

THE SCIENCE OF SOCIAL REASONING
AND DECISION MAKING:
FOUNDATIONS OF A NEW SOCIAL-LIBERAL THEORY

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SEPTEMBER 2009

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ABSTRACT

This study addresses the dialectic between two kinds of liberal political philosophy which have strongly influenced Western politics, and remain highly relevant to current debates – libertarian theory and social-liberal theory. In particular, it examines how representative theories on both sides are based on claims about our human nature as reasoning, self-determining, individual agents; and claims about how this nature may be fulsomely expressed or inhibited under different kinds of socio-political conditions. I show that broadly naturalistic claims of this sort support normative claims about aspects of our nature we ought to value, and about the kind of political system we ought to prefer. Social-liberals and libertarians disagree about how human capacities for reasoning, self-determining agency will tend to fare within a liberal State-free market political system. This leads them to different conclusions about the role of the State.

The overall approach is to test the relevant claims about our nature and social psychology against current theory and evidence in cognitive neuroscience and epidemiology, and then to interpret the normative implications for each political position. At the heart of the project is a neuroscience-based model of capacities for everyday social reasoning and decision making ('SRD' capacities), which I claim offers a plausible, evidence-based account of universal human capacities which both social-liberals and libertarians claim to value. Once in place, the model is employed for critical analysis of data in epidemiological research into aspects of mental health within Western populations. I conclude that certain socioeconomic circumstances commonly encountered within Western societies causally contribute to detrimental impacts on SRD capacities, in the form of psychiatric disorders or diversion behaviours.

This material is then used to reinterpret the normative claims of libertarians and social-liberals. I argue that the kind of political system recommended by libertarians will tend to generate conditions which have significant detrimental effects on SRD capacities, which they claim to value; and do so to a greater extent than a social-liberal system. This puts libertarians out of step with their own basic values and initial arguments justifying a liberal State. The libertarian system will also tend to create significant social risks and costs, to the point of being self-undermining. A social-liberal system will tend to mitigate these risks and costs.

Thus I argue that, if SRD capacities are regarded as valuable, we have reason to prefer a social-liberal system over a libertarian system. However, in the light of the proposed model, I claim that the ‘standard’ form of contemporary social-liberal politics and programs also has weaknesses. Familiar forms of egalitarian social program partially address some social conditions implicated in undermining SRD capacities, but there are other aspects of the problem which are outrunning the usual methods. The associated risks and liabilities are still cause for prudential concern. A more creative and psychologically astute politics is required. In conclusion I make a number of proposals in that direction, and claim that the project as a whole offers elements of a new social-liberal theory.

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Ian Matthew Fisher and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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ABBREVIATIONS

PF-A model	The proposed ‘Prefrontal-Amygdala’ model of social reasoning
SRD capacities	Human capacities for everyday social reasoning and decision making
PFC	The prefrontal cortex
OFC	The orbitofrontal cortex
M-PFC	The medial prefrontal cortex
VMC	The ventromedial cortex
ACC	The anterior cingulate cortex
NAc	Nucleus accumbens
CN	Central nucleus of the amygdala
BLA	Basolateral nucleus of the amygdala
VTA	Ventral tegmental area of the brainstem
PVN	Paraventricular nucleus of the hypothalamus
HPA axis	The hypothalamic-pituitary-adrenal axis
SNS	Sympathetic nervous system
DA	Dopamine
NA	Noradrenaline
5-HT	Serotonin
GABA	Gamma-aminobutyric acid
ACTH	Adrenocorticotropic hormone
CRF	Corticotrophin releasing factor
CS	Conditioned stimulus
US	Unconditioned stimulus
SCR	Skin conductance response
SES	Socioeconomic status
ToM	Theory of mind
fMRI	Functional magnetic resonance imaging
CBF	Cerebral blood flow
MDD	Major depressive disorder
PTSD	Post-traumatic stress disorder
GHQ	General health questionnaire

ACKNOWLEDGEMENTS

I would like to express my deep gratitude to my wife, Katherine Fisher, who encouraged me to take on a PhD project and generously supported by efforts throughout. Without her love and support, and that of my two children, Phoebe and Sabina, this work would not have been possible. I also extend particular thanks to my colleague and friend, Dr. Jon Opie, who supervised both my M.A. thesis and this project, and has offered diligent, encouraging and rigorous support to my work over the last nine years. Thanks also to Dr. Jennie Louise for her support as secondary supervisor, to all the academic and administration staff of the Philosophy Department, and to my fellow post-graduate students.

THE SCIENCE OF SOCIAL REASONING AND DECISION MAKING: FOUNDATIONS OF A NEW SOCIAL-LIBERAL THEORY

CHAPTER 1. INTRODUCING THE PROJECT

1.1 RATIONALE

In the late 1970s and early 80s, the political and philosophical character of government in a number of Western nations began to undergo a marked change. A post-WWII period dominated by forms of social or welfare liberalism (and Keynesian economics) began to give way to a more recent era in which the politics of a ‘new right’ have come to the fore. This ‘new right’ politics combines elements of a neo-liberalism, reviving *laissez-faire* ideas from the classical liberalism of theorists such as John Locke and Adam Smith; and a neo-conservatism appealing to long-standing values of tradition, authority and social order; and including elements of Christian conservatism. (Heywood 1998). The election of Margaret Thatcher in the U.K in 1979, and of Ronald Reagan in the U.S.A. in 1980 are commonly regarded as a crucial marker of this shift in the political landscape. (Harvey 2005; George 1999) The Republican administration of George W. Bush and the Liberal government of John Howard are more recent exemplars of a ‘new right’ politics in action. (Heywood 1998; McKnight 2005; Manne 2006; Howard 2008) Some would argue that since the collapse of European communism in the 1980s, the key debate for Western democracies is now between this ‘new right’ politics and a social-liberal or social-democratic politics best exemplified by countries such as The Netherlands, Denmark or Sweden. (Panic 2007; Rudd 2006)

It is also sometimes claimed that those inclined to question or criticise aspects of ‘new right’ politics do not pay sufficient attention to its philosophical content. This is to suggest that the actual conduct and policies of ‘new right’ governments may be informed by underlying philosophical beliefs to a greater extent than some critics might recognise; and also that confronting these beliefs themselves, rather than only the overt policies and practices – in other words to tackle ‘new right’ politics *as philosophy* – might be a significant arena for debate in its own right. (McKnight 2005; Hamilton 2002)

An overarching goal of this study is to contribute fresh ideas to political debate by exploring the argument between two kinds of liberal political philosophy which have strongly influenced Western politics; *libertarian* theory, and what I will refer to as *social-liberal* theory (otherwise sometimes referred to as ‘welfare’ or ‘modern’ liberalism [Gaus 1983]). I will sometimes describe these two forms of liberalism as being in a dialectical relationship, in the general sense that they are counter-posed positions taken in a particular arena of philosophical debate, where the two sides agree on some basic suppositions and principles, but draw differing conclusions. Libertarianism will be represented here by two of its most prominent advocates, Robert Nozick (1938-2002) and F.A. Hayek (1899-1992). Harvey (2005) argues that both of these theorists exerted considerable influence on rise of ‘new right’, neo-liberal politics in the 1970s and 80s. Social-liberal theory will be represented by two English philosophers: T.H. Green (1836-1882) and L.T. Hobhouse (1864-1929); and two Americans, John Dewey (1859-1952) and John Rawls (1921-2002). Throughout the study the two libertarians will come in for more detailed attention. The other four will be referred to more selectively and in less depth, as a means to defining some general features of social-liberal political philosophy. Two other canonical works of liberal philosophy will be particular points of reference: the second of *Two Treatises of Civil Government* (1953) by John Locke (1632-1704); and *On Liberty* (1991) by J.S. Mill (1806-1873).

To a first approximation, both libertarians and social-liberals are part of a broader stream of political liberalism because individual *liberty*, or *political freedom* (and I shall consider the two as interchangeable), are central to their respective theories¹. Also, the work of each of the six theorists we will focus on may be regarded as ‘fully fledged’ political philosophy in the Enlightenment tradition insofar as they each (in their own manner) seek to justify certain political claims by theorising from fundamental premises about *human nature*, and what they regard as valuable within the human condition. (Gaus 1983; Klosko 1993)

This last point is particularly significant. The structure of the project as a whole is guided by an initial supposition; that beliefs about human nature commonly play a fundamental role in shaping political philosophies, and that drawing out these ideas from various forms of theory can offer considerable insight into their differences.

The logic of such an approach is well stated by philosopher, Isaiah Berlin:

¹ This is not to suggest, however, that an appeal to individual freedom, in itself, is sufficient to render a theory an instance of liberalism. Marxist or anarchist theories may also claim to provide political prescriptions that would (better) serve the cause of individual freedom. (Gaus 1983, pp.5-6)

The ideas of every philosopher concerned with human affairs in the end rests on his *conception of what man is and can be*. To understand such thinkers, it is more important to grasp this central notion or image, which may be implicit, but determines their picture of the world, than even the most forceful arguments with which they defend their views and refute actual and possible objections. (cited in Gaus 1983, p.vi; italics added)

In other words, Berlin suggests, a ‘central notion or image’ about ‘what man is’, which may in itself be expressed in a quite limited way or simply tacitly assumed, will nevertheless strongly condition and shape the subsequent argument any particular theory is concerned to make; I agree. (See also: Klosko 1993; Dewey 1963, p.103)

I hope to show that, by exposing basic claims about human nature within libertarian and social-liberal theories and testing these against contemporary scientific evidence, we can arrive at new, critical perspectives on the merits of each position, and of the dialectic as a whole, for Western liberal-democratic societies today.

1.2 PROJECT OUTLINE

The essential features of the human condition invoked within libertarian and social-liberal theories are typically *psychological* features. This is to say, the premises about human nature underlying these theories are for the most part claims about our nature *as beings with Minds*. In chapter 2, to follow, I will focus in particular on claims from theorists on both sides asserting a universal human propensity to realise capacities for *reasoning* and *self-determination* (conceived in terms of everyday abilities to evaluate options for action, formulate plans, make decisions, and/or take action in pursuit of valued goals). These capacities are commonly regarded as important and *valuable* elements of individual agency, and the individual’s scope to exercise his or her capacities without undue interference is seen as part of political freedom.

As we will see, both social-liberals and libertarians also make claims – in the vein of social psychology – about how the development or use of these capacities for reasoning and self-determination will tend to fare across populations, under different kinds of socio-political conditions. Claims of this sort are used in support of arguments for preferring one kind of political system over another. It is in this area that the considered intuitions of libertarians and social-liberals lead them to different political conclusions; most particularly concerning the proper role of the liberal State. While both sides endorse a political system combining a liberal State, which defends certain basic rights and freedoms,

and a free market economy, they disagree about the role of the State in that setting. Libertarians argue for a State which protects private property and maintains law and order, but refrains as far as possible from interfering in the workings of the market economy. Social-liberals argue for a State which balances individual freedom in the marketplace with egalitarian values, is willing to intervene in the market, and to use public resources to reduce marked inequalities in people's socioeconomic conditions.

The overall approach taken here is to test naturalistic claims about human nature and social psychology found in libertarian and social-liberal theory against current theory and evidence in cognitive neuroscience and epidemiology; and then to explore the normative implications for each side of the debate.

Chapter 3 will preface this approach; setting out basic elements of a preferred naturalistic approach to investigating and understanding the Mind. Chapter 4 will then develop a model of everyday capacities for competent social reasoning and decision making, based in theory and evidence from cognitive neuroscience. I will claim this model offers a plausible, evidence-based account of universal human capacities which both libertarians and social-liberals claim to value. Chapter 5 will explore further evidence in cognitive neuroscience showing how the capacities for reasoning and decision making described in chapter 4 can be subject to detrimental, limiting effects in certain circumstances. In particular, we will see how chronic exposure to circumstances giving rise to internal states of uncertainty and stress can lead to the onset of psychiatric disorders.

Having concluded those parts of the thesis which deal directly in cognitive neuroscience, I will then proceed to redirect discussion back to the pertinent issues in political philosophy. As a first step in that direction, chapter 6 will look at evidence in epidemiological research, especially in relation to the incidence of the more common psychiatric disorders within populations. The evidence considered here will show that the prevalence of these disorders is greater among people of lower socioeconomic status (as compared to those of higher status). Combining this with the analysis of chapter 5, I will claim that certain social and/or economic conditions commonly encountered in Western societies can and do causally contribute to damaging effects on capacities for reasoning and decision making.

With all of this material in hand, the way will then be open to directly test the social-psychological claims within libertarian and social-liberal theories, and to explore the implications for their respective arguments in relation to the role of the liberal State vis-à-vis the free market. Chapter 7 will focus on the libertarian case. In light of the evidence

considered, I will claim that the kind of political system recommended by libertarians is in reality likely to generate socioeconomic conditions which will have negative impacts on capacities for social reasoning and decision making, within a substantial portion of the client population. However the libertarian State, on principle, is not allowed to intervene in socioeconomic conditions (or inequalities of conditions) in ways which, as we will see, are demonstrably likely to mitigate those damaging effects. On these grounds, I will argue that the libertarians' preferred system is inconsistent with their own basic values, as used in their initial justification of the liberal State. I will also claim that a libertarian system in action will tend to create certain substantial social risks and costs, to the point of being self-undermining. Thus I'll argue that a libertarian consequentialist argument for their preferred system – that it will produce a greater global material wealth – fails to take account of significant countervailing consequences.

In chapter 8 I will consider implication of the analysis for a contemporary social-liberal politics. Here I will conclude that, as compared to the likely effects of a libertarian system, familiar forms of social-liberal policy and public programs in areas such as housing, education, and public health are likely to reduce damaging effects of socioeconomic conditions on capacities for social reasoning and decision making. Thus I will argue that, within the terms of the dialectic, we have reason to prefer a social-liberal system to a libertarian one. However, the analysis exposes some limitations in the familiar social-liberal program as well. Current social and cultural conditions in Western societies undermine our capacities in some ways the familiar, 'top-down' mechanisms of the liberal State are not well-placed to address.

With this critique in view, I will argue that in the end an inadequate, too-simple social psychology underlies political positions on both sides of the libertarian–social-liberal dialectic. Thus the way the dialectic informs contemporary political debate impedes accurate understanding of the social causes of some serious social problems and risks. A new form of social-liberal politics is required, coupled with changes in civil society. In conclusion, I will make a number of proposals in that direction, and claim that the project as a whole offers important elements of a new social-liberal theory.

CHAPTER 2.

LIBERAL POLITICAL PHILOSOPHY AND HUMAN NATURE

2.1 INTRODUCTION

This chapter identifies various claims about human nature within libertarian and social-liberal political theories, and examines how they are employed to support certain normative claims. I will show that libertarians and social-liberals present quite similar views of a universal human propensity to realise and express capacities for everyday reasoning and self-determination, as key elements of individual agency. Both assert that these capacities ought to be regarded as an essential and valuable aspect of our nature.

We will see also that both libertarians and social-liberals prefer a basic political structure combining a liberal State and a free market economy, over other political systems. However, a key point where they disagree, I will say, lies with their different claims about what happens for the realisation or expression of these valuable agential capacities *inside* this preferred system. Differences in this area then lead the two forms of liberal theory towards quite different normative conclusions about the legitimate role of the liberal State.

On the basis of this analysis I will outline the general form of social-liberal critique to be developed over the course of later chapters, and identify the main points of the libertarian position which I will argue against.

2.2 KINDS OF HUMAN NATURE CLAIM

It is important to this study to show that certain claims about psychological features of human nature play a fundamental role in the structure of liberal political philosophies. In order to do this effectively, the following preliminary analysis is offered, suggesting two general kinds of claim about our psychological nature to be found within the selected theories, which I will call *universal* claims and *contingency* claims. It is intended that specification of these kinds of claims will prove useful to the task of identifying salient aspects of the theories in question, and to analysing differences between libertarian and social-liberal theories. The collection of claims of both kinds within any one theory I will say constitute a form of psychological theory.

