



How poverty affects people's decision-making processes

by Jennifer Sheehy-Skeffington and Jessica Rea

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As poverty continues to be a feature of the social and economic landscape in the United Kingdom, attention is turning towards the potentially damaging role played by individual decisions made in low-income contexts. This report summarises the most recent evidence on the relationship between socioeconomic status and the psychological, social and cultural processes that underpin decision-making.

The report summarises:

- the results of 15 systematic reviews of recent evidence on the relationship between socioeconomic status and psychological, social and cultural processes underpinning decision-making;
- insights on the impact of poverty on thinking, behaviour patterns, facing challenges and engaging with the social world;
- a discussion of what these relationships mean for decision-making by those living in or near poverty;
- how decision-making in contexts of poverty serves important immediate functions, even if it has negative consequences for long-term outcomes; and
- implications for interventions designed to empower those living in poverty to make decisions that enhance their long-term well-being.

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Executive summary

As poverty continues to be a persistent feature of the social and economic landscape in the United Kingdom, attention is increasingly turning towards the potentially damaging role played by individual decisions made in low-income contexts. Stereotypes propagated in public opinion, media representations, and even political discourse, often depict those on the lowest incomes or in receipt of government benefits as people apparently making little effort to improve their socioeconomic condition. Emerging research from academic social science and behaviourally focused government bodies is beginning to replace this set of assumptions regarding decision-making in poverty with robust evidence. This report summarises the most recent research on this topic, with a focus on the influence of poverty and low socioeconomic status (SES) on the psychological, social and cultural processes that underpin decision-making in a range of settings.

An approach to understanding decision-making in poverty

Being in poverty means living without enough resources – both money and education – to meet one's needs and to participate fully in society. It is also usually accompanied by unreliability in the availability of food, shelter and employment, and instability in one's environment, both of which are experienced as stressful. Such a constrained decision-making context triggers changes in the functioning of key psychological, social and cultural processes. This project studied such processes as intermediary mechanisms through which low SES might influence decision-making in a range of domains. By focusing on a core set of underlying mechanisms underpinning decision-making, it offers insight into why observed behavioural patterns are taking place, and thus how to address them in the most effective and widely applicable manner.

Decision-making can also be understood in terms of underlying patterns, in terms of whether they serve immediate or more distant goals. Specifically, many of the suboptimal decisions and behaviours associated with low-income groups are characterised by a preferential focus on the present (as opposed to the future), on the actual (as opposed to the hypothetical), on those socially close (as opposed to those socially distant), and on the 'here' (as opposed to places far away). Whereas some decisions might have harmful distal consequences, such as the influence of unhealthy eating on health in older age, they often perform important proximal functions, such as providing immediate comfort or a sense of social connectedness. This report thus proposes recasting decision-making patterns associated with contexts of poverty from being suboptimal or resulting from psychosocial deficits, to being rational or adaptive when considered in terms of the proximal functions they serve. In doing so, it offers a more nuanced understanding of the behavioural dimension of poverty than has previously been available, and charts a path for more sustainable interventions than have yet been attempted.

Conducting the evidence review

The project team conducted systematic reviews of the influence of poverty and low SES on the key psychological, social and cultural mechanisms that underpin decision-making. Starting with a large-scale search of all major publication databases from the social sciences, the researchers narrowed results down to a final set of 226 papers that fit a clear set of inclusion criteria. The papers included in the final review were original, quantitative empirical studies of the link between SES and one of a limited set of key psychosocial mechanisms, conducted in an OECD country, and published between 2010 and 2016. These papers were supplemented by unpublished work and recent review papers, to arrive at a snapshot of what is currently known about poverty, decision-making and the mechanisms that underpin their interrelationship.

The influence of poverty on key thinking processes

The first set of mechanisms considered involve **thinking**. There is robust evidence that exposure to poverty or low SES while young is associated with poorer functioning on tasks measuring basic cognitive

processes. In particular, the poorer one's socioeconomic background, the worse one is likely to perform on measures of selective attention and inhibitory control, both of which are important for focusing on a goal and resisting distracting alternatives that might derail one from achieving it.

SES is also correlated with higher-level thinking processes such as reasoning and learning, as reflected in income gaps in performance on intelligence tests and academic achievement more generally. All of these relationships have been observed across age groups, in studies that measure SES and cognitive performance at the same time, and in studies that look at the impact of early family social class background and later-developing thinking skills and ability. It is difficult to rule out the role of heritable differences in cognitive skills in explaining at least part of this relationship. However, some experimental studies have demonstrated the causal impact of the subjective experience of low SES on cognitive performance and subsequent decision-making, suggesting that the situation of poverty can affect the thinking processes of all people, regardless of intelligence level.

The influence of poverty on key behavioural patterns

The second set of mechanisms included in this review concerned **behavioural patterns**, such as whether one is likely to act in line with one's goals, and what kinds of risks one will take in order to achieve them. Growing up in a family low in SES is linked to lower academic aspirations and motivation to learn, a link possibly driven by the poorer quality school environments, and lower parental expectations, to which many low-income children are exposed. Family-level poverty also seems to be predictive of a lesser likelihood of making study and career choices based on intrinsic enjoyment, as opposed to instrumental goals such as job security and salary.

Multiple studies report a positive association between SES and self-regulation, the tendency to act in line with future goals when they compete with more immediate rewards. The fact that those in poverty tend to focus on current (over future) rewards can lead to decisions that are damaging in the long term. It also appears to be heightened by the anxiety caused by thinking about social comparison and the stigma associated with social class.

Though it is commonly assumed that people living in low-income contexts engage in greater risk-taking, this was not supported by the evidence reviewed. Rather, it seems that being exposed to poverty while growing up makes one more averse to taking risks. This appears to change, however, when one's needs become acute, and the only way to meet them is to take a risk. Finally, though the behaviour of one's peers has a large impact on one's own decisions, there is inconsistent evidence regarding the link between SES and risk-related behaviours of peers in the domains of health and schooling.

In sum, poverty seems to influence behavioural patterns by shifting one's focus towards meeting immediate needs and threats. The stereotype of behavioural norms in low-income groups facilitating greater risk-taking and impulsivity at the cost of ambition and motivation is not supported by the research reviewed.

The influence of poverty on ways of navigating life's challenges

The third set of mechanisms considered involve the psychosocial resources one draws on to **navigate life's challenges**. The most basic of these is how one evaluates one's sense of worth – a self-appraisal that was found to be more negative among people lower in SES, across a range of life stages and age groups. Those lower in income and education perceive themselves to sit lower in their surrounding social hierarchy – a perception that often has negative consequences, depending on the cultural context, and whether one can draw psychosocial support from spiritual or social domains.

People's judgment of their competence at learning new skills and succeeding in tasks is also robustly positively correlated with SES, as is their perception that their actions will make a difference to how their lives turn out. This has important consequences for academic performance and health behaviours, as the less one feels that one's actions are under one's control, and will have an impact, the less invested one is in behaving in line with future goals. Though the role of perceived self-efficacy in understanding income

differences in health outcomes has been supported by previous research, the review of recent studies unearthed inconsistent results regarding the link between poverty and specifically health-related efficacy.

Finally, there is a fairly consistent relationship between poverty and how one responds to stress: those lower in SES exhibit less effective coping styles in response to difficult situations, and this has negative consequences for physical health and quality of life.

In sum, though poverty has been attributed to a lack of ambition, aspiration or the correct mindset, recent evidence implies that it is the experience of life on a low income that leads to downward reappraisal of one's ability to influence one's life outcomes – a psychological shift that is arguably rational and adaptive.

The influence of poverty on appraisals of the social world

The fourth and final set of mechanisms reviewed can be loosely characterised as ways of **appraising the social world**. Children from poorer socioeconomic backgrounds report a lower sense of belonging at school and greater exposure to negative incidents such as bullying or sexual harassment. These findings might explain the robust association between living in poverty and demonstrating more aggressive, and less co-operative, behaviour at primary and secondary school. Parents living in worse economic conditions have harsher parenting styles, a pattern also connected to greater levels of child aggression, which endures later in life. Growing up in poverty is also linked to lower general trust of others, perhaps because of a lower sense of inclusion in society at large.

People lower in SES put a lesser weight on personal aspirations and achievement, in favour of helping others and conforming to community traditions. Some studies also find that they have more compassion and generosity than those higher in SES.

Looking at the findings together, it is possible that greater dependence on others makes those living in poverty behave more positively to those who are socially close (as long as they are given the mental relief to do so), but more negatively to strangers and institutions.

Implications for poverty reduction strategies

Though policy recommendations and interventions were not directly assessed in this review, there are a number of insights it has produced that can be brought forward to aid in the struggle to reduce and eliminate poverty. At a general conceptual level, the authors argue for the framing of decision-making in poverty as the product of the interaction of individual resources and powerful socioeconomic and cultural contexts. This means recognising the cognitive constraints of life in poverty, as well as the existence of cognitive skills that are specialised towards context-specific goals.

Moving beyond the cognitive, to the domains of motivation and behaviour, the report recommends understanding decision-making in poverty as a shift in psychological focus, towards the here, the now, the actual, and those socially close. This entails considering the proximal functions served by decisions and behaviours observed in low-income contexts, and thus the ways in which they may be not only suboptimal, but also rational and adaptive. To the extent that they ensure proximal functions are addressed, interventions designed with this framing in mind will be more sustainable than interventions focused only on reducing distal costs. To the extent that they focus on underlying mechanisms, they will also impact a wider range of decision domains than they would if focused on one kind of decision alone.

There is a specific set of areas for intervention indicated by the evidence in this review, which involve action not only at the individual, but also at the neighbourhood, institutional and wider societal levels. There are also important areas where more research is needed, if this more nuanced understanding of poverty and decision-making is to have a robust evidence base, and thus be compelling in policy and public circles.

In conclusion, this report argues that studying decision-making in poverty can be done in a way that acknowledges the agency and purposiveness of those experiencing it. Specifically, a focus on the

evidence for the influence of poverty on core psychosocial mechanisms, and the proximally-adaptive nature of many decisions that result, can open the way to attempts to reduce poverty that address its behavioural dimension in contextually-sensitive and empowering ways.

1 Introduction

Despite rapid economic growth in recent decades, and national recovery from the Great Recession, poverty continues to be a striking feature of British society (MacInnes *et al.*, 2015), as it is of all rich countries today. Its causes are multifaceted, and have been summarised in terms of structural characteristics of the economy, taxation and public spending decisions by government, and barriers to the accessibility of public services faced by an increasingly diverse and ageing population (Goulden, 2015; Loopstra *et al.*, 2015). Neglected until recently is an attempt to understand the agency and experiences of people living in or near poverty, and the role of their decisions and behaviours in securing a better future for them and their families.

The relative paucity of research from social science and policy scholars on the topic of decision-making in contexts of poverty has not hindered the frequent appearance of the topic in public and political discourse. Indeed, whenever public opinion is consulted regarding financial or housing support for those on low or no incomes, beliefs about the behaviour and motivations of those in poverty take centre stage (Bullock *et al.*, 2003; Gilens, 1999). Whether surveyed in a US or UK context, some of the most commonly cited reasons for the persistence of poverty among groups at the bottom of society are that those receiving government assistance spend their money unwisely, do not try hard enough to look for work, and do not communicate to their children the value of education and of productive participation in society (Bullock *et al.*, 2003; Clery *et al.*, 2013). This bias towards behavioural explanations for the persistence of poverty is mirrored in media images of those in poverty which, through their focus on case studies or fictitious communities (cf. soap operas such as *Emmerdale*), orient the audience to see poverty as an individual rather than a structural phenomenon (Bullock *et al.*, 2001; MacDonald *et al.*, 2014; McKendrick *et al.*, 2008).

Moving from the public to the political sphere, the importance of individual effort in escaping poverty is a central plank in UK Government efforts to reform the social welfare system (Department for Work and Pensions, 2015). This is part of a wider growth in interest among policy-makers in the behavioural dimension of socioeconomic issues, as evidenced by the formalisation of a role for behavioural science at the heart of the UK and US governments (in the form of the UK Behavioural Insights Team and the White House Social and Behavioural Sciences Team, respectively), and even the international development agenda (World Bank, 2014). A positive feature of these developments is the acknowledgement that we need to replace assumptions regarding decisions and behaviours associated with poverty with robust empirical evidence.

To aid in this task, emerging research in applied social science fields is beginning to document the role of decision-making in understanding adverse outcomes associated with poverty in the industrialised world. In the field of public health, an important role has been assigned to behavioural patterns concerning diet, exercise, smoking cessation and medication adherence, in exacerbating socioeconomic disparities in health outcomes (Adler and Rehkopf, 2008; Pampel *et al.*, 2010; Stringhini *et al.*, 2010). In education, differences in motivation and ability to create a home learning environment, to pay attention at school, or to spend time on homework, have been found to explain part of the persistently observed gap in academic achievement between income groups (Chowdry *et al.*, 2011). In economics, decisions to take out high-interest loans, and to spend limited money on gambling or non-essential goods, are highlighted as worsening the financial situation of the most vulnerable (Bertrand *et al.*, 2006).

The set of behaviours that might be pivotal either in increasing one's risk of poverty, or in helping one move towards financial stability and societal inclusion, spans a range of life domains. Such behaviours are the product of decisions not only concerning one's health and finances, or access to medical and education services, but also regarding how one spends one's leisure time, organises one's family life, chooses what products to buy, approaches one's job, and selects where to live. Underlying the apparent diversity in decision-making settings, however, is a commonality in the psychosocial processes that drive decisions made within them. This report assumes that only through understanding the shared underlying mechanisms that explain decisions made in the context of poverty can we hope to design interventions that have broad impact.

As well as being broad in their impact, behaviourally focused anti-poverty interventions also need to be sustainable. This means they will need to work in the wider context of people's daily lives. This report argues that this can only be achieved with full awareness of the functions served by decisions and behaviours that at first seem suboptimal or unwise. That is, it recommends understanding decision-making patterns associated with poverty as the product of psychosocial mechanisms that respond in purposive and rational ways to the experience of life at the bottom of the socioeconomic spectrum.

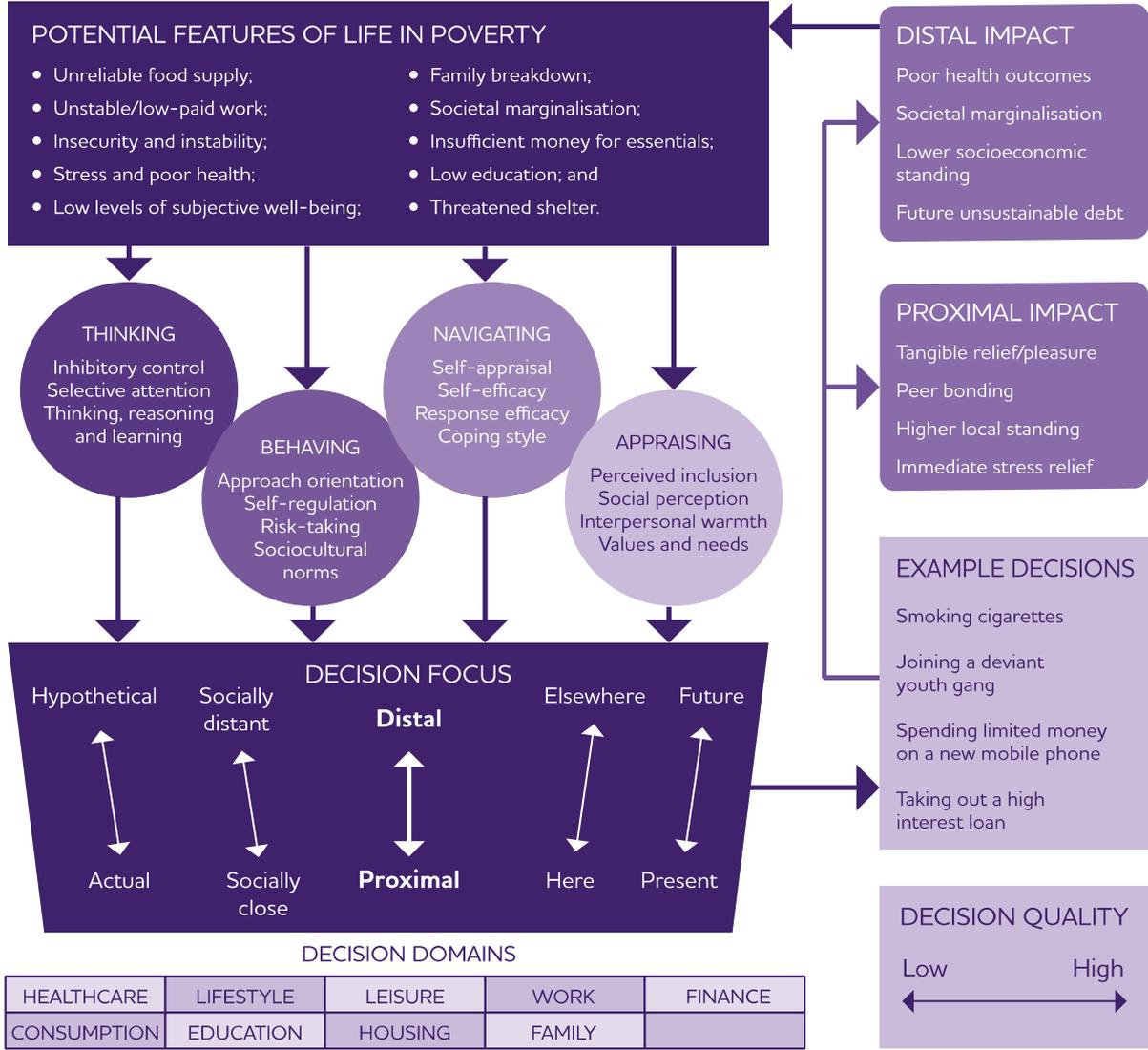
This report first presents the overarching framework with which the authors approach the study of decision-making in contexts of poverty. It then focuses on the most important mechanisms – psychological, social, and cultural – that underpin decisions and behaviours in a range of life settings. In attempting to understand how these psychosocial processes function in contexts of poverty, it presents a systematic review of the evidence for the influence of poverty or low socioeconomic status on each mechanism in turn. This set of reviews also considers how psychological, social and cultural processes are influenced by poverty at different life stages, and which social groups might be more affected than others.

After presenting overviews of research on how and whether poverty influences each set of mechanisms, the report discusses what the findings might mean for decision-making in key life domains. Finally, it considers policy and public service implications of the findings of the evidence review. The hope is that a conceptually nuanced understanding of decision-making in the context of poverty will provide insights that are useful to ongoing efforts from government and statutory bodies to design policies with human behaviour in mind. It might also empower non-governmental organisations to design, implement and lobby for anti-poverty strategies that increase the ability of those in the UK's poorest communities to make decisions that enhance their long-term well-being.

2 A framework for understanding poverty and decision-making

Figure 1 outlines the conceptual framework guiding our understanding of decision-making in the context of poverty. This chapter discusses each section of the framework in turn, highlighting the research on which it is based, and how it shapes the interpretation of the findings of the evidence review.

Figure 1: Conceptual framework for understanding decision-making in the context of poverty



The influence of characteristics of life in poverty on psychological, social and cultural processes

The box shown at the top of Figure 1 considers the most important potential characteristics of daily life in poverty or on a very low income, in the United Kingdom. By definition, living in or near poverty means struggling to have enough money to meet essential needs such as food, clothing, secure shelter, transport and personal care. More than this, living on a low income in a rich country often entails doing without desirable goods that are seen as critical to full participation in society, such as a mobile phone, clothes for special occasions, and opportunities to take part in social activities and school outings

(Goulden and D'Arcy, 2014). The poorer one is, the less educated one is, on average, such that poverty brings with it obstacles to participation and advancement in the workforce that can persist through generations. Educational and asset-based barriers to participation in society, along with rising levels of economic inequality, mean that poverty is not only an experience of material deprivation, but of relative deprivation, and with it a sense of social exclusion (Gordon *et al.*, 2000).

In addition to poor quality of life, precariousness in income often brings with it instability in food supply, shelter and employment, and the stresses of living in an unpredictable environment more generally (Kushel *et al.*, 2006). The most deprived neighbourhoods are also likely to be the more dangerous ones, whether from frequent instances of aggression and violence, or greater exposure to environmental toxins damaging to one's health (Sampson, 2012). Unsurprisingly given stress, obstacles and poor quality of life, living in poverty is associated with far lower levels of reported subjective well-being than living in any other socioeconomic position (Haushofer and Fehr, 2014). It is through consideration of the features of daily life in poverty that we begin to see a picture of what has been called its 'psychological situation' (Sheehy-Skeffington and Haushofer, 2014): the parameters and cues that make some behavioural responses more facilitated, and thus more likely, than others (see also Steele and Sherman, 1999). The framework thus next turns to the set of psychological, social and cultural processes that might be influenced by the experience of being in poverty or low in socioeconomic status (SES).

As outlined in the next chapter, the evidence review began by considering a comprehensive set of processes that might play a role in decision-making, before homing in on the core set of mechanisms deemed most important to understanding decision-making in poverty, summarised in Figure 1. The initial set included basic cognitive processes such as executive functioning, reasoning, and heuristics and biases, as well as the neurological mechanisms underpinning them. In addition to cognition, it also included the other two 'building blocks' of the mind – emotion and motivation – by considering processes such as affective arousal, attitudinal mindsets and sense of personal efficacy. Other psychological processes considered include the regulation of competing goals and one's behavioural tendencies to take risks, as well as key personality dimensions such as extraversion and conscientiousness.

