage mothers (n=1,645), the researchers looked at the short term impacts on smoking in pregnancy, birthweight, emergency hospital attendance and admission for the child, and second pregnancy (Robling et al., 2016). Surprisingly the researchers found that after two years the programme was ineffective on all primary outcomes. One explanation for the nil effect may be that the 'usual care' that the control group received (from the NHS) was much better in the UK compared to what is available in the US. In addition, participants in the US may have been more disadvantaged than those in the UK.

More encouragingly, mothers in the treatment group self-reported higher intention to breastfeed; child language development (at 12 and 18 months); child cognitive development (at 24 months); levels of social support; partner-relationship quality; and general self-efficacy. However, these results might be subject to reporting bias. A follow up study is due to report in 2018.

Box 6: What are the limitations of character capital approaches for preventing intergenerational poverty?

There is growing interest in developing interventions that build character capital in childhood to prevent intergenerational poverty. This is because there is strong evidence that, for example, individuals with low self-control in childhood (as rated by primary school teachers), experience 1.6 times as many months of unemployment throughout their adult life as those with high self-control in childhood (Daly, Delaney, Egan, & Baumeister, 2015).

However, in some cases character capital may be less consequential than economic capital. A study which used longitudinal data from the UK National Child Development Study (n=7,324) found that externalising behaviour (aggression, hyperactivity or hostility) at age 11 had different implications for adult earnings depending on the child's socio-economic background. Among individuals who did not grow up in poverty, externalising behaviour actually increased adult earnings by 3 per cent for men and 3.3 per cent for women, as well as the number of hours women worked. In contrast, externalising behaviour carried no significant earnings premium for individuals who grew up in poverty and this could not be explained by greater selection into criminality (Papageorgiou, Christou, Spanoudis, & Demetriou, 2016).

Social capital

Social networks

Social networks can have powerful effects in helping parents balance the multitude of demands they face, and provide important resources to help parents nurture their child's learning. This includes the role of grandparents and other significant adults, as well as diverse social groups (Terrion, 2006). Support from social networks has been shown to alleviate stress from parenting and poverty, as well as open channels for reciprocal aid and information sharing (Hashima & Amato, 1994; Benin & Keith, 1995; Webster-Stratton & Hammond, 1997).

If low-income families are part of social networks that are low in human capital, they are less likely to be exposed to important strategies or information that may improve their children's cognitive and socioemotional development (Fram, 2003). In contrast, being part of a social network that supports responsive parenting reinforces this behaviour as a social norm (Bradley et al., 2001; Gratz, Nation,

Schools, & Kurth-Schai, 2006). For example, women with friends who have breastfed successfully are more likely to choose to breastfeed (Office of the Surgeon General, 2011).

Intervention #5: Peer-to-peer parenting support

Many evidence-based parenting programmes fail to reach socially excluded parents, creating a service gap which could be filled by social networks. Involving whole families, their schools and local communities in group parenting classes could enhance relations between people from the dominant and marginalised social groups and promote the transfer of human capital (Davis, McDonald, & Axford, 2012).

In the UK, the Empowering Parents, Empowering Communities programme was developed with hard to reach families in mind. It uses a peer-to-peer training model in community settings to improve parent-child interactions, reduce behavioural problems in the child and increase participants' confidence in their parenting abilities.

An RCT conducted in the deprived London borough of Southwark compared outcomes between an intervention group (n=59 families) with a waitlist control condition (n=57 families) (Day, Michelson, Thomson, Penney, & Draper, 2012). The programme was delivered to groups of 7-14 parents in two hour sessions over eight weeks by trained facilitators who were themselves local parents. Intervention sessions involved sharing of information, group discussion, demonstration, role play, reflection, and planning/review of homework tasks. The cost of the programme was about £2,700 per group.

Compared to the control group, programme participants showed medium to large improvements in positive parenting practices and child behaviour problems. However, parental stress did not differ significantly between the groups. Importantly, the programme appeared to be popular, with drop-out rates below 10 per cent.

Environmental capital

Bad housing

Twenty per cent of homes in England are below the Decent Homes Standard (Department for Communities and Local Government, 2015). Housing quality is a particular issue for low-income families (Tunstall et al., 2013).