In all cases, claims about human nature identified within the theories in question will be addressed as *naturalistic* claims, insofar as they purport to describe or explain natural facts about human beings, without appeal to supernatural facts or entities, and do so in ways

which are broadly consistent with the way that comparable claims are made in the natural sciences.

2.2.1 Universal Claims

Within the political psychologies we will consider, claims are made about certain putatively *universal* or pan-human features of our nature; and indeed the very notion of there being a definable human nature implies some such features. In the most general terms, we can say that claims of this type posit a notional set of all human beings, and either assert certain features as common to the individual members of the set¹, or assert that the set as a whole displays a characteristic variation in some feature common to members of the set.

If we ask whether this is a legitimate manoeuvre in principle, it must be recognised that any claim of this sort will typically be pitched at a relatively abstract level, and thus will come with certain limitations and caveats in terms of what the truth of the claim would entail about individual members of the set. For example, it would seem generally valid to claim, ‘that human beings are language users’ on the basis that language use is a feature common to most individuals beyond the age of, say, 1-2 years. However, in interrogating the claim, it would seem to obviously not be true of *every* individual who one might wish for other reasons to include in the set of all human beings: e.g. newborn children.

As Corning discusses, it is conventional in both natural and social science research that generalisations about the traits of any population are statistical in nature, and are not necessarily applicable to individual cases. (1977, pp.25-30) It is clear, then, that such claims make assertions about something which is *normally* or *commonly* the case. So far as human nature claims are concerned, then, these will assert something which normally holds of human beings, *in virtue of* their simply being human, *and* (perhaps) of their growing up within/living in a normal human environment; and which doesn’t depend on being a member of a particular culture. For example: ‘Human beings normally have two arms’ or, ‘Human beings normally can have children’. Claims of this kind I will regard as asserting *innate* human features.

In philosophy, the question of the validity of such claims, and of what counts as ‘normal’, might take one into difficult areas of epistemology, or language analysis. Here a strongly naturalistic stance is adopted, and thus the validity of claims made at such a

¹ Amongst these putative features, of course, one would expect to find some regarded as uniquely human, which act to delimit the set, but not all features common to members of the set would need to be such.

'population' level is seen as properly based in and testable against empirical evidence; and in their ability to generate useful inferences and predictions.

The main point here is that, on these terms, there is no reason in principle why valid naturalistic claims about human beings cannot be made at this universal level, provided certain limits on the extent of the claim are understood. The caveat of *ceteris paribus* ('other things being equal') can be employed to signal a level of abstraction in a claim: 'Other things being equal, human beings are typically language users.'

Equally, I can see no reason why our various liberal theorists could not be mindful of such considerations, at least to the extent of recognising that claims about human nature might be pitched at different levels of abstraction. In any case, as we shall see it is indeed common for theories to claim universal features of human nature in both the senses mooted above; that within the notional set of all human beings:

- There are features common to all (or most) individual members of the set. In other words, these are seen to normally hold (*ceteris paribus*) of any individual
- That the whole set displays a characteristic variation in some feature common to members of the set.

As an example of the first, consider Rawls' claim (his 'Aristotelian Principle') that:

'[O]ther things being equal, human beings enjoy the exercise of their realized capacities (their innate or trained abilities), and this enjoyment increases the more the capacity is realized, or the greater it's complexity.' (1971, p.426) As an example of the second, Hayek claims that: 'The boundless variety of human nature – the wide range of *differences in individual capacities and potentialities* – is one of the most distinctive facts about the human species.'² (1960, p.86-87, italics added)

In relation to the first sub-type, it is worth noting that claims here, which assert a feature to normally hold of all individuals, may by extension offer a conception of what will count as *abnormal* (or pathological) in relation to that feature. Thus, for example, a person's anatomy may be assessed as abnormal to the extent that it departs from the 'template' provided by a well-evidenced understanding of human anatomy in general.

Given the potentially pejorative connotations of terms such as 'abnormal' one might find the prospects of such claims within political philosophy worrying. One does not have to look very far for universal-type claims being used spuriously to label some social grouping as 'outside the boundary'; such as a claim that heterosexuality is 'normal' and

² This second sub-type of claim does not stand on its own insofar as it assumes a set already defined according to some feature common to the individual members.

homosexuality ‘abnormal’. For the moment, let us take on notice the potential for both use and misuse of universal claims in this respect, and reiterate that while universal human nature claims can be made and supported, the scope of such claims and their applicability with reference to individuals is limited. In all cases, they should be carefully defined and defended, and open to revision as the evidence demands. Claims made in either or both of the above ways by our liberal theorists are likely, as one might expect, to be their most fundamental human nature claims³.

2.2.2 Contingency Claims

While pan-human characteristics may be asserted at the abstract, universal level of description, they may also be addressed in terms of how they are (variously) realised or expressed within the *contingent* world of actual life, experience and social interaction. Indeed, it would be more accurate (from a naturalistic stance) to say that all human traits only in fact exist in individual entities, in this material domain. It is *from* that body of fact, so to speak, that any generalisations about the characteristics of groups, populations or human beings in general are derived. (Corning 1977, p.26)

Contingency claims, then, are regarded here as claims about what actually happens, and how (putative) features of human nature are variously realised or expressed for a particular individual, or across individual cases, within the interaction between specific individuals or groups and their specific, real-world circumstances.

Real-world circumstances, of course, may at times include many kinds of factors able to impinge on the progress of a person’s life, including natural events. However, the main interest of political philosophy tends to be on the contingencies arising within explicitly social interactions between individuals, or between individuals and families, institutions, or other forms of ordered group activity.

One well-established method of drawing political conclusions from beliefs or intuitions about human nature is to appeal to a hypothetical social condition commonly referred to as a ‘state of nature’. (Kymlicka 1990) The essence of this method is to postulate a proto-society which has no dominant governing agency or State apparatus, and to ask what – given our nature as human beings – is likely to occur. The 17th Century English philosopher, Thomas Hobbes, asked himself this question and drew the pessimistic conclusion that what would emerge is interminable strife and conflict, as each individual strives to fulfil his needs and desires. From this position, Hobbes argued that an absolute

³ In the traditional parlance of philosophy, their *metaphysical* claims about human nature.

monarchy was justified, in order to maintain a liveable social order. (Klosko 1993) As we will see, the libertarian philosopher, Robert Nozick, also uses a state-of-nature argument to justify a form of State power.

Claims about what happens in a ‘state of nature’ are regarded here as a form of contingency claim. Although the hypothesised state may usually be interpreted as a simplified, artificial ‘world’, designed to meet certain explanatory purposes (Nozick 1975, pp.6-9) or as a theoretical ‘device for teasing out the implications of certain moral premises concerning people’s moral equality’ (Kymlicka 1990, p.60); I would nevertheless regard it as exploring a theorised arena of social interaction, populated with individuals with certain prior proclivities, wherein it is supposed certain things will happen as those proclivities are expressed. And while generally not presented as describing the actual historical emergence of a political system, these theorised worlds must at least convince as a realistic portrayal of how people would think or behave within the hypothesised setting. (Nozick 1975, pp.6-9)

2.2.3 ‘Potential’ and ‘Capacity’

Claims about human psychological nature are sometimes expressed in terms of our having certain *potentials*, or manifesting certain *capacities* (or ‘capabilities’, e.g. Sen 1993). The latter term in particular will be used extensively in later chapters, so it is important to be clear about the way these terms will be employed here.

In relation to any claims about human psychological nature – my own or those of others – the term ‘potential’ will be used here to refer to a trait, skill or form of behaviour which a person normally can *acquire* or come to manifest (in virtue of being human); but which they do not presently have. The allied concept of ‘capacity’ will then refer to certain traits or features which an individual *has* at a particular time, to some degree or other; namely those traits or features concerned with having *an immediate ability to act or behave in certain ways*. For example, as I will treat the matter, as a normal newborn infant I had the potential to acquire the skilful use of spoken and written language. As an adult, I have realised that potential, and now have a capacity to use the English language. I *express* that capacity in acts of speaking and listening, reading and writing. And I still *have* that capacity even when I am doing none of those things, evidenced by the fact that I can ‘switch on’ the capacity whenever an appropriate occasion rises. Capacities thus conceived are resources for certain kinds of action. (Sen 1993)

Universal claims about innate, pan-human features are often best understood as claims about potential. Treating potential and capacity in this way also works well within the

universal /contingency claim distinction. Thus, one might make the universal claim that human beings normally have the potential to acquire language, and nevertheless also make a contingency claim that the particular language capacity a person ends up with will typically depend on specific facts about their individual cultural setting.

Within the selected theories to be explored below, the use of the terms ‘potential’ and ‘capacity’ (or ‘capability’) is often broadly consistent with my intended usage here, but is not always so.

2.3 NATURALISTIC CLAIMS SUPPORTING NORMATIVE CLAIMS

Normative claims for political philosophy are claims about what is to be regarded as good and bad in human life, what is right and wrong in human thought or conduct, or how our social and political institutions ought to be arranged to best foster, protect or allow for what is valuable, and prevent, remedy or deter what is not.

Here I will address the issue of normative claims in a relatively narrow way, identifying firstly a general form of *inferential structure* that is common to the selected liberal theories, as they move from universal claims about human nature to conclusions about a preferred socio-political system and/or the legitimate role of the state. Specifically, I say, this structure turns around two inferential relationships, whereby certain kinds of human nature claims *support* kinds of normative claim or argument. The common structure I intend to reveal within the selected liberal theories is as follows:

1. Firstly, there are universal claims about certain features of human psychological nature (considered either as potential or capacity)
2. Secondly, there are normative claims *about* features asserted in 1; either:
 - That certain features of our nature, and the fulsome realisation or expression of those features in individual persons, ought to be regarded as valuable for some reason. For the moment let us call these ‘value-features’
 - Or that certain other features of our nature ought to be regarded as problematic, insofar as the realisation or expression of those features runs counter to, obstructs, or negates the realisation or expression of valuable features. Let’s call these ‘problem-features’
3. Thirdly, there are naturalistic contingency claims made (in the manner of a critical social psychology, or sociology) about how the realisation or expression of value-features or problem-features will tend to go, under certain kinds of social, economic

or political conditions. Some of these are claims about how value-features are variously *at issue* or *at risk* (or not) according to different kinds of socio-political conditions; some are used to explain patterns of difference in how well people do within liberal, free market societies

4. And finally there are normative political arguments, supported by claims in 3, which say that some particular kind of socio-political order ought to be preferred to others (including a liberal State which conducts itself in certain ways) *because* it will tend to better enable, allow, protect, foster (or what have you) the expression of value-features; and/or better suppress, deter, minimise or counter the expression of problem-features

(Pennock 1977)

I intend to show that libertarian and social-liberal theorists make quite similar claims about human nature and some basic features which ought to be regarded as valuable, although with some significant differences of emphasis. In particular, we shall see here claims about our nature as reasoning, self-determining, individual agents. It is in relation to claims as per point 3, and especially in differing explanations of how people variously tend to fare within a free market system, that the two sides diverge; and these inform different normative conclusions about the role of the State.

This method of analysing, defining, comparing or critiquing different political theories might be regarded as somewhat unconventional to political philosophy at large⁴. Suffice it to say that the relationship between this and other methods is not a question I will explore, except briefly in one respect, outlined in the next section below, which relates particularly to the dialectic between libertarian and social-liberal theories. The intention here is only to apply and defend my approach in relation to the selected theorists, and I will leave it to the reader to consider any wider implications which might follow.

2.4 NEGATIVE AND POSITIVE FREEDOM

A distinction between classical *laissez-faire* liberalism and a social-liberal position has sometimes been made on the grounds that the former seeks to promote negative political freedom, while the latter seeks to promote positive political freedom. (Berlin 1969) In light

⁴ However, there are others who regard beliefs about human nature as fundamental, and analyse theories on that basis. For example, Masters defines political theories according to whether they adopt an essentially ‘pessimistic’ (asocial) or ‘optimistic’ (social) view of human nature. (1977; see also Stevenson 1998; Gaus 1983)

of similarities between classical liberalism and libertarianism, this view might be expected to be relevant here too.

The difference between political values here appeals to a more basic distinction between negative and positive freedom as general conditions of being. In this sense, freedom understood in the negative sense is about an absence of external obstacles or constraints to one's actions. One is free to the extent that one is not prevented from acting in certain ways. Positive freedom, on the other hand, is about having certain 'positive' resources available which make it possible to act in self-determining ways, or to pursue valued goals – in the sense, for example, that having an education enables you to pursue a particular line of work. (Dworkin 1999; Berlin 1969) However, the merits of this distinction have been notably challenged by MacCallum, who argues that conditions of freedom (of agents) always involve a triadic relation, such that freedom is always, '*of something (an agent or agents), from something, to do, not do, become, or not become, something*'. (1967, p.314) In other words, on this interpretation, a condition of freedom will always involve both an agent with certain 'positive' potential or capacity for doing or becoming something, *and* a lack of certain external obstacles; and so the positive/negative distinction breaks down. And furthermore, according to MacCallum, a claim that a condition of freedom ought to obtain will always invoke the several aspects of the triadic relation, even though it may not do so explicitly.

Translated into the arena of political philosophy, the negative/positive distinction may be broadly understood in terms of differing positions about the proper role of the State. A negative conception says that, within a polity which values freedom, the essential role of the State is to use its powers to defend certain 'spaces' of non-interference, wherein individuals can act as they choose. A positive conception says the State ought to act to take actions which enable people at large to have, or have genuine access to, the positive resources required to realise their potential, attain goals, or what have you. (Berlin 1969; Taylor 1979, pp.176-177) The negative conception can be taken to describe a more limited role for the State, allowing people to act as they choose, so long as they don't interfere with others in proscribed ways. The positive conception can be taken to propose relatively uncontroversial State actions, such as a program of universal public education⁵. (Green 1885)

There are differences between the libertarian and social-liberal theorists we will consider below which will resonate with these distinctions; both between negative and

⁵ Advocates of positive freedom have also been criticised on the grounds that, by recognising a difference between the 'empirical self' and the 'true [rational] self' they open the way to justification of coercive attempt by a State to, in effect, force people to be 'truly' free. (Berlin 1969, pp.147-148)

positive freedom as general conditions, and the two as political values. However, I strongly suspect the evidence we shall consider would (if the matter were pursued) favour the MacCallum interpretation of both libertarians and social-liberals. Our two libertarians, as we shall see, do on the face of it argue for rights and freedoms which fit a negative conception, but they also appeal to certain positive capacities of agents to occupy that ‘space’. Our social-liberals argue for positive State programs to enable people to realise their potential, but do not deny the value of certain rights or freedoms of non-interference.

For these and other reasons I believe the negative/positive distinction between political values does not have much to offer the analysis to follow. However, note will be made from time to time of points where these concepts do resonate with the various ideas considered.

2.5 VIEWS OF HUMAN NATURE

In this section we will encounter the basic picture of a universal human nature being offered by our various theorists and see, in broad outline, that these portrayals show a quite high degree of similarity.

2.5.1 The Rational, Self-Determining Agent

I would suggest firstly that all of our theorists believe that intrinsic to human nature is a potential to become, or a capacity to be a *rational, self-determining, individual agent*. Within the selected theories, I suggest, this belief can be found in the form of three kinds of universal claim. Two of these assert certain capacities for everyday *reason* and *self-determination* as a common feature of individuals, in a manner broadly consistent with the following working definitions:

- Reason: an individual capacity to intelligently and/or knowledgably assess one’s available options for future actions, and to evaluate those options in the light of one’s needs, interests, desires and/or prior experience
- Self-determination: an individual capacity to make rational choices, formulate plans and take actions accordingly; and thereby to that extent to endogenously determine one’s course through life

Both of these putative capacities are appropriately understood as forms of internal resource for individual action, and thus as capacities *for agency*. Both, as we shall see, are regarded by all our theorists as value-features.