Moving from psychological to social processes, the project team first considered verbal and nonverbal communication, while also looking at social skills such as emotional intelligence and persuasive power. Social perceptions and behaviours were considered both at the interpersonal and intergroup levels, including how one behaves towards and appraises the actions not only of other members of one's family or neighbourhood, but also those of people in society at large.

Finally, the review considered the set of cultural processes most relevant to decision-making. This included patterns of behaviour or norms that are widely spread in one's sociocultural environment, and the extent to which one lives in a community in which the self is seen as independent versus interdependent. The review considered social representations of societal phenomena such as education and social class, as well as whether one's cultural group values goals such as being well-educated, working hard and relating to others.

As outlined later in this report, a key subset of these psychological, social and cultural processes are influenced by life in poverty, with consequences for decision-making in a range of domains. By referring to these processes as psychosocial mechanisms, we can investigate the extent to which they mediate the influence of poverty on the kinds of decisions and behaviours that are observed more commonly in low-income than high-income groups, and thus claimed to play a role in the persistence of poverty in the industrialised world. As behaviour change specialists have pointed out (Madrian, 2014), only by understanding underlying mechanisms of a behavioural pattern can we plan interventions that lead to improved behaviour and life situations in a sustained manner. Furthermore, because the same psychosocial mechanism (such as risk-taking) might play out in a similar way across multiple domains (such as gambling, heavy drinking and anti-social behaviour), an intervention targeted towards the mechanism can have useful 'spillover' effects from one to many other kinds of decisions (see Dolan and Galizzi, 2015).

The functional landscape of decision-making in poverty

In order to arrive at the connection between an infinite number of potential decisions and a small set of underlying psychosocial mechanisms, it is worth drawing out the general patterns that might shape

decision-making in a range of contexts. The current framework achieves this with the use of insights from construal level theory, a model from social psychology that looks at decisions as a product of a changeable psychological state described as one's information-processing style (see Trope and Liberman, 2010). According to this approach, at any one time, the mind is oriented towards processing information that is at varying degrees of 'psychological distance' from the self at that moment. Information that is psychologically 'distal' is about the future, about the hypothetical, about socially distant people, or about far-away places. Information that is psychologically 'proximal', on the other hand, concerns the present, the actual, the 'us', and the 'here'. Researchers in the tradition of construal level theory have amassed a large body of evidence that as the mind shifts between focusing on stimuli or decisions that are distal versus proximal, its style of information-processing changes with it. Decisions focused on distal contexts are better served by more abstract, goal-focused thinking, whereas decisions focused on proximal contexts, such as in the case of an immediate threat, are better served by more concrete, implementation-focused thinking (Trope and Liberman, 2010). It is thus worth considering whether the concept of psychological distance might be a useful way to organise the many kinds of decisions of interest in the context of poverty.

A review of existing insights on decision-making patterns associated with poverty suggests that this organising framework fits it well (see Sheehy-Skeffington, in press; Sheehy-Skeffington and Haushofer, 2014). Emerging theoretical perspectives on poverty and decision-making are already converging on the observation that what characterises a range of behaviours in low-income contexts is a focus on the present at the cost of the future – that is, on proximal goals on the temporal dimension of psychological distance (Mullainathan and Shafir, 2013; Pepper and Nettle, under review; Sheehy-Skeffington, in press). Seen through this lens, unhealthy eating is a product of privileging short-term pleasure over long-term health, just as taking out high-interest loans favours meeting an immediate financial need as opposed to future needs, and skipping school may offer enjoyment now at the cost of future academic performance. A separate set of research from social psychology highlights what can be called the existential dimension of psychological distance: it finds that being low in a social hierarchy leads to the neglect of hypothetical goals for the sake of focusing on what is actual, or tangible (Keltner *et al.*, 2003). This might translate into those lower in socioeconomic standing being more focused on actual threats and barriers, rather than possible rewards and dreams – a mindset that we know hampers academic performance among those low in social class (Oyserman *et al.*, 2011; see also Dweck and Leggett, 1988).

Moving from the self to others, there is consistent evidence from the field of political psychology that the lower one is in SES, the more one is biased in one's attitudes and behaviours towards members of one's own social group, as opposed to members of other groups (Wagner and Zick, 1995) – a pattern that fits with a proximal focus on the social dimension of psychological distance. If being from a low social class background is associated with more altruistic behaviour towards others (Piff *et al.*, 2010), *yet also* with greater hostility towards strangers (Barefoot *et al.*, 1991), this might be because poverty brings with it a shift towards those who are socially close, at the expense of those who are socially distant. This is supported by evidence that experiencing hunger leads to greater demands for resources for one's social group, but lesser likelihood to share resources with a stranger (Aarøe and Petersen, 2013).

There is less evidence that speaks directly to the link between poverty and the spatial dimension of psychological distance. However, the finding that perceptions of low status can cause greater desire to spend on status-displaying goods such as clothing and electronics (Rucker and Galinsky, 2008, 2009; Sivanathan and Pettit, 2010) could be understood as a privileging of gains in local social standing over gains in societal social standing. It has also been observed that those lower in SES are less likely to move from their neighbourhood to a less deprived one when given the opportunity (South and Crowder, 1997), suggestive of a focus on, and preference for, one's local geographic proximity, as against exploring new locations. Perhaps more importantly, the existence of spatial segregation by SES in the UK and other rich countries (Musterd, 2005) implies that such a constriction in geographic focus may be externally imposed through housing policy and discrimination, if not voluntarily chosen.

Overlaying the framework of construal level theory onto the set of findings on poverty and decision-making enables us to do more than group them into a manageable number of categories. It also sheds light on how what seem to be suboptimal decisions might not actually be irrational ones, and certainly aren't without a purpose. That is, there are very good reasons why one might need to shift into a proximal mindset – focusing on the here, the now, the real, and those close – such as if one needs to address a pressing threat or is in immediate need. Engaging a distal mindset, on the other hand, is

something of a privilege: it makes sense when one's mind and time are freed up to contemplate future goals and aspirations in a predictable world, but will not be of any help in navigating immediate challenges in unstable environments (see also Frankenhuis and de Weerth, 2013; Frankenhuis *et al.*, 2016).

Challenges, threats, instability, scarcity in time, money and mental space – all are characteristic of life on a very low income, in stark contrast to the kind of middle-class contexts where a focus on distal goals is instilled. Thus, one could argue that what appears self-destructive or unreasonable in a decision-making pattern associated with poverty is, in fact, performing an important proximal function – one that is hard to see from the perspective of social science observers writing from well beyond the world of poverty.

The boxes at the right of Figure 1 provide illustrations of the difference between the proximal versus distal impact of decisions that one might be more likely to make if one grows up in a low-income context. Though smoking cigarettes might harm one's hypothetical health goals, it offers physical pleasure and pain relief that is very tangible in the moment. Joining a neighbourhood gang is a decision that is linked with consequences such as marginalisation from society at large (Thornberry, 2003), but provides a sense of identity and bonding with socially close others. Though spending the bulk of one's pay cheque on a smartphone might ultimately lower one's socioeconomic standing in society at large, it offers the opportunity for greater local respect, in one's neighbourhood or among one's friendship group. Finally, taking out a high-interest loan in order to pay for school uniforms might be financially damaging in the long run, but it helps solve a pressing problem in the moment, thus relieving the stress of not being able to provide for a child's needs.

In using the above organising framework to form the backdrop of our understanding of decision-making in poverty, the authors do not claim to try to fit all decisions and behaviours into a limited set of 'types'. Indeed, some decisions are just poor decisions, and are the product of the disrupted operation of cognition rather than a functional focus on the proximal; this is represented by the dimension of 'decision quality' in the box at the bottom left-hand corner of Figure 1. Nevertheless, it is our contention that being alert to both the proximal and the distal impacts of decisions made in contexts of poverty enables a much more nuanced understanding than does studying them as merely damaging or suboptimal. Indeed, by considering the subjective purpose that a particular decision or behavioural pattern serves, one can see how the only substitute behaviour that can have a more empowering, sustainable, long-term impact is one that also ensures key proximal functions are addressed.

3 Methodology

The project team conducted a wide-ranging review of recent scientific evidence for the link between poverty and psychological, social and cultural processes, as they are relevant for decision-making in key life domains. The project consisted of a set of 15 evidence reviews, conducted in stages aligned with the Cochrane and Campbell principles for the systematic review of interventions (see Davies and Boruch, 2001). A detailed account of the search and selection process, as well as a record of all final papers included in the review, can be found in the Appendix.

The first phase consisted of consulting the most widely used academic databases (EBSCO, IBSS, Scopus, Web of Science and Zetoc), which contain records from journals spanning the fields of psychology, economics, sociology, anthropology, political science, education, medicine, and the social sciences more generally. These databases were searched for journal articles, conference proceedings and dissertations published from the beginning of 2010 to the beginning of 2016, which reported original empirical studies, and which fit a combination of two sets of search terms. The first set of search terms referred to poverty as construed broadly, including not only the words 'poor' and 'poverty', but also terms such as 'low socioeconomic status', 'adversity', and 'marginalisation'. Thus, in order to capture linear effects of relative deprivation and subjective social standing, and to consider those at risk of poverty as well as those currently in poverty, the review considered the relationship between decision-making processes and low socioeconomic status (SES) more generally. The poverty-related search terms were then combined with a second set of search terms, depicting one of a large set of psychological, social or cultural mechanisms. The initial list of 54 mechanisms was developed from a combination of psychological theory and consideration of the existing literature, and was intended to cover all plausible intermediary processes that might underlie decision-making and behaviour.

Once searches were conducted for each mechanism in turn, the large list of results was screened to remove duplicates, and to ensure that only papers that matched the search terms as intended remained. As the overarching research question concerns poverty within the context of the UK, studies conducted in non-OECD countries (and in Mexico or Chile) were excluded. Studies conducted in all other OECD countries were included due to the similarity of the economic national context, and the fact that the bulk of research on this topic has been conducted in the US and Europe. Following the screening phase, the team then engaged in a first phase of filtering, applying a set of exclusion criteria to the article titles, in order to leave in only those papers that involved original quantitative assessment of the evidence for a link between poverty and the mechanism in question.

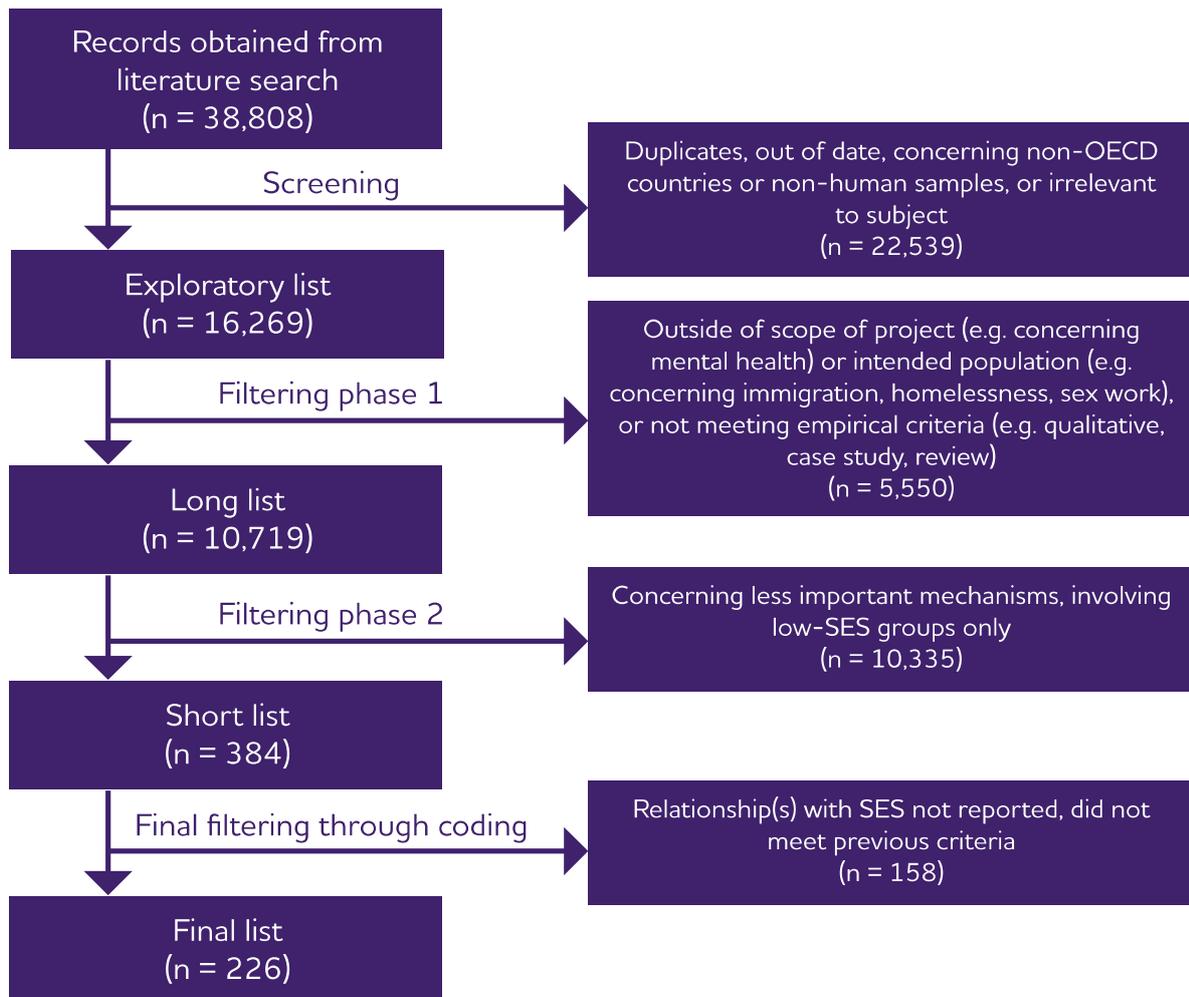
At this stage, scores were given to each mechanism, depicting the number of articles pertaining to that mechanism, the relevance of those articles to decision-making, and the theoretically derived importance of that mechanism to decision-making in the context of poverty. Using this method, the project team selected the 15 most important mechanisms to take forward to the second stage of the evidence review. A second phase of filtering was then conducted based on article abstracts, resulting in the removal of articles concerning only mechanisms outside of the selected set, articles that did not enable the assessment of the relationship of SES with a mechanism (e.g. that included only participants from a low-income context), and articles that did not meet the inclusion criteria of first stage filtering.

This procedure produced a short list of articles, each of which were then read fully and coded to extract the key methodological details and findings (see Appendix for the coding frame). Though no articles were excluded based on their methodological rigour, each article was assigned scores for 'quality' and 'relevance', informed by considerations of sample size and specific methodology (e.g. cross-sectional, longitudinal, experimental), as well as applicability to the context of poverty in the UK. In terms of sample size, the summaries below use the term 'small' to refer to sample sizes below 100, 'medium' to refer to sample sizes between 100 and 1,000, 'large' to refer to sample sizes between 1,000 and 10,000, and 'very large' to refer to sample sizes larger than 10,000. In terms of study design, it is important to note that a correlation between poverty and the functioning of a psychosocial mechanism cannot be taken to infer a causal relationship from the former to the latter. At the same time, however, the random assignment of socioeconomic conditions, as would be necessary to make causal claims, is neither ethically nor practically feasible. The review thus included results of the limited set of studies that did attempt to experimentally recreate some of the experiences associated with poverty (such as resource scarcity or

low subjective social status), summarising them separately to those studying real-life socioeconomic conditions. This report restricts usage of causal language (such as ‘poverty leads to’ or ‘the effect of poverty’) to such studies, intending other forms of description of relationships (such as ‘poverty is associated with’ and ‘SES predicts’) not to imply any strict causal ordering.

In the process of article coding and evaluation, some final articles that did not meet the inclusion criteria were identified and removed, resulting in the final list, consisting of 226 articles, of which 23 involved UK samples. A summary of the search, screening and filtering process is provided in Figure 2.

Figure 2: Flow diagram of the search, screening and filtering process for the evidence review



Although grey literature in the form of conference proceedings and dissertations did form around 15% of the original search results, additional searches were conducted for reports published by organisations including charities and academic and government organisations working on relevant topics. Networks in relevant professional organisations (e.g. the American Psychological Association Committee on Socioeconomic Status), as well as leading researchers in the area of poverty and decision-making, were contacted via email to solicit unpublished findings. Social networking sites were also used to request unpublished work from researchers in the field (e.g. the Poverty Network on ResearchGate).

Results of this additional search were combined with a set of theoretical and review papers on the topic of poverty and decision-making more broadly, in order to provide insight into the links between the mechanisms found to be affected by poverty and decisions in key life domains, and also to inform recommendations for intervention.

4 The influence of poverty on key thinking processes

Underpinning all decision-making are the building blocks of cognition: the psychological mechanisms through which we process information from the world, and use it to orient our attitudes, judgments and behaviours. Investigating the relationship between socioeconomic status (SES) and cognitive processes is thus a natural first place to start in the search for mechanisms underlying decision-making in poverty.

Cognition is more than what is commonly denoted by the word 'thinking'. For before intelligence and knowledge can be brought to bear in high-level processes such as reasoning, more basic processes need to be doing their job. Specifically, the brain's tools for monitoring and guiding thought are collectively known as the 'executive functions'. The executive functions include attention, working memory, and processes that switch other cognitive responses on and off according to the needs of the task (Zelazo *et al.*, 1997). The review focused on two of the executive functions most important for decision-making in contexts of poverty: selective attention and inhibitory control.

Staying focused: selective attention

Selective attention is what enables one to centre on the task at hand, and not to be diverted by competing tasks or stimuli. It is a measure of the ability to focus one's mind at will, and to see the important details of a decision, ignoring less important ones.

Well-functioning selective attention is the opposite of distractibility, and is thus essential to the successful implementation of decision-making that is in line with one's goals. Being able to focus on important tasks is of most obvious utility in the school context, where distractibility is one of the most common barriers to academic achievement. Beyond education, selective attention is also key to making good financial decisions and accessing support services – both situations in which large amounts of information need to be waded through (such as in social service leaflets or application forms) in order to home in on the key points. Being able to focus on tasks is also critical to good performance at work, just as it is for making consumer decisions in line with what one needs the most.

Selective attention is measured through the use of one or more cognitive tasks drawn from a set of measures developed specifically to assess executive functioning, and usually administered in young samples. These involve asking participants to respond to characteristics of a particular object (or 'target stimulus'), which is presented while surrounded by irrelevant objects (or 'distractor stimuli'). A widely used example is the flanker task, in which one must press a computer key corresponding to the direction in which an arrow is pointing, while ignoring a set of distractor arrows flanking the target arrow, which point in the opposite direction. Another way in which selective attention is assessed is through ratings by parents or teachers of how focused versus distractible a child is on a daily basis.

Using such measures, a solid set of evidence has built up since 2010 implying a link between selective attention skills and SES. One of the most robust findings is that a child's performance on selective attention tasks at the age of entry into primary school is positively predicted by his or her parents' SES, even where the latter is measured as early as when the child was 7 months of age (Bernier *et al.*, 2015; Mezzacappa *et al.*, 2011; Razza *et al.*, 2010; Ruberry *et al.*, 2016; though see Markant *et al.*, 2015). A similar developmental pattern holds later on in life: the higher an adolescent's family SES as they enter secondary school, the better their selective attention when they graduate (Boelema *et al.*, 2014).

As it is hard to see how one's cognitive performance while a child could impact one's earlier levels of SES, the above evidence implies that there is something about growing up in poor environments that has a damaging effect on one's attentional capacities. This allies with evidence that brain structure varies with SES (Noble *et al.*, 2015), and that experiencing deprivation while very young can hamper brain development enough to impair executive functioning (Nelson and Sheridan, 2011; see Fell and Hewstone, 2015). However, most of the above studies are conducted with young people not experiencing extreme deprivation, but from a range of socioeconomic backgrounds; just one study

involved a large number of children whose families could be classified as in poverty. When interpreting the link between SES and selective attention skills, one must leave open the possibility of a role for stable cognitive abilities inherited from parents, which might affect both SES and executive functioning. Indeed, one study showed that when one statistically controlled for mothers' verbal intelligence, the link between SES and selective attention was no longer significant (Roze *et al.*, 2010).

Holding back: inhibitory control

Success in selective attention tasks involves more than the ability to focus: it also involves the capacity to resist the urge to set one's attention elsewhere. This latter skill is part of what is known as inhibitory control, a process also referred to as 'cognitive control' or 'executive control'. Inhibitory control is the ability to resist (or 'inhibit') the urge to give a response that is facilitated at a particular moment, but is in fact wrong. An example is found in the Stroop task, one of the most widely used measures of inhibitory control. Here, participants are asked to press a computer key corresponding to the colour of the ink in which a word is written. The task is very easy when the word 'blue' is written in blue ink, and still easy when a string of letters, such as 'XXXX', is written in blue ink. It becomes more difficult, however, once the participant sees the word 'red' written in blue ink: here, the facilitated response is 'red', as that is the word the participant reads, but the correct response is in fact 'blue', because ink colour is what one is asked to report. Tempting alternative responses, such as pressing 'red' in the above example, are known as 'prepotent', and they conflict in the participant's mind with the 'target' response, in the above case, 'blue'. Thus, inhibitory control tasks measure the extent to which one can resist prepotent responses in situations of cognitive conflict, in order to produce the target response required by the situation.