Issues such as high household density and noise levels have a striking impact on parents' interaction with their children. High household density has been shown to increase anxiety levels and lead to disruptive child behaviour patterns (Schroeder, 1991). One study found that, after controlling for socio-economic status, housing density was negatively associated with parental responsiveness. This in turn led parents in crowded homes to speak in less complex, sophisticated ways with their children compared with parents in uncrowded homes. The authors concluded that their findings could potentially explain the link between residential overcrowding and delayed cognitive development (Evans, Maxwell, & Hart, 1999).

Living in a noisy environment disrupts an individual's sleeping patterns, which can affect cognitive performance and impair optimal decision-making (Alhola & Polo-Kantola, 2007). Overstimulation from excess noise makes it difficult for parents and children to focus attention and filter relevant information (Bornstein, 2005), disturbing important parent-child interactions. Research suggests that there is a negative correlation between early childhood cognitive development and noise levels in the home (Wachs, 1992).

Relatedly, residents who live on noisy and high traffic flow streets are less likely to know or like their neighbours (Halpern, 1995), cutting off an invaluable source of support to parents, while also making it less safe for children to play outside and interact with others (Timperio, Crawford, Telford, & Salmon, 2004).

Policy recommendations and suggestions for further research

Recommendation 1: Provide families in or near poverty with free access to evidence-based online parenting programmes

Context	Specific recommendation
<p><i>Well-evidenced parenting programmes teach parents strategies for achieving their parenting goals, such as being calm and responsive to their child's needs. However, face-to-face delivery is expensive and when daily life is chaotic, families may find it difficult to access scheduled sessions.</i></p>	<p>The government should provide families in or near poverty with free access to online parenting programmes that are supported by rigorous evaluations (Asmussen, Feinstein, Martin, & Chowdry, 2016; Nieuwboer, Fukkink, & Hermanns, 2013). For example, RCT evidence supports the effectiveness of the Triple P Positive Parenting Program and recent research has shown that an online version provides similar benefits in terms of reductions in child behaviour problems and decreases in parents' use of ineffective parenting strategies (Day & Sanders). We recommend giving schools, health services and Jobcentres in the UK the ability to refer high risk families to free support of this kind. Additional benefits could be gained by testing behaviourally-informed text messages to prompt parents to remain engaged with the programme.</p>

Recommendation 2: Develop community-based platforms for parents' mutual learning and peer support

<p><i>Low-income families, and some migrant groups, are less likely to be connected to a supportive social network that is high in human capital to benefit from peer knowledge about the latest parenting advice.</i></p>	<p>The government should look to develop community-based platforms for parents' mutual learning and peer support. Regular workshops or meetings would enable parents from a local community to learn about the best parenting practices, and strengthen social ties between parents with different levels of human capital. A model could be The Challenge Network which works to create 'shared spaces' that encourage</p>
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	<p>individuals from different socio-economic backgrounds to come together.</p>
<p>Recommendation 3: Conduct research into how changes to housing conditions can reduce cognitive load and improve parental decision-making</p>	
<p><i>Bad housing and a lack of green space tax cognitive bandwidth and make responsive parenting harder.</i></p>	<p>We recommend the government conduct research into whether small and inexpensive adjustments to housing conditions in low-income neighbourhoods can reduce cognitive load and improve parental decision-making. For example, community gardens, tree lined streets, and more noise insulation.</p> <p>In addition, we recommend that the Joseph Rowntree Housing Trust experiment with their own housing estate to examine: 1) whether more communal housing designs can facilitate positive social interactions (Halpern, 1995) which might in turn help parents balance work and childcare (e.g., babysitters) and provide emotional support when relationships between parents are under strain; and 2) whether homes can be designed to support responsive parenting. Some research suggests that house designs that support concurrent activities - such as a large kitchen which can be used for children to do homework or play while parents cook or clean - best facilitate family interaction (Miller & Kinetic Workplace, 2003).</p>

Section 5.3 Factors that influence decisions around applying to post-secondary education

Cognitive capital

Present bias

When deciding whether to continue or leave education after high school, an individual faces a range of immediate costs, such as time to complete the application, tuition fees and forgone income. These must be weighed up against employment gains that are uncertain, difficult to imagine, and far in the future. Research suggests that low-income students are prone to overestimate tuition fees, and underestimate the gap in earnings between those with secondary education compared to university graduates (Usher, 1998; UCAS, 2016).