Allied to claims about reason and self-determination is another form of universal claim, asserting a general form of variability as a property of human beings as a group, which I shall treat as a claim about *individuality*, in the following terms:

- Individuality: a diversity of innate potentials for personal talents or character traits between individuals and across populations (such that the expression of specific talents and traits within a person, other things being equal, renders that person a distinctive individual)

It is important here to recognise that this is primarily a claim about innate *differences* between individuals and across the set of all human beings. We will see that this part of the claim is asserted by all our theorists simply as an empirical fact, and *not* as carrying any normative implications as such. Furthermore, it doesn't say anything as such about individual agency.

However, as expressed above, there is also a derivative aspect of the claim, asserting that (in virtue of our diversity) *each* individual will normally have the proclivity to develop some specific suite of personal talents or traits sufficient to render them a distinctive individual. A particular individual's talents and traits may be regarded (by our theorists) as *taking on* normative value, insofar as they are developed and *used* by that individual in what are regarded as appropriate, self-determining ways.

The justification of a preferred political scheme by our various theorists, in the most basic sense, lies (I say) with their beliefs that our capacities for agency are valuable; and that their preferred scheme will be more conducive than other possible or actual alternatives to the realisation and/or expression of these capacities in individuals and across populations. This is not to claim, however, that all features of our nature a liberal theorist might take to be politically important are contained in these descriptions.

In now examining our various theorists, we shall see how certain universal features of our nature are asserted as value-features, and begin to examine also claims about certain problem-features. Let us consider our two libertarians and Hayek first of all.

2.5.2 The Libertarian Agent

Hayek:⁶

F.A. Hayek is a self-proclaimed advocate of a negative conception of freedom or liberty as discussed above; he says 'our concept of liberty ... describes the absence of a particular obstacle – coercion by other men.' Liberty as a general condition of life within a political

⁶ All quotations in this part are from *The Constitution of Liberty*. (1960)

formation obtains when ‘all is permitted that is not prohibited by general rules’. (p.19) But who, we may ask, is the agent who takes up the opportunities afforded by this ‘absence’, or by this enforcement of certain proscriptive rules?

In relation to reason, firstly, Hayek is generally concerned to argue that human powers of reason are limited, principally to undermine what he sees as ‘rationalistic’ (positive freedom) ideas about the possibility of a wholly *rational* state, ‘managing’ the economy for the general good, and embraced by an increasingly enlightened, rational citizen (p.54). He distinguishes a Cartesian, idealised rationalism from a more contingent, practical reason, born of social evolution and the progress of empirical science. Nevertheless, he says, this should not be taken to imply ‘that reason has no important positive task.’ On the contrary, ‘[r]eason undoubtedly is man’s most precious possession.’ (p.69) On the nature of reason itself, in relation to an argument for the probity of assigning responsibility to individuals, he says that this, ‘presupposes the capacity for rational action … [which is a] capacity in them for learning and foresight, for being guided by a knowledge of the consequences of their action.’ Rationality in this context, he argues, ‘can mean no more than some degree of coherence and consistency in a person’s action, some lasting influence of knowledge or insight which, once acquired, will affect his action at a later date and in different circumstances.’⁷ Here we clearly see those elements of using prior knowledge and experience to ‘look forward’ and assess future options for action. Thus, clearly, some general human proclivity for acquiring and exercising reason figures prominently in Hayek’s construction of his universal agent.

As for self-determination, invocations of capacities for self-made decisions and plans, and actions taken accordingly, figure prominently as value-features in Hayek’s scheme. For example, we can assess the extent of a person’s freedom, Hayek says, in terms of ‘how far in acting he can follow his own plans and intentions, to what extent the pattern of his conduct is of his own design, directed towards ends for which he has been persistently striving’. (p.13) Here we have approving description of systematic, planned pursuit of a valued goal over an extended period of time. Such a description is also close to what Hayek regards as a distinct capacity for ‘inner freedom’ (and different to his conception of negative liberty), which he describes as an ability to formulate actions through ‘considered will … reason or lasting conviction’, as opposed to ‘the influence of temporary emotions, or moral or intellectual weakness.’ Indeed he goes on to say that this, ““inner freedom” and

⁷ And there is a ‘complementarity’ between liberty and responsibility thus underpinned by a capacity for reason; indeed ‘liberty can only apply to those who can be held responsible’. (pp.76-77)

“freedom” as an absence of coercion *will together determine* how much use a person can make of his knowledge of opportunities.’ (p.15, italics added)

On the matter of individuality, as we saw earlier, Hayek makes much of the ‘boundless variety of human nature … [as] one of the most distinctive facts about the human species.’ He asserts that ‘individuals are very different *from the outset*’ and decries the ‘fashion in modern times to minimise the importance of congenital differences between men’. (p.86, italics added) These are claims about innate differences as a property of the set of all human beings. And it is implied elsewhere that the differences Hayek has in view here are largely to do with individual talents and/or personal traits; for example, when he says, ‘[t]here is little a man can do to alter the fact that his special talents are very common or exceedingly rare. A good mind or a fine voice, a beautiful face or a skilful hand, and a ready wit or an attractive personality are in large measure as independent of a person’s efforts as the opportunities or experiences he has had.’ (p.94) Also, it is clear that the fact of innate differences as such, so construed, is not something to which Hayek attaches any particular normative significance *qua* the individual agent. He says explicitly that neither, ‘differences in individual capacities which are inborn …[or] those which are due to the influences of the environment … has anything to do with moral merit.’ (pp.88-89)

However, the talents and traits of particular individuals do take on a particular normative political significance for Hayek insofar as they are *used* by individuals acting in the mode of economic agency, and rewarded by others, within free market systems. Indeed, a major reason for the success of political systems valuing individual freedom, in Hayek’s view, is that they make space for the expression of individual talents and traits in this way. (pp.80-83) We shall consider more evidence of this stance as it figures in Hayek’s political scheme, later in the chapter.

In terms of problem-features (internal obstacles to the exercising of agency) as portrayed by Hayek, there are a number which might be mentioned, but one form in particular stands out, given that it is implied by the concept of coercion itself; which goes to the heart of Hayek’s distinction between freedom and un-freedom. Hayek regards coercion as ‘evil’ (p.21), and defines it as ‘such control of the environment or circumstances of a person by another that, in order to avoid greater evil, he is forced to act not according to a coherent plan of his own but to serve the ends of another.’ (1960, p.20-21) A coerced action, he makes clear, is not one I am directly, physically forced to perform; instead ‘coercion implies … that I still choose but that *my mind is made someone else’s tool*, because the alternatives before me have been so manipulated that the conduct that the coercer wants me

to choose becomes for me the least painful one.' (p.133, italics added) Coercion is typically achieved by 'the threat of force or violence' (p.135), and surely then it is, in part at least, some internal state of anxiety or *fear* about that threat that is supposed to render it effective. The problem-feature as such would seem to be a natural vulnerability to an inhibited or reduced capacity for reason and self-determination, due to fear under conditions of coercion.

Importantly, Hayek makes it clear that these claims are of a universal, abstracted character, 'concerned with coercion that is likely to affect the normal, average person.' (p.138) The archetypal case of un-freedom for Hayek is a condition of slavery, where by virtue of coercive restraints imposed on the slave, the possibility of 'acting according to his own decisions and plans' is not available, and instead he is the oppressed subject of 'the arbitrary will of another'. (1960, p.12)

Nozick:

On the face of it, Robert Nozick's fundamental appeal is to rights as moral claims each individual holds over others, and largely of a negative character, as claims delineating domains of non-interference in the individual's life. However, again I would suggest that the assertion of natural rights is tied to other claims about human nature, and here Nozick's argument in *Anarchy, State and Utopia* (1975) is partially grounded in appeals to Locke; most particularly the second of his *Two Treatises of Civil Government* (1953)⁸. Both Nozick and Locke elucidate the essential value-features of their protagonists within a 'state of nature'; a theorised arena of social interaction, populated with individuals with certain prior proclivities. Despite the simplified treatment of such an arena, however, Nozick makes plain that it's merit as an expository device relies on the realism of its assertions about its individual protagonists; 'the more it picks out basic, important, and *inescapable* features of the human situation ... the better.' (p.7, italics added) Nozick's state of nature begins (p.10) with Locke's first main assertion about the 'estate that all men are naturally in' and that is 'a state of perfect freedom to order their actions, and dispose of their possessions and persons as they think fit ... without ... depending on the will of any other man'. Locke adds that men are born to a 'state of equality' including the 'use of the same faculties'. (L p.118) For Nozick this already offers a view of the individual naturally disposed to be a self-determining, will-exercising chooser and planner of ordered actions towards ends that he or she judges to be 'fit'. He then moves immediately (p.10) to cite

⁸ In this part all quotations from Nozick (1975) are referenced as page numbers (p.x), and from Locke (1953) as (L p.x)

Locke's essential next manoeuvre to move from a state of nature to a normative law of nature, revealed by and accessible to human reason:

The State of Nature has a Law of Nature to govern it, which obliges everyone; And Reason, which is that law, teaches all Mankind who will but consult it, that being all equal and independent, no one ought to harm another in his Life, Health, Liberty or Possessions. (L p.119)

For Locke, then, and derivatively for Nozick, assertions of natural, intrinsic rights are tied to prior assertions about human nature, at least insofar as (it would seem) we have intrinsic rights in virtue of having certain natural features.

Nozick examines this relationship more explicitly, asking ‘in virtue of what characteristics of persons are there moral constraints on how they may treat each other or be treated?’ (pp.48-49) In attempting an answer he recognises firstly the ‘traditional proposals for the important individuating characteristic[s] ...[including]: sentient and self-conscious; rational (capable of using abstract concepts, not tied to responses to immediate stimuli); possessing free will; [and] being a moral agent’. These add up, he suggests to ‘something whose significance is clear: a being able to formulate long-term plans for its life, able to consider and decide on the basis of abstract principles or considerations it formulates to itself and hence not merely the plaything of immediate stimuli’. Further to these proposals he suggests an ‘additional feature’ of the individual, ‘the ability to regulate and guide its life in accordance with some overall conception’ of life and ‘what it is to add up to’. (pp.48-49) These descriptions, I suggest, are broadly consistent with those I offered earlier of capacities for reasoning and self-determination. Again those elements of ‘looking forward’, planning, choice-making etc are present.

Nozick explicitly attaches a value to these capacities as, shall we say, qualifying conditions for the having of his rights, when he says, ‘[i]t would appear that a person’s characteristics, by virtue of which others are constrained in their treatment of him, must themselves be valuable characteristics. How else are we to understand why something so valuable emerges from them?’ (p.48) Furthermore he also attaches normative value to our proclivities for reasoning, decision making and self-determination as natural assets which are commonly employed in the way we *exercise* rights; taking actions to acquire things we want, and so on. In debating (with views of John Rawls) a question of whether ‘natural assets’ are morally arbitrary (perhaps because they’re not earned but just a given fact of being born), he argues that the use of such assets as ‘[r]ationality...[and] the ability to make choices are not morally arbitrary’ precisely because *use* of these abilities typically

enters into our activities to acquire ‘holdings’ (possessions, wealth, etc) which our rights entitle us to hold. In other words, ‘these features [rationality, etc] *have moral significance*... [because] moral facts depend upon or arise from them.’ (pp.216-227, italics added)

In relation to self-determination more particularly, Nozick holds, firstly, to what is a typical libertarian conception of self-ownership; of having an inalienable property right in oneself. (Cohen 1995, Ch.3)⁹ Nozick bases his commitment here on an appeal to the Kantian principle that individuals are ends in themselves and should not be treated as a means; and concludes therefore that ‘individuals are inviolable’. (p.31) What an individual does with self-ownership is, in general terms, to *live out* his or her own choices and plans as action in the world. If someone offered you an ‘experience machine’ enabling you to have the experience (memory?) of doing *x* and *y* without actually doing them, Nozick says we would reject the offer. ‘[W]e want to *do* certain things,’ he says, ‘and not just have the experience of doing them.’ (p.43) And presumably this activity is guided by reason (and reasons), including the formulation of long-term plans.

It is not until late in his argument that Nozick’s view about individuality is made more explicit; where he asserts, ‘the fact that people are different. They differ in temperament, intellectual ability, aspirations, natural bent, spiritual quests and the kinds of life they wish to lead ... in the values they have and [in] different weightings for the values they share.’ (pp.309-310) I would not suggest that this is wholly a claim about innate differences in talents and traits, but some elements of it, especially claims about differences in temperament or ‘natural bent’, clearly bear that reading. This interpretation is supported, and the naturalistic tenor of Nozick’s claims clearly shown, when he later asserts that our ‘qualities’ are primarily the result of the ‘filter process’ of evolution, and speculates in positive terms about the capacity for genetic engineers to run a ‘genetic supermarket’, designing people and *personalities* to meet parents’ ‘individual specifications’. (pp.314-315, italics added) We shall see further evidence of Nozick’s commitment to innate differences in later sections.

What of the normative significance of variability in innate talents and traits? Nozick’s view is again revealed within his discussion of Rawls’s view of differences between individuals ‘natural assets’; understood as differences in ‘natural talents and abilities’. (p.213) After a lengthy discussion, Nozick in the end does not contest the basic proposition

⁹ Hospers defines this as, ‘the doctrine that every person is the owner of his own life, and that no one is the owner of anyone else’s life; and that consequently every human being has the right to act in accordance with his own choices, unless those actions infringe on the equal liberty of other human beings to act in accordance with *their* choices.’ (1974, p.3)

that differences in natural assets across populations is a morally arbitrary fact about the way we are. (p.226) What he does claim is that *individuals* are entitled to whatever natural assets they have, and to ‘what flows from them’, namely any private holdings acquired through the exercising of one’s natural talents or traits. (pp.224-227) In this way the use of natural assets may enter into and becomes part of the exercise of self-determining agency and/or Nozickian rights.

In relation to problem-features as internal obstacles or resource deficits, Nozick like Hayek picks out fear in particular as a form of internal condition that might, in its expression, interfere with people’s proclivities otherwise to go about their business as agents. Fear is presented as something specifically not amenable to rational calculation of probabilities (of some fear-making event actually happening) or compensation (for an inconvenience actually suffered). If some acts, such as assault, were not specifically prohibited, Nozick thinks, an undesirable climate of ‘general fear and apprehension’ would result. (N pp.65-71)

2.5.3 The Social-Liberal Agent

The several themes of our present interest – reason, self-determination and individuality as universal and valuable features of human nature, and other features as problems – are broadly present within the respective works of our selected social-liberal theorists: Green, Hobhouse, Dewey and Rawls; and in J.S. Mill’s *On Liberty* (1991).

Before considering some examples, however, it bears making some preliminary comments about two related themes that are characteristic of a social-liberal position. As we shall see, firstly these writers share a concern with individual human *development* or *growth* within a social environment. Hobhouse, for example, suggested that ‘The foundation of liberty is the idea of *growth*.’ (1911, p.122, italics added) Dewey said ‘that the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-around growth of every member of society.’ (Cited in Gaus 1983, p.40) Amongst some of our theorists this interest can be expressed as a form of moral perfectionism, seeing reason and/or self-determination more in terms of (ideally) a developmental process towards greater degrees of self-realisation and inner harmony.

A focus on development also spurs an interest in questions not only about the innate proclivities of our nature, but about the way an individual’s circumstances at various stages of life might foster or inhibit the ‘translation’ of potential into valuable capacities. A focus on this kind of *interaction* is another common feature of the social-liberal approach.

We will begin by looking at social-liberal claims about capacities for reason and self-determination (or self-realisation). Here we will see that the kinds of basic, universal psychological features invoked by social-liberals are not greatly different to those invoked by Nozick and Hayek.

Reason:

Amongst the selected social-liberals, T.H. Green displays the strongest perfectionist attitude to reason, seeing it as a feature of our intelligence which can lift us above our ‘lower’ animal natures and passions, and provide moral ideas able to act as a lure for progressive self-realisation towards a greater internal harmony. The functioning nature of the faculty itself, however, as Green portrays it, is not radically different to the general capacity I described earlier. He still invokes an ability to use prior knowledge and experience in order to survey and evaluate future options, as a basis for making choices about actions.