Inhibitory control matters for decision-making, firstly, as the inverse of selective attention: only with strong inhibitory control can one be sure one is not derailed by tempting alternatives, away from the processing of information or choices in line with one's goals. It applies beyond cases of concentration, however, to cases where, for example, using an irregular verb in a foreign language requires resisting the urge to conjugate the verb as if it followed the pattern of regular verbs. When measured by teachers or parents through observations, inhibitory control is the ability of a child or young person to control impulses and to cease engaging in a disruptive behaviour.

Studies of inhibitory control, as with those of executive functioning more generally, have mostly been conducted among children and young people, in educational settings. As with the other executive functions, it is already known that inhibitory control is impaired in children who have grown up in situations of extreme deprivation, because of slower development of the regions of the brain where it is located (see Fell and Hewstone, 2015). The question considered here was whether there is recent, robust evidence for a link between inhibitory control skills and income or deprivation across the socioeconomic spectrum.

The review found evidence for just such a relationship, both when SES and inhibitory control were measured at the same time points, and when their relationship was investigated over time. Studies with medium to large samples find that those exposed to longer periods of poverty and more family financial strain in infancy perform worse on inhibitory control tasks in early childhood (Raver *et al.*, 2013; Rochette and Bernier, 2014). Similarly, low family income during early childhood is linked to poorer inhibitory control during middle childhood (Hughes *et al.*, 2010; Ruberry *et al.*, 2016). Although one study found no difference in inhibitory control at primary school entry as a function of SES at earlier ages, this was conducted with a smaller sample size, and with teacher ratings of inhibitory control, rather than direct assessment (Bernier *et al.*, 2015). A similar pattern holds when poverty and inhibitory control are assessed at the same time: all studies conducted since 2010 (Matte-Gagné and Bernier, 2011; Sarsour *et al.*, 2011; Roy *et al.*, 2014), with the exception of two studies with small sample sizes (Colasante *et al.*, 2015; Vandenbroucke *et al.*, 2015) find that those higher in SES have better ability to inhibit prepotent responses.

Moving from primary to secondary school, the review found evidence that SES is positively associated with performance on inhibitory control tasks. This is observed regardless of whether the two constructs are measured at the same time (Spielberg *et al.*, 2015; though see Micha *et al.*, 2010), or whether the effect of early life SES on later development of inhibitory control skills is considered (Boelema *et al.*, 2014).

What is it about SES that might influence the development of children's inhibitory control abilities? The link between SES and response inhibition skills seems to be less likely to be found when neighbourhood deprivation is used as the measure of exposure to poverty (Markovits and Brunet, 2012) than when family conditions are. Neighbourhood conditions do matter, as it has been found that moving into a high-income neighbourhood enables improvements in inhibitory skills (Roy *et al.*, 2014; Vettenburg *et al.*, 2013), but such wider community factors seem to be mediated through their impact on home and family conditions. One study found that although the link between SES and inhibitory control is observed at age 6, it is driven not by the family income component of SES, but the education component (Størksen *et al.*, 2015). Digging deeper, it may specifically be the relational aspects of the home environment, such as low parental responsiveness and family companionship, which explain the ways through which low SES impairs response inhibition skills in childhood (Bernier *et al.*, 2010b). Brain functioning also plays a mediating role: one study found that compared to high-SES children, low-SES children used up more neural resources in order to inhibit tempting, non-target responses in an auditory selective attention task (D'Angiulli *et al.*, 2012).

Does SES always predict inhibitory control skills, or are there 'boundary conditions' on this relationship, that is, conditions under which it does and does not apply? Though sample size limits have prevented thorough investigation of this question, the evidence indicates that the link between SES and response inhibition is more likely to occur when low-income children are living with only one parent (Sarsour *et al.*, 2011), and is possibly stronger among girls than boys (Spielberg *et al.*, 2015; Størksen *et al.*, 2015). One noteworthy study conducted with university students sheds light on situations that might exacerbate the link between family income and executive functioning. It found that it was only when the potential stigma of being low in SES was made salient, such as when talking about an academic topic or comparing oneself to those higher in SES, that those from lower social class backgrounds performed worse than others on inhibitory control measures (Johnson and Mortimer, 2011).

Thinking, reasoning, and learning

While executive functioning processes are a necessary precursor to good decision-making, higher-level processes such as reasoning, learning and deliberation play a vital role in the quality of decisions one makes, particularly more complex ones. These abilities are what come to mind when we think of general intellectual ability: the capacity to remember information in the long term, and to weigh up competing perspectives in order to arrive at the best decision. Learning complex concepts, deliberating about one's life goals, and taking in lots of information relevant to a particular question, are examples of this kind of systematic thinking process.

Studies of the link between socioeconomic background and intellectual ability have been mostly conducted in educational or early childhood settings, and used measures of general intelligence and (in older samples) academic achievement. Even before reaching school age, it has been found that young children, regardless of age, ethnicity and gender, perform worse at learning tasks the lower their parents are in SES (Bornstein and Putnick, 2012; Reid and Ready, 2013; von Stumm, 2012; though see Kalogrides and Ovink, 2013). As with executive functioning, the socioeconomic conditions of one's early childhood environment appear to shape the over-time development of verbal and non-verbal intelligence as one reaches primary school age (Metcalf *et al.*, 2013; Schoon *et al.*, 2010; von Stumm, 2012), up to age 16 (von Stumm *et al.*, 2013; von Stumm and Plomin, 2015), and even into adulthood (Flensburg-Madsen and Mortensen, 2014), equally for boys and girls. Heritability in intelligence might again play an important role in explaining this relationship: although one small study observed that the link between parental SES and infant intelligence held even when the mother's intelligence was taken into account (Betancourt *et al.*, 2015), another small study found no link between maternal education and intelligence at primary school age, once maternal intelligence and was accounted for (Roze *et al.*, 2010). As this latter study also involved taking into account the child's earlier mental and psychomotor development, it does not definitively show that it is maternal intelligence that explains the relationship between child intelligence and maternal SES – a question in need of further study.

A similar pattern emerges in studies of reasoning and learning in the primary school years. A large number of recent studies find a positive correlation between family SES and performance on intelligence tests when the two are measured at the same time, usually equally for boys and girls (Flouri *et al.*, 2015a; Holmes and Kiernan, 2013; Hornstra *et al.*, 2015; Kalogrides and Ovink, 2013; Marcus Jenkins *et al.*, 2013; Martini and Sénéchal, 2012; Metcalf *et al.*, 2013; Pina *et al.*, 2014; Razza *et al.*, 2012; Wrulich *et*

al., 2013). One study based in the UK also found longitudinal effects of eligibility for free school meals – an indicator of family-level poverty – at age 7, and fluid intelligence at age 10 (Lütke and Lange-Küttner, 2015). The two studies that did not find a difference in reasoning skills by SES were conducted in small-to-medium sized Turkish (Beceran, 2010) and African American (Day and Burns, 2011) samples, which arguably differ in key respects from socioeconomic groups in a UK context.

Through the secondary school years – whether SES is measured through education, income, neighbourhood deprivation or occupational status – its link with performance on intelligence tests continues to be reported in several studies (Damian and Roberts, 2015; Kriegbaum and Spinath, 2016; Rajchert *et al.*, 2014; Steinmayr *et al.*, 2012). The predictive power of SES holds when one examines academic achievement, including in cross-national samples (Guttersrud, 2015; Kalaycioğlu, 2015; Parr and Bonitz, 2015; Yerdelen-Damar and Pesman, 2013), even controlling for intelligence (and gender: see Hogan *et al.*, 2010).

Finally, two studies looking at socioeconomic differences in intelligence among adults found a similar positive correlation between the two constructs as is observed in childhood: the higher the SES, the better the intelligence scores (Betancourt *et al.*, 2015; Torres, 2013). Indeed, one study with a large British sample found that educational attainment in adulthood was predicted by childhood intelligence, which itself varied by childhood SES (von Stumm *et al.*, 2013). As with earlier life stages, the two studies that failed to find the relationship between SES and higher-level cognitive skills in young adults used small samples (Micha *et al.*, 2010; Rigoli *et al.*, 2012), limiting the extent to which they challenge the bulk of evidence supporting the relationship.

Though many studies document the link between socioeconomic background and performance in academic and intelligence tests, few dig deeper to attempt to understand when and why it is found. One study found that meal quality – specifically, the fact that lower-SES children have less healthy diets – might play a role in explaining the link between childhood SES and verbal reasoning ability (von Stumm, 2012). Similarly to the case of executive functioning, one set of studies found that performance disparities between high- and low-income people are exacerbated by tasks that make interpersonal comparisons salient (Smeding *et al.*, 2013). This paper reported that if competitive tasks are reframed in terms of either collaboration, or mastering a new skill, performance differences by SES disappear (Smeding *et al.*, 2013). Conversely, it appears that using experimental methods to make the stigma of low SES salient exacerbates SES differences in test performance among college students (John-Henderson *et al.*, 2014). It appears that one way of combatting this latter effect is for low-income students to compare themselves to others who are doing worse than themselves (John-Henderson *et al.*, 2014).

Consequences for decision-making

The above three reviews leave no doubt that there is substantial evidence for the link between cognitive ability and SES, suggestive that not only experiencing poverty, but also having parents who are relatively low in income or education, makes one susceptible to worse performance on measures of reasoning and intelligence, and of the executive functions that underpin these skills. Caution must be heeded before inferring that the relationship runs in this direction, however, as few studies have directly addressed the possibility that parental differences in cognitive skills influence socioeconomic outcomes, while also, through genes and parenting style, influencing the cognitive abilities of children.

Four papers have attempted to address this gap by taking an experimental approach to the question of poverty and cognitive functioning. One study investigated performance differences in an inhibitory control task and a fluid intelligence task in a sample of Americans who had been asked to consider either easy or hard financial problems. Though there were no income differences in performance on either task among those considering the easy financial problem, considering a difficult financial problem caused those lower in income to perform worse on both measures than those higher in income (Mani *et al.*, 2013). The authors conclude that it is the cognitive strain of thinking about how one can meet one's needs without enough money that causes those in poverty to appear as if they are less intelligent than the rich (Mani *et al.*, 2013). Another paper had middle-income participants temporarily feel what it's like to be on a low income by randomly assigning them to have very few (versus a lot of) resources in a computer game. Here, the experimentally 'poor' group exhibited worse inhibitory control than the 'rich' group, apparently because they were distracted by the concerns of not having enough resources to meet their needs (Shah *et al.*, 2012). The generality of these experimental findings is challenged by a more

recent paper, however, which compared performance on inhibitory control, selective attention and intelligence tasks in two large samples of Americans, who were randomly assigned to be assessed before versus after their payday (Carvalho *et al.*, 2016). Though the financial strain argument implies that one's cognition is most disrupted when one is most distracted by considerations of financial need, there were no performance differences observed in the paid versus unpaid groups, on any task (Carvalho *et al.*, 2016).

A fourth paper examined the influence on cognitive functioning of the temporary experience of low subjective social status, as experimentally induced by giving people false feedback on where they sat on the socioeconomic ladder in relation to others in their society (Sheehy-Skeffington *et al.*, 2016). Those who were randomly assigned to be told that they were doing worse than most of their compatriots in terms of SES made more errors on a task measuring inhibitory control (and on other measures of executive functioning) than those randomly assigned to receive positive feedback on their relative SES. In another study in this paper, the low-SES group performed worse on a complex financial decision-making task, suggestive that the damaging causal influence of perceptions of low societal status on executive functioning mechanisms has a downstream impact on decisions that depend on the use of such mechanisms (Sheehy-Skeffington *et al.*, 2016). In follow-up studies, the authors found that once the cognitive tasks were reframed as being linked to later gains in SES, the performance difference disappeared. They interpreted this finding as indicative that those in the low-SES condition were not experiencing a deficit in cognitive functioning, but were, rather, distracted by the status threat that the low-SES feedback induced. This distraction led to worse performance on a cognitive task that seemed irrelevant to status, but just as good, if not better performance, on the same cognitive task once it was explicitly linked to a potential status gain (Sheehy-Skeffington *et al.*, 2016). Although experimental evidence of this kind is very helpful in establishing a causal link between the experience of low SES and thinking processes, it is important to consider how successfully it captures characteristics of life in poverty as it is actually experienced in the real world.

One notable pattern from the review of this set of processes is the convergence in results across mechanisms, which makes sense given that good executive functioning is needed in order for one to perform well on measures of intelligence (Engle *et al.*, 1999). Inhibitory control and selective attention had previously been found to play a role in understanding the link between poverty and academic achievement (Lipina *et al.*, 2005; Mezzacappa, 2004; see also Ardila *et al.*, 2005; Lupien *et al.*, 2001; for a review, see Hackman and Farah, 2009), and one study in this review found they both predicted good relations with peers and lack of behaviour problems (Razza *et al.*, 2012). The implication is that the poorer one's socioeconomic background, the worse one's likely academic achievement and relations at school, and subsequent occupational performance and success (Katz and Hartman-Maeir, 1997). The downstream consequences of the influence of poverty on key thinking processes thus fit into the left-section of the multidimensional framework introduced in Chapter 2: a case of poorer decision-quality as a result of one's socioeconomic position.

Executive functioning skills are linked not only to the 'slower' cognitive processes of reasoning and learning, but also to 'faster' cognitive processing, which is based on quick, sometimes unconscious decision rules (known as 'heuristics'), and thus which is easily prone to bias (de Bruin *et al.*, 2007). While no papers on this link came up in our review of recent evidence, it has previously been found that low income and education are associated with greater susceptibility to the use of heuristics and biases in decision-making (Booij *et al.*, 2009; Green *et al.*, 1994; Harrison *et al.*, 2002; see Lunn and Lyons, 2010). Such biases can play out most starkly in the economic realm, meaning that not only does poverty make one more likely to make bad decisions, but also such decisions often impede one's ability to escape poverty (see Bertrand *et al.*, 2006). Furthermore, whereas the wealthy may have plenty of time, technological capacity and social networks that they can use to obtain extra information that might counter a cognitive bias, those living in poverty are often forced to make decisions in a rushed and information-poor setting, in which misleading heuristics generally thrive (Lunn and Lyons, 2010). The systematic study of the influence of poverty on susceptibility to heuristics and biases is thus a research area ripe for development.

5 The influence of poverty on key behavioural patterns

Though some decisions are the result of thinking, others are the result of a set of often ‘thoughtless’ patterns formed by how one normally behaves. Behavioural habits can be divided into a few general types of pattern, each of which can influence decision-making and behaviour across multiple domains. For example, if one is a risk-taker, one is more likely to take risks not only when it comes to spending money, but also when it comes to engaging in dangerous health behaviours or pushing the social boundaries at work (see Dahlbäck, 1990). Habits are the product not just of personality, however: they develop over time, in response to one’s environment. The review focused on the three behavioural patterns that are most important for decision-making in contexts of poverty: approach orientation, self-regulation and risk-taking. The report then looks at an aspect of one’s sociocultural environment that can also shape one’s behaviour in unconscious ways: patterns of how other people behave, and the inferred cues as to what they expect.

Going for a goal: approach orientation

Approach orientation is a general term used to refer to one’s behavioural stance in relation to one’s goals. Being approach-oriented means that one is motivated to act in order to achieve one’s goals, and focused on the rewards on offer if one accomplishes them. The opposite is referred to as being ‘inhibition-oriented’: a state of diminished motivation to pursue one’s goals, which go neglected in favour of caution and inaction. The more inhibition-oriented one becomes, the more one is focused on threats in the environment, and the less likely one is to exhibit a proactive response in an ambiguous situation. It is easy to see how this behavioural stance might lead to decisions that prevent one from moving up in socioeconomic standing. Indeed, low aspirations and lack of motivation to act in line with them has been linked with poor academic and occupational achievement, and to difficulty in escaping poverty (e.g. Dalton *et al.*, 2016).

Studies of poverty and approach orientation have focused on asking people about either their aspirations, or how they think about and approach their goals. One distinction frequently studied is that between intrinsic and extrinsic motivation: being intrinsically motivated means that one takes on a task because of the rewards one gains out of the action of performing it, such as the choice to study a university subject in which one is very interested. Extrinsic motivation, on the other hand, is being motivated to perform a task by what one can obtain at the end, and is exemplified in the decision to choose a university subject purely because it might guarantee good marks or set one up for a high-paying job. As evidenced by these examples, most studies of approach orientation are conducted in academic settings.

In primary and secondary school contexts, recent research has found that students with lower social class backgrounds are less likely than those with higher class backgrounds to report being motivated to master an academic subject (Berger and Archer, 2015; Bodovski and Youn, 2011, Garriott *et al.*, 2013; McCoy *et al.*, 2015), and to display their mastery to others (Berger and Archer, 2015). Low family socioeconomic status (SES) is also linked in multiple, large studies with having lower educational (Boxer *et al.*, 2011; Bowden and Doughney, 2010; Diamond and Huguley, 2014; Frostick *et al.*, 2015; Tynkkynen *et al.*, 2012) and occupational (Gore *et al.*, 2015; Schoon, 2014) aspirations, and more uncertain career goals (Gutman and Schoon, 2012) at secondary school. The three studies that did not find this link were conducted on small samples that were either solely female (Novakovic and Fouad, 2013) or mostly made up of American ethnic minorities (Day and Burns, 2011; Perry *et al.*, 2012; though see Wolniak and Rekoutis, 2016). Adolescent career aspirations matter, as, along with ability, they are found to be important predictors of adult aspirations and income in midlife (Cochran *et al.*, 2011; Lee *et al.*, 2012), and to act as an important psychological resource for young people in adverse economic circumstances (Schoon, 2014).

The link between aspirations and SES is not always straightforward, however: one longitudinal study from the Netherlands found that although teachers rated low-SES students as less committed than high-SES students towards the end of primary school, low-SES students themselves reported being just as

motivated by, and interested in, academic work as did high-SES students (Hornstra *et al.*, 2013). Thus, there is a need to arbitrate on whether self-reports or behavioural observations are the best indicators of this form of approach orientation. Another study found that ethnic status might affect the relationship between low SES and aspirations: students from low-SES families who have migrated internationally (Bowden and Doughney, 2010) or who have minority ethnic status (Diamond and Huguley, 2014; Frostick *et al.*, 2015) reported higher aspirations than other student with the same socioeconomic background. Finally, one very large study of young children in the UK found that only among boys was there a relationship between family poverty status in infancy and occupational aspirations at age 7 (Flouri *et al.*, 2015b).

Aside from how high one's aspirations are, approach orientation also shapes what kinds of incentive motivate one to work towards them. In young adulthood, it has been found that having a low income, regardless of one's gender or ethnic group, means having lower levels of intrinsic motivation when it comes to study and career choice (Johnson and Mortimer, 2011; Salinas-Jiménez *et al.*, 2010). This is in line with the finding that high school students lower in SES are less likely than those higher in SES to pursue domain-specific knowledge in line with their interests (Tucker-Drob and Briley, 2012). It also appears that those lower in SES may have higher extrinsic motivations than those higher in SES (Johnson and Mortimer, 2011). Two studies, however, find no link between SES and either extrinsic or intrinsic motivations: one followed a medium-sized sample of young adults in Finland (Sortheix *et al.*, 2015), and the other was conducted with a medium-sized sample of teenagers in Italy (Alivernini and Lucidi, 2011).

How might recent studies enable us to dig deeper, to understand the pathways through which the link between SES and approach orientation operates? One study found that the influence of neighbourhood deprivation on diminished academic motivation was at least in part due to the poorer school facilities provided in low-income neighbourhoods (McCoy *et al.*, 2015). Though better school facilities might aid in keeping up students' motivation, changing the socioeconomic composition of schools could have the opposite effect: one longitudinal study found that among low-SES primary school students, and regardless of age and gender, there was greater improvement in academic motivation only when most members of one's class were also low in SES (Hornstra *et al.*, 2015).

The above studies of approach orientation in low-income contexts also investigated the downstream consequences of the observed differences. These were not as straightforward as one might think: though a large, UK-based, longitudinal study showed that being low in SES meant one was less certain about one's career aspirations, this uncertainty actually led to better academic performance in later years and lower likelihood of dropout, after accounting for differences in parental educational expectations, school motivation, perceived academic ability and receipt of career advice (Gutman and Schoon, 2012). Thus it appears that for students who are identical in terms of personal and parental encouragement, those lower in SES have more open-minded and realistic career aspirations, and end up doing better than their higher-SES peers who have fixed or highly optimistic aspirations.

The diminished intrinsic career motivation associated with living at or near poverty makes sense in terms of the low level of exposure one has to jobs that are both rewarding and pay the bills; it is arguably a case of pragmatic expectations, rather than diminished aspirations. Indeed, in the long run, those on a low income, who were more extrinsically motivated, ended up earning more than if they had not been motivated by instrumental concerns (Johnson and Mortimer, 2011). The authors of this study note, however, that this is not because those who were more extrinsically motivated obtained jobs with higher salaries, but because they worked more hours in their current job; meanwhile, by virtue of being weakly intrinsically motivated, they were less likely to have much autonomy or space for self-direction at work (Johnson and Mortimer, 2011).