School leavers are also of an age when neurological factors make them more likely to exhibit present bias. During adolescence the brain's reward circuit matures at a quicker rate than the area of the brain responsible for executive function, self-regulation and critical thinking, which does not fully develop until adulthood (Catani, Dell'acqua, & Thiebaut de Schotten, 2013; Rajmohan & Mohandas, 2007). This developmental time-lag underpins the reward-seeking, risk-taking behavioural patterns often associated with adolescence (Schneider et al., 2012; Steinberg, 2008).

Intervention #1: Prompts

Many US college applicants struggle with present bias and put off completing pre-matriculation tasks (such as registering for orientation, taking placement tests and completing housing forms) in favour of more enjoyable summer activities. As a result, they miss important deadlines. Some estimates of so-called 'summer melt' are as high as 40 per cent of college-intending students (Castleman, Page, & Snowdon, 2013).

An RCT (n=4,754) used 10 automated and personalised text messages between early July and mid-August to remind high school students about pre-matriculation tasks and to connect them to counsellor support (Castleman & Page, 2016). The text message intervention increased overall college enrolment by 5 per cent, and increased college enrolment among low-income students by 9 per cent. This effect was statistically significant and the intervention only cost \$7 per student. In

addition, fewer than 4 per cent of students or parents opted out of the messages. An example of one message was:

'Hi Alex! have you signed up for the UM-Boston orientation? Last one is 7/15. Need to register? <http://bit.ly/umborient> Need help? Reply to talk w/ an advisor'

Cognitive load

The importance and complexity of the decision to stay in education after high school can be cognitively depleting. Application processes for tertiary and technical education involve a number of stages and decision points. In addition, reliable information about university options and costs are likely to be less accessible for low-income students (Bettinger et al., 2012; Dynarski & Scott-Clayton, 2006; Hoxby, 2007; Scott-Clayton, 2012). Someone experiencing time or financial scarcity may fail to choose optimally, either in terms of not applying at all, or applying to a course they are not motivated to complete.

Choice overload

There are 165 officially recognised higher learning institutions in the UK (gov.uk) and 379 further education colleges (Association of Colleges, 2016), each with their own unique combination of courses. For plumbing alone, there are around 33 different qualifications and multiple awarding organisations, in contrast to the much simpler pathways that characterise the technical education systems of Germany, Switzerland and Denmark (Sainsbury, 2016).

When deciding to apply to a post-secondary education institution, students may experience 'choice overload' and find it difficult to know how best to narrow down their options. Research shows that when people have to choose between too many options, they are more likely to take the simplest option, or avoid the decision, which may not lead to the best outcomes (Chernev, Böckenholt & Goodman, 2015; Lyengar & Kamenica, 2010). Coupled with choice overload, students from low-income backgrounds may also have reduced self-efficacy compared to their higher income counterparts (Elliott, 2008), which will affect their motivation and engagement when applying to post-secondary education.

'I thought maybe I should try admin because there was nothing else I could really think of to do. I would want to do something else but I didn't think I could achieve it.'

Female, aged 19, on work placement programme for disadvantaged youth

(Egdell & McQuaid, 2016)

Intervention #2: Customised comparison information

A US-based RCT (n=39,677) aimed to assess whether helping low-income high school students understand their options would encourage more high achieving students to apply to selective colleges. Students were provided with customised information that made it easier to compare college application processes, net costs and graduation rates - similar to what they might receive if an expert counsellor were guiding them, but in this case the information came via mail or email. They also received application fee waivers that allowed them to apply to eight of about 200 selective colleges for free with no paperwork. Students in the treatment group submitted 48 per cent more applications, and applied to colleges with 17 per cent higher graduation rates. The researchers estimated that for each \$10 spent on the programme, students will likely earn an extra \$222,990 to \$567,821 over their lifetime (Hoxby & Turner, 2015).