In *Prolegomena to Ethics*, Green says the ‘primary expression’ of a ‘self-realising principle’ in us is a ‘capacity, distinctive of the “animal rationale” in all its forms, of conceiving itself in a better state than it is.’ (1906, p.202-203) In another work he says that, ‘[p]ractical reason is the capacity in a man of conceiving the perfection of his nature as an object to be attained by action.’ (1937, p.31) However, this faculty is also seen to develop with experience, so that ‘we only learn to express the idea of self-perfection in [an] abstract form upon the analysis of an experience of self-improvement which we ourselves have gone through’. (1937, p.32)

Hobhouse adopts a similar view, combining elements of reason and self-determination (as I described them) in an idea of progressive self-realisation, and movement towards a harmonising of inner ‘forces’. For example, he proposes a ‘conception of thought as a growth ..., flourishing in the movement of ideas as guided by experience, reflection and feeling’, and that ‘individual well-being has as its foundation the responsible life of the rational creature’. (1911, pp.110-111) Again we see reason portrayed as an ability of reason to ‘look forward’ and identify future goals, but also, with a note of perfectionism, as ‘an impulse towards unity and coherence’. (Cited in Gaus 1983, p.35)

Rawls, in his *Theory of Justice* (1971), adopts a form of ‘state of nature’ approach to justification, by positioning human actors in an ‘original position’ wherein they are to agree (rationally) to principles of social ordering, mindful of their own self-interest in a general way but otherwise ignorant of their individual interests, talents and what have you, and thus of their relative prospects for material success or social status. Within this overall

approach, the actual faculty of reason invoked is clearly consistent with our present basic definition. Rawls says his concept of reason is ‘standard’ in social theory, being that ‘a rational person is thought to have a coherent set of preferences between the options open to him … [and he] ranks these according to how well they further his purposes’. (p.143)

Dewey displays some perfectionist tendencies when he describes reason as a faculty able to bring the competing imperatives of more immediate impulses or desires into some form of coherence; ‘Rationality’ he says, ‘…is the attainment of a working harmony among diverse desires.’ (Cited in Gaus 1983, p.35) However, in *Freedom and Culture* (1963) he also argues for a pluralistic and empirical approach to understanding human development (Ch.1), and for the potential social benefits of promulgating the sceptical, evidence-based, practical reasoning of empirical science. (Ch.6)

Self-determination:

There are other ideas within our social-liberal theories which more specifically fit our current notion of self-determination as, shall we say, a capacity to *apply* forward-looking reason to choice-making, planning and deliberative action. For example, we may consider the idea of formulating and following life-plans, seen as a valuable facet of our psychological potential. Rawls in particular attaches significant merit to the having of a rational life plan. ‘The aim of deliberation’ he says, ‘is to find that plan which best organizes our activities and influences the formation of our subsequent wants so that our aims and interests can be fruitfully combined into one scheme of conduct.’ (1971, p.410-411)

Green’s psychology distinguishes carefully between what he regards as animal or physically derived ‘wants’ or ‘impulses’ – such as hunger, for example – and ‘motives’, which are conceptions of a preferred goal leading to action to attain that goal, after evaluation of different possibilities. He suggests our notion of an ‘instinctive’ action implies this very distinction insofar as ‘[b]y an instinctive action we mean one *not* determined by a conception, on the part of the agent, of any good to be gained or evil to be avoided by the action.’ (1906, p.104) The endogenous forming of *motives*, and acting in accordance with them, represents for Green the exercising of one’s ‘will’, and a basic and vital form of self-determination. He says, if man ‘is not free or self-determined in his motive, he is not free at all.’ (1906, p.108) Green believes that motives ought to operate in concert with well-developed powers of reason, so that, ideally, ‘the objects in which self-satisfaction is habitually sought contribute to the realisation of a true idea of what is best for man’. (1906, p.202-203)

Another aspect of the importance that social-liberals attach to self-determination takes us also to one of the potential problem-features which individuals are seen as liable to; and part of a social-liberal argument against coercion. Again the general theme of development is relevant, in that acts of endogenous choice, planning and action are seen as a means to cultivate one's native potential as capacities for future use. Coerced actions, on the other hand, rather than simply eliciting fear as are seen as likely to produce pathological internal deficits – conceived perhaps as passivity or conformity – which represent a failure to cultivate and exercise one's own powers of reason, and thus a loss of capacity for self-determination. Hobhouse considers the contrast between self-determination and such putatively pathological effects in suggesting that:

[I]t is of course possible to reduce a man to order ... by arbitrary control and harsh punishment ... but regarded as a moral discipline it is a contradiction in terms. It is doing less than nothing for the character of the man himself. It is merely crushing him ... It is also possible ... to teach a man to discipline himself, and this is to foster the development of will, of personality, or self-control, or whatever we please to call that central harmonizing power which makes us capable of directing our own lives. (1911, p.122-123)

In this respect, social-liberals pick up on a strong theme from J.S. Mill's *On Liberty* (1991). Mill argues that coercion, or mere unthinking conformity with custom, will both tend to compromise a range of valuable psychological 'faculties'. '[P]erception, judgement, discriminative feeling, mental activity, and even moral preference' he says are developed by being 'exercised ... in making a choice'. (p.116). "He who chooses his plan [of life] for himself, employs all his faculties. He must use observation to see, reason and judgement to foresee, ... discrimination to decide, and when he has decided, firmness and self-control to hold to his deliberate decision." (p.117) If on the other hand a person's opinions (and actions based on them) passively conform to custom, then, according to Mill, 'is so much done towards rendering his feelings and character inert and torpid, instead of active and energetic.' (p.117) (Hobhouse says something very similar; 'To find vent for the capacities of feeling, of emotion, of thought, of action, is to find oneself. ... The self so found has at the pivot of its life the power of control. ... But the essential of control is that it should be self-control.' [1911, p.111])

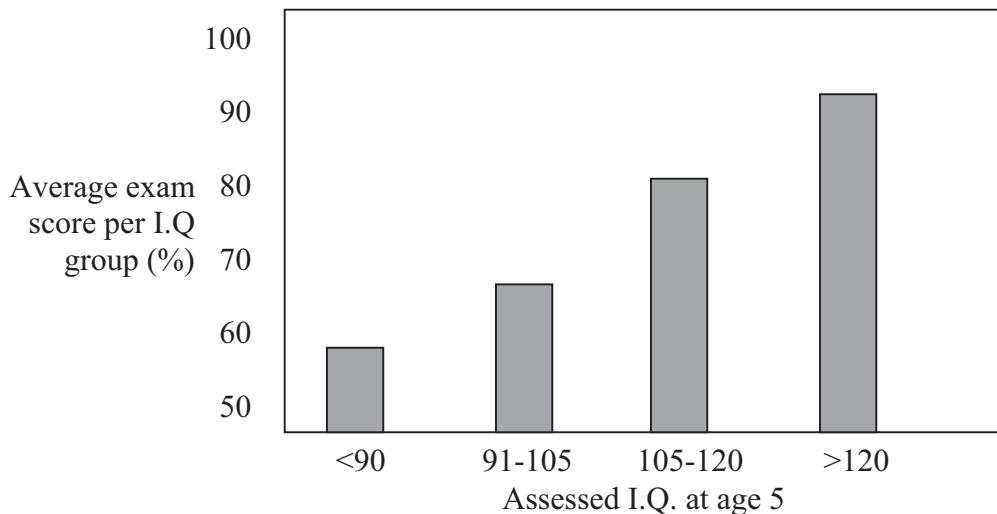
Gaus says that, 'the claim that coercion is a dangerous drug is central to nearly all later modern [my 'social'] liberal defences of liberty.' (1983, p.175)

Individuality:

It is broadly characteristic of all of our selected social-liberalists to accept that individuals considered collectively are innately disposed to realise a variety of talents or character traits. Before we proceed to consider some examples, however, it will be useful to explore in more general terms the matter of *differences* between individuals, and some ways in which they may be explained. This will later become an important lever to expose a key point of divergence between the political arguments of our social-liberalists and the two libertarians.

Let us say, to begin with that, in seeking to compare two unrelated adult individuals who have grown up in broadly similar social conditions, we might identify some differences which *prima facie* appear likely to be mainly a product of prior differences in genetic make-up – their respective height, for example, or skin colour. Other differences would suggest themselves as likely products of the two people's lived experience – she can type 100 words per minute, he cannot. So then, in seeking to better understand or explain some *pattern* of differences across a population, one might look to prior innate differences as the main causal factor, or to differences in life circumstances, or some mixture of both.

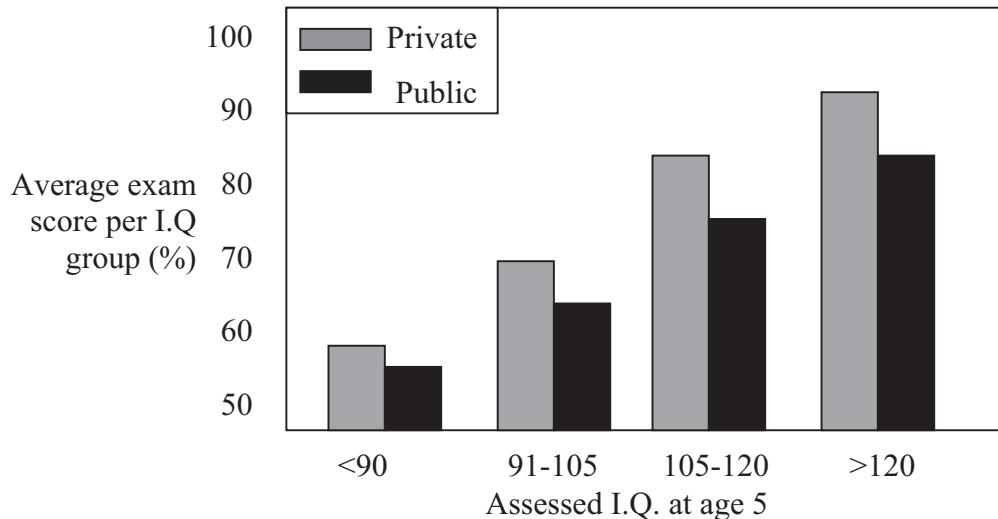
With these thoughts in mind, I wish to draw a distinction between what I will call a *social selection* (or ‘strong nativist’) and an *interactionist* (or ‘weak nativist’) approach to *explaining* a pattern of differences in some dimension of personhood within a population. The distinction can best be made with an example. Let us say that we have 100 senior students who have achieved a variety of scores on their final maths exam, and we want to try to explain this pattern of difference. Suppose also that we had measured these students’ I.Q. when they first entered primary school; and (for the sake of the argument) we regard these differences in I.Q. as largely innate. Perhaps then we hypothesise that prior differences in I.Q. might be relevant to understanding the later exam results. So we group the students by I.Q. measured at age 5 exam results, assess the average exam performance per group, chart the two factors on a graph, and get a set of results as shown in Figure 2.1, below.

Figure 2.1.

In general, what one would say about such a result is that, on the face of it, there appears to be a very strong association between I.Q. and exam results. Now, from such a position, one could allow that ad hoc life circumstances might influence an individual's result in ways that don't fit this association. For example: 'Alex's I.Q. is 130, and he only scored 50%, but we know he missed 6 months school this year helping out at his parent's business.' However, let us say that, apart from such ad hoc differences, we believe students' circumstances have not varied in any larger, patterned way likely to influence math's performance – on the whole they've been raised in good homes, taught by competent teachers, used the same curriculum, made an effort, etc. If this assumption stands, then, in the above association, we would have some evidence that prior variation in I.Q. has in fact been a main *cause* of subsequent variation in maths performance; or that the variation in performance can be substantially *explained* by prior innate differences in I.Q. This is a *social selection* explanation. The term 'selection' here is intended to imply that the common conditions of being taught and then examined in maths operated over the group and, in effect, selected individuals for some level of success according to the prior variation in I.Q.¹⁰

Now let's say that out of our 100 students, half attend a public school in a poor area and half a wealthy private school, and when we plot the results for each group separately, in the same way as above, we get a result as shown in Figure 2.2.

¹⁰ In the same way, if I subjected 100 people to a set of conditions such as, 'Walking through a doorway 5 feet high without bending' it would *select* out all those 5 feet tall or under, from those over 5 feet tall.

Figure 2.2.

Now, it seems, we have a different picture, suggesting that (at least) two patterns of difference within the total group have influenced the overall distribution of results. Prior differences in I.Q. still appear to be a major explanatory factor, but so also does the fact of having attended one or other school. Explaining the total distribution of results in this way I describe as an interactionist explanation. And in this case we have an interaction between prior innate variability and a socially determined pattern of difference in circumstances which, by hypothesis, have both causally influenced the overall pattern of results.

We may note that in both these examples a prior pattern of innate differences is accepted, and that both forms of explanation allow the influence of other socially mediated, environmental differences. In the first case, however, there was nothing patterned or *systematic* recognised in the socially-mediated differences, they were ad hoc – it just happened that Alex missed 6 months school, but that didn't affect the overall pattern of results. Note also that in the latter example, one might still appeal to differences in I.Q. as a main cause of differences in exam performance between any two individuals *within* one or other group. It is when differences between the two groups as such are measured and compared that one is led to consider the systemic effects of another causal factor in explaining the overall results.

Making a distinction between these two ways of putatively explaining patterns of difference within populations is not uncommon in research areas such as epidemiology (E.g. Marmot 2004, Ch. 2), and it is a matter we will consider in more detail in chapter 5¹¹.

¹¹ We have bypassed other possible form of explanation of variation in populations. For example, one might argue as Plato did that individuals are innately disposed to fall into one of several types of person, resulting in the ‘natural’ formation of social classes (Russell 1948, bk.1, Ch.14). This is not a thesis any of our liberal theorists would accept.

Without yet getting into any particular explanations offered by our selected theorists, we can now return to our social-liberals, and see that, as indicated earlier, all adopt generally interactionist approach to the psychology of individual development, and differences between individuals. While accepting some innate variability in personal talents and/or character traits, they tend to look at personality and the realisation of certain capacities in the individual not so much as the mere ‘unfolding’ of prior innate facts against a neutral ‘background’, but as a product of a developmental pathway, where prior potential and contingent circumstances typically have *interacted* to shape the final result. At the population level they are disposed to interpret differences in personal attributes and capacities as influenced not only by innate variability but also by *the distribution of certain salient social conditions*. Below we will examine some evidence of social-liberalists adopting this stance.

Green’s general approach on these matters is well exemplified by a passage from his *Prolegomena* (1906), where he says:

[I]t is equally true that the human spirit can only realise itself, or fulfil its idea, in persons, and that it can only do so through society. But the realisation of the human spirit in society can only be attained according to the measure in which that function is fulfilled. ... There cannot be this development [of personality] without a recognised power of appropriating material things. *This appropriation must vary in its effects according to talent and opportunity, and from that variation again must result differences in the form which personality takes in different men.*
Nor does it appear how those reciprocal services which elicit the feeling of mutual dependence ... would be possible without different limitations of function and ability, which determine the range within each man’s personality develops (sic), in other words, the scope of his personal interests. (p.219-220, second italics added)

Here, I would suggest, Green implicates variability of innate traits, understood as differences in ‘ability’ or ‘talent’, which contribute to differences in developed personality. He also suggests that development will be affected differentially by differences in contingent circumstances, such as varying opportunities to ‘appropriate material things’ (which in this context we may take to mean varying powers to acquire ‘things’ such as land, a house, food, capital goods, tools, books, etc). The key point, however, lies with Green’s general claim that variation in both ‘talent’ and ‘opportunity’ are *combined* in their effects on ‘differences in the form which personality takes in different men.’ This is an interactionist view.

Dewey's interactionist psychology is a major feature of *Freedom and Culture* (1963).