Thus, on the one hand, the link between SES and style of approach orientation – i.e. intrinsic versus extrinsic motivation, and fixed versus uncertain aspirations – is not one of poverty impairing this psychological mechanism. Rather, it seems that coming from a lower income family equips one with more pragmatic and realistic expectations, which might be highly adaptive when one is facing poorly equipped schooling and an unreliable labour market. This fits with the conceptual framework introduced in Chapter 2, and its focus on decision-making in poverty as a product of shifts in psychological focus, as opposed to psychological deficits (see also Sheehy-Skeffington, *in press*). On the other hand, if growing up in a low-income context means that one is more likely to neglect one's goals and aspirations in general, this can only have a harmful effect on life outcomes. This is because it makes one less likely to achieve not only

learning and career goals, but also goals regarding health, parenting, finances and social relationships, more broadly.

Focusing on the future: self-regulation

Whereas approach orientation concerns one's motivation to act in line with one's goals, self-regulation refers to which particular goals one privileges over others. Those with strong self-regulatory abilities are more likely to act in line with long-term, rather than short-term, goals (Fujita, 2011). Doing so entails being able to resist the impulse to act to achieve an immediate benefit, if it comes at the cost of a future, greater reward (see Vohs and Baumeister, 2011). Self-regulation thus encompasses the ability to control impulses, and to delay the gratification of one's desires until a later time. In economics, this is the opposite of what is known as 'future discounting' – the willingness to pay more to receive something now than to receive it at some later date. Future discounting is a behavioural manifestation of impatience or 'present-bias', implying that one has a restricted time horizon in the decisions one makes.

It is not hard to see why self-regulation and time horizon matter for decision-making in a range of contexts, not only low-income ones. Most health behaviours require the sacrificing of an immediate reward, such as a tasty cake or a night on the sofa rather than at the gym, for the sake of a future reward of better physical health. So, too, when it comes to financial decisions, where being able to resist the impulse to spend money on a luxury good, for the sake of building up one's savings account, will pay off only in the long run. As discussed in Chapter 2 in relation to the temporal dimension of psychological distance, the notion of present–future trade-offs is a key axis of psychological focus, and characterises many of the decision-making challenges facing those in poverty. If self-regulation has a particularly high payoff for those in poverty, it is worth investigating whether at the same time, the experience of poverty makes one less likely to exhibit it.

Though there are inconsistent results when it comes to the link between delayed gratification and SES in infants and toddlers (Bernier *et al.*, 2010a; Eisenberg *et al.*, 2010; Matte-Gagné and Bernier, 2011), a clearer picture emerges in later years. Two large, longitudinal studies have found that for boys and girls across ethnic groups, family SES as measured in early childhood is positively correlated with self-regulatory abilities once a child reaches primary school age (Flouri *et al.*, 2014), while also predicting improvement in self-regulation in the intervening years (Moilanen *et al.*, 2010). Living in a family that struggles to meet its needs, or living in a poor neighbourhood, also means one is more likely to exhibit problems in behavioural regulation at the same life stage (Piotrowski *et al.*, 2013; Roy *et al.*, 2014; Størksen *et al.*, 2015; though see Vandenbroucke *et al.*, 2015). Conversely, moving into a better neighbourhood is linked to improvement in self-regulation among children, even when accounting for all other factors that might be associated with the decision to move (Roy *et al.*, 2014).

In the teenage years, lower SES continues to be associated with higher impulsivity and lesser tendency to delay gratification, as shown by three studies with large samples from three different countries (Damian and Roberts, 2015; Freeney and O'Connell, 2010; Vettenburg *et al.*, 2013). Recent research, again using large samples, has also demonstrated this link over time, such that the lower one's family income and education at secondary school entry, the poorer one's self-regulatory ability at ages 13 and 15, especially among boys (Evans *et al.*, 2012; Khurana *et al.*, 2015; Neumann *et al.*, 2010; though see Auger *et al.*, 2010).

Evidence from adult samples is usually cross-sectional in nature, and converges on a similar pattern as the studies with children and teenagers. Young adults who are lower in SES report lesser ability to resist impulses and greater tendency to procrastinate, and are observed to eat more unhealthy food in the lab, than those higher in SES, controlling for age and gender (Chow, 2011; Johnson *et al.*, 2011). Adults of all ages and both genders, when questioned in large surveys, report being more impulsive and biased towards the present, the lower in income and education they are (Lehto *et al.*, 2013; Peretti-Watel *et al.*, 2013), and the more they feel deprived compared to their peers (Callan *et al.*, 2011).

A small number of studies have attempted to investigate the boundary conditions and mediating pathways of the link between poverty and self-regulation. The emerging picture seems to be that anxiety heightens the impact of poverty on self-regulatory failures, as this link is strongest among people who are generally anxious (Zhao *et al.*, 2015), or who are made to think about injustice, mortality or their own poor performance on a test (Griskevicius *et al.*, 2011; Laurin *et al.*, 2011). Echoing findings from the

literature on executive functioning, another factor that appears to heighten the negative relationship between low SES and self-regulation is salience of the stigma associated with low social class (Johnson *et al.*, 2011).

Unsurprisingly, given the importance of self-regulation to decision-making, the papers reviewed imply that its association with SES has negative downstream consequences for those at the bottom of society. The poorer one is, and thus the less one holds off on current pleasures for the sake of future goals, the less likely one is to engage in physical exercise (Lehto *et al.*, 2013), and the more likely one is to engage in unhealthy eating, and thus to have higher body mass index in later years (Evans *et al.*, 2012). In such situations, one is also less likely to attempt to quit smoking, and to succeed in each attempt (Peretti-Watel *et al.*, 2013). Present-focused behaviours among low-income groups hamper their later academic performance (Freeney and O'Connell, 2010), and also make them more susceptible to mental illness (Flouri *et al.*, 2014). Finally, a bias towards the present comes hand-in-hand with the next psychosocial mechanism – risk-taking – as those with poorer self-regulation skills as a result of low income have been found to be more likely to gamble (Auger *et al.*, 2010; Callan *et al.*, 2011), engage in risky sexual behaviour (Khurana *et al.*, 2015), and get involved in violent youth gangs (Vettenburg *et al.*, 2013).

Putting things on the line: risk-taking

Risk-taking needs little explanation, defined as the tendency to opt for uncertain outcomes that offer high possible payoffs, over certain outcomes with lower payoffs. It is also often assumed to be a behavioural problem associated with low-income groups, whether one reads about the greater incidence of unsafe sexual practices and drug use among young people in deprived communities, or the popularity of outlets for gambling on sports and fruit machines in working class areas. Once one looks at recent empirical papers on the link between SES and risk-taking, however, the relationship appears more complicated.

In the papers reviewed, risky behaviour was measured either in the form of choices in experimental gambling tasks, or through observations of behaviours in particular domains. Contrary to popular assumptions, there are a number of recent studies linking low SES to risk aversion – the tendency to avoid risks in favour of safer options. One study conducted in Turkey found that controlling for age and gender, the lower the income, the more likely one is to choose 'safe' careers (such as in health and education) over 'risky' careers (such as business: Caner and Okten, 2010). A French study found that both male and female students in low-income high schools displayed less risky financial preferences than students in wealthier high schools (Eckel *et al.*, 2012), while a study with a large Australian sample found that lower SES, whether measured at the household or neighbourhood level, was linked to fewer instances of alcohol-related hazardous behaviour (Livingston, 2014). The one study that looked at risk-taking in teenage sexual behaviour found no link between this form of risk-taking and income or general SES (Rew *et al.*, 2011).

Thus, studies of those who have had long-term exposure to the bottom of the socioeconomic hierarchy seem to imply that this experience makes one more cautious as opposed to more risk prone. It seems that living with few resources leads one to be careful with the resources one has, and more likely to go for safe options in terms of life choices. Things may change, however, if one's situation of need becomes acute, or if one is exposed to the experience of threat, as demonstrated by recent experiments in different research streams. When participants in one set of studies were presented with cues regarding an economic recession or thoughts about mortality, it was those with low social class backgrounds who were the most likely to respond by taking financial risks (Griskevicius *et al.*, 2011). In another set of studies, where the experience of poverty itself was experimentally induced by randomly assigning study participants to have a very small (versus large) starting budget in a laboratory game, risky economic behaviour was elicited, and this risk-taking became more frequent as people's budget increased (Fatas *et al.*, 2011).

A third stream of research assumes that what induces risk-taking is the immediate experience of not having enough to meet one's needs, such that the only way to fulfil needs is by taking a gamble. When participants in these studies were randomly assigned to a game condition in which they had insufficient resources, they were more likely to make riskier choices in that game than if they started with enough resources to get by (Mishra and Lalumière, 2010; see also Shah *et al.*, 2012). Finally, a fourth set of findings imply that this sense of not having enough can also be induced through comparison with others,

with implications for risk-taking. People who generally feel they have fewer resources than their peers, or who are experimentally induced to feel as if they have fewer, are more likely to engage in risky decision-making, including gambling with real earnings (Callan *et al.*, 2011; Mishra *et al.*, 2014; Mishra and Novakowski, 2016; though see Carvalho *et al.*, 2016). It seems to be the perception that taking a risk is the only way one can meet one's needs that is driving these effects (see also Haisley *et al.*, 2008). If one's needs are met through some other route, or if risk-taking is not seen as a valid option to raise one's socioeconomic standing, then risk-taking decreases in frequency again (Mishra *et al.*, 2014; Tabri *et al.*, 2015).

In summary, there is no straightforward link between poverty and risk-taking, as conventional wisdom regarding behaviours associated with poverty seems to assume. Indeed, given that the options for enacting risk proneness vary widely across the socioeconomic spectrum – from high stakes gambling through the stock market at the top end, to far lower stakes gambling by buying a lottery ticket at the bottom – it may be impossible to obtain a definitive view of the relationship of this behavioural tendency with SES. What does appear to be clear from the above studies is that risk-taking in the context of perceived resource scarcity is a strategic decision, which depends on one's enduring experience of poverty, one's current pressing needs, and the perceived benefits to be gained (or the perceived lack of anything to be lost) from taking a risk. Risk-taking is thus another case where the influence of poverty fits less with a pattern of impairment than of a shift in psychological priorities to address pressing needs.

Doing as others expect: sociocultural norms

Although we have seen how they can be influenced by contextual circumstances such as neighbourhood deprivation and family resource availability, approach orientation, self-regulation and risk-taking are three intuitive behavioural tendencies that operate at the individual level. Yet there is another key route through which behaviours can be elicited without being decided on by conscious thought: social influence. As we are fundamentally social beings, we strive to behave like others around us whom we recognise as members of our social group, and we turn to others as teachers of what behaviours work well, and what is expected of us (Cialdini and Trost, 1998). Behaviourally informed public policy is increasingly recognising the importance of social norms – that is, patterns of how others in our social circle behave – in shaping important life decisions (Behavioural Insights Team, 2010). Adding to this, one prominent claim about 'suboptimal' decisions made by low-income groups is that they are a result not of personal deliberation, but of surrounding cultural contexts that make some ways of behaving seem like 'what people like us do' (Lewis, 1996; Moynihan, 1965). Assumptions about unique 'subcultures' of poverty or marginalisation have fallen out of popularity in academic research, but still feature in political and media representations of recipients of government financial or housing assistance (MacDonald *et al.*, 2014). The review thus searched for recent papers featuring reference to norms and culture alongside terms indexing poverty and low SES, to capture a snapshot of the strength of the evidence on this question.

One area that has recently been studied empirically is whether there are differences across the socioeconomic spectrum in the expectations that parents signal to their children regarding their potential in the academic and career domain. There is some evidence, including from a very large, cross-sectional American study and a longitudinal British study, that low-income parents have lower expectations for their child's academic achievement than do high-income parents (Gutman and Schoon, 2012; Lawrence, 2015; Perry *et al.*, 2012; Sciarra, 2010), an attitude that might be communicated through behaviours such as engaging in less academic-related play with children (DeFlorio and Beliakoff, 2015). In the domain of career expectations, however, the one (medium-sized) study that examined the question found no difference in parental encouragement of career aspirations, through their sharing of work experiences with their children (Novakovic and Fouad, 2013). Another study of what normative cues may be passed from parents to children concerned a parenting style described as exhibiting 'psychological control': a large Finnish study found that the lower the SES of parents, the more they expected gratitude and obedience from their children in return for the sacrifices made in parenting. This appeared to have a negative influence on parental educational aspirations for their children, in turn predicting children's worse academic performance (the latter, in part, because the child's own aspirations were depressed as a result: Tynkkynen *et al.*, 2012). Finally, one large, UK-based study found that lower-income parents were more likely to engage in anti-social behaviour, a normative pattern that may send cues to children as to how it is appropriate to behave (Odgers *et al.*, 2012).

Moving from the influence of parents to that of the surrounding community, one large American study found that in low-income, ethnically-mixed neighbourhoods, young people, regardless of age, gender and ethnic identity, are more likely to be exposed to violence (Warner *et al.*, 2011) than in high-income neighbourhoods, while community members are also less likely than in high-income neighbourhoods to report crimes to the police (Slocum *et al.*, 2010).

Lastly, there are inconsistent findings regarding the influence of peer expectations and behaviours on young people's decisions in important domains such as education and health. One very large American study found an association between parental SES and how much pressure to perform well at school was communicated from fellow students, such that low-income students experienced the least peer pressure, regardless of ethnic group membership (Diamond and Huguley, 2014). In contrast, two studies with predominantly ethnic minority American samples found no negative peer influence associated with low social class, reporting that the educational expectations and values of peers of low-SES secondary school students were no lower than those of high-SES students (Perry *et al.*, 2012; Boxer *et al.*, 2011). There were just two studies looking at peer norms and expectations in the domain of health. One fairly large British study found that although the behaviour of peers mattered for young people's likelihood of engaging in condom use, low- and high-income students reported no difference in the incidence and valence of such peer norms (Abraham *et al.*, 2011). One large Dutch study found that perceived norms were a strong predictor of likelihood of smoking, and that such norms were marginally more in favour of smoking among secondary school students from lower- than higher-income areas (Cremers *et al.*, 2014).

Consequences for decision-making

Unlike its relationship with thinking processes, the relationship between poverty and behavioural patterns is complicated and not yet fully understood. Research is particularly scarce and inconclusive when considering the behaviours of others, perhaps unsurprising as the studies reviewed were conducted in a range of settings, and norms are, by their nature, tied to a particular context. Thus, it is not clear how poverty shapes the normative backdrop that provides indicators as to what kinds of decisions and behaviour are approved of, and which are poorly valued. Understanding this question is important, as the evidence is clear that such normative behaviours matter, playing a critical antecedent role in a range of educational, health and financial behaviours (see Behavioural Insights Team, 2010). To the extent that poverty triggers a tendency to focus on the proximal social context, as implied by the conceptual model proposed in this report, it will place a premium, in the process of decision-making, on considerations of what family and friends would like one to do. This report returns to the implications of findings regarding parental and community influence when discussing the influence of poverty on the experience of the social world more generally, in Chapter 7.

Another area in need of more research is the link between poverty and risk-taking. Just as this association is not clear, so it is also not certain whether risk-taking should be seen as a desirable or undesirable psychosocial process: it is encouraged in academic and economic domains where one can afford to fail, but discouraged in the domain of health, and in economic decisions for the most financially constrained. Some of the above studies found an inverse correlation between risk-taking and another behavioural mechanism that is more clearly desirable: self-regulation (Auger *et al.*, 2010; Callan *et al.*, 2011). Despite the correlation between self-regulation and decisions that lead to positive long-term outcomes, however, the conceptual framework in Chapter 2 highlights the proximal functions that might be served by so-called failures in self-regulation. Thus, while spending money rather than saving it, or engaging in heavy drinking and unhealthy eating, might have damaging financial and health consequences in the long term, they also offer immediate rewards such as pleasure and social esteem – cherished goods that can be hard to find in a life at the bottom of the socioeconomic spectrum (see Sheehy-Skeffington, in press).

Approach orientation is a psychosocial stance that also appears to be unequivocally good. Certainly, to the extent that poverty entails an attitude of low aspirations and little motivation to succeed, it runs the risk of embedding a psychological mindset that can entrench one's poor socioeconomic position. Yet neglect of goals can be seen as a case of focusing more on the actual than the hypothetical, with both proximal and distal effects. Although keeping hypothetical 'better possible selves' in mind can help to encourage one to strive towards these future selves, confronting the gap between the actual and the ideal self can also be demotivating (Oyserman *et al.*, 2011). In resource-constrained contexts

characterised by environmental instability, it might make more sense to focus on dealing with very real obstacles and threats, than it does to pin one's hopes on aspirations that might turn out to be unrealistic.

6 The influence of poverty on ways of navigating life's challenges

The first two clusters of processes considered concern enduring orientations that one brings with one to various life contexts. The report now turns to sets of psychosocial mechanisms that are not dispositional to the same extent, but arise in response to challenges and social situations that one encounters in daily life. Life in poverty, as in a range of socioeconomic contexts, throws up a range of challenges, from the struggles to establish one's identity in adolescence, through the pressure to perform well academically in order to obtain a stable job, to the stresses of making a relationship work, raising a child and supporting a family. The resources one harnesses in response to these challenges centre on the notion of belief in the self: expressing confidence in one's self-worth in relation to others, one's ability to succeed in tasks, as well as faith that one's actions will have a meaningful impact on future outcomes. Also relevant is what is broadly known as one's coping style: whether one tends to respond to a difficult situation by adjusting the self or the environment, or by denying the existence of the situation altogether. As each of these mechanisms has an established link to positive decision-making in a range of domains, an important task is to understand whether there might be an impact of socioeconomic status (SES) on their functioning.

Measuring up: self-appraisal

A primary consideration in determining how one will navigate life's challenges is what one thinks of oneself in the first place. Self-appraisal includes self-concept – a person's image of him- or herself – and self-esteem – how a person evaluates him- or herself in relation to others. Self-esteem has been heavily studied in the United States, where one might argue that individualistic cultural values have built in a culturally-specific link between one's perceived success in life and one's worth as a person. Recent research reflects this national bias, though some studies also investigate the question of the relationship between SES and self-appraisal in other industrialised countries. Although most studies described below are cross-sectional rather than longitudinal, they tend to include controls for background variables such as age, gender and ethnic group membership, in order to understand the relationship of interest as clearly as possible.

One point of consensus in the literature is that the lower one's income or education level, the lower one's 'subjective social status': a construct that is measured by asking people to place themselves on a ladder representing their society or community, where they are told that those at the top have the best jobs, income and education, and those at the bottom have the worst (Goodman *et al.*, 2001). Researchers of socioeconomic disparities in health developed this measure in order to document the importance, not only of objective conditions such as poverty or unemployment status, but also of how people subjectively construe such conditions. Specifically, they found that it is the influence of SES on one's self-perceived rank in society that contributes to socioeconomic health disparities being so stark (Goodman *et al.*, 2001). One recent study from our review supported this claim, reporting in a large US adult sample that low income and low education are associated with low subjective social status (Seeman *et al.*, 2014).

Such subjective construals in turn matter for deeper evaluations of self-worth. One large Canadian study found that subjective social status was positively correlated with self-esteem in young people, as was parental education, household income and (inversely) whether one was in a school district classified as in poverty or found to be very unequal (Quon and McGrath, 2015). The relationship between SES and self-esteem among adults was also found in two large UK and US studies (Packard *et al.*, 2012; Thompson *et al.*, 2012), while another large study linked SES to perceptions of how well one is doing compared to others in the domains of work, family life and the home.

Among young people, the higher one's family's SES, the higher one's own self-esteem and self-confidence, as assessed in large samples of secondary school students (Damian and Roberts, 2015; Quon and McGrath, 2015). Expectations regarding how one will do in school were also found to be related to SES (Bodovski, 2014), as were whether or not one will proceed to higher education (Sciarra, 2010). One interesting finding, however, is that (especially female) students in high-income private schools actually expressed greater envy of their peers than students in equally selective, low-income public schools

(Lyman and Luthar, 2014), implying that status anxiety is an issue for adolescents across the socioeconomic spectrum.

Poor evaluations of the self are also observed among adults low in income (controlling for age and ethnicity: James and Amato, 2013), and are linked to poor evaluations of what one could achieve, and to poor self-rated health down the line (Tan and Kraus, 2015). The pathways aren't definitive, however, as some boundary conditions point to contexts and resources that might buffer against the negative impact of SES on self-appraisal. One of these might be cultural, as the one study conducted cross-nationally showed that though subjective social status predicted well-being in both the United States and Japan, being unemployed only led to lower subjective social status in the United States (Gnambs *et al.*, 2015). Another boundary condition concerns the belief one has about what social class means for one's competence and potential: one set of studies found that only those who held an essentialist view of social class – in which class identities are based on immutable, biological differences – became more self-conscious the lower they were in SES. Those with malleable ideas about social class did not experience the negative consequences of having a low social class identity, presumably because they did not infer from their current social position any set of fixed qualities or limited possibilities (Tan and Kraus, 2015).