Social capital

Social networks

The perception of belonging in education is crucial to a person's application, engagement, and success. Recent research looking at white working class boys in the UK suggests that they often do not feel that university is for them (Baars, Mulcahy, & Bernardes, 2016). Other qualitative research from the UK shows that young people from less well-off backgrounds value and rely on informal information (from their social networks) more than formal information (such as careers services) when making career decisions (Greenbank & Hepworth, 2008).

A quantitative US study found that high school graduates were more likely to enrol in college if their friends planned to attend college and if their parents were

involved in the school they attended (e.g., contacting the school to volunteer time in the classroom or discuss academic matters). Regardless of a student's own friends and parents, there was an additional positive effect on college enrolment from social capital at the school level: college enrolment was related to the average number of students that reported that most or all of their friends planned to attend college, and average parent-initiated contact with the school about academic matters (Perna & Titus, 2005). These findings highlight the powerful role of social networks in supporting the decision to stay in education.

Box 7: The role of technical education

Literature from the UK and elsewhere suggests that, particularly for those who are out of education or considering leaving, engaging in technical qualifications is likely to increase earnings and job security, as well as prepare individuals to take up positions in key sectors of the economy (Blanden, Buscha, Sturgis, & Urwin, 2012; Britton, Dearden, Shephard, & Vignoles, 2016). However, the UK has one of the smallest technical education sectors in the OECD (OECD, 2014) and the number of students attending technical education has declined in recent years (Department for Education, 2015; Skills Funding Agency, 2015).

Although young people are aware of the technical education path, they often lack awareness of the value of these qualifications (Batterham & Levesley, 2011). Technical qualifications are a stepping stone both to labour market security, and to university education. Despite this, the view persists that vocational pathways are for those who are not smart enough for university (with the notable exceptions of medicine and law). The relative lack of uptake of these qualifications widens the gap between the top and bottom ends of the labour market.

Intervention #3: Social information

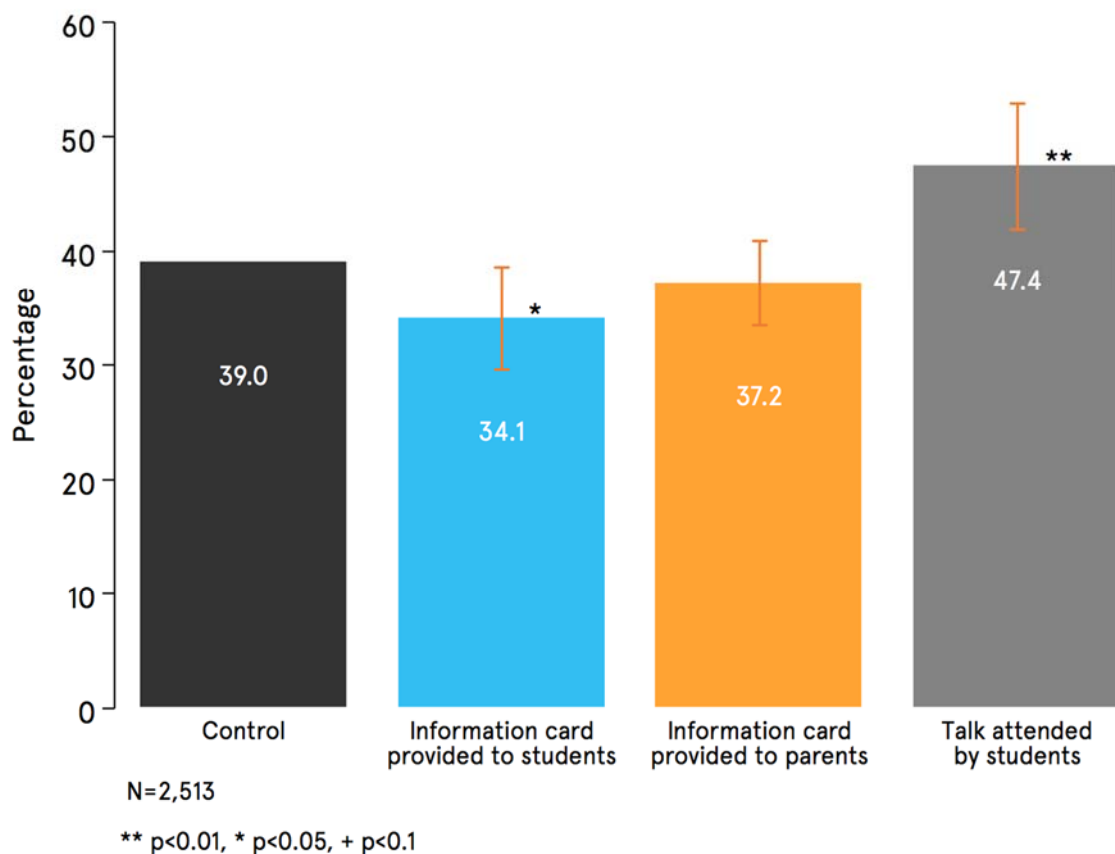
There is mixed evidence on whether providing students with information about the financial benefits of post-secondary education increases enrolment. Some studies in the US have found positive results (e.g., Hoxby & Turner, 2013) but in the UK studies suggest that social information is more important.