For example:

Each culture has its own pattern, its own characteristic arrangement of its constituent energies ... it perpetuates itself through the transformation of the raw or original human nature of those born immature. These statements do not signify that biological heredity and native individual differences are of no importance. They signify that as they operate within a given social form, they are shaped and take effect *within* that particular form. ... The function of culture in determining what elements of human nature are dominant and their pattern or arrangement in connection with one another goes beyond any special point to which attention is called. It affects the very idea of individuality. (p.20-21)

The distinction drawn above between possible explanations of difference between individuals within a group (sharing common circumstances), as opposed to differences between groups (having different circumstances) comes out clearly here. Dewey indicates here that one might certainly look to innate variation as causally implicated in differences of individual traits within a particular cultural group, where the social circumstances are more or less the same for all. Differences between cultural groups on the other hand, are not well explained as 'indigenous traits that mark off one people'. (p.20) Instead they are better understood as the result of differences between sets of contingent cultural facts typical of each group.

Hobhouse, as noted about, sees the essential purpose of a liberal politics, in application, as one of *growth* for (*ceteris paribus*) all members of society, and for society as far as it can to provide *conditions* conducive to that end. Already this forecasts a view that systemic features of those contingent conditions might *matter* in more than an incidental way. Such an interactionist stance with Hobhouse's view of human nature is shown more definitely when he says:

[W]hile personal opinions and social institutions are like crystallized results, achievements that have been grown by certain definite processes of individual or collective effort, human personality is that within which lives and grows, which can be destroyed but cannot be made ... [which] can be placed under conditions in which it will flourish and expand, or, if it is diseased, under conditions in which it will heal itself by its own recuperative powers.' (1911, p.121-122)

Here we do not have claims about innate variability as such, but clearly present are assertions about essential, valuable and common features of our nature, the actual expression of which is open to the contingencies of social circumstances. Liberty and

equality, variously construed, are seen as vital features of those conditions, and the distribution of opportunities for the ‘right’ kind of individual development is clearly something Hobhouse regards as a matter of profound social import. (p.125) Elsewhere, however, we can see suggestions that he also accepts innate differences; for example, when he says that life is ‘individual, and in each of its cases there is something unique and unseizable by the intellect – creative of essentially novel, and therefore unpredictable, developments’. (Cited in Gaus 1983, p.19)

Rawls’ interactionist psychology comes through clearly in his discussion of how a distribution of goods will tend to play out within an unregulated system of market exchange. In those circumstances, he says:

The existing distribution of income and wealth ...[will be] the cumulative effect of prior distributions of natural assets – that is natural talents and abilities – as these have been developed or left unrealized, and their use favoured or disfavoured over time by *social circumstances* and such chance contingencies as accident or good fortune. (1971, p.72, italics added)

Accidents and the like are ad hoc factors which could happen to any one. The interactionist view here is best expressed in the appeal to ‘social circumstances’, implying as it does that differences in ‘natural assets’ and a socially-mediated pattern of differences in, say, education or economic circumstances, might *combine* to produce the pattern of income and wealth (as it obtains at any point in time). These are issues we will consider directly later in the chapter. Rawls is also strongly of the view that differences in ‘natural assets’ are arbitrary from a moral point of view. (1971, p.72)

On the whole it would seem that variability in innate talents and traits is described by our social-liberals as a natural fact about the way we are, and not something which in and of itself carries any particular normative implications. However, we can also see, in Green or Rawls for example, that an individual’s particular inherited attributes might very well play a part in the expression of his or her reasoning, self-determining agency.

2.5.4 Summary

In light of the naturalistic descriptions above from both libertarian and social-liberal I would argue that, notwithstanding some differences of emphasis, a common picture begins to emerge of a basic human type, defined by certain essential features. This is the rational, self-determining individual agent who, in the business of living within a social formation, will, other things being equal, normally realise in some manner (and exercise):

- A capacity for reason, understood as intelligent, forward-looking assessment and evaluations of options for action in light of personal experience
- A capacity to apply powers of reason to make choices, formulate plans for the future, and take deliberate actions accordingly
- Some distinctive set of talents and/or character traits

The first two of these features have been offered to us by all of our theorists as aspects of the human condition which we ought to regard as valuable. The attitude towards an individual's proclivities for particular talents and traits is more neutral, although these attributes are seen to play a part in the way agential capacities are exercised.

The relationship between the human nature claims and the normative claims about features we ought to value is quite straightforward. The normative claims are *about* features described as normal parts of our nature.

2.6 THE BASIC LIBERAL STATE

Hitherto we have considered claims fitting the first two parts of the general structure of inference outlined in § 2.3. Here we will begin to consider claims and arguments fitting the third and fourth part of that structure, and the inferential relationship between them. That is to say, we will consider some contingency claims about how the realisation or expression of various features of our nature (which happen to be regarded as having normative significance) will tend to go under different kinds of socio-political conditions. And we will see how those claims support normative arguments that we ought to prefer one kind of political formation over another.

Our examination of these kinds of claims and arguments within the selected theories will come in two main parts. The first, here, will look at the way that a certain kind of political structure, the *basic liberal State*, is justified over other, shall we say, thoroughly different alternatives; e.g oligarchy, anarchy, socialism or communism. We will again see that libertarian and social-liberal views are broadly similar in their conclusions, insofar as both sides prefer a basic liberal State over other alternatives. The main point, however, will be to see how our two libertarians justify this move, because it will be important to later argument against their overall positions.

The second part of this analysis will address arguments justifying different on-going roles for the State, *within* a liberal State-free market political system.

Arguments justifying the State within liberal philosophy are typically not, of course, about *any* kind of institutional power. They argue for a particular canonical form of State because it is seen to deliver certain benefits, and to be preferable to other possible kinds of political arrangement. This canonical form I will call the ‘basic liberal State’, and before we move to consider the case in its favour, it will be useful to set out a working definition.

Therefore, I suggest, we may roughly describe firstly some generic features of the State as a institution, or set of institutions, which:

- Is formally recognised by and operates within a social formation, being all of a substantial number of people living and interacting with each other, within a geographically definable area (or areas)
- Claims sovereign authority to create laws as binding rules for all the members of the social formation, including those individuals who at any time exercise the powers of the State, or carry out its functions
- Claims a monopoly (in a special sense) on the legitimate use of coercive force or sanctions to enforce its laws, or to defend recognised rights claims of its members
- Is, in one way or another, subject to limitations or checks on its powers

((Dunleavy and O’Leary 1987, Ch.1)

The notion of a monopoly on the legitimate use of force can be problematic because, for example, if taken to its logical conclusion it would rule out the use of force in personal self-defence, or to prevent someone harming a third party. I think Nozick grasps the required sense well when he says that:

A state claims a monopoly on deciding who may use force when; it says that only it may decide who may use force and under what conditions; it reserves to itself the sole right to pass on the legitimacy and permissibility of any use of force within its boundaries; furthermore it claims the right to punish all those who violate its claimed monopoly. (1975, p.23)

The notion of *force* here we may take to cover both the coercive effects of threats (such as a threat of punishment for non-compliance with a law), or direct physical restraint, compulsion or attack.

An important further point about the basic liberal State as we will understand it here is that it is both defined in its function, *and* justified in terms of a particular kind of primary or initial *role*. That role (as we will see below) is to equally protect its clients *against* certain putative tendencies of other political systems; namely that they systemically allow actions by some that interfere with and compromise the realisation/ expression of reasoning, self-determining agency in others. And such systemic inequality, of course,

would be unjustifiable for anyone who regards the expression of those capacities as a universal value.

This primary role for the basic liberal State (vis-à-vis other systems), to *prevent* certain kinds of interferences in the affairs of individuals, is commonly expressed in terms of it defending certain ‘negative’ political rights or freedoms. Again, both libertarians and social-liberals endorse some such rights. The main issue which then divides them is whether, or to what extent, the role of the State ought to extend beyond that primary task, within a liberal free market system.

2.6.1 Libertarian Arguments for the Basic Liberal State

Hayek:¹²

One of the main reasons Hayek offers for preferring the basic liberal State as a political structure over other alternatives is that it will protect us against widespread and/or arbitrary *coercion* that will tend to occur (in his view) within other political systems. History, according to Hayek, is full of examples of societies where political power has been used by some to exercise direct coercive control over others. (p.32-36) This would include any society which built slavery into its economic activities, and as we saw earlier slavery is an exemplar of the coercion Hayek objects to. (p.12) On a more contemporary note, Hayek also warns against the excessive coercion he sees in the actions of a socialist State which ‘over’-controls individual economic activity, or directly manages activities which in other systems are undertaken by the private sector. (E.g. pp.288-290)

It is against such possibilities that Hayek offers us what some would regard as a standard form of argument for the basic liberal State (Gutmann 1980, pp. 7-8), being that the only reliable protection against the possibility of systems which engage in such excessive or arbitrary forms of coercion is a different kind of system, based on a more limited, ‘controlled’ form of coercive power vested in the State. As he describes it:

Coercion, however, cannot be altogether avoided because the only way to prevent it is by the threat of coercion. Free society has met this problem by conferring the monopoly of coercion on the state and by attempting to limit this power of the state to instances where it is required to prevent coercion by private persons. This is possible only by the state’s protecting known private spheres of the individuals against interference by others (1960, p.21)

This is an argument for preferring the basic liberal State, using its monopoly on coercion to protect certain negative freedoms or rights. It is important to note, however, that the

¹² All references in this sub-section are to Hayek 1960

normative force at the heart of Hayek's argument does not lie with merely preventing certain 'mechanics' of coercion *per sé* (like institutionalised slavery). It is about preventing (or minimising) interferences in the individual exercise of everyday capacities for reasoning and self-determination, which Hayek regards as fundamentally valuable. A person under coercion, we are told, 'is unable to use his own intelligence or knowledge or to follow his own aims and beliefs...[and] *Coercion is evil precisely because* it thus eliminates an individual as a thinking and valuing person'. (p.21, italics added) And liberty, as Hayek's highest political value (p.68), is a state where 'coercion of some by others is reduced as much as possible in society.' (p.11)

A system based around the basic liberal State is offered as a preferred choice for achieving that goal. The negative effects of its more limited uses of coercion are greatly reduced (as compared to other systems) because, under a system of known rules, they are both predictable and avoidable. (p.142) Hayek highlights some specific rights to be defended by the State, most especially property rights (rights of non-interference in private property) and enforceability of contracts. These provide protected spheres for individual activity in the vein of, shall we say, economic agency. (pp.140-141) He mentions also rights of immunity from arbitrary arrest, freedom of choice in the work that one does, and freedom of movement. (p.19)

So, for Hayek, a commitment to individual liberty, understood as freedom from coercion, is a pre-eminent political principle. However, we are also to understand that coercion is wrong precisely because it undermines individual capacities for reasoning and self-determination; capacities which Hayek regards as intrinsically valuable. Thus we can say that a fundamental reason Hayek offers for preferring his own system over others – such as socialist or welfare State systems – is that *they* will systemically promulgate coercive social or political conditions which undermine, inhibit or interfere with the expression of individual capacities for reasoning and self-determination (in some substantial portion of the client population) (Ch.17); whereas his preferred system will not (beyond a necessary minimum of coercive activity by the State). The essential justification of the liberal State, for Hayek, lies with its role to protect the widespread expression of these capacities from any such systemic interference. Therefore we can draw a conclusion: if it turned out that Hayek's own preferred system (when put into effect) generates socio-political conditions that, in a more than incidental fashion, undermine the expression of human capacities for reasoning, self-determining agency; then, to be consistent, he ought to find this ethically

untenable, and be disposed to endorse actions by the State to modify the social conditions in question.

Nozick:¹³

Nozick's conception of what he calls the 'minimal state' is consistent with the definition of the basic liberal State above. The essential role of the State is to secure certain individual, 'negative' rights. (E.g. pp.113-118) His argument justifying this kind of State is grounded in a state-of-nature theory.

Nozick positions his 'actors' as (presumably adult) members of a stateless, anarchistic social formation (presumably within some circumscribed territory), and as individual holders of natural rights such as, following Locke, rights of non-interference in one's life, health, liberty and possessions. They also have ancillary rights to actively defend these things by punishing or exacting compensation from those who unduly interfere with them. (pp.10-11; p.92). In this situation, Nozick supposes that certain problems are likely to arise, namely, in the first instance, that 'private and personal enforcement of one's rights (including those rights that are violated when one is excessively punished) leads to feuds, to an endless series of acts of retaliation and exactions of compensation. And there is no firm way to settle such a dispute, to end it and to have both parties know it is ended.' (p.11)

In making this social-psychological assessment, Nozick appeals to an intrinsic human tendency to individual partiality, such that 'men who judge in their own case [within a dispute] will always give themselves the benefit of the doubt'. (p.11) Because of this, the 'possibility of such [intractable] conflicts is part of the human condition.' (p.99) Given such 'inconveniences' (p.10), Nozick suggests that, through the exercise of rational self-interest, his players will choose to form themselves into mutual-aid associations, and cede some of the enforcement of their rights to that collective agency. However, these 'protective associations' won't do either, bringing inconveniences of their own, including conflicts between associations. (p.16) Thus, Nozick tells us, rational self-interest will tend to 'drive' the players a further step, to shift their allegiances to a 'dominant protective association'. And so, '[o]ut of anarchy, pressed by spontaneous groupings, mutual-protection associations ... and rational self-interest there arises something very much resembling a minimal state' (pp.16-17); which 'claims a monopoly [within the relevant territory/social formation] on deciding who may use force when'. (p.23)¹⁴

¹³ All references in this part are from Nozick 1975.

¹⁴ We are to understand that such a State is justifiable, not because it ever has come about in that way, but because it could have done so in a way that would not contravene individual rights, and therefore it is not intrinsic to the very existence of that kind of State that it must contravene rights.

This argument is surely intended to have us prefer a political system based around Nozick's minimal State over (so far) at least one alternative political condition, namely a state of anarchy. (p.4) Once his initial argument is in place, Nozick recommends his own system against other alternatives too, such as a socialist system. (pp.162-163) And what is it about these other systems that Nozick ethically objects to? On the face of it, as we might expect, we are to understand that for one reason or another, these alternative political conditions will, in virtue of some systemic characteristics of their own, allow rights to be contravened or interfered with. In a state of anarchy, it just will be the case that intractable conflict will *commonly* arise and presumably, with no mechanism to arbitrate or settle disputes, some people will by brute force assert their own interests over those of others. (p.12) A socialist State, in pursuit of its values, just will tend to engage in 'continuous interference with people's lives.' (p.162-163)

However, as we saw earlier, Nozick also attaches basic normative value to our capacities for reasoning, self-determining agency as things which both qualify us for rights and enter into our exercising of rights. In light of this, it seems that a part of what is ethically objectionable for Nozick about actions that contravene one's rights is that, in one way or another, they will typically also constitute an interference with the 'free' expression of these capacities. And part of what is objectionable about political systems or structures which allow contraventions of rights must be that they systemically allow such interferences. The fundamental role of Nozick's minimal State to protect certain negative rights, on the other hand, must involve the prevention of any systemic conditions which interfere with the expression of capacities for reasoning, self-determining agency (in some substantial portion of the client population).

Thus we can draw a conclusion similar to that above: if it turned out that Nozick's preferred system itself generates social or political conditions that undermine the expression of individual capacities for reasoning self-determining agency; then, to be consistent, he ought to find this ethically problematic, and be disposed to endorse actions by the State to modify the social conditions in question.