Another route through which one can be protected from the influence of SES on self-evaluation is through the availability of social or spiritual support. One large American study found that for all ethnic groups (and especially African Americans), socioeconomic disparities in self-esteem were attenuated among those who were more religious (Thompson *et al.*, 2012). One set of studies conducted in Italy found that when people were randomly assigned to groups in which they felt relatively low (versus high) in resources, they in fact responded with more positive evaluations of their own group, with whom they express sharing a sense of common fate (Moscatelli *et al.*, 2014). The implication is that perceiving low social status in an intergroup context is not as psychologically painful as perceiving it in an inter-individual context, because one has the group as a resource to maintain positive self-esteem (see Rubin and Hewstone, 1998). One should, of course, add the caveat here that this study randomly assigned participants to *ad hoc* groups of varying status; it remains to be seen whether group membership would fulfil the same buffering function in the case of chronic membership of real stigmatised groups.

Feeling able to perform: self-efficacy

Though self-esteem is an important global construct predictive of well-being and life outcomes, the construct of self-efficacy is more specific, and thus more potent as a precursor to decision-making. Self-efficacy is defined as one's perceived ability to learn new skills and to succeed in the tasks that one sets oneself (Bandura, 2001). It can be measured as a general, competence-based self-appraisal, or in terms of specific domains, such as whether one feels efficacious in doing well at school, or in managing one's health.

The relationship between poverty and self-efficacy is an already-established one, as public health scholars have pointed to self-efficacy, or perceived personal control, as one of the most important psychosocial mediators of the link between SES and health outcomes (Seeman, 2008). The review nevertheless uncovered several recent papers assessing this link at different life stages, as well as those investigating it in specific domains.

The pattern emerging from a number of studies, with large samples across diverse national contexts, is remarkably consistent. Some 13 papers reported that generalised self-efficacy is positively correlated with SES when people are in primary (Hornstra *et al.*, 2013; Hornstra *et al.*, 2015; Wiederkehr *et al.*, 2015b; Vekiri, 2010) and secondary (Arslan, 2013; Falci, 2011; Kriegbaum and Spinath, 2016; Kwon and Wickrama, 2014; Moilanen and Shen, 2014; Tikkanen, 2016; Wiederkehr *et al.*, 2015b) school, and at university (Aguayo *et al.*, 2011; Condon and Holleque, 2013). There were two exceptions: studies involving an Italian medium-sized sample of high school students (Alivernini and Lucidi, 2011), and a British medium-sized sample of high school students (McGeown *et al.*, 2014), in which no link between SES and self-efficacy was found. The one longitudinal study conducted found in a large sample that although one's parents' SES at age 1 did not influence one's self-efficacy at age 13, the latter was predicted by improvements in family SES and affluence during childhood (Mazur *et al.*, 2014). The pattern continues to adulthood, where 11 papers, some including large, representative samples in different countries (including the UK and Japan), reported that SES is positively correlated with self-efficacy (Groffen *et al.*, 2012; Kan *et al.*, 2015; Moilanen *et al.*, 2010; Murray *et al.*, 2012; Packard *et al.*, 2012;

Seeman *et al.*, 2014; Schieman and Narisada, 2014; Ward, 2013; Rea, 2016; Sheehy-Skeffington and Sidanius, 2015; Speer *et al.*, 2013). Only one paper failed to find this relationship (Shobe *et al.*, 2013), though this study measured SES only in terms of financial assets, as opposed to including other components such as education and occupational status.

There is also suggestive evidence that at least part of the relationship between poverty and general self-efficacy is due to the causal impact of the former on the latter. One set of studies, conducted on small to medium-sized US samples, randomly assigned participants to have positive versus negative perceptions of their relative socioeconomic standing in society. Each time, those who were induced to feel low in subjective social status reported diminished self-efficacy and lesser ability to exhibit control over their life outcomes (Sheehy-Skeffington and Sidanius, 2015).

Turning to specific domains, it has been found in a number of studies that perceived competence in academic tasks is lower among students with lower social class backgrounds, as are performance expectations at school (Karaarslan and Sungur, 2011; Kalaycioğlu, 2015; Parr and Bonitz, 2015, Yerdelen-Damar and Pesman, 2013). The pattern holds when efficacy in relation to specific types of academic subject is considered, from maths and science subjects (Garriott *et al.*, 2013; Guttersrud, 2015) to those based in the creative arts (Karwowski, 2011). The only study that found a result contradicting this pattern was conducted with a sample of primarily ethnic minority students at an all-girls Catholic school in the United States (Novakovic and Fouad, 2013), and so is not straightforwardly applicable to the UK context.

Results are less consistent in the domain of health, where efficacy is measured in relation to one's perceived ability to live a healthy lifestyle or to adequately manage a healthcare condition. One large study reported an association between SES and dietary self-efficacy among American teenagers, such that those from wealthier families reported being more able to engage in healthy eating (Fahlman *et al.*, 2010). Six studies reported that adults higher in SES expressed greater health-related efficacy, in the form of perceived ability to engage in adequate physical activity (Lehto *et al.*, 2013; Murray and Rogers, 2012), or to manage chronic conditions such as diabetes and heart disease (Murray *et al.*, 2012; Lyles *et al.*, 2013; Seligman *et al.*, 2010; Vijayaraghavan *et al.*, 2011). In contrast, seven studies found no relationship between SES and health efficacy among young people, whether studied in terms of one's approach to general health behaviours (Abraham *et al.*, 2011; Hall *et al.*, 2016), or to specific cases such as refraining from smoking (Conner *et al.*, 2013; Cremers *et al.*, 2014) and engaging in physical activity (Dzewaltowski *et al.*, 2010).

Considering that health behaviours are more specific and varied than school-related behaviours (where the link with SES is more clear), it seems that SES has its greatest influence on more general and enduring self-appraisals than on perceived efficacy in specific domains. Given the centrality of education to measures of SES, there could also be a role played by genetically inherited components of intellectual ability, both in driving SES and in driving perceived mastery in the academic domain. Overall, the clarity and robustness of the link between generalised self-efficacy and SES could be due, in part, to the influence of intelligence on general confidence, and in part to the fact that, almost by definition, domain-general processes are more psychologically stable than domain-specific ones. Another possibility for reconciling the findings regarding SES and generalised or academic self-efficacy with those regarding health efficacy is that health-related behaviours are more subject to additional environmental constraints unrelated to SES, such as partner support and biological disease risk factors.

This is a question worth resolving, as one point of consensus concerns the importance of self-efficacy for consequential decision-making in the domains of health, education and beyond. Studies included in this review found that the low self-efficacy associated with lower-SES groups was linked to worse academic self-concept and greater perceived ostracism in school (Tikkanen, 2016), and as a result, poorer academic attainment (Wiederkehr *et al.*, 2015b; Yerdelen-Damar and Pesman, 2013). Lower sense of personal control is also linked to greater chances of relapse into smoking after having quit (Businelle *et al.*, 2013), worse health behaviours (Kwon and Wickrama, 2014), and poorer physical (Greene and Murdock, 2013; Kan *et al.*, 2015; Mazur *et al.*, 2014) and mental (Groffen *et al.*, 2012; Kan *et al.*, 2015) health outcomes. Even in the domain of civic participation, low SES is associated with lower perceived efficacy of civic actions, and as a result, lower likelihood of voting (Manganelli *et al.*, 2015).

Sensing that one's actions matter: response efficacy

It is one thing to sense that one can carry out actions that one intends, and quite another to be convinced that one's actions actually matter for life outcomes. Response efficacy refers to the latter of these appraisals: one's judgment of the extent to which external events and personal trajectories are the product of one's behaviour, versus of circumstances beyond one's control. Though some self-report scales combine components of self-efficacy and response efficacy (e.g., Lachman and Weaver, 1998), response efficacy is usually measured with the dedicated locus of control scale (Rotter, 1966), on which the key distinction is whether one sees the source of control of events as primarily coming from within versus outside of the self. Indeed, it is important to separate the two constructs, as one over-arching theory of poverty and decision-making states that the most important environmental cue determining whether one will focus one's energies on short-term versus long-term goals is the perception of how much the ultimate life outcome – mortality – is unaffected by one's actions (Pepper and Nettle, under review). The report thus turns to findings from the limited set of recent studies that have looked at the relationship between poverty or SES and perceived response efficacy.

All studies were cross-sectional, and most were conducted on large samples of adults in diverse national settings. Together, they highlight a consistent pattern of lower SES being associated with a weaker belief that outcomes are primarily the result of personal actions, and a stronger belief that they are dependent on external factors such as other people, or mere chance (Bodovski, 2014; Groffen *et al.*, 2012; Murray and Rodgers, 2012; Petersen and Lindstrom, 2010; Prawitz *et al.*, 2013; Seeman *et al.*, 2014; though see Greene and Murdock, 2013). The pattern is replicated in studies of young people, whether assessed in secondary school (Bodovski, 2014) or in their early 20s (Roncancio *et al.*, 2012, Kiviruusu *et al.*, 2013). The only study that found those low in SES were more likely to have a higher internal locus of control also found that the same group attributed more control to powerful others and to chance than did those high in SES, a somewhat inconsistent pattern (Grotz *et al.*, 2011).

Beyond general appraisals of locus of control, there are also studies of the relationship of SES to ratings of how much autonomy and self-direction one has in specific contexts. One study reported a cross-sectional correlation between income, education and perceived control at work (Seeman *et al.*, 2014), and another found that those with lower SES in high school were less likely to experience autonomy in their jobs 17 years later. As reported in Chapter 5, this latter relationship was primarily driven by those low in SES having lower intrinsic motivation, and thus being less likely to seek out jobs that feature self-direction (Johnson and Mortimer, 2011). Domain-specific correlations between SES and autonomy have also been observed as regards control over one's finances, over the help one can give to others, and even over the development of one's marriage (Seeman *et al.*, 2014). Consistent with evidence from the public health literature, the lower levels of response efficacy reported by those lower in SES are also linked to worse physical health outcomes in later life (Groffen *et al.*, 2012; see also Pepper and Nettle, 2014).

Responding to stress: coping style

The final mechanism that sheds light on how people navigate life's challenges concerns individual reactions to situations of pressure and strain, that is, their coping style in response to stress. The study of coping has played a large role in the development of health psychology, due to the field's discovery that stressful situations can be prevented from having negative physical and mental health consequences if they are responded to with the right mindset. Acknowledging the existence of a threat or stressor, and being active in responding to it, whether through reappraising it, or adjusting oneself or the surrounding situation, are found to be healthy, adaptive forms of coping. Maladaptive coping, on the other hand, is characterised by avoidance or disengagement from the threat (e.g., Billings and Moos, 1981; Endler and Parker, 1990). Related concepts include resilience, a form of hardiness in the face of stress (see e.g., Luthar, 2003), and its converse, a sense of helplessness in response to uncontrollable life events, with its resulting failure to act at all (Maier and Seligman, 1976).

The papers that met the criteria for this review indicated that children who have experienced more economic hardship exhibit lower levels of resilience (Bethell *et al.*, 2014) and less adaptive functioning as they reach primary school years, the latter measured in terms of secure attachment, prosocial behaviour, academic competence and receptive vocabulary (Schofield *et al.*, 2011). In the teenage years, it appears that more active coping over time (and less avoidance coping) is observed among those from higher-SES families (Glasscock *et al.*, 2013; Jaser *et al.*, 2012; Walker *et al.*, 2015), with one longitudinal study finding

that family income played a particularly important role for boys, and family education played the most important role for girls (Glasscock *et al.*, 2013).

The pattern continues through to adulthood, though becomes somewhat less clear-cut. Being low in income has been found to predict less self-reported coping efficacy in young adults (Danvers *et al.*, 2015), greater negative emotions in postpartum young mothers (Businelle *et al.*, 2013), and more self-reported helplessness and hopelessness (Ree *et al.*, 2014). Yet a fairly large study of American adult parent couples found no effect of income or economic strain on active coping that was focused on adjusting one's environment in response to a stressor. The same study reported gender-differentiated effects on active coping in which one adjusts the self in response to stress: for men, more economic strain was related to lower self-adjustment, whereas for women, economic strain was linked to greater self-adjustment (Wadsworth *et al.*, 2013).

Another form of effective coping is seeking help from sources outside of the self. The one recent study that looked at this found no difference in the personal coping strategy of reframing, nor in the external coping strategies of seeking support from spiritual practices and from one's family, depending on the material resources of parents of very young children. This same study did find, however, that parents who had more of their material needs met were more likely to succeed in obtaining support from friends, another externally-focused strategy (Maupin *et al.*, 2010). It might be fruitful to reconcile this with the evidence for the link between poverty and social capital (e.g., Cattell, 2001; Knack, 2002).

What might buffer against the negative influence of poverty on coping strategies and abilities? One strategy that does not seem to differ by SES is known as 'shifting and persisting': reframing an obstacle in positive terms, and sticking with the path towards a desired goal (Chen and Miller, 2012; see also Perry *et al.*, 2012). Two studies in medium-sized samples of Canadian secondary school students found that those low-SES students who engaged in shift and persist strategies had fewer markers of respiratory or cardiovascular inflammation than those who did not (Chen *et al.*, 2011, 2013). The authors argue that teaching this coping strategy to low-income students could help protect them against the physiologically stressful aspects of life at or below the poverty line.

Exploring these and other interventions is critical for protecting those at the bottom of society from experiencing some of the worst characteristics of life in poverty, namely, the stress and pressure it brings (see Haushofer and Fehr, 2014). For as well as showing that SES matters for coping strategies, the above studies also show how important coping is for life outcomes. Downstream consequences of poorer coping in low-income groups included higher stress levels (Glasscock *et al.*, 2013), more signs of inflammation (Chen *et al.*, 2011, 2013), faster heart beat (Danvers *et al.*, 2015), poorer diabetes self-management (Jaser *et al.*, 2012), and thus, unsurprisingly, worse physical health (Danvers *et al.*, 2015; Ree *et al.*, 2014) and quality of life (Jaser *et al.*, 2012, Walker *et al.*, 2015). This may have knock-on effects on loved ones, too, as one study found worse coping among parents was linked to more parental depressive symptoms, more negative mother-child interactions, and, as a result, greater incidence of behavioural and mental health problems in children (Wadsworth *et al.*, 2013).

Consequences for decision-making

The picture that emerges from this review of recent empirical investigations of the link between poverty and ways of navigating life's challenges is, in many ways, a pessimistic one. It implies that the lower one finds oneself on the socioeconomic ladder, the more poorly one evaluates one's self worth and one's ability to behave in ways that might actually matter for one's life outcomes. One is thus more likely to respond to stressors by denying or avoiding the threat encountered, rather than reappraising it to make it more manageable and thus potentially scalable. In summary, low levels of perceived personal effectiveness and avoidance-based coping seem to leave little space for behaving in ways that might lead to long-term improvement in SES. Nevertheless, in line with the conceptual framework guiding this review, it is worth considering the ways in which such response orientations might facilitate decisions that are adaptive in a proximal sense.

Though self-esteem is often taken for granted as a psychological good in American contexts, there is good reason to believe that holding an inflated image of the self is maladaptive not only for social relational purposes, but also as a guide to behaviour. First, research into the psychology of social class suggests that in working-class contexts, expressions of self-praise, rather than being seen as a necessary

part of self-promotion and career success, may in fact be damaging to one's reputation, as they violate cultural expectations regarding interdependence, humility and solidarity (for a review, see Stephens *et al.*, 2014). If this is the case, then low-SES students with more modest self-concepts may flounder in universities and workplaces only to the extent that such spaces are structured in terms of middle-class cultural expectations focused on self-advancement (Stephens *et al.*, 2012). To the extent that experiencing relative deprivation in resources facilitates a greater focus on one's proximal social group, as implied by the conceptual framework and shown by one of the above studies (Moscatelli *et al.*, 2014), adaptation to local norms regarding expressions of self-esteem makes rational sense. Combining modest self-appraisal with limits on self-efficacy and response efficacy might also be helpful for making realistic plans to meet one's goals, as the failure to acknowledge real constraints is known to be damaging both to effectiveness and to well-being (Seeman, 1991).

Focusing further on self-efficacy, research in social psychology indicates that being deprived of a sense of control triggers anxious efforts to regain control (e.g., Pittman and D'Agostino, 1989; Rothbaum *et al.*, 1982). One means of achieving this might be a decision to stay focused on local geographic spaces that seem navigable and manageable – a proximal shift on the spatial dimension of psychological distance, which again achieves important contextual goals – even if it means one misses out on opportunities in other neighbourhoods or workplaces. Regarding response efficacy, if those living in contexts of poverty in fact hold accurate perceptions of the extent to which their life outcomes are primarily under the control of external forces, then it is even adaptive in an evolutionary sense for them to focus on short-term goals, such as gaining status in local hierarchies, rather than long-term goals, such as maintaining physical fitness into old age (Pepper and Nettle, 2014).

Finally, the influence of poverty on coping style may be a product both of adaptive regulation, and of an impairment in psychological resources. Given the evidence from Chapter 4 for the disruptive cognitive impact of poverty, it is understandable why the cognitively demanding coping strategies of self-adjustment and problem-reframing may be too much to ask of a brain dealing with multiple threats of deprivation. Indeed, given that all cognitive work takes more effort in resource-constrained conditions (Mullainathan and Shafir, 2013), a more plausible and sensible use of one's limited efforts might be in blocking out salient threats for the moment, in order to get on with the daily grind of putting food on the table and paying the most pressing bills.

In summary, the evidence under this cluster of psychosocial mechanisms implies that there are comprehensible, if not yet definitive, routes through which low SES might drain a person's capacity to respond to challenges in the most ultimately successful ways. Understanding why such pathways make sense in the context of poverty, and the functionality of the decisions that might ensue, will help in designing interventions that can empower those at the bottom of society in a truly sustainable and effective way. Rather than focusing on improving an individual's sense of self-efficacy or response efficacy, for example, one might focus on objectively increasing the autonomy they have over life choices, such as which school to attend and what hours to work.

7 The influence of poverty on appraisals of the social world

As highlighted throughout this report, the experience of poverty is more than one of individual financial need, and does not occur in a social vacuum. Rather, it is more often a situation of relative need, which is experienced by families and communities collectively, and has interpersonal and intergroup consequences. Similarly, decision-making is the product not only of individual psychological resources, but also of representations and goals that emerge at the collective level, through processes of social identification and the setting of norms, and the collective construction of values regarding how to behave. Whereas Chapter 5 considered how the behaviours of others might unconsciously influence one's decision-making, this chapter focuses on how one consciously thinks about the social world in which one is embedded. This involves, first, a consideration of who one is socially: the groups to which one belongs and the groups from which one is excluded. Next, it involves considering how one interprets the actions of others, and how one predicts they are likely to behave. These factors feed into one's own decisions about how to interact with other people, and about what values one thinks others should share. This chapter considers each of these mechanisms of social appraisal in turn.

Feeling part of the group: perceived inclusion

Perceived social inclusion is a general heading used to denote a subjective sense of belonging to a social group, which varies according to the group considered. To the extent that social exclusion forms part of the definition of poverty (Goulden and D'Arcy, 2014), it is important to consider whether there is, in fact, an association between one's socioeconomic position and one's reported experiences of inclusion and exclusion in daily life. This can be measured by asking people to report the extent to which they feel they belong in a particular context (e.g. school, the workplace) or by assessing people's sense of connectedness to a salient social identity (e.g. 'working class'). Perceived inclusion in a particular social group matters not only because of its established relationship with well-being (e.g., Umberson *et al.*, 1996), but also because it will shape how one treats other members of that group.

The small number of studies looking at this topic tends to corroborate the association between poverty and a subjective sense of social exclusion. At a young age, children from low-income families are slower than those from higher-income families to grow in their sense of belonging to their primary school as they proceed through it (Hornstra *et al.*, 2013). Sense of connection to secondary school is also correlated with socioeconomic status (SES), as two medium-sized studies found that those with better-educated parents reported a stronger feeling of belonging to their school than those with less-educated parents (Boxer *et al.*, 2011; Tikkanen, 2016). Much of this seems to be occurring through relationships with peers: two large studies of Norwegian teenagers reported that the lower the SES of one's family, the worse one's relationship with one's peers (Veland *et al.*, 2015), and the less one sees oneself to be accepted by them (Sletten, 2011). The first of these studies even found a greater likelihood of being bullied, the lower one's SES background (Veland *et al.*, 2015), an observation supplemented by the finding that adolescents in low-income American secondary schools reported experiencing more sexual harassment from peers than did those in middle- or high-income secondary schools (Lyman and Luthar, 2014). One study did not report findings consistent with the above pattern, finding no link between SES and self-reported sense of ostracism in a medium-sized sample of American high school students (Garriott *et al.*, 2013).

Beyond the school years, there is some evidence that the lower one's SES in adulthood, the lower one's sense of inclusion in, or attachment to, one's surrounding community. One study found that lower-income mothers reported having less social support than higher-income mothers (Harknett and Hartnett, 2011), and another found that community volunteers (especially males) who were lower in SES reported feeling a weaker sense of belonging to their community than did those higher in SES (Speer *et al.*, 2013). Finally, in a study with large samples from both the United States and Japan (Gnambs *et al.*, 2015), being unemployed was associated with a decreased sense of having an important role to play in a collective.

The one experimental study that looked at perceived inclusion and SES involved randomly assigning participants to be in a group that had either more or less money than another social group, thus varying both absolute wealth and relative wealth. As reported in Chapter 6, the authors found that those placed into the low-income group had a greater sense of a shared or common fate with their fellow group members, though here the sense of exclusion from other groups was not measured (Moscatelli *et al.*, 2014). Considering this finding alongside the others reported above, it is possible that being low in income leads one to feel less included in society at large and the institutions representing it (such as schools), but perhaps to feel a stronger sense of connection to others also sitting at the bottom of the socioeconomic spectrum.