A trial conducted by BIT (n=2,513) found that students aged 15-16 who received information cards about the costs and benefits of university were 13 per cent *less*

likely to state their intention as being to go to university (Figure 7). However, students who saw an aspirational talk by an ex-student, who described the social benefits of going to university, were 22 per cent *more* likely to state that they intended to go to university (The Behavioural Insights Team, 2015c).

Another UK study (n=12,000) found that light-touch information focusing on the availability of loans increased students' perceptions that staying in education would be affordable, but it did not shift their intentions towards going to university (McGuigan, McNally, & Wyness, 2012).

Figure 7: Effect of interventions on students' perceived likelihood of attending university



Intervention #4: Peer mentor outreach

Peer mentors can help low-income students visualise the benefits of going to university and reduce the psychological costs.

An RCT (n=3,276) in the US used a peer mentoring intervention to reduce ‘summer melt’. Peer mentors were current university students from the same high schools as participants in the trial, with good academic standing and a clear understanding of the financial aid process. For approximately 20 hours per week, over one month of summer, peer mentors helped college-intending students interpret their financial aid options and identify pre-matriculation tasks they had yet to complete. They offered information and encouragement about how they navigated summer obstacles and managed to succeed in college from a first-hand perspective. Peer mentors also connected students with professional support (Castleman & Page, 2016).

Across the entire sample the intervention did not have a statistically significant impact on college enrolment. However, among students with less developed college plans at the end of high school, enrolment increased by 12.3 percentage points. The cost of the intervention was \$80 per participant.

Policy recommendations and suggestions for further research

Recommendation 1: Make applications processes to post-secondary institutions as simple as possible

Context	Specific recommendation
<p><i>Applying to post-secondary education is a complex, multistage process. Students that are not highly motivated may stick to the default which is to not apply.</i></p>	<p>We recommend the government work with The University and Colleges Admissions Service (UCAS) to expand its existing (but underutilised) further education application platform so that students can apply to both university and technical education from the same point. This would enable school leavers to be defaulted into the application process for multiple post-secondary education options, making it more likely that they will go on to complete an application.</p> <p>To increase students’ motivation to complete the application form, it could be pre-populated with information already held by the Department for Education such as their date of birth and address. Behavioural science research shows that we are more motivated to complete a task when we have</p>

	<p>already made some progress, even if this is only perceived progress (Kivetz, Urminsky, & Zheng, 2006).</p>
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Recommendation 2: Use personalised assistance and prompts to encourage students and parents to apply to post-secondary education

<p><i>Prompts and reminders aid the delivery of important information in a timely manner, and help to break down a complex process into easily manageable chunks. Personalisation provides an additional layer of salience.</i></p>	<p>Most schools already have text messaging software to communicate with parents. This could be used to notify students about application deadlines for post-secondary education institutions and scholarships, links to relevant career guidance websites, tips for interviews, and reminders about social events with peer mentors. In addition, text prompts could be sent to parents to involve them in their child’s decision-making process; and teachers could also be prompted to encourage students to apply to post-secondary education.</p>
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Recommendation 3: Develop outreach programmes that link formal and peer information about post-secondary education