2.6.2 Social-Liberals and the Basic Liberal State

As we have already discussed, it is not unusual for social-liberals to reject propositions to the effect that coercion may be well employed for 'people's own good', or to 'force them to be free'. On the contrary, they see excessive and arbitrary coercion as having debilitating effects on individual development. (Green 1885, p.371) Thus we should not be

surprised that they also typically recognise a basic role for the State in protecting certain (negative) rights of individual activity free from coercive interference by others. Hobhouse restates what I described above as the ‘standard’ argument for the basic liberal State, when he says:

The function of State coercion is to override individual coercion, and, of course, coercion exercised by any association of individuals within the State. It is by this means that it maintains liberty of expression, security of person and property, genuine freedom of contract, [and] the rights of public meeting and association’ (1911, p.140)

Similarly, Mill argues that one of the State’s primary functions must be to enforce rules of conduct, and that ‘[t]his conduct consists, first, in not injuring the interests of one another; or rather certain interests, which, either by express legal provision or by tacit understanding, ought to be considered as rights’. (1991, p.132)

Rawls has his own way of justifying a political regime. However, for our purposes here we need only note that as one of his two fundamental principles of justice arising out of that method, Rawls argues that ‘each person … [should] have an equal right to the most extensive basic liberty compatible with a similar liberty for others.’ (1971, p.60) And then he proceeds to list the specific kinds of liberty he would see as basic, including: ‘political liberty (the right to vote and be eligible for public office) together with freedom of speech and assembly; liberty of conscience and freedom of thought, freedom of the person … [and] the right to hold (personal) property’ (1971, p.61)

Dewey also accepts the essential functional character of the state as a mechanism to restrain certain kinds of encroachments of one person on another. He says that ‘[t]he system of liberties that exists at any time is always the system of *restraints* or controls that exist at that time.’ (Cited in Gaus 1983, p.174) The idea of restraint, in this instance, captures that sense in which negative freedoms are achieved by *preventing* certain kinds of behaviour; by specifying kinds of actions people ought not to do, rather than what they ought to do.

2.6.3 The Egalitarian State

Claims and arguments from both libertarians and social-liberals, as considered so far, already offer at least two possible senses of ‘equality’. To claim certain universal features of our nature just is to assert that in that respect we are ‘equal’, at least in the sense of being similar. To claim that certain common human capacities are valuable implies that (*ceteris paribus*) human beings share a certain equality of basic ethical status, insofar as all

normally have those capacities, or the potential to acquire them. In any case, more important for our purposes is another more specific sense of equality as a political value, emerging in descriptions of universal rights or freedoms.

Here I will call *egalitarian* any normative political claims to the effect that the State *ought to*: take steps to control or modify ‘social conditions’ – that is, some systemic feature or features of the society within which it operates – and the *distribution* of these conditions across the relevant population; with a view to achieving a *wider* or *less unequal* distribution (as compared either with some actual here-and-now conditions, or a distribution obtaining under another political regime). In the cases we’re interested in, I will continue to interpret the underlying justification for such claims in terms of suppositions that, by taking the steps in question, the State will thereby better enable the expression of value-features and/or prevent the expression of problem-features.¹⁵

On this definition, claims such as those from either Hayek or Nozick that the State ought to use its powers to codify and enforce certain (negative) rights, are a form of egalitarian claim. They require the State to take actions to ensure (so far as it can) an equal distribution of conditions of non-interference in certain kinds of activity; e.g. owning property. And they assert that we should all (*ceteris paribus*) be recognised equally as rights-bearing citizens by the State itself under the regime of rules it enforces; therefore a value of ‘equality before the law’. (Hayek 1960 pp.85-87) As Gutmann describes it, ‘[o]ne way in which equality ... enters liberal thought is as a rule of aggregation: a principle of ordering and balancing liberties so that people are permitted to share freedom(s) equally.’ (1980, p.8)

To say that the State ought to institute a program of universal public education is another form of egalitarian claim. It should be noted that nothing about egalitarian claims thus understood asserts that the State, by ‘taking steps’ to achieve a wider or less unequal distribution of some social condition, need aspire to an absolute *equality of conditions* for all, at all times. It would be false to suppose, for example, that a claim that the State ought to improve the ‘spread’ of employment opportunities necessarily requires each and every person to be given (or have) *exactly the same* opportunities at the same time.

(Gutmann 1980, Intro. and Ch.1)

¹⁵ Alternatively, one might underpin egalitarian claims about the role of the State with arguments appealing explicitly to ‘justice’ or ‘fairness’; to say for example that it would be unjust for the State to allow one person to be subject to arbitrary coercion while others are not. This is not an approach I will adopt in this study.

2.7 THE SOCIAL-LIBERAL AND LIBERTARIAN POLITICAL SCHEMES

It is the nature of the kind of political theory we are discussing to formulate ideas about human *societies*, defined in political terms. Theories address particular aspects of how a society is ordered or organised, and how political power is exercised within it. They make normative claims about how a society ought to arrange its affairs. A collection of such claims, insofar as it proposes a particular kind of societal order, I will describe as a *political scheme*. It is intrinsic to the ‘project’ of political philosophy, I believe, that such schemes are intended to describe states of affairs which are either actual or possible for the society in question. In this way normative proposals stake a claim as being applicable in the real world, and political theories become *testable* against their own applications.

Within our selected liberal theories the role and activities of the State are clearly regarded as crucial – a defining element – but nevertheless as only part of a larger social order. Other forms of ordering considered to play a significant role sometimes include: democratic procedures, the family, social values and norms, or the economic order.

It is intrinsic to the history of Anglo-American liberalism – the tradition of John Locke, Adam Smith, Herbert Spencer and the like – that one main form of activity expected to be widely expressed within a liberal political structure is individual enterprise within a free market system of economic exchange; an expression, we might say, of *economic agency*. (E.g. Heywood 1998, Ch.2; Hill 1999) For the most part, therefore, both libertarian and social-liberal political schemes typically feature a combination of (at least) the basic liberal State and a free market economy; with the State charged with responsibilities to establish certain seen-to-be necessary constraints *for* economic agency within market settings. An emphasis on the State’s role to defend private property rights or to enforce adherence to contracts are generally to be understood as enabling measures for precisely that kind of free activity. (Klosko 1993, Ch.3) Again, on the whole, the basic combination of liberal State and free market economy is not something that libertarians and social-liberals disagree about. Where the two positions *do* diverge is in their differing views about *what then happens* (or can happen) *within* an overall political system combining these two main elements, *what matters* (normatively) about what happens, and what the State should therefore do (or not do). We can begin to grasp these differences, and identify what will be for me the crucial aspects of a social-liberal critique of libertarianism, by first examining how social-liberal ideas emerged as a response to classical liberalism.

2.7.1 Social-Liberals and Classical Liberalism

One feature of social-liberal writers such as Green, Hobhouse or Dewey is the critical stance they adopt toward the earlier period where classical liberalism (and writers such as Locke and Smith) had exerted particular influence, especially in Britain. As with libertarianism, classical liberalism as a political movement also placed high value on individual (negative) freedom, a limited role for government, and a *laissez-faire* market economy. (Barry 1986; Klosko 1993) From this position, it is not unusual for social-liberals to accept that classical liberalism as a political movement had helped to achieve a measure of individual freedom *from* previous, more oppressive, rigid political (and religious) systems. In light of further experience with a *laissez-faire* economic system, however, they are then concerned to ask how successful the classical conception had been in application. Had it lived up to the values it claimed to promote? Did it display shortcomings, requiring additional measures? For example:

We have ...regarded Liberalism mainly in its earlier and more negative aspect. We have seen it as a force working within an old society and modifying it by the loosening of bonds which its structure imposed on human activity. We have yet to ask what constructive social scheme, if any, could be formed on Liberal principles; and it is here, if at all, that the fuller meaning of the principles of Liberty and Equality should appear. (Hobhouse 1911, pp.47-48)

The view that love of freedom is so inherent in man that, if it only has a chance given it by abolition of oppressions exercised by church and state, it will produce and maintain free institutions is no longer adequate. ... We are now forced to see that positive conditions, forming the prevailing state of culture, are required. (Dewey 1963, p.7)

One can easily see how, from such a position, a social-liberal might firstly accept the ‘standard’ argument for the basic liberal State (over other systems) or a primary role for the State in defending ‘negative’ rights, but then also consider the need for other steps beyond this. As critics of the classical model, one main concern raised by social-liberals is the unequal distribution of material wealth and social conditions which a *laissez-faire* economic system, left to itself, tends to produce. They ask how this inequality, as it manifested itself in their own society, sits with the basic egalitarian ‘spirit’ of liberal humanism, or the supposed universality of ‘individual freedom’ as a value. They begin to ask whether the mere prevention of certain interferences in individual action and enterprise, necessarily renders a person any more genuinely ‘free’ to make the best of themselves, if they are homeless, desperately poor, or lacking any formal education. Ought we to recognise that such deprived conditions, or a lack of appropriate development can in

fact constitute external or internal *obstacles* to a person's freedom? Do people in such circumstances have 'opportunity' in name only or a *real* opportunity, on a par with the opportunities enjoyed by others, to improve their lives through their own efforts? (Berlin 1969; Gaus 1983; Green 1885)

It is precisely this kind of critique which led T.H. Green to propose that classical values of negative freedom be supplemented with a positive conception of freedom as 'a positive power or *capacity* of doing or enjoying something worth doing or enjoying, and that, too, something that we do or enjoy in common with others.' (Cited in Gaus 1983, p.163) And this is intended to be understood as a political conception, as we see when Green says, 'The ideal of true freedom is the maximum of power for all members of human society alike to make the best of themselves.' (1885) The idea of poor social conditions leading to an internal deficit, and an obstacle to a person's freedom, is demonstrated in Green's argument in support of universal education. He says, 'Without a command of certain elementary arts and knowledge, the individual in modern society is as effectually crippled as by the loss of a limb or a broken constitution. He is not free to develop his faculties.' And this in turn leads to calls for an extended, egalitarian role for the (classical) liberal State, to take steps to ensure an equality of access to basic education for all. (1885, p.373) This is hardly surprising, given that the State is the agency charged in the first place with protecting certain universal values, and the only body with powers to exercise the relevant controls over social and economic activity. (Hobhouse 1911, Ch.2) On like grounds, Green argued for a range of other public measures including 'revising the system of land tenure, ... factory acts and temperance legislation'. (Gaus 1983, p.243)

We see a similar critique directed against classical liberalism in action from L.T. Hobhouse in his *Liberalism* (1911). Again we see a willingness to extend a value of individual freedom when he says, for example, that:

Social freedom, then ... rests on restraint. It is freedom that can be enjoyed by all the members of a community, and it is a freedom to choose amongst those lines of activity which do not involve injury to others. As experience of the social effects of action ripens ... the *conception of injury* is widened and insight into its causes is deepened. The area of restraint is therefore increased. (p.92, italics added)

In other words, Hobhouse proposes an extended understanding of the ways that systemic differences in social conditions of his time were, in effect, obstructing the individual freedom of those at the lower end of the socioeconomic scale. He elaborates on this idea by identifying a number of kinds of liberty, including 'civil', 'fiscal', 'personal', 'social',

‘economic’ and ‘domestic’, all of which may be detrimentally impacted by social conditions in one way or another. In relation to each, he draws conclusions about an extended, egalitarian role for the State.

Under a heading of ‘social liberty’, for example, he argues that ‘freedom to choose and follow an occupation … means [requires] equality with others in the opportunities for following such an occupation. …[This has] led Liberalism to support a national system of free education’. (p.32) In relation to ‘domestic liberty’, he argues that the State ought to take steps to secure, ‘the physical, mental, and moral care of children, partly by imposing definite responsibilities on parents …, partly by elaborating a public system of education and hygiene.’ (p.39) As for ‘economic liberty’, Hobhouse argues in positive terms that ‘men of the keenest Liberal sympathies have come not merely to accept but eagerly to advance the extension of public control in the industrial sphere, … the housing of the industrial population, the care of the sick and aged, and the provision of the means of regular employment’. And all of these thoughts form part of a critical argument against classical liberalism, asserting that in a *laissez-faire* system without such measures, ‘liberty without equality is a name of noble sound and squalid result’ (p.86)

However, such a range of measures should not be taken to suppose a socialist state and a command economy. Hobhouse still recognises a competitive market economy as an arena for the expression of individual agency, effort and initiative, but it should be a ‘rivalry of the keenly contested game, subject to the rules of honourable sportsmanship’ rather than a ‘rivalry that is reckless of means and ready to destroy.’ (Cited in Gaus 1983, pp.242-243)

In *Freedom and Culture* (1963), Dewey argues that ‘[i]f we want individuals to be free we must see to it that suitable conditions exist’, and in so doing we may pay attention to conditions in such domains as ‘cultural conditions, conditions of science, art, morals, religion, education and industry’. Later he addresses the role of the State more directly in approving the provision of universal public education. (p.148-151) In another work, specifically focused on education’s role in society, he argues that ‘[w]hat the best and wisest parent wants for his own child, that must our community want for all its children. … Here individualism and socialism are at one. Only by being true to the full growth of all individuals who make it up, can society by any chance be true to itself.’ (Dewey and McDermott 1973, p.455)

2.7.2 The Form of Social-Liberal Critique to be Employed

Now, it is not a goal of this study to defend any individual social-liberal theorist's political views as such; and nor is it to discuss classical liberalism. The purpose of the above discussion is to preface the next step, which is to set out in general terms the form of the critical social-liberal view I will employ, and clarify precisely how I see it targeting the libertarian position. In light of the above, I interpret a social-liberal critique of either classical liberalism or a libertarian system to amount to the following kind of argument.

A *laissez-faire* market system, if allowed to do so by a non-interventionist State, will tend (systemically) to produce widespread differences in some kinds of socioeconomic conditions¹⁶. Conditions at the lower end of the socioeconomic scale are likely to have detrimental impacts on those people living under them; indeed, *detrimental impacts on their capacities for reasoning, self-determining agency* (which may be construed either as external or internal – psychological – obstacles or deficits). And these are the main positive capacities required to enter into and take up the opportunities offered by a regime valuing individual (negative) freedom. If these capacities, and their expression, are valuable, then this carries implications for what the liberal State ought to do. Given that the liberal State has been justified over other possible political systems on the grounds of preventing systemic, negative and unequal impacts on the expression of agency, it follows that the State ought to take actions to alleviate inequalities of social conditions having the same kind of detrimental impacts, within the system it has charge over.

This line of argument, I submit, also clearly presupposes a general form of *interactionist explanation* of differences in how well people tend to do as agents. To make this more concrete, let us ask how a social-liberal would likely explain the pattern of differences in the extent of different people's economic 'success' (as it obtains at any particular time), within an un-regulated free market system – where 'success' is understood as the extent of one's privately owned/controlled income, monetary or asset wealth, or productive resources relative to others within one's society. (Hereafter, I will refer to this pattern of differences as the 'success distribution'. The various kinds of possessions I will sometimes describe collectively as 'goods'.) On the basis of all we have considered so far, I believe it is abundantly clear; social-liberals would tend to explain the success distribution as the outcome of two broad kinds of variability amongst the population in question: variability in innate talents and traits, and variability of exposure to different kinds of socioeconomic

¹⁶ The kinds of socioeconomic conditions commonly considered include access to education or medical care services, housing conditions, employment opportunities or workplace conditions, and personal or household income or wealth.

conditions. And indeed, we can see this clearly and explicitly recognised in the words of Rawls quoted earlier, when he says:

The existing distribution of income and wealth ...[will be] *the cumulative effect of prior distributions of natural assets – that is natural talents and abilities – as these have been developed or left unrealized, and their use favoured or disfavoured over time by social circumstances* and such chance contingencies as accident or good fortune. (1971, p.72, italics added)¹⁷

Recognising this as another part of the critical social-liberal position I will pursue is important because, as we shall see shortly, it contrasts directly with a form of explanation offered by our two libertarians. And finally, for this part, although the overall line of social-liberal argument I will use is recognisably similar to some of its predecessors, it will nevertheless be advanced (I think) in an original way, and lead to some fresh conclusions.

2.7.3 The Libertarian Scheme: State & Market

Just as social-liberals such as Green and Hobhouse respond to the earlier period of classical liberalism, both Hayek and Nozick, writing in the latter half of the 20th Century, may be seen to respond to the climate of their times; a post-WW II period in which forms of Keynesianism and social-liberalism were prevalent within Western politics. (Hayek 1973, Vol.2 p.65; George 1999) If social-liberals pick up on and extend the basic liberal-egalitarian commitment to equality of certain rights or freedoms, and arrive at an extended State; we might then expect to find that a libertarian will attempt to *restrict* egalitarian commitments, in defence of a limited or minimal State.