Inferring about others: social perception

Whereas inclusion touches on the group to which one thinks one belongs, social perception refers to how one interprets the behaviours of others, both within and beyond the group. One important component of this is attribution: the process of making inferences from observing a person's behaviour about what their intentions or traits might be. Social perceptions matter for decision-making, as the ways one interacts with others and engages with social groups and institutions will depend on how one expects members of those groups and institutions to behave. Most of the limited set of recent studies looking at this mechanism centre on the correlation between individual SES and the extent to which one has a general trusting orientation, versus a sense that people in general are selfish and untrustworthy. Another set of studies look at the link between one's own socioeconomic standing and the attributions one makes about how socioeconomic positions are arrived at in the first place – notions that feed into stereotypes about social class. All studies were conducted in adult samples, in either the United States or Europe.

Most of the recent evidence on social trust is obtained from large European samples, and converges on the finding that regardless of age, gender and even political ideology, the lower one's SES, the lesser is one's willingness to report that others are generally trustworthy (Petersen and Lindström, 2010; Trautmann *et al.*, 2013). This is corroborated by two longitudinal studies, one of which found in a UK sample that the SES of one's parents at age 11, along with one's own SES at age 33, predicted one's level of general social trust at age 33. The other reported, in two large US and UK samples, that increases in income over time were associated with increases in social trust over time, controlling for age, gender and life satisfaction (Brandt *et al.*, 2014). Higher social trust might be expected to come with lower Machiavellianism – a personality trait indexing one's judgment that everyone is 'only out for themselves', such that it is fine to exploit them for one's own benefit (Paulhus and Williams, 2002). However, the one study that measured Machiavellianism along with income in a medium-sized US sample found no correlation between the two (Chen and Tang, 2013). Related to the issue of social trust, one study on a medium-sized female American college sample found that low SES was linked with greater detection of hostility in a higher-SES interaction partner (controlling for ethnicity: Kraus *et al.*, 2011). The same paper also reported in a separate study that lower social class rank, whether measured through objective SES or induced through the experimental shifting of subjective perceptions, is associated with more hostile interpretations of a fictitious story vignette, across age and ethnic groups (Kraus *et al.*, 2011).

Moving from general trust to stereotypes about specific social groups, one key dimension of social perceptions is the extent to which one employs individualistic versus structural explanations for the socioeconomic position of others. Individualistic explanations attribute people's socioeconomic outcomes to their personal characteristics, such as intelligence or hard work. Structural explanations, on the other hand, put explanatory weight on wider societal factors in understanding the reasons for differences in socioeconomic outcomes, such as the state of the economy, or discrimination enacted by institutions. It appears that those higher in SES are more likely than those lower in SES to make individualistic attributions in this domain, claiming that people's financial success is mostly down to merit (Tan and Kraus, 2015; Wiederkehr *et al.*, 2015a). One of these studies found that once participants were thinking about possible failure, however, it was those lower in SES who were more likely to endorse individualistic attributions (Wiederkehr *et al.*, 2015a). Though this might be seen as a motivational strategy for low-income students, such endorsement of individualistic beliefs regarding success can exacerbate the negative impact of being low in SES on well-being (Tan and Kraus, 2015). The one large, American study that complicates this picture found that those low in income and education made not only less individualistic attributions for poverty, but also less structural attributions, regardless of gender and ethnic identity (Merolla *et al.*, 2011). The authors put this pattern down to a form of 'dual consciousness', arising from exposure to social conditions that simultaneously foster positive and negative attributions regarding

the behaviour of those who are in poverty; a more simple explanation, however, is that those who are lower in SES are more likely to agree to any kind of explanation presented to them in a questionnaire – a form of acquiescence bias that we already know is inversely correlated with education level (Meisenberg and Williams, 2008).

Though the studies of general social trust fail to distinguish between perceptions of people inside one's social group and perceptions of non-group members, the studies of explanations for SES outcomes imply that those lower in social class make more generous attributions about other people also low in social class, by saying their poor economic position was not arrived at through any fault of their own. This touches on the notion of 'ingroup bias', or the extent to which one has more positive social evaluations of members of one's own social group than of non-members. Three experimental studies addressed this question in the case of people randomly assigned to the temporary experience of low or high SES. In one study, those who were assigned to a group associated with low status traits (as opposed to one associated with high status traits) were more likely to attribute warmth in judgements of their ingroup, but more likely to attribute competence in judgements of the other group (Capozza *et al.*, 2012). There is also the experimental study reported earlier, in which being assigned to a low-income group led to better evaluations of one's own group, perhaps driven by participants' greater sense that they shared a common fate with other low-status group members (Moscatelli *et al.*, 2014). In a similar vein, those randomly assigned to feel relatively deprived have been found to be less judgmental of a fictitious criminal who was described as low in social class, than they were of one high in social class (Sharma *et al.*, 2014). The emerging picture from these studies is that though being low in SES does not prevent one from recognising the greater achievement, and possibly skills, of those higher in SES, it may nevertheless mean that one has more warm feelings and sense of connectedness towards fellow members of one's own social class, than one would if one were higher in SES. The report considers what the implications of this might be for social interactions in the next section.

Interacting with others: interpersonal warmth

Once one has a notion of group membership and a theory of why people behave the way they do, an important decision is how warm or cold to make one's interactions with others. Interpersonal warmth is used here as an umbrella term, to refer to the extent to which one behaves positively, cooperatively and agreeably with others, versus negatively, competitively and aggressively. Interpersonal warmth is underpinned by high levels of empathy and compassion, and the ability to tune into the feelings of others. This matters not only for the success of one's social relationships, but also for how well one can build up social capital and navigate the politics of one's workplace. As revealed by the substantial set of evidence described below, interpersonal warmth also manifests in the domain of parenting, where displaying warmth in one's interactions with children is contrasted with harsh or negative parenting. Early indicators of interpersonal warmth are often measured in the recording of so-called 'internalising' or 'externalising' behavioural problems in young people. Internalising problems centre on social withdrawal, whereas problematic externalising involves engaging in aggressive or intimidating interactions with others.

When it comes to the traits of empathy and compassion for others, the relationship between SES and interpersonal warmth is not fully clear. Medium-to-large-sized studies from three national contexts (Spain, USA and Turkey) report a positive correlation between SES and the tendency to empathise with others (Sánchez-Pérez *et al.*, 2014), as well as to correctly detect their emotional states (Raver *et al.*, 2015). These studies find that lower levels of empathy observed among low-income groups are linked to poorer emotional regulation (Raver *et al.*, 2015), and worse interpersonal skills (Beceren, 2010) as children grow up. There is also a set of research that challenges this pattern, involving observations from small, predominantly ethnic minority, US samples. Two such studies reported greater trait compassion and empathic concern among those lower in social class, taking into account gender, ethnic identity, and other traits such as spirituality and optimism (Stellar *et al.*, 2012). Another study found no SES differences in the tendency to take on positive emotions of an interaction partner (through a process known as 'emotion contagion') in a female student sample, but did find that those lower in SES in the interaction were more likely to track and mimic their partner's level of hostility (Kraus *et al.*, 2011). Moving from empathy to prosocial behaviour, a further four studies observed greater generosity and helping among those low in either subjective social status (again controlling for age, gender and, this time, religiosity) or income (Piff *et al.*, 2010). One large cross-sectional American study also found a pairing of low SES and agreeableness, controlling for age, gender and ethnicity (Chapman *et al.*, 2010). Finally, when subjective social status was experimentally manipulated among young adult participants, there was

again a link observed between low perceived SES and higher interpersonal warmth, this time in the form of generous charitable donations (Piff *et al.*, 2010).

The picture is more consistent once one moves from mild manifestations of low interpersonal warmth (such as lack of compassion and generosity), to more severe manifestations, such as aggression and hostility. As young as preschool age, large studies document that more aggressive behaviour is observed in children from low-income families or those in poverty, compared to those from middle- and high-income families (Browne *et al.*, 2012; Zilanawala and Pilkauskas, 2011; Kalogrides and Ovink, 2013). Early childhood aggression among children from low-income families and neighbourhoods is also associated with greater aggression and behavioural problems exhibited in later years, regardless of gender, age, ethnic identity, and even maternal education (Holmes and Kiernan, 2013; McCoy *et al.*, 2015).

Once children reach primary school, a number of cross-sectional and longitudinal studies from a range of countries find that regardless of age and gender, those from low-SES backgrounds are not only less co-operative and sympathetic, but also more aggressive, than those from higher-SES backgrounds (Bassett *et al.*, 2012; Baydar and Akcinar, 2015; Bodovski and Youn, 2011; Colasante *et al.*, 2015; Razza *et al.*, 2010). Two studies find that lower-income students at this age are more likely to exhibit the aggression-focused externalising behavioural problems (Denham *et al.*, 2013; Jin *et al.*, 2010), though a third, larger study found no such link between SES and behavioural problems in primary school (Véronneau *et al.*, 2015). Changes over time in this age group are harder to predict: one large study found no link between parental occupational status and the development of aggressiveness throughout primary school (Malti *et al.*, 2013), while another found that SES-based differences in aggression at age 3 did not continue through to age 6 (Metcalfe *et al.*, 2013).

At secondary school age, multiple studies again find higher aggressiveness, and lower sociability, among male and female adolescents from lower- (versus higher-) income groups (Conger *et al.*, 2015; Damian and Roberts, 2015; Quon and McGrath, 2015; Uz Bas and Yurdabakan, 2012; though see Santiago *et al.*, 2011). Even when poverty is measured at the neighbourhood level, it is found to predict anti-social behaviour among those in this age group in the UK (Neumann *et al.*, 2010). The other context-level factor that seems to matter is the level of inequality of a secondary school, which was correlated with aggressive behaviours in one large Canadian study (Quon and McGrath, 2015). The above-mentioned evidence concerning perception and spread of hostility in interactions and vignettes (Kraus *et al.*, 2011) implies that being low in SES means exhibiting greater readiness for and attunement to aggression in one's social context in early-to-middle adulthood (see Ellis *et al.*, 2012). A larger longitudinal study found that SES differences in aggression displayed during the teenage years continued through to adulthood (Conger *et al.*, 2015), and another found that they are predictive of later parenting behaviours such as having children young and not being present for their birth (Serbin *et al.*, 2011).

Indeed, once one reaches adulthood, the primary means through which differences in interpersonal warmth versus hostility are studied is through parenting behaviour. Though one study found no difference in mother's self-reported parenting style by SES (Browne *et al.*, 2012), a number of large observational studies, across national contexts, find that the higher the family SES or the mother's education, the more responsive a mother is (Baydar and Akcinar, 2015), and the more warm and the less harsh her parenting style (Browne *et al.*, 2012; Henninger and Gross, 2016; Moilanen *et al.*, 2010; Newland *et al.*, 2013; Odgers *et al.*, 2012; Razza *et al.*, 2010; see also Ellingsen *et al.*, 2014). The four studies that did not find this difference in parenting style by SES were again conducted with smaller, sometimes atypical, samples than those that did find the link (Smith, 2010; Szepeswol *et al.*, 2015; Wadsworth *et al.*, 2013). The relationship persists when one moves from researcher observations of parenting style to reports given by children (Kwon and Wickrama, 2014; Ritchie and Buchanan, 2010). It is also observed with fathers' parenting styles: one large study found that paternal engagement was lower among low-SES American families (Bronte-Tinkew *et al.*, 2010), while two others reported higher levels of father aggression with lower income (Conger *et al.*, 2015; Raver *et al.*, 2015). Lower family income is also linked with less co-operative parenting (Schoppe-Sullivan and Mangelsdorf, 2013) and lower supportiveness between parents (Bronte-Tinkew *et al.*, 2010). Young parents who themselves grew up in low-SES households end up engaging in more negative parenting once they have children (Trentacosta *et al.*, 2010), and exhibiting lower emotional stability and agreeableness (Schofield *et al.*, 2011).

Thus, it seems that the greater one's exposure to poverty or low SES, the more harsh and less responsive the parenting one is likely to receive from both caregivers. Unsurprisingly, this has negative downstream

consequences for strength of parental bonding with children (Veland *et al.*, 2015; though see Novakovic and Fouad, 2013). It also seems to result in poorer child vocabulary and interpersonal behaviours (Baydar and Akcinar, 2015; Razza *et al.*, 2010, 2012). Stricter parental discipline (Hakulinen *et al.*, 2013; Smith, 2010) and colder parenting style (Odgers *et al.*, 2012) observed in low-SES families in early childhood were also linked to increased anti-social behaviour and delinquency in late childhood (Hyde *et al.*, 2010), including in one large UK-based longitudinal study (Odgers *et al.*, 2012). Finally, hostility and anger in adulthood appear to be predicted by SES differences in parenting styles experienced while young, controlling for age and sex (Conger *et al.*, 2015). Yet there are also complications in the relationship between parenting style and later outcomes: though parenting beliefs are commonly transferred from low-SES parents to their children, one study that tested found no evidence of a difference in prevalence of positive versus negative parenting beliefs by SES (as measured by household occupational status: Erzinger and Steiger, 2014). Another, small Israeli study found that it was children of higher-SES parents who reported greater frustration than those of lower-SES parents, because their parents were more critical and demanding of them (Grebelsky-Lichtman, 2014). A final study found that lower-SES children in the US reported feeling less alienation from their parents despite the fact that they received more criticism from them (Lyman and Luthar, 2014).

Few studies shed light on the mediating mechanisms of the link between SES, parenting style and interpersonal aggression. It was found that transitioning into parenthood involves more negative emotions for low-SES (compared to high-SES) mothers (Schoppe-Sullivan and Mangelsdorf, 2013), likely because of financial pressure (Newland *et al.*, 2013), with implications for mental ill-health (Newland *et al.*, 2013). Meanwhile, one study suggested that the link between neighbourhood deprivation and behavioural problems is mediated by poorer student–teacher interactions (McCoy *et al.*, 2015). In terms of compounding factors, once low income is combined with stress and/or family conflict, the use of harsh discipline by parents increases even further (Pereira *et al.*, 2015).

Deciding what matters: values and needs

Having considered social perceptions and behaviour, a final key component of one's orientation to the social world consists of judgements of what is ultimately the right way to behave. Values articulate what is important to a person in their life and motivate the choices that they make. They have been summarised into key dimensions shown to replicate across cultures, one of which taps whether one gives high importance to self-enhancement (through power and achievement) versus to 'transcending' the self, through humanity and benevolence (Schwartz, 1992). Values develop as a joint product of the individual's needs, traits, temperament, culture, socialisation and personal experiences (Bardi and Goodwin, 2011), and they have an overarching effect on perceptions, attitudes and behaviour (Bardi *et al.*, 2008). As such, values often reflect social conventions and are projected into one's social circle as a prescription for how others ought to behave. Studying values in the context of poverty is important not only as a way of addressing the once-influential tradition of study of the so-called 'culture of poverty', in which low-income American families were described as valuing welfare dependency and idleness over hard work and success (Lewis, 1996; Moynihan, 1965). Rather, there is a more recent empirical consensus that personal values matter for important life decisions, such as how much to invest in education, which careers to aspire toward and how to treat other people. As a result, it is worth asking whether recent research documents any associations between SES and values of different kinds.

Some values are unsurprisingly correlated with education, such as whether health should be an important consideration in food choice for children (Zarnowiecki *et al.*, 2012), and the importance of schooling (Boxer *et al.*, 2011). Interestingly, what underlay the observed link between less-educated families and lower valuation of school by adolescents in this study was the fact that school was pitted against the importance of one's peers, which were rated more highly the lower participants' family SES (Boxer *et al.*, 2011; see also Steinmayr *et al.*, 2012). Indeed, one might take a second look at the association between SES and educational and career aspirations, reported in Chapter 5 (see also Beal and Crockett, 2013), by considering the possibility that such aspirations might be down-regulated in favour of social goals. Consistent with this, individual preferences for self-enhancement values (including personal achievement) are found, across cultures, to be negatively associated with preference for self-transcendence values, such as caring for others (see Bardi and Schwartz, 2003).

It is thus worth exploring whether the lower one's social class background, the more one values others over the self, as predicted by the line of research into the psychology of social class (see Piff *et al.*, 2010;

Stephens *et al.*, 2014). Indeed, three studies reviewed for this report found that those lower in SES exhibited greater self-transcendent values, whether measured directly with a values scale (Rea, 2016), through the self-reported importance of benevolence (Trail and Karney, 2012), or through prosocial behaviours in experimental games (Piff *et al.*, 2010). Furthermore, a German study of ratings of linguistic terms found that low-income cultural contexts appear to feature more positive evaluations of concepts such as intimacy, and less positive evaluations of concepts such as achievement, than high-income cultural contexts (Ambrasat *et al.*, 2014).

Though those living in circumstances of, or close to, poverty value personal achievement and influence less than those far from poverty (Rea, 2016), this does not mean that they neglect material goals. In fact, being lower in SES is associated with a greater focus on physical and economic needs, as manifested in endorsement of materialistic values (Petersen and Lindström, 2010) and a focus on security as a factor in job choice (Sortheix *et al.*, 2015). Meanwhile, high-SES counterparts report greater adherence to post-materialistic values such as autonomy and self-expression (Petersen and Lindström, 2010), a finding reminiscent of their greater intrinsic motivations when approaching life goals (see Chapter 5). Complicating this picture, one medium-sized French study found no link between parental education and whether one valued autonomy for one's children (Tazouti and Jarlégan, 2014). Another (medium-sized, UK) study found that inter-generational improvement in SES predicted an increase in materialistic values in the later generation, though here the increase was not in caring for basic material needs, but about projecting status through the acquisition of goods (Carr and Vignoles, 2011).

Another set of values that might play a similar role, for low-income groups, as do power and achievement values for high-income groups, concerns conformity and tradition. One study found that lower-SES parents valued conformity more in their children than did high-SES parents (Tazouti and Jarlégan, 2014). Other studies found that tradition (Trail and Karney, 2012) and conformity (Rea, 2016) were more generally valued among low-, compared to high-SES participants.

No recent studies have looked at the downstream consequences of SES differences in values, with one exception. This found that the greater value placed by those lower in SES on security in career choices resulted in lesser likelihood of unemployment years later (Sortheix *et al.*, 2015). Yet again, what looks like a less ambitious or success-oriented mindset turns out to be a possibly adaptive one for those living a life at risk of poverty.

Consequences for decision-making

The study of poverty and social appraisals is complicated both by the complexity of phenomena, and by the many ways in which the relationships involved might play out. Given the importance of group membership, one perspective that stands out as missing from the above-reviewed research is an explicit consideration of whether or not the social targets of one's attributions, behaviours or values are seen as members of one's social identity group. Indeed, perhaps one way of reconciling the seemingly contradictory findings regarding the relationship between SES and a prosocial orientation is to posit, first, that life on little or no income forces one to depend on immediate others in one's social context. Such 'ingroup members' should be perceived as particularly vital, for one both to support and to be supported by – a form of interdependence that leads to the emergence of a construal of the self as interwoven with and responsible to others (see Stephens *et al.*, 2014; see also Day *et al.*, 1999, for an anthropological account of social closeness enforced by societal marginalisation). It is this notion of interdependence which underpins theories of social class that link growing up in working-class contexts to more collectively-oriented notions of agency, and with it, a greater valuing of doing as others do, and of helping out those in need (Stephens *et al.*, 2011; Piff *et al.*, 2010).

However, a shift towards the proximal on the social dimension of psychological distance (see Chapter 2), along with the importance of group distinctiveness in establishing social identity (see Tajfel and Turner, 1979), should predict that this co-operative, collective self extends no further than the boundaries of one's salient ingroup in a particular context, whether that be one's family, one's gang of friends, or one's entire community and social class. Thus, while lower SES might mean greater willingness to help socially close others at a cost to the self, it could also entail a greater hostility, or mistrust, towards those who are not classified as fitting into one's social group. Such a prediction, along with the link between poverty and perceived exclusion (e.g., Gnambs *et al.*, 2015), seems to make sense of observations that young people from poorer neighbourhoods exhibit greater hostility towards strangers and authorities (e.g., Kalogrides

and Ovink, 2013), yet stronger commitment to peer groups such as gangs (Thornberry, 2003), and greater benevolence to those in need (Piff *et al.*, 2010). Indeed, there is reason to believe that aggressive behaviour exhibited even among friends leads to increases in social status at the local level, particularly for young men (Ellis *et al.*, 2012). Though proximal benefits of such a social stance might include stronger and more supportive relationships among family and friends, possible negative downstream consequences are that those with lower-SES backgrounds are more likely to feel alienated from society, and less likely to make new friends at university, or to form wide social networks in the workplace.