<p><i>Providing formal information about the returns to education is important but should be done in a way that maximises young people’s ability to assimilate this information. That is, by providing it with peer information about what post-secondary education will be like.</i></p>	<p>The Department for Education should work with schools to develop peer outreach programmes from as early as the middle of primary school. This would allow young people to hear about the benefits and realities of post-secondary education from relatable people with similar backgrounds to them.</p> <p>Given that these programmes are difficult to implement in remote locations, an online programme could be established through a partnership with an existing platform, such as Founders4Schools. In addition, students could be defaulted into alumni networks as they leave school so they can be called upon to provide inspiration to the next cohort. An RCT could look</p>
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	<p>at which outreach activities have the greatest impact on students and are most cost-effective, and at what point this communication is most effective.</p>
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Section 5.4 Conclusion

Poverty is not transferred across generations as a 'package'. Rather, a complex mix of family decisions, social context, and structural conditions affects its transmission (Moore, 2005). This chapter has provided evidence about the impact of cognitive, character, social and environmental capital on decisions around parenting and post-secondary education.

There is strong evidence that investing early in a child's life, when the brain is most malleable, is one of the best protections against intergenerational poverty. In particular, positive parenting interventions can enhance a child's human, social and character capital development, which is linked to greater economic capital in adulthood. However, precisely because the returns on investment appear to be so wide-ranging and may take many years to emerge - a generation later - it is important that future evaluations of parenting interventions include comprehensive indicators and measure long-term outcomes to fully capture the effects on poverty.

The evidence on encouraging young people from disadvantaged backgrounds to apply to post-secondary education suggests interventions should focus on social networks, including peers, parents and teachers. Some US studies have found positive impacts from reminding students about pre-matriculation tasks, and from providing comparative information about fees at different universities. We urge caution when applying US findings to the UK because the application processes and fee structures are quite different. Nevertheless, the principle of using timely and meaningful information to make the process of applying to post-secondary easier is highly relevant in the UK context.

Chapter 6 – Report conclusion

This report set out to answer two research questions:

1. How does poverty affect individual decision-making, and how do decisions taken by individuals influence their poverty status?
2. What can policymakers learn from behavioural science to prevent and reduce poverty in the UK?

On the first question, we find that poverty and decision-making have a two-way effect. Decisions made by individuals can make a difference to their poverty status but these decisions are significantly influenced by how choices are presented and the context in which they are made, including the context of poverty itself.

Our capital model of decision-making proposes that there are also other interlocking drivers and mediators of decision-making which explain why people with similar levels of financial resources in the present can face very different poverty outcomes in the future. While all of the feedback loops between the different forms of capital have not been specified in the literature, this report highlights some of the relationships that could lead to a vicious cycle of deprivation or a virtuous cycle of opportunity. For example:

- ◆ Cognitive capital is enhanced when an individual is high in all the other forms of capital and vice versa.
- ◆ Character capital boosts economic capital by improving decisions about employment and finance.
- ◆ Social capital supports human capital because parenting information and educational aspirations flow through social networks.
- ◆ Environmental capital facilitates the development of character capital because quality housing underpins positive parent-child interactions.

On the second research question, we find that there are numerous well-evidenced interventions which have been tested both in the UK and abroad to help people make decisions that can reduce their risk of poverty. We focus on decision-making in the areas of consumer credit, savings, work, government entitlements, parenting and post-secondary education, but there is a growing body of research in other policy areas too.

Importantly, we find that in many cases, simple tweaks to service design at the level of the user-interface can yield disproportionate gains in improving decision-making (e.g., sending text message reminders to help people save). However, we also see a role for behavioural science to inform traditional policy levers (information, incentives and regulation) to ensure that market forces do not weaken or undo the effects of interventions aimed at improving decision-making, (e.g., regulating credit markets to restrict predatory lending). We also recommend that before any intervention or policy is rolled out, it should be rigorously evaluated to ensure it is effective in the target population.

Key take-aways

For JRF and others to take this agenda forward, we conclude with two key take-aways from the evidence reviewed in this report:

1. **Policymakers should aim to minimise the time and mental costs of engaging in government services to make it easy for people on low incomes to make good decisions for themselves.**

Too often policy interventions fail to account for the time and cognitive constraints faced by the end-user, with the potential that well-meaning interventions fall short either through lack of take-up or indeed by inadvertently ‘taxing’ the remaining resources of those they are trying to help.