As we have seen, both Hayek and Nozick argue for a basic (defining) role for the liberal State – to hold a monopoly on coercive force, to enforce certain rights of non-interference, and so on – as part of justifying that kind of State over other political systems. With that step in place, both describe a larger political scheme in which the role and activities of the State are intertwined with the workings of a competitive market economy. In that setting a part of the essential *on-going* role of the State, as it were, is to defend property rights, the enforceability of contracts, and so on, in order to enable effective market processes to occur. (Hayek 1960, ch.6; Nozick 1975, Ch.7)

¹⁷ And again we see the combination of a market economy with an extended, egalitarian State when he says, ‘[f]ree market arrangements must be set within a framework of political and legal institutions which regulates the overall trends of economic events and preserves the social conditions necessary for fair equality of opportunity ... [including] preventing excessive accumulations of property and wealth and of maintaining equal opportunities for education for all.’ (1971 p.73)

In a range of ways, we may note, the further elaborations offered by Hayek and Nozick of the State's role and activities within their respective schemes do differ. As we shall see, the more pragmatic Hayek allows the on-going State to take on a range of activities beyond its basic role. Nozick is more doctrinaire, and keeps his conception much closer to the basic, rights-defending role. For these reasons I will generally refer to Hayek's proposed State as *limited*, while with Nozick I will follow his own terminology and refer to his model as a *minimal* State. A more detailed analysis of these respective conceptions will be developed in chapter 7.

For the moment, however, we will continue to consider the two positions in terms of what they share, and note immediately that, whether 'limited' or 'minimal', both descriptions clearly imply that the preferred role of the State will be defined as much by what it ought *not* do, as much as by what it ought to do. And indeed, each of our libertarians argues explicitly and at length *against* a more extended, egalitarian role for the State. (E.g. Hayek 1973, Vol.2 Ch.9; Nozick 1975, Ch.7)¹⁸

In general terms, what both Hayek and Nozick are objecting to here are State actions to intervene in what they regard as the *spontaneous* workings of a free market system, in order to address widespread inequalities of conditions. In order to understand how arguments *for* such interventions are blocked or countered, we need a summary picture of what this system is, and how it is understood to operate within a libertarian scheme.

I will show that both Hayek and Nozick present views consistent with the description below; which, we shall see, also owes a debt to Adam Smith, and his views of market constraints operating as an 'invisible hand', leading the self-interested actions of many individuals, through no intention of their own, to contribute to the spontaneous formation and sustaining of a form of economic order, and thereby unwittingly serving certain common interests. (Nozick 1975, p.18; Hayek 1960, p.57)

The libertarian free market is first of all a *protected* domain of activity, wherein many individuals engage in the production, consumption and exchanging of valued goods and services. It is protected because the State, by coercively defending certain rights, etc., creates 'spaces' for individual activity generally unencumbered by (coercive) interference by others; and does so more or less equally for all. Adult individuals, acting as economic *agents*, are understood to normally bring a 'package' of various attributes and capacities into this domain. Included in this package are the key elements of agency in general:

¹⁸ Some of these arguments attack what they regard as misconceived egalitarian principles of 'social justice' or 'distributive justice'. Here, however, the contrast between libertarian and social-liberal positions is not addressed in terms of competing conceptions of justice.

capacities for reasoning, planning, evaluation of options for action, decision-making, and some distinctive set of talents or character traits (e.g. intelligence level, physical attributes or abilities, technical aptitude, determination). The latter are understood to vary between individuals and across populations.

Given that the State continues to do its job, the protected space for economic activity is thus occupied by a pool of individual ‘strivers-after-valued-goals’, who act as choice-making, preference-satisfying consumers/purchasers of goods or services offered by others, and/or as producers of goods or services available for purchase by others – even if only their own labour power. The processes of exchange of good and services within this domain of activity create constraints of both *demand* for goods or services which are valued, and *supply* to provide the goods or services that others are willing and able to pay for. Higher demand will tend to drive the value of the demanded good up, and the higher value will drive greater production of the valued good, which will push prices down.

Assuming that all individuals acting as goal-pursuing economic agents have a reasonably equal (non-interfered with) opportunity for doing so, then these constraints of supply and demand will tend to operate over the variation in personal traits and talents across the pool, leading to (at any particular moment in time) *a pattern of differences in economic success*. How so? In basic terms, the explanation offered by our two libertarians is as follows. Firstly, by hypothesis, all players are understood to normally have capacities for reasoning and self-determination, and the State is understood to make equally available to all a space of non-interference for the exercising of these capacities, in the mode of economic agency. However, as all (or most) strive to attain their goals, *the particular talents and traits of some agents, offered as productive skills into the marketplace, just will, as it happens, be regarded as (more) valuable to others, who happen to have resources available to pay for them (or the products they give rise to)*. Thus, according to no prior intention or design on anyone’s part, those people will tend to enjoy greater economic success than others. They will attract ‘value’ in the form of whatever others are willing to pay for their products or services. Thus a pattern of differential economic success will arise within a system of production and consumption, driven by the constraints of supply and demand, which are themselves the cumulative product of people’s individual choices and actions. It is in this way that market forces are understood to operate over differences in talents and traits (as, we might say, the independent variable), so as to produce, at any point in time, a pattern of differences in economic success; previously defined as the ‘success distribution’.

Finally, it is understood that this overall process, taking advantage as it does of people's motivated individual pursuit of valued goals, will tend to constitute an economic system which is both highly productive (as compared to other systems), and flexible, because it will self-adjust to changes in demand over time.

Both Hayek and Nozick hold views consistent with this description. Turning to Nozick, firstly, these views mainly arise in *Anarchy, State and Utopia* in sections dealing with his entitlement theory of distributive justice. (1975, Ch.7) Leaving aside any normative considerations for the moment, part of Nozick's argument here consists in claims about how the expression of rights-protected economic agency by individuals will tend to subvert any predetermined, 'designed' pattern of distribution of goods; or how 'liberty upsets patterns'. (pp.161-164) Nozick asks the reader to assume that a set pattern of distribution, D1, which he or she (the reader) regards as just, is in place. He then introduces to this hypothesised scenario a famous basketball player, Wilt Chamberlain, who many people (as it happens) like to see play. On the understanding that people under D1 are then free to use their allocation of goods as they wish, it so happens that a million of them choose to pay some amount to see Wilt play, and of that Wilt gets 25¢ per patron. He makes \$250,000 (quite a bit for 1975).

What we are to understand, then, is that by virtue of the cumulative effect of freely made individual choices, goods just did flow to an individual who just happened, for no reason determined in advance, to display a talent that other people (in a position to pay) found to be valuable. The original distribution, D1, was subverted just as, Nozick would have us believe, *any* predetermined pattern would be. At the close of the scenario another pattern of distribution holds, but one that is now on the way to being 'un-patterned' in the relevant sense (un-designed). The economic liberty which Nozick portrays in operation here is precisely the kind of liberty he recommends as a right within his entitlement theory – to do whatever one chooses with one's legitimately acquired 'holdings' (i.e. goods) (Ch.7). And where those rights hold (defended by the State), and people get on with the business of producing goods, acquiring and exchanging holdings, then this just is a (idealised) description of a free market system as we've understood it.

Nozick's views here are further confirmed when he says explicitly that, '[d]istribution according to benefits to others *is* a major patterned strand in a free capitalist society...' (p.158). He adds that '[s]ince in a capitalist society people *often transfer holdings to others in accordance with how much they perceive these others benefiting them*, the fabric constituted by the individual transactions and transfers is largely reasonable and

intelligible.'¹⁹ (p.159, italics added) Presumably, then, the success distribution in a capitalist society is also ‘intelligible’ or explainable as largely caused by ‘market forces’ (understood as the cumulative effect of individual agents’ choices and actions) operating over variability in talents and traits as offered as products or services in the market²⁰.

In Hayek’s *Constitution of Liberty* (1960) we find a similar explanation of the success distribution unfolding. Like Nozick, Hayek is concerned to argue that, in a capitalist system, the distributions of goods (at any point in time) does not, and ought not to, follow any predetermined pattern of distribution, for reasons of justice or for any other reason. As he puts it, ‘[o]ur objection is against all attempts to impress upon society a deliberately chosen pattern of distribution, whether it be an order of equality or inequality.’ (p.87) His case against such attempts lies, in large part with his view of the market as a self-ordering process in which, as a cumulative effect of individual choices, goods will follow talents and traits found to be valuable by others. In unequivocal terms, he says:

The market will generally offer for services of any kind the value they will have for those who benefit from them... (1960, p.96; see also pp.94-96)

Hayek also emphasises that the differential rewards which people gain within this spontaneous process need have nothing to do with any ascertainable merit, understood as attributes of personal conduct deserving praise. He says:

There is little a man can do to alter the fact that his special talents are very common or exceedingly rare. A good mind or a fine voice, a beautiful face or a skilful hand, and a ready wit or an attractive personality are in large measure as independent of a person’s efforts as the opportunities or experiences he has had. In all these instances the value which a person’s capacities or services have for us and for which he is recompensed have little relation to anything we can call moral merit or deserts. (1960, p.94)

Here again we see the idea of the distribution of success (at any point in time) as largely determined by the choices people make to purchase products or capacities which they find valuable, as they arise from some individual’s particular innate talents and traits – the ‘good mind’ or ‘skilful hand’ which they happen to have. (And we have already seen how strongly committed Hayek is to the idea of innate variability in talents and traits.) Furthermore, as noted above, although Hayek has no objection to equality of material

¹⁹ It bears noting also that Nozick appeals directly to Hayek in making these claims. (1975, p.158)

²⁰ Nozick also sees exchanges in the form of gifts, inheritances, acts of charity etc as having some additional influence. (p.158)

success per sé, he clearly believes that, within the protected conditions created under a regime of equal (negative) rights and freedoms, an inequality of material wealth is the much more likely outcome.

From the fact that people *are very different* it follows that, if we treat them equally, the result must be inequality in their actual position, and that the only way to place them in an equal position would be to treat them differently. ... *The equality before the law which freedom requires leads to material inequality.* (1960, p.87, italics added)

The formation of a system of economic exchange arising from the cumulative effects of individual choices and actions (*qua* economic agency) Hayek regards as an instance of spontaneous social ordering which he refers to as a ‘cosmos’, and contrasts with a designed, made form of social order, described as a ‘taxis’. (1973, Vol.1 Ch.2)

It would seem, then, that both Hayek and Nozick offer views which conform to the above summary description of the libertarian free market. As a part of these views, both purport to explain a pattern of differences in economic success within a market system as largely a product of ‘market forces’ operating over prior, and substantially innately determined, variability in personal talents and traits. *This is a social selection explanation of the success distribution.* Following Nozick and Smith, I will sometimes refer to it as an ‘invisible-hand’ explanation of the success distribution. Two things about this explanation bear noting.

Firstly, both Hayek and Nozick allow that other ad hoc factors may affect the patterns of distribution in some marginal ways. For example, Hayek recognises the potential influence of (putatively) ad hoc differences in family upbringing (1960, pp.90-91), or in the ineffable fact that one person might make a greater effort to turn his or her native talent into a ‘useful service to others who can reciprocate’. (p.94) Nozick’s description of the marginal influences of gift-giving would also fit here. As we saw, one can do this, and not undermine a social selection explanation.

Secondly, unlike our previous example, this explanation is not intended to assert that the success distribution will neatly mirror any prior distribution of differences in any specific talent or trait. It is certainly not to claim, for example, that success will tend to follow higher I.Q., or ought to do so. (Nozick 1975, pp.155-156; Hayek 1960, p.82) Indeed, to claim the latter would be to demand a determinate pattern of distribution of another kind, and thus would be disallowed. But this also does not disqualify their position as a social selection explanation. Only one form of *prior* variability (in talents and traits) is

understood to play a primary causal role, *under* the rigours of competitive market conditions, in determining later *differences* in success. No other kind of features of the system-individual interaction is identified as systemically (or more than incidentally) affecting these differences in outcome (as they obtain at any point in time). Other factors relevant to economic agency, such as the scope to exercise one's capacities for reasoning, choice making, etc, are held to be, for the most part, equally available to all.

In summary, both Hayek and Nozick hold views consistent with the description above of the libertarian free market. Both make claims about goods tending to follow talents and traits valued by others; both appeal to this process of market constraints operating over variation in talents and traits as an adequate explanation of the success distribution; and both see a market system as a *spontaneous* economic order, insofar as its systemic features (including the success distribution at any point in time) are understood, not as products of anyone's prior design or intention, but as a cumulative result of many individual, goal-oriented, self-seeking choices and actions.

2.7.4 The Libertarian – Social-Liberal Dialectic

I suggested earlier that both libertarian and social-liberal theories (as we've considered them) follow a certain underlying inferential structure, employing claims about human nature to build arguments about the legitimate role of the State. We now have all the elements of this structure before us, from both sides, and can consider some important questions which preface the argument to come. What does this analysis propose as the key 'turning points' of the argument between libertarians and social-liberals? How does the libertarian case serve to defend its normative position, and its preferred scheme, against the line of social-liberal critique outlined earlier; and how might it be vulnerable to such a critique nevertheless?

As I have shown, both libertarians and social-liberals believe that it is a universal propensity of human beings to develop and use capacities for everyday reasoning and decision making, and present similar pictures of what these natural capacities are. Both clearly place a normative value on these capacities, as features of our nature we ought to value. My own arguments will assume this as a basic normative commitment common to both sides.

Both sides also give us some naturalistic accounts of how the realisation and/or expression of these capacities will tend to fare (across populations) under different kinds of

socio-political conditions. But now we can identify one crucial point where the libertarian view of the Smithian free market, (and non-interventionist State) presents a countering move to a social-liberal account. Within both Hayek's and Nozick's descriptions of the workings of this system, and especially in their explanations of the success distribution, it is variation in innate talents and traits which is offered as *the* main causally potent factor. And as we saw earlier, this feature of populations is regarded by all sides as a morally arbitrary fact about human nature. And, so long as the State defends negative rights, then according to the libertarian account, the expression of capacities for reasoning and self-determination (which may incorporate development and use of one's individual set of talents and traits) just is equally available to all. By hypothesis, individuals are operating in a protected sphere of non-interference, and bring an intact 'package' of attributes into the competitive realm of market interaction. The ways in which social-liberals see differences in socioeconomic conditions (as they emerge inside a libertarian-style system) having systemic detrimental 'feedback' effects on these valued capacities just doesn't appear in the description. From anything we might learn from the libertarian account, such 'feedback' effects just don't happen. So then, there is nothing to signal any potential problem for the preferred system, in relation to their prior ethical and political commitment to capacities for reasoning and self-determination. And thus no further ethical demand is placed on the State to go beyond its limited role, and interfere in market outcomes.

An essential point of my approach, however, is that, the argument here largely turns around contrasting naturalistic views of everyday human capacities for reasoning and self-determination, and how they may or may not be differentially subject to detrimental impacts, as influenced by different kinds of socioeconomic conditions commonly present within liberal State-free market societies. With respect to this part of the dialectic, therefore, I suggest the veracity of the contrasting claims can in principle be tested against theory and evidence in the natural and social sciences. What view, if any, might contemporary neuroscience offer of everyday, natural capacities for reasoning and self-determination? And what view might research in the social science have to offer, about how these capacities really do tend to fare under different kinds of social conditions? Ahead of considering the evidence itself, of course, we have no *prima facie* reason for believing this is possible in practice, but that indeed is part of my point. I say it is possible, and can bring important 'game-changing' information back into the normative debate.

Both libertarians also offer a form of supplementary argument, to counter concerns about widespread differences in socioeconomic conditions inside their scheme having differential impacts on agential capacities. (And it bears noting here that the likely

occurrence of such widespread differences within a libertarian-style scheme in action is *not* something social-liberals and libertarians disagree about. On the contrary, according to the invisible-hand explanation, it is something one expects to occur.)