Without further study, it is impossible to know with certainty whether group membership acts as a boundary condition for the observed link between lower social class and more positive social perceptions and behaviours. One association it does not seem well-fit to explain is that between SES background and parenting styles, as children are arguably the most socially close of all, and yet are the target of harsh parenting by parents experiencing lower incomes (e.g. Browne *et al.*, 2012), with knock-on effects for child aggression (Hyde *et al.*, 2010). One possibility is that negative and harsh parenting styles do not, in fact, fit the values dimension that seems most relevant to interpersonal warmth: whether one values others (self-transcendence) over the self (self-enhancement). Rather, they may be a manifestation of SES differences in the other key dimension of values: a greater valuing of conformity and tradition over autonomy and openness to novelty (see Rea, 2016; Tazouti and Jarlégan, 2014). Strict parenting styles and a greater focus on developing 'toughness' might be part of a sociocultural norm adopted by low-SES parents because it is what is needed to survive in the harsh environments characterising many poor and working class contexts (see Ellis *et al.*, 2012; Frankenhuis *et al.*, 2016). Seen through this light, harsh parenting may have the positive proximal consequence of reinforcing adaptive behaviours demanded by the culture of one's social class, even if at the distal cost of leading lower-income children to grow up less likely to be open to new people, to explore new areas or to seek out opportunities for autonomy (see Johnson and Mortimer, 2011).

In reconciling harsh parenting styles with a proposed greater investment in close social relationships, another possibility is that those living on low incomes would like to be more warm and less strict in their parenting, but do not have the psychosocial resources available to do so, given the challenges they face on a daily basis. Given the stress of meeting the growing financial needs of a family in an unstable economic environment (Haushofer and Fehr, 2014), there may be so many other pressing demands on one's mind that the desire to be warm to one's children recedes into the background. If so, then, as in the case of thinking processes (see Chapter 4), the pattern of parenting behaviours exhibited more in low- (than high-) SES families is an understandable case of poorer decision-making; a consequence of a highly constrained and pressured psychological situation (see Sheehy-Skeffington and Haushofer, 2014).

The above speculations are informed by the evidence reviewed and the conceptual framework proposed in this report. Given the complexity of the origins and functioning of social values, attributions and interactions, and the observed consequences of social behaviour throughout the lifespan and across generations, the relationship between SES and one's orientation towards the social world is one in urgent need of empirical illumination.

8 Implications for policies and interventions designed to reduce poverty

The primary purpose of this evidence review was to provide a comprehensive summary of recent empirical research on the influence of poverty on key psychological, social and cultural processes relevant to decision-making. It does so within a broader conceptual framework in which decisions made in contexts of poverty are understood as potentially functional, in that they may serve proximal goals, if often at the cost of distal, long-term outcomes. The report was not targeted towards evaluating behavioural interventions, and thus does not aim to arrive at a definitive set of recommendations for policy-makers and those working to combat poverty. Nevertheless, there are some general implications and suggestions that arise from the evidence review, which are laid out in this chapter for further consideration and assessment.

These implications can be divided into three types: high-level considerations, specific areas for intervention, and topics where future research is needed.

High-level considerations

The conceptual model proposed at the start of this report arose as a way of summarising emerging evidence and theory on decision-making in poverty. It then proved a useful lens through which to understand the findings reviewed, and to consider their consequences for decision-making and life outcomes. Below is the set of key insights developed from this approach, which are worth carrying forward to future efforts to understand decision-making in poverty in industrialised countries.

- **Frame decision-making in poverty as the product of the interaction of individual resources and powerful socioeconomic and cultural contexts.** The potent psychosocial impact of the characteristics of life in poverty, from resource scarcity and environmental instability to low subjective standing and social exclusion, needs to be explicitly recognised in poverty reduction efforts. Because much decision-making in poverty is a product of socioeconomic forces shaping psychological ones, a focus on how decisions are made at the individual or interpersonal level must not preclude interventions targeting the higher levels (such as the neighbourhood, institutions and wider societal structures), which are to a large extent responsible for the production of poverty and inequality in the first place (see Chapter 2; see also Sheehy-Skeffington, 2015).
- **Consider decision-making in poverty as the product of the workings of general psychosocial mechanisms.** By considering the psychosocial mechanisms that underlie decision-making in a range of contexts, we can design interventions that apply more widely than those which focus on decision-making in just one domain (see Chapter 1).
- **Recognise the cognitive constraints of life in poverty, and their potential impact on decision quality.** An important step in considering improvements in decisions and behaviours associated with life in poverty is to recognise how extremely different and challenging such a life is, compared to a life of wealth. In particular, poverty poses a set of psychological constraints that mean that the cognitive (and perhaps relational) resources available as a default in middle- or upper-class contexts are largely absent (see Chapters 4 and 7). Specific interventions (such as those suggested below) should be designed with this ‘psychological situation of poverty’ (Sheehy-Skeffington and Haushofer, 2014) in mind.
- **Consider the existence of cognitive skills that are not only constrained in contexts of poverty, but possibly specialised towards context-specific goals.** Though the psychological constraints of poverty might trigger worse performance on classic academic and decision-making tasks, they might trigger better performance on tasks that are tailored to address the needs made salient by poverty (Sheehy-Skeffington *et al.*, 2016 see Chapter 4), or that draw on cognitive skills harnessed by life in

high-risk, unpredictable environments (Frankenhuis *et al.*, 2016). As research on this possibility is only now being conducted, policy-makers, and indeed anyone without direct experience of poverty, should be open to how society might learn effective new decision-making techniques by considering the adaptive cognitive skill set imbued by an early life of adversity.

- **Reframe decision-making in poverty as a shift in psychological focus, towards the here, the now, the actual and those socially close.** Whereas the impact of poverty on thinking processes is often damaging, the influence of poverty on motivation, behaviour and interpersonal processes is best understood as functional, and as serving important proximal needs (see Chapters 2, 5, 6 and 7). Focusing only on distal consequences of apparently ‘problem behaviours’ associated with poverty limits the view of decision-making in such contexts to being suboptimal or irrational. This representation not only misconstrues the actual functioning of the psychosocial processes involved, but also denies the very real agency and responsibility possessed by those living at the margins of any society.
- **Build into the design of interventions consideration of the proximal functions served by decisions and behaviours observed in low-income contexts.** Using a model that understands decision-making in poverty in terms of proximal functions and distal consequences (see Chapter 2) will aid in the design of interventions that are more sustainable than those that focus on distal consequences alone. A behavioural pattern can be most effectively improved when approached with an understanding of the reason it is engaged in in the first place, and respect for the decision-maker as a purposeful and capable agent. One might work with those living in low-income contexts to replace actions they find detrimental with those they find desirable in the context of distal rewards and proximal constraints. More generally, before targeting change at the individual level, one might consider ways to address the constraint that is leading to a proximal focus in the first place (for examples, see below).

Specific options for intervention

The relationships presented in this report between poverty and the psychosocial mechanisms underpinning decision-making renders a set of candidate intervention areas worthy of consideration for addressing poverty in the UK. These are presented below, one level of intervention at a time, and in the order in which their underpinning insights are introduced in the evidence review.

Individual-level

- **Design and implement training that attempts to directly improve the functioning of psychosocial mechanisms.** For example:
 - Intelligence can be increased through high-quality education, widening access to which should continue to be a government priority (see Chapter 4).
 - Attention and self-regulation might be improved for all socioeconomic groups through learning and practising meditation (Tang *et al.*, 2007; see Chapters 4 and 5).
 - Self-efficacy can be developed through training in job skills and financial literacy, which could be made available to low-income groups via Job Centres (see Chapter 6).
 - Response efficacy could be increased through information, such as through NHS communications regarding the influence of health behaviours on life outcomes (see Chapter 6).
 - The benefits and feasibility of adaptive coping styles might be conveyed through communications and support from local primary care centres (see Chapter 6).
 - Self-esteem and aspirations should be nurtured with sensitivity to the realistic goals, material needs and sociocultural norms of low-income contexts (see Chapters 6 and 7).
 - Warm and responsive parenting skills can be modelled and encouraged for all parents through support groups based at NHS Children’s Centres (see Chapter 7).
- **Design and implement training in strategies or outlooks that help to mitigate the influence of poverty on a psychosocial mechanism or its related decision-making processes.** For example:

- Improving parenting styles (see above), as well as improving child interpersonal skills (see Chapter 7) could buffer the impact of poverty on cognitive functioning (see Chapter 4).
- The shift-and-persist mindset can be taught as a way of dealing with obstacles, thus mitigating their impact on stress and motivation (see Chapter 6).
- The link between poverty and low self-worth could be weakened by encouraging those living in adverse circumstances to think about, and draw on, their existing networks of social support (see Chapter 6).
- Anxiety-reduction techniques such as mindfulness training, if made available at highly subsidised rates through charities, could equip people to help reduce the psychological pressure induced by living in or near poverty (see Chapter 6), with knock-on effects on self-regulation (see Chapter 5).
- Encouraging low-income or unemployed job applicants to think about intrinsic job characteristics, such as autonomy and flexibility, could increase their chances of obtaining work that supports self-efficacy and response efficacy (see Chapter 6).
- The social segregation of those living in low-SES contexts could be reduced by teaching at secondary school the benefits of social networks to career progression, decreasing the likelihood that only those from higher-SES backgrounds will seek to make new connections at college and work (see Chapter 7).
- Diversity in cultural values could be taught as part of secondary school civics education classes. This could prepare students from working class backgrounds or those in poverty to succeed in contexts where self-advancement values predominate, while also educating middle- and high-income children about the importance of self-transcendent values (see Chapter 7).
- Fixed beliefs about the limited academic or career potential of those low in SES should be challenged as part of career advice in secondary school, to be replaced with beliefs regarding the malleability of intelligence and the mobility of social position (cf. Dweck, 2000; Oyserman *et al.*, 2011; see Chapter 7).

Neighbourhood-level

- **Develop neighbourhood policies and initiatives that can improve the psychosocial processes of all inhabitants.** For example:
 - Strengthen social routes to self-efficacy, such as through group-based decision-making structures in residential complexes (Fritsche *et al.*, 2013; see Chapter 6).
 - Reduce the sense of social exclusion (or, conversely, superiority) felt by those at the bottom (or the top, respectively) of a community's socioeconomic hierarchy by combatting income-based segregation and ensuring that low-, middle- and high-income communities have opportunities to interact on a daily basis, such as through mixed residential developments, neighbourhood spaces and public transport (see Chapter 7).
 - Tackle the propagation of aggressive norms in low-income neighbourhoods through enhancing the sense of shared responsibility of the community for the behaviour of its members (Sampson, 2006; see Chapters 5 and 7).
- **Develop neighbourhood policies and initiatives that can mitigate the influence of poverty on a psychosocial mechanism or its related decision-making processes.** For example:
 - Activate the benefits of increased social support for self-appraisal and self-efficacy by creating spaces in low-income communities for residents to congregate (see Chapter 6).
 - Activate the benefits of spiritual support for self-appraisal by supporting faith-based places and groups in low-income communities that cater to a diversity of inhabitants (see Chapter 6).

- Create opportunities for the formation of tightly knit friendship groups not defined in terms of societal deviance, through local youth clubs and extracurricular school activities (Chapter 7).

Institutional

- **Design and reform institutions in order to ensure they work in favour of, rather than against, the psychosocial processes of their users.** For example:
 - Strengthen self-efficacy and response efficacy of all employees by providing opportunities for ongoing skills training and autonomy in job design and work schedule, respectively (see Chapter 5).
 - Enhance academic motivation and sense of belonging by investing in school facilities in low-income areas. Not only the material resources, but also the appearance and cultural norms of a school, matter for student motivation and cohesion (see Chapters 5 and 7).
 - Improve perceived inclusion and cultural fit by making institutions more welcoming to working-class users who are likely to have an interdependent sense of self. Reconsider the implicit cultural norms and values of schools, universities and workplaces, which may privilege the independent forms of agency and interpersonal style that originate almost exclusively from middle- and upper-class contexts (Stephens *et al.*, 2012; see Chapter 7).
- **Ensure institutions help in mitigating, as opposed to exacerbating, the negative influence of poverty on psychosocial mechanisms and decision-making.** For example:
 - Mitigate the psychosocial disruption of life on a low income by providing low-earning workers a sense of job security and long-term commitment, thus reducing uncertainty and stress (see Chapters 2 and 6).
 - Prevent constraints on executive functioning from acting as a barrier to low-income groups' engagement with financial and public institutions, by making communications and application forms from such institutions more clear and succinct (Mullainathan and Shafir, 2013; see Chapter 4).
 - Reduce the impact on occupational performance of distraction and strain caused by family-related financial troubles or parenting demands, by ensuring workplaces provide adequate support for challenges faced outside of work, such as through subsidised childcare and parental leave (see Chapter 4).
 - Enhance the approach orientation and performance of all students or employees by designing school or workplace assessments to focus less on competition, and more on mastery and collaboration. As academic or occupational contexts focused on relative performance can enhance perceived difficulty for low-SES students and employees of competing with others from higher social class backgrounds, such contexts should be replaced by ones that focus on the merits of learning and task completion, or which draw on collaborative norms more intuitive to those growing up in interdependent social class contexts (see Chapters 4, 5 and 7).
 - Reduce perceived exclusion (see Chapter 7) and performance disparities (see Chapter 4) by tackling prejudice and discrimination based on social class, whether in the form of micro-aggressions, ostracism or bullying, or in the use of inferences drawn from interpersonal mannerisms, dress or accent to inform hiring and promotion decisions. Sensitivity to the ongoing reality of socioeconomic disadvantage and class-based prejudice should be at the centre of institutional diversity and anti-discrimination efforts. Such efforts could include the celebration of socioeconomic diversity, and the mandatory training of all of those involved in promotion and hiring decisions in the pervasiveness of social class stereotypes.

Societal

- **Reduce the psychological burden of poverty, by supporting, strengthening and widening the government-provided safety net for those living in or near poverty, or experiencing temporary financial hardship.** As life in poverty brings with it so many characteristics that have a potent psychosocial impact (see Chapters 4, 5, 6 and 7), decision-making in poverty can only be improved when such material strains are at least partially relieved.
- **Minimise the psychological impact of relative socioeconomic standing.** The importance of subjective social standing for cognition (see Chapter 4), motivation (see Chapter 5), self-belief (see Chapter 6) and perceived inclusion (see Chapter 7) implies that societal conditions which increase its salience will have myriad negative psychosocial consequences for those at the bottom. The UK Government should build such psychosocial considerations into its fiscal and regulatory decisions as it considers responses to rising economic inequality.
- **Improve public discourse on the normative dimension of socioeconomic status (SES).** To the extent that the link between SES and self-esteem is culturally-specific (see Gnambs *et al.*, 2015), and the valuing of self-enhancement is class-specific (see Rea, 2016) it might be worth questioning, through media communications and public debate, the ways in which the UK middle class cultural context links sense of personal worth to material resources (see Chapters 6 and 7).
- **Challenge public representations of poverty and decision-making.** Stereotypes about 'suboptimal' or 'wilfully irrational' behaviours associated with low-income groups are rendered problematic by the findings of this report, as they neglect the myriad psychosocial constraints built into the experience of life near or below the poverty line, and do little justice to the purposive and adaptive nature of much decision-making in the face of adversity (see Chapter 2). So that those in the lowest earning groups in society are truly empowered by behaviourally focused anti-poverty interventions, public engagement and education should do justice to the complexity and contextual rationality of decision-making in contexts of poverty.

Areas in need of research

Though the model and evidence presented above holds the potential to radically shift our understanding of poverty and decision-making, it will need to achieve robust empirical support for all of its components in order to be compelling in policy and public circles. This set of systematic reviews pointed to a pressing need to conduct rigorous research on the following topics, in order to strengthen and deepen our understanding of decision-making in contexts of poverty.

- The proposed pathways linking poverty and decision-making, specifically:
 - the relationship between poverty and psychological distance (on temporal, existential, social and spatial dimensions), in order to test whether there is indeed a pattern of constriction of focus to the proximal realm, and thus to guide stronger behaviour change interventions (see Chapter 2); and
 - the relationship between poverty and construal level (abstract versus concrete information-processing), in order to understand the underlying mechanism explaining the proximal focus in decision-making associated with low SES; understanding this relationship will also reveal what kinds of cognitive task might yield enhanced, versus impaired, performance by those low in SES (see Chapters 2 and 4).
- The potential for adaptiveness and specialisation in cognitive processes as a result of life in poverty (see Chapter 2). Aside from its intrinsic scientific interest, understanding this might, firstly, enable the design of school and occupational assessment tasks that do justice to the cognitive abilities of those growing up in low-SES families. Secondly, it opens up the possibility that specific decision-making skills could be learned from those growing up in adverse circumstances that might help all people deal with situations of immediate need or threat.
- The relationship between poverty and specific understudied psychosocial mechanisms, namely:

- susceptibility to heuristics and biases, where there is a paucity of research looking at links with SES (see Chapter 4);
- intrinsic versus extrinsic motivation, where there are conflicting findings regarding links with SES (see Chapter 5);
- risk-taking in specific contexts, where there is need for both empirical (what is the link between SES and risk-taking?) and normative (when is risk-taking desirable?) clarification (see Chapter 5);
- sociocultural norms, where research needs to be conducted in specific contexts relevant to urban and rural poverty in the UK (see Chapter 5);
- health-related self-efficacy, where the more recent research seems not to replicate previously observed links with SES (see Chapter 6);
- interpersonal perceptions and behaviours, where group membership remains to be studied as a boundary condition to observe relationships with SES (see Chapter 7); and
- traditional values, where more evidence is needed to be sure of the robustness of observed links with SES (see Chapter 7).

9 Conclusion

The study of decision-making in contexts of poverty is fraught with difficulty, for both normative and empirical reasons. Normatively, a focus on the individual actions and behaviours of those living in or near poverty risks occluding the role of wider social structural factors in exacerbating and sustaining poverty even while economic growth at the national level continues. Empirically, there is such a wide set of decisions that matter for life outcomes, and such multifaceted ways in which they may be affected by and, in turn, affect poverty, that a comprehensive understanding might be unfeasible to achieve, and impossible to communicate easily.

This overarching evidence review has attempted to tackle these challenges by reporting on social science evidence, and by pushing forward social science theory, pertaining to the question at hand. At the empirical level, by focusing on core psychosocial processes that underpin decision-making in a range of contexts, the project aimed to shed light on the mediating mechanisms of poverty's influence on behaviour. Towards this end, it presented results from multiple systematic reviews of the evidence for the relationship between socioeconomic status (SES) and 15 key psychosocial mechanisms. This revealed findings that both corroborate and challenge previously established knowledge, while also identifying pressing gaps to be filled by future empirical work. Caveats must be placed on the depth and generalisability of the findings, given that much of the evidence was in the form of correlations obtained from cross-sectional samples, the vast majority of which were located outside of the UK. Nevertheless, they point to the potential for interventions that might improve psychosocial functioning, while revealing shortcomings in existing approaches that have not previously been considered.

At the conceptual level, the authors have introduced models from social psychology to help organise and understand patterns of decision-making in poverty, arguing for its reframing in terms of distal consequences and proximal functions. This reveals the extent to which people living in or near poverty behave in rational and purposive ways in response to challenging environmental constraints. It thus allows one to replace the normatively problematic approach of 'blaming the poor' for decisions perceived to be unwise with one that looks squarely at the role of contextual forces in shaping such decisions in understandable ways. The goal is to have provided inspiration and guidance for the design of substantive and sustainable interventions at multiple levels, from the individual up to the societal.

In summary, the authors hope to have demonstrated that rigorous empirical research, when combined with theorising that recognises the power of context and of people's agency in navigating it, can lay the ground for understandings of decision-making in poverty that are faithful less to assumptions and stereotypes, than to the actual experiences of those whose lives it touches.