Behavioural best practice points to bundling application processes and eligibility requirements across programmes. The government should also ensure that anti-poverty policies are ‘bandwidth friendly’ in their design and implementation by developing a standard ‘cognitive load stress test’ that all new policies have to pass before they are rolled out.

2. **Anti-poverty interventions that account for positive and negative feedback loops between the different forms of capital, over different time horizons, will be more effective and efficient.**

Different interventions operate on different timescales. For example, it may be possible to quickly boost a person’s income by making it easier to apply for an entitlement. On the other hand, increasing enrolment in post-secondary education may require boosting the aspirations of children as young as ten to choose that pathway (UCAS, 2016).

The different forms of capital also have feedback loops which create a dynamic model of decision-making and poverty over the life course. For example, supportive social networks improve the quality of parent-infant interactions, which underpins child brain development with long term effects on learning, which in turn impacts adult earning potential.

This way of thinking about the lives of those in or near poverty presents exciting opportunities to tackle poverty more comprehensively but it puts greater demands on policy coordination when designing and evaluating interventions. This could be achieved through expanded support to the relevant Cabinet Committee, through a dedicated resource in the Cabinet Office, or through assigning a clear lead to one Minister.

Future research

In many respects, the field of behavioural science is still relatively new. As such, we have identified three areas for further research:

1. Very little behavioural research analyses how interventions to improve short term decisions, in areas such as consumer credit and work, influence long term poverty outcomes. Few studies even assess whether interventions impact people across the income spectrum differently. For example, are people in poverty more or less likely to succumb to behavioural biases in the first place? More research along these lines can help us design and target interventions most effectively.
2. Early childhood is a formative period: it is when neurological foundations are set down that influence decision-making throughout life. However, more research is needed to understand if interventions in adulthood can compensate for missed opportunities at younger ages. For example, character capital is widely recognised as being critical to social mobility. However, aside from improving parenting practices, the research offers few character capital interventions to support adults to make choices that will reduce their risk of poverty, such as moving into better paid work or managing family conflict.
3. A significant portion of behavioural science research focuses on improving the decisions of end-users - in this case people in poverty. But what about the decisions of service providers and policymakers? Studies indicate that judges impose harsher sentences before lunch compared to after lunch

(Danzinger, Levav, & Avnaim-Pesso, 2010), and policymakers are just as likely as the general public to suffer from the traps of System 1 thinking (World Bank, 2014). How can we improve the quality of their decisions to support people escape poverty? And how can we build their empathy with those whose opportunities are at stake?

The research presented in this report gives us reason to be optimistic. Behavioural science and our model of decision-making offers a different perspective on poverty and opens up a new set of impactful tools and strategies to reduce and prevent poverty in the UK. We also believe that there is scope for policymakers to take on wider definitions of wellbeing when measuring the impact of interventions, to improve the lives of the most vulnerable in our society and to expand opportunity for all.

Annex 1 – Methodology

This report selectively draws on the behavioural science literature to illustrate our conceptual model of different forms of capital, how these forms of capital affect decision-making, and the implications for preventing and overcoming poverty. Our literature review encompassed the following principles:

- ◆ We identified key policy areas that impact on poverty in the UK from JRF's existing reports.
- ◆ We searched for UK-based articles and spoke to UK experts that could shed light on the policy context and 'customer journey' in our six policy areas (for example, statistics on how parents in the UK use their time).
- ◆ We sought the latest and emerging research on decision-making under conditions of poverty directly from academics working in this area and from a broader search of the literature using Google Scholar.
- ◆ We searched Google Scholar for articles that examined the psychological, social and cultural drivers of the six decisions we chose to focus on, or that tested the impact of behavioural interventions in these areas. We did not limit our search to any particular timeframe or location but prioritised studies from the UK and other developed countries.
- ◆ We did not exclude any disciplines or research methods, but prioritised evidence from large samples and randomised controlled trials (both positive and negative results).
- ◆ We sought to unpack the mechanisms underpinning quantitative findings with qualitative research, particularly from the UK.
- ◆ We sought review from policymakers within government, particularly on the feasibility of our recommendations.

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