Glossary

Affect/affective – concerning emotions or feelings

Approach orientation – a person's behavioural orientation towards their goals; the extent to which one is motivated to act in order to achieve one's goals, and focused on the rewards on offer if one accomplishes them

Arousal – raised activation or readiness of a psychological or physiological mechanism

Attribution – an inference made from a person's observed behaviour about their internal traits or intentions

Boundary conditions – limits put on the set of circumstances under which an observed relationship is expected to occur

Cognition – psychological processes involving thought and information-processing

Construal level – the level of abstraction (versus concreteness) with which one processes information at any given time

Coping style – one's general pattern of response to stress; this can include accepting or confronting the stressor, attempting to adapt oneself or the environment to reduce stress, or ignoring/denying the source of stress

Cross-sectional – involving the study of (usually, correlations between) processes and outcomes in one group of people measured at one time-point

Decision-making – the thought process of selecting a choice or action from a set of available options

Executive functions/executive functioning – a set of basic cognitive processes that monitor and control thought and action

Experimental – involving the random assignment of study participants to be exposed to one or other kind of treatment; any subsequent differences in outcome variables between conditions can be assumed to be caused by the experimental treatment

Externalising behaviour – a problematic behavioural pattern involving negative actions towards others, such as disobeying rules, physical aggression or intimidation

Extrinsic motivation – motivation to perform a task because of instrumental benefits that result from it

Future (also temporal) discounting – the extent to which one attributes greater value to a reward the sooner it is received

Heuristics – simple decision rules used for fast decision-making

Ingroup bias – the extent to which one has more positive social evaluations of members of one's own social group than of non-members

Inhibition orientation – the extent to which one has diminished motivation to act in order to achieve one's goals, and/or is focused on threats and barriers standing in the way of them

Inhibitory (also cognitive or executive) control – one of the executive functions, the ability to hold back a tempting ('facilitated' or 'prepotent') but incorrect response

Internal (versus external) locus of control – the extent to which one sees events as under the control of the self (versus environmental factors such as chance or other people's behaviour)

Internalising behaviour – a problematic behavioural pattern involving social withdrawal and negative perceptions of the self, sometimes accompanied by self-punishment of some kind

Interpersonal warmth – the amount of positive affect and co-operative intent conveyed in one's interactions with others

Intrinsic motivation – motivation to perform a task because of rewards one gains out of the performance of the task itself

Longitudinal – involving the study of processes and outcomes in the same group of people measured at more than one time-point, in which associations are assessed between initial levels of a predictor variable and later levels of an outcome variable

Machiavellianism – a personality trait centred on adherence to a world view in which everyone is self-serving, and thus exploitation and manipulation of others for personal ends can be justified

Mediator/mediate – (that which) acts as a pathway, or intermediate mechanism, through which a causal variable influences an outcome variable

Psychological distance – the proximal (versus distal) psychological location of a mental process or representation with reference to the self; consists of temporal (now versus later), existential (actual versus hypothetical), social (socially close versus socially distant) and spatial (here versus far away) dimensions

Psychological situation (of poverty) – the parameters and cues regarding current challenges that are triggered by the experience of life in poverty (e.g. instability, resource scarcity, low social status) and thus make some behavioural responses more facilitated than others

Risk aversion – the tendency to prefer certain rewards over (often larger) rewards of uncertain probability

Risk proneness – the tendency to prefer rewards of uncertain probability over (often smaller) rewards of certain probability

Selective attention – one of the executive functions, the ability to focus on a target stimulus despite the presence of distractor stimuli

Self-concept – a person's image of herself or himself

Self-efficacy – the extent to which one feels able to learn new skills and to perform the actions required by a task

Self-esteem – how a person evaluates herself or himself in relation to others

Self-regulation – the extent to which one acts in line with long-term over short-term goals, involving impulse control and delay of gratification

Social perception – representations of how others in one's environment tend to behave, as well as one's style of attribution of the traits and intentions of others, based on their behaviours

Sociocultural norms – behavioural patterns and expectations originating from members of one's surrounding family, community, colleagues or peers

Subjective social status – personal perception of where one sits on the socioeconomic ladder of one's community or society

Response efficacy – the extent to which one feels the actions one performs will have the desired impact, or will matter for one's life outcomes

Values – desired goals or outcomes, guiding principles

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Appendix

Introduction and objectives of the review

This project aimed to understand what is known about how living in poverty influences individual decision-making within high-income nations, and what influences the capacity, ability and choice of those affected by poverty. The authors looked specifically at the evidence regarding the relationship between socioeconomic status (SES) and the psychological, social and cultural processes that underpin decision-making. In referring to these processes as psychosocial mechanisms, the project investigated the extent to which they mediate the influence of poverty on the kinds of decisions and behaviour that are observed more commonly in low-income than high-income groups. The shift in focus from context-specific decision domains (e.g. education, family and finance) to the general mechanisms that typically inform these decisions (e.g. risk-taking or personal value orientations) enables the design of interventions that can have a more effective and wide-ranging impact. The project was sensitive to the purposive and often adaptive ways in which people respond to the situation of poverty, and to how their decisions can be framed as addressing proximal functions, though often at the cost of distal goals.

In this research, poverty was not only operationalised as a financial situation, but also in terms of its associated experiences, such as being deprived, being low in relative SES, and being marginalised and socially excluded. The set of psychosocial processes considered was also broadly construed, and narrowed down in a systematic manner as the literature search progressed. Some 54 different Boolean searches of the literature were conducted, which ultimately resulted in 15 related systematic reviews, with the same set of filtering criteria being applied to each. A full discussion of the rationale for the project, the context within which the research question was formulated, results of the reviews, and implication lessons for policies and interventions designed to reduce poverty can be found in the main report. This Appendix is intended to provide additional information with regard to the methodological rationale and decisions taken in the systematic review process. The information herein is presented in accordance with the guidelines of the Campbell Collaboration (2001) as far as is practical without producing unnecessary duplication of content in the primary synthesis report.

Methodology

Criteria for relevance

This review concerned itself with how living in poverty influences individual decision-making within high-income nations. In order to include ecologically valid findings, only those studies that were conducted in societies with applicable socioeconomic environments were included. To this end, only OECD nations (OECD, 2016) excluding Chile and Mexico were included, and this decision was taken prior to conducting the search (details of the exclusion Boolean can be found in Table 1). Further criteria for relevance were determined following a pilot search excluding non-OECD nations. The details of the final set of exclusion criteria can be found in Table 2, and the respective screening and filtering of papers, to arrive at the final list for inclusion, can be found in Table 3.

Table 1: Boolean search terms by reported mechanism

High-level process	Mechanism	Associated terms	Boolean commands
Thinking	Selective attention	selective attention/concentration/distractibility	"selective attention" OR distract* OR concentration OR "flanker task"
	Inhibitory control	cognitive control/executive inhibition/response inhibition/interference control	"inhibitory control" OR "cognitive control" OR "executive inhibition" OR "response inhibition" OR "Stroop" OR "interference control"
	Thinking, reasoning and learning	reasoning/System 2/intelligence/long-term memory	reasoning OR "system 2 information processing" OR "System 2" OR "long-term memory" OR intelligence OR IQ
Behaviour	Approach orientation	goal focus/action or approach orientation/regulatory focus	"approach orientation" OR "action orientation" OR "regulatory focus" OR goal
	Self-regulation	time horizon/present bias/future or delayed or temporal discounting/intertemporal choice/impulsivity/willpower	"time horizon" OR "present bias" OR "intertemporal choice" OR "future discounting" OR "temporal discounting" OR "future focus" OR "short-term goal" OR "long-term goal" OR impulsivity OR "impulse control" [OR self-regulation OR "self regulation" OR "will power" OR "willpower" OR will-power
	Risk-taking	risk aversion v. proneness	risk-seeking OR risk-taking OR "risk aversion" OR "risk proneness" OR "risky behavior*" OR gambler*
	Sociocultural norms	street culture/norms/shared behaviour/scripts/normative behaviour/Protestant Work Ethic/interdependent independent/individualistic/collectivistic	"cultural norms" OR "shared behavioural script" OR "shared behavioral script" OR "behavioural script" OR "behavioral script" OR "normative behaviour" OR "normative behavior" OR "culturally normative behaviour" OR "culturally normative behavior" OR ideology OR ethics OR narrative OR "social customs" OR "street culture" OR interdepend* OR independ* OR individualis* OR collectivis*
Navigating challenges	Self-appraisal	social comparison/self-construct/perceived status/selfhood/group status/personal status/relative deprivation/fairness/perceived discrimination/subjective social status/social class/actual-ideal discrepancy/social ladder/prestige	identit* OR self-concept OR selfhood OR "identity models" OR self-enhancement OR "social comparison" OR "social ladder" OR self-construct OR "self construct" OR "personal power" OR "status-seeking" OR "perceived status" OR "group status" OR "personal status" OR "actual-ideal discrepancy" OR "actual-ought discrepancy" OR "actual and ideal discrepancy" OR "relativ* depriv*" OR "perceived discrimination" OR "social representation* of social class" OR status OR "social class" OR "low class" OR "working class"
	Self-efficacy	self-efficacy/mastery/personal control/agency/sense of power/autonomy/self-determination/helplessness	self-efficacy OR "self mastery" OR "personal control" OR "sense of control" OR "sense of power" OR autonom* OR helplessness OR agency OR self-determin*

High-level process	Mechanism	Associated terms	Boolean commands
	Response- efficacy	locus of control/perceived constraints	"locus of control" OR "perceived constraints"
	Coping style	coping/perseverance/resilience/ struggling/thriving/grit	coping OR resilien* OR dependency OR struggl* OR thriv* OR modify* OR grit OR persever*
Appraising the social world	Social perception	social attribution/trust/dangerous or competitive worldview/Machiavellianism	"social perception" OR "fundamental attribution error" OR "correspondence bias" OR "attribution effect" OR attribution OR "social schema" OR worldview OR world-view OR "world view" OR trust OR trusting OR cautio* OR Machiavellian
	Perceived inclusion	inclusion v. exclusion/ostracism/ingroup or self-stereotype	Cyberball OR "sexual attraction" OR "self-stereotyping" OR "social schema" OR ostracism OR "perceived social inclusion" OR "perceived social exclusion"
	Interpersonal warmth	Interpersonal warmth/cohesion/ supportive/empathetic/cooperative/ kind/harsh/sympathetic/agreeable/ hostile/aggressive/competitive	"interpersonal warmth" OR cohesi* OR *supportive OR *empath* OR *cooperat* OR kind* OR harsh OR *sympath* OR *agreeabl* OR hostil*OR aggressi* OR competitive*
	Values and needs	aspirations/importance/valuing self-direction, achievement, self-transcendence or hedonism/Maslow/deficit needs/actualisation	"personal values" OR "motivational values" OR aspiration OR "valuing self-direction" OR "valuing self-transcendence" OR "valuing achievement" OR "valuing hedonism" OR Maslow OR Schwartz OR "deficit needs" OR actualisation OR actualization OR "cultural values" OR "valuing education" OR "goal focus"
Poverty related search terms		poor people/marginalised/political exclusion/ economic exclusion/ poverty/low income/deprivation/ adversity/low socioeconomic status	marginali* OR "poor people" OR "social* exclu*" OR "political* exclu*" OR "economic* exclu*" OR poverty OR "low income" OR depriv* OR adversity OR "socioeconomic status" OR "socio-economic status" OR "low SES" OR "relative deprivation"
Exclusion terms		Non OECD, non-human samples	Africa* OR India* OR "South America*" OR Latin* OR Asia* OR "developing countr*" OR "low income countries" OR "low income nation*" OR Russia* OR China OR Chinese OR rats OR mice

Table 2: Exclusion criteria

Review stage	Criterion type	Criterion
Screening	Project scope	Non-OECD countries, Chile and Mexico
		Non-human samples
	Recency	Research published before 2010
First filter	Project scope	Outside of the scope of mechanisms, e.g. concerns anxiety, depression, mental health or physical health conditions
		Inapplicable within UK context, e.g. medical decisions based on insurance coverage
	Process scope	On decision-making only, with no underlying process
		Biological level, including epigenetics
	Population scope	Concerns a participant group dealing with an issue likely more salient than their experience of poverty, e.g. veterans, refugees or homeless people
	Empirical status	Based only on qualitative methods
Not a piece of original research, e.g. review		
Bounded case study		
Second filter	Scope	Does not involve a selected mechanism
	Empirical status	Does not allow for assessment of relationship between poverty/SES on a mechanism (e.g. low SES only)
	Quality	Lacks full methodology section
Inadequate sample size for generalisation		

Table 3: Screening and filtering process

Initial search	No. of papers added	Screening	No. of papers removed	Filtering phase 1	No. of papers removed	Filtering phase 2	No. of papers removed	Filtering phase 3 (short list to final list post-coding)	No. of papers removed
IBSS	132	Non-valid countries	5,977	Project scope	1,557	Mechanism selection	4,625	Relationships not reported	36
EBSCO	27,263	Non-human samples	1,830	Population scope	1,006	Further screen and filter	5,526	Low SES only	11
SCOPUS	11,175	Studies before 2010	551	Empirical status	2,987	Low SES only	184	Non-OECD	10
Zetoc	350	Other irrelevant material	13,525					Other	101
Web of Science	3,609								
Proquest	10								
Other	10								
Duplicates	-3,741	Duplicates	656						
Total removed	–		22,539		5,550		10,335		158
Total database size	38,808		16,269		10,719		384	Final list	226

Relevance decisions were made at the following levels by a research assistant (RA1) under the oversight of the principal investigator (PI) and the research associate (RA2). Deleted items were also scanned by a different researcher from the person who did the scanning. Deleted papers that appeared potentially relevant were reintroduced to the literature for more thorough screening to reduce the margin of error.

Table 4: Relevance decisions

Review stage	Content assessed	Initial assessor	Second assessor
Initial search to exploratory list	Titles (+ scan of abstracts)	RA1/RA2	RA2/PI
Exploratory list to long list	Titles (+ scan of abstracts)	RA1/RA2	RA2/PI
Long list to short list	Abstracts	RA2	PI
Short list to final list	Full papers	RA2	PI

Search strategy for identification of relevant studies

The following sources of information were searched for relevant content spanning the fields of psychology, economics, sociology, anthropology, political science, education, medicine, and the social sciences more generally. These databases were searched for journal articles, conference proceedings and dissertations published between January 2010 and January 2016. Boolean operators were included for poverty-related search terms 'and' mechanism-related search terms with additional 'not' Boolean to remove non-human and non-OECD samples. There were a total of 54 mechanisms included in the initial search. The list of mechanisms was developed from a combination of psychological theory and consideration of the existing literature, and was intended to cover all plausible high-level processes that might underlie decision-making and behaviour. The full list of mechanisms used in the initial search, the results of which constituted the long list, can be found in Table 5. Detailed Boolean commands for the poverty-related terms, the exclusion search terms and the final set of mechanisms can be found in Table 1. Boolean commands used for the remaining mechanism searches are available on request from the authors.

Table 5: Additional mechanisms in the exploratory list

Process	Mechanism
System 1	Heuristics and biases Construal level
Actual – ideal discrepancy	Cognitive dissonance reduction strategies
Learning	Environmental cues Comprehension Implementation
Executive function	Working memory Planning (neuropsychological) Cognitive flexibility
Emotion	Positive affect Negative affect
Personality	Extraversion–introversion Conscientiousness Openness to experience Neuroticism Honesty–humility
Attitudes	Outlook/mindset Attitude change World view
Behavioural patterns	Effort
Motivation	Outcome expectation
Neurology	Epigenetic effects Brain development
Social perception	Interpersonal attraction
Social skills	Verbal communication Non-verbal communication
Intragroup/Ingroup	Leadership and followership Social influence
Intergroup/Outgroup	Intergroup exposure Intergroup behavioural orientation
Identity	Identity models
Cultural values	Hard-working Segregation v. assimilation Ideology
Social representations	... of education ... of social class ... of society ... of own social group
Cultural beliefs	Religious beliefs

Published articles, conference proceedings, theses and dissertations

- **EBSCO:** Anthropology Plus, British Education Index, Business Source Complete, Child Development and Adolescent Studies, Criminal Justice Abstracts with Full Text, Econ Lit, ERIC (education database), International Political Science Abstracts, MEDLINE, PsycARTICLES, PsycINFO, SocINDEX.
- **IBSS:** all subject disciplines searched including Anthropology, Economics, Political and Sociology.

- **Scopus:** Social Sciences and Humanities database; Scopus only enabled the import of 2,000 references, and therefore the 2,000 most recent references were included for each of the individual searches.

Conference proceedings, theses and dissertations

- **Web of Science:** Science, Social Sciences and Humanities were searched for Title/Topic/Conference.
- **Zetoc:** Conference proceedings with each individual Boolean based on automated AND statements.
- **Proquest:** Masters and PhD dissertations searched.

Grey literature (other)

- **Charity reports:** End Child Poverty, Oxfam, Joseph Rowntree Foundation.
- **Individual contacts:** 152 researchers in the broad area of poverty and decision-making.
- **Research networks:** including SPSSI, APA, LSE, Washington, poverty.ac.uk.
- **Listservs:** h-net, SPSP, EASP, JDMS.
- **Social networking:** ResearchGate topic calls (# of followers): Decision-making (6,024), Poverty (3,744), Cultural Psychology (497), Socioeconomic status (39), Socioeconomic factors (549), Judgement and decision making (493), Decision making under uncertainty (1,109), Socio-cultural (1,575), Social exclusion (4,587).

Description of methods used in primary research

The studies included within the systematic review are quantitative empirical studies. The bulk of the studies conducted used regression or structural equation modelling, as the poverty-related independent variables tended to be on a continuous scale (e.g. distance from poverty line, income, education or occupational status). A large proportion of the studies examined SES indicators as a covariate within more complex models. Where this was the case, the inter-correlation matrices of variables were examined and results were reported with no covariates. Many of the studies, particularly those looking at outcomes for young children in poverty in the US, were secondary analyses conducted on large-scale national datasets.

Criteria for determination of independent findings

While the majority of studies covered single mechanisms of interest, there were a number of studies that included both multiple measures of poverty-related variables and multiple measures of mechanisms. Our coding frame included additional columns to capture designs in which up to two poverty variables had reported relationships with up to two mechanisms. Where the studies were more complex, studies were allocated new rows, though cross-referenced to the original study, so that the source of each observed relationship was clear. Where there was one dataset that was analysed in multiple studies across papers (such as the American Head Start dataset), resampling of the same group of participants was not judged as a significant source of bias, as the sample size in such studies was very large (typically in the thousands). Results and implications were developed based on a narrative review of the aggregate of studies, and statistical meta-analyses were not conducted.

Details of study coding categories

Studies were coded by two researchers and each coded study was reviewed by the PI, in order to ensure the greatest degree of accuracy. The categories that formed the coding frame are outlined in Table 6. The results were captured and analysed in a spreadsheet, and overall trends were presented in narrative form in the synthesis report. Where possible, potential mediators, moderators and covariates were

recorded to identify pathways, boundary conditions and confounds pertaining to the relationships reported.

Table 6: Coding frame

Heading	Coding variable	Description
Paper information	First author	Number subscript if multiple studies per paper, and letter subscript if multiple papers by same author
	Year	Year published
	Title	Full title
	Coder	Initials of person coding
Domain	IV1 – main poverty-related predictor	Operationalisation of the term 'Poverty', e.g. personal income, neighbourhood income, occupational status, (parental) education, housing situation, free school meals, self-identified social class, subjective SES (ladder)
	IV2 – secondary poverty-related predictor	Where applicable; if not state 'None'
	Location of study	Country
	Decision domain	Decision domain relevant to mechanism as it is studied, e.g. education, consumer, healthcare, lifestyle... OR general
Participant characteristics	Total sample size	
	Number in poverty	Or low SES OR mean income/SES if only that is reported
	Mean age	In years
	Standard deviation of age	In years
	Gender	% male: rounded to nearest quartile
	Predominantly ethnic minority?	If yes, state which
Measurement	Method of analysis	Cross-sectional, longitudinal, observational (controlled v. not), quasi-experimental, experimental, other/mixed
	Primary mechanism – DV1	Selected mechanism label, which assumes high scores = better performance/ability/desirable state (except for risk-taking, heuristic/biases); for needs and values, state which
	Operationalisation of primary mechanism	What was measured
	Secondary mechanism – DV2	How operationalised (where applicable – not just more measures of DV1)
	Covariates	Age/gender/ethnicity, etc.

Heading	Coding variable	Description
Results	IV1 to DV1	In final model – higher SES means what for mechanism processing? Higher, Null, or Lower; include marginal (.05<p<.1) and state if so
	IV1 to DV2	Higher, Null, or Lower; include marginal (.05<p<.1) and state if so
	IV2 to DV1	Higher, Null, or Lower; include marginal (.05<p<.1) and state if so
	IV2 to DV2	Higher, Null, or Lower; include marginal (.05<p<.1) and state if so
	Mediator	Could be another mechanism, or a characteristic of life in poverty
	Moderator	Identity (age, gender, ethnicity), situational (e.g. housing status, employment status, presence of children) or individual (e.g. IQ, height) characteristic) variable – list moderator and nature of interaction
	Effect on decision-making	If measured
	Proximal outcome	If measured
	Distal outcome	If measured
		Coder notes
Evaluation	Methods score 1–3	1 = very small sample size (n low SES < 30), 2 = medium sample size (30 < n low SES < 100) + low-mid quality design, 3 = large sample size (n low SES > 100) OR medium sample size + high quality design; X = experimental manipulation of SES
	Relevance score 1–3	NON-EXPTAL: 1 = (Outside UK + Atypical low SES group) OR No decision-relevance, 2 = (Outside UK OR Atypical low SES group) + Some/High decision-relevance, 3 = In UK + Typical low SES group + Some/High decision-relevance. EXPTAL: 1 = low external validity, 2 = medium external validity, 3 = high external validity
	Inferred downstream consequences	Decision-making proximal and distal impact
	Reviewer notes	Including relevance to potential intervention

Treatment of research outside of the scope

Grey literature was combined with a set of theoretical and review papers on the topic of poverty and decision-making more broadly, in order to provide insight into the links between the mechanisms found to be affected by poverty and decisions in key life domains, and also to inform recommendations for intervention. Qualitative research papers were excluded from the primary review as the focus of this review was already very broad, and case studies and monographs, while informative, are not robustly generalisable. Papers using only qualitative methodology were stored in a separate database for reference, with a view to offering richer insight and contextual details relevant to the research question and the impacts of poverty in people's lives.

Timeframe

Table 7: Illustrative timeframe of work undertaken

Timeframe	Action
January–March 2016	Searches for published and unpublished studies
March 2016	Pilot testing of inclusion criteria
March–May 2016	Relevance assessments
May 2016	Pilot testing of study codes and data collection
May–June 2016	Extraction of data from research reports
June 2016	Study evaluation
June–July 2016	Preparation of report

Plans for updating the review

Given the large scope of this review, it will not be practical for the authors to update this review on a regular or ongoing basis. However, the authors intend to publish more detailed reviews concerning some of the mechanisms in academic and open-access journals, and hope that this work forms the basis of future academic enquiry.

Statement concerning conflict of interest

The authors do not observe any conflict of interest on their part, pertaining to the contribution of any researcher to this project.

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