According to Hayek, the likely development of widespread differences in socioeconomic conditions need not give rise to ethical concern because, even if you end up on the bottom of the success distribution, perhaps ‘forced’ by circumstances to accept a menial job, that doesn’t count as coercion, because there is no person intentionally seeking to control you. (1960 p.137) You still presumably have your complement of agential capacities, and you still, on this view, have a genuine choice – albeit over fewer options. Thus Hayek asserts, ‘[w]hether or not I am my own master and can follow my own choice and whether the possibilities from which I must choose are many or few are two entirely different questions.’ (1960, p.17) Therefore, again, there is no trigger for State action to modify the distribution in defence of negative freedoms.

Similarly with Nozick, under his entitlement theory of justice, rights extend to entitlements over any ‘holdings’ (goods) that one has acquired by claiming something previously un-owned, by work, or by being given things. The only condition is that holdings have not been acquired by infringing the rights of others. If that condition is met then, once again, nothing about the success distribution per sé can trigger a rights claim, no matter how ‘low’ you go. Nozick accepts that ‘[o]ther people’s actions [may] place limits on one’s available opportunities,’ but that ‘[w]hether this make one’s resulting actions non-voluntary depends on whether these others had the rights to act as they did.’ (1975, p.262) Even a choice to work or starve, he claims, is fully voluntary, provided that none of the individual choices/actions taken by others to create that situation contravened rights of others. (pp.262-265) Thus, once again, given the role of the State, there is nothing about the libertarian free market to suggest any systemic relationship between economic inequality and contravention of Nozickian rights.

This argument *might* be seen to count against a social-liberal critique, if the obstacles to agential capacities created by widespread differences in conditions are construed *only* as *external* obstacles – such as a lack of ‘equal opportunity’. However, if differences in socioeconomic conditions created under a libertarian-style system in action have detrimental impacts on the actual capacities for reasoning and self-determination *themselves*, and do so unequally, the situation would be quite different. Clearly, if this were so, it ought to matter normatively to both Hayek and Nozick, according to their own prior

commitments, and trigger an ethical demand on their liberal State to address the relevant differences in conditions²¹.

I intend to show that in fact such impacts can and do occur under certain common kinds of contemporary conditions, and are likely to be more widespread and/or severe under a system following libertarian prescriptions.

Both libertarians suggest that the State applying a ‘positive’ egalitarian principle of ‘social justice’ or ‘distributive justice’ will attempt to enforce a predetermined pattern of distribution on the economy as a whole – and thereby tend toward a fully socialist State.

(Hayek 1973, Vol.2 p.64, Nozick 1975, pp.162-163) With the possible exception of Rawls, none of our social-liberals recommend such action by the State, and as we have seen they oppose excessive state coercion as counter-productive. In any case, this is not an approach I will argue for, and as we have seen ‘egalitarian’ actions by the State need not imply any enforced determinate pattern of absolute equality of conditions, opportunities, or what have you.

Finally, there is another, consequentialist form of argument offered by both Hayek and Nozick (Kymlicka 1990) in favour of a limited or minimal, non-interventionist State. This is also informed by the Smithian description of the market, and the invisible-hand explanation, but not tied as such to the prior normative commitments to individual agency. For both, the basic argument runs as follows: by embracing an economic system with competitive ‘incentives’ for individual agential effort, one which differentially rewards talents and traits and doesn’t prevent widespread differences in success; the greater success of some will drive economic activity in a way likely over time to deliver a larger overall amount of material benefits to the society as a whole (that is, larger than would be achieved under another kind of political/economic system). In arguing for the benefits of ‘free societies’ over others, Hayek says, ‘[n]ot all of the amenities that we can today provide for the few will sooner or later be available to all ... But most of the gains of the few do, in the course of time, become available to the rest. Indeed, all our hopes for the reduction of present misery and poverty rest on this expectation.’ (1960, p.51) And we ought to refrain from State intervention to mitigate widespread economic inequality between the few and the many precisely because, ‘[t]he rapid economic advance that we

²¹ Say I invented a machine which could ‘turn down’ people’s capacities for everyday reasoning and self-determination, making them passive, indecisive, confused or short-sighted. Using that device wouldn’t, in any direct sense, take away a person’s wealth, property or job, it wouldn’t subject her to fear of a coercive threat; but surely it would do something that both Hayek and Nozick, according to their stated values, ought to object to.

have come to expect seems in a large measure to be the result of this inequality and to be impossible without it.' (pp.41-42)

Nozick argues that a system such as he favours, embracing defining principles of private property rights, '*increases the social product* by putting means of production in the hands of those who can use them most efficiently (profitably)'. (1975, p.177)²² (In neither case does this argument assert that each individual will always be better off.)

I will show that a libertarian-style system in action, because of the detrimental impacts on people's psychological capacities that will tend to occur, is in fact likely to create significant risks to its own viability, even though material wealth may be increasing.

²² Nozick relies heavily on this claim to assert that his system satisfies the intent behind the Lockean provision, that the appropriation of private property from the natural world by some leave 'enough and as good left over' for others.

CHAPTER 3.

BACKGROUND ISSUES: NATURALISM AND NEUROSCIENCE

3.1 INTRODUCTION

In the chapter to follow I will put forward a naturalistic account of basic human capacities for social reasoning and decision making, and argue that it ought to be seen as a plausible alternative to descriptions of capacities for everyday reasoning and self-determination found within liberal political theories. The proposed account will draw directly on theory and evidence from within specific areas of cognitive neuroscience research. Less directly, however, it will also draw on a wider range of information and ideas about naturalism, and about neuroscience in general. And what brings these background ideas together, so to speak, is an underlying commitment to *locating* the task of understanding the Mind, as it has figured in various forms of philosophy, within the framework offered by empirical science for understanding the world. And more concretely, here this means investigating aspects of Mind of interest to philosophers, but via an approach which treats mental states and events as products of the brain, and the human phenotype as an evolved, material and biological structure.

To fully explicate and attempt to justify this approach is outside the scope of this project. However, in this chapter I will set out a number of key points in summary form, as a preface to the account of social reasoning and decision making to follow. The discussion will be structured around four main goals:

- To identify some main assumptions of the study's *naturalism*, encompassing both ontological and methodological commitments
- To note some general ideas from contemporary neuroscience, about understanding the Mind as a product of the brain
- To introduce 'affective neuroscience' as an area of research
- To clarify some allied terminology

3.2 A NATURALISTIC APPROACH: SOME BASIC COMMITMENTS

As De Caro and Macarthur describe it, for Western philosophy today a commitment to 'scientific naturalism' is characterised by two main themes:

"1. *An Ontological Theme*: a commitment to an exclusively scientific conception of nature;

2. A Methodological Theme: a reconception of the traditional relation between philosophy and science according to which philosophical enquiry is conceived as continuous with science.”
(2004a, p.3)

The naturalistic stance adopted here encompasses commitments in both these areas, in the following terms.

3.2.1 Ontology

This study accepts a basic *materialist* view which sees the world as fundamentally composed of the physical or material entities and processes described by physics.

However, it also recognises a range of other natural kinds of things, as identified across a range of sciences. The latter move may proceed by firstly recognising processes of *composition* whereby basic physical entities are combined in ordered ways, within larger structures, including of course complex biological structures.

From that position one may then claim that, in virtue of the *relationships* between simpler elements, larger structures sometimes display *emergent* properties that are not features of their constituent parts considered separately. (Auyang 2000, 95-96) For example, being a liquid at certain temperatures may be considered an emergent property of water, in relation to the properties of its constituent elements, namely H₂O molecules. No individual molecule has that property. The emergent property comes about because of the way large numbers of H₂O molecules interact with each other in certain conditions.

Emergent properties are sometimes distinguished from *resultant* properties of composite structures. The latter are properties that are, we might say, simply the sum of the aggregated properties of the constituent parts; in this sense the mass of a billiard ball is nothing ‘over and above’ the aggregated mass of its atomic constituents. Mahner and Bunge offer a distinction between emergent and *resultant* properties as follows:

A property of a whole which is also possessed by some of its parts is said to be *resultant*. If, on the other hand, a property of a whole is not possessed by any of its components, it is called *emergent*. For example, the property of being alive is an emergent property of cells, but a resultant property of multi-cellular organisms. (1997, p. 29)

Living things are paradigm cases of entities displaying emergent properties, and here, unlike the case of water, the constituent elements in question are differentiated internal structures within a bounded system. The property of being able to sense and move away from areas of high salt concentration possessed by some single-cell organisms is enabled, we may say, by *both* the presence of the cell’s various molecular component parts and the organised arrangement within which the activities of those parts interact. It is the

composite structure which is properly understood to have the property – motility in response to salt concentrations – and this is not a property displayed by any of the component elements considered separately¹.

On these terms, mental states and events are good candidates to be considered as emergent properties of the activities of neurons interacting within the heterogeneous structures of the brain.

3.2.2 Methodology

The naturalistic stance adopted here is broadly committed to engaging with a range of scientific theory and practice informing a view of the human phenotype as an evolved biological structure, and Mind as a product of the brain. That range might include biochemistry and molecular biology, evolutionary or developmental biology, neuroanatomy and physiology, cognitive or social psychology.

In trying to come to grips with the profound complexity of biological structure and activity described by such disciplines, as they focus at different scales, certain general methodological ‘tools’ may be employed. For example, in addressing the composite structure of the human phenotype, it is not uncommon for researchers and theorists to analyse elements in terms of part-whole relationships, and levels of ordering. Bunge argues that the concept of ‘levels’ in this context is a useful tool for picking out and describing certain classes of organised structure within a complex whole; for example the ‘cell level’ or the ‘organ level’. (1977, p.78) In a similar way, Churchland and Sejnowski argue that, within nervous systems, one may pick out ‘as distinct descriptive levels the molecule, the membrane, the cell, the circuit, networks, maps, brain systems, and several levels of behaviour (from the reflexive to the highest levels of cognition). (1999, p. 139) The designation of levels in these ways may to some extent depend on the nature of the

¹ It should be noted that this approach to emergent properties is not the only one available. Much of the contemporary debate in philosophy of science address the idea of emergent properties in terms of the relationships between *theories* or descriptions applied to different levels of ordering within a composite structure. Here the question of whether a property ought to be considered ‘emergent’ depends on whether the relevant concepts and explanations of the ‘higher level’ theory describing that property can be wholly reduced to the terms of a ‘lower’ or more basic constituent theory. (Churchland 1986, pp.323-327; Kim 1999) Here I prefer the approach of philosopher, Mario Bunge, who argues that emergent properties are to be defined as ontological features, whereas issues of reduction between theories are matters of epistemology. On this view, emergent properties are what they are, and our ability to explain them (or not) by reference to the properties of their constituent elements and how those elements interrelate is a separate issue. The fact that an emergent property *is* explainable in this way does not (or need not) ‘explain it away’ nor undermine its ontological distinctiveness. (Bunge 1977, p.79) Churchland suggests that, in relation to features of complex organisms, this is a valid – and perhaps less contentious – use of the concept of emergent property, roughly equivalent in her view to a ‘network property’. Thus a set of retinal cells can display an emergent property by functioning as a ‘movement detector’; because ‘none of the individual cells is itself a movement detector’, notwithstanding that ‘the functional property is certainly and obviously reducible to the neurophysiological properties of the network.’ (1986, pp.324-325; also Clark 1997, pp. 39-42)

investigation, and is revisable as understanding increases. To notionally identify ‘maps’ as Churchland and Sejnowski do, is to refer to a class of neural structures that appear to topologically represent sensorimotor information. Whatever the veracity of that classification, it clearly arises from empirical investigations of the operations of certain neural systems, and is found by some to be useful for the purpose. Elsewhere, citing a range of studies, Churchland identifies 11 distinct levels of description of processes of memory and learning, from synapse function to cell assemblies to the performance of college graduates on memory tests. (1986, pp.359-360)

A specification of different levels of structure and function within complex wholes may also be expressed in terms of part-whole relationships, and the ‘roles’ designated to particular features in this sense may vary according to the scale one is considering. As a simple example, one may investigate certain molecules and the properties they display as parts within a single cell; or investigate collections of cells as the constituent elements of an organ, say the heart; or investigate the heart as part of the circulatory system, and so on. (Auyang 2000; Craver 2001) Again, the designation of some particular thing as a part or whole within a multi-levelled structure is a methodological tool, and the designations are relative insofar as, for example, a cell may be considered a whole relative to its own parts, and a part relative to some larger structure. (Churchland 1986, p.360)

This recognition of part-whole relationships is also consistent with a particular approach to forming explanations of some posited property or activity of a complex system – e.g. the property of the brain as an ‘information processor’ (see below). A methodological stance recommended by a number of relevant thinkers here is one of *moderate reduction*. This approach suggests that the appropriate approach to explaining the properties of some particular composite whole proceeds via analysis in the terms of part-whole relationships. That is, satisfying explanations of a higher-level emergent property can be constructed in terms of the properties of those elements that form the (‘next level down’) constituent level, and the interrelations between these elements. In this sense the designation of higher-level properties is not arbitrary, but is theoretically ‘tied’ to the parts which, relative to the whole, may be considered as the *material* constituents. (Auyang 2000, pp 156-159; Bunge 1977; Churchland 1986, 364-375)

This approach can be seen as part of a wider methodology governed by the *co-evolution* of theories at different levels. Employing a methodological stance of moderate reduction, one can say that genuine, materialist analysis of properties posited at a higher level of description can take place; but that this need not involve a strongly reductive ‘elimination’ of the higher level terms that specify the property one is seeking to explain or better

understand. The point, instead, is more in terms of ‘co-evolution’ of theories, including the possible revision of higher-level classifications, descriptions or assignment of properties, in the light of improved understanding of the underlying constituent structures and processes. Similarly, theories pitched at a higher level, perhaps psychology or sociology, might identify commonalities of human behaviour in certain circumstances which inform research approaches in sciences pitched at the constituent level, e.g. neurophysiology. (Churchland 1986, pp.363-364)

3.2.3 Evolution and Homology

The concept of homology identifies a similarity in the structure, physiology and function of some particular anatomical feature across species sharing a genetic ancestry, understood to obtain because DNA coding for that feature has been preserved relatively intact along the evolutionary line in question. The similar arrangement of wrist bones across species of larger mammals including seals, horses and primates is a case of homology. (There may be a similarity of function between the wings of birds and butterflies, or to put it another way, a relationship of analogy, but there is no homology. [Griffiths 1997, Ch.1])

Identification of a homology may also signal that a particular shared feature plays a similar functional role for the members of the various species in question. The hypothalamic-pituitary-adrenal (HPA) axis, for example, is a feature common to many mammal species, and its operations are seen to play a similar role in driving physiological arousal in response to threat (the so-called ‘fight or flight response’). (McEwen 2002) The preservation of some homologous feature across genetically related species is also evidence that it has continued to serve the survival and reproductive prospects of the organisms concerned. (Panksepp 1998, Ch.4). Classification by homology is a common feature of contemporary neuroscience methodology, and underpins theoretic extrapolation from the study of particular features in animals to conclusions about the human phenotype. (Panksepp 1998)

3.3 PERSPECTIVES FROM CONTEMPORARY NEUROSCIENCE

3.3.1 Mind as Computation

A distinguishing feature of contemporary cognitive science is a *computational* theory of Mind. In other words, the paradigmatic research orientation of cognitive science is to investigate and theorise about human mental states and processes as, in some sense,

information processing occurring in a physical system, the brain. And the ‘bottom line’ for asserting a physical system as an ‘information processing’ system seems to be that it firstly *represents* information about the world in some manner, and secondly *processes*, or operates on those representations in a systematic way. (Crane 2003, pp. 83-85) As O’Brien and Opie put it, according to a computational theory of Mind, cognitive processes are ‘to be understood … as disciplined operations defined over neurally realised representational states’. (1997, p.1) In this study the following general tenets of a computational approach to understanding the Mind are accepted:

- a) That mental states are physical events in the brain
- b) That the brain – a physical system consisting most centrally of neurons, their structures of connectivity, and the electro-chemical processes of ‘signalling’ between them – is also an *information processing* system
- c) That certain states within this system stably *represent* information about the world, and that certain processes of activity and change within the (brain) system – transitions from one state to another – manipulate those representational features in an ordered manner
- d) And that these internal representing states and state transitions bear some kind of correspondence with things and events in the world, such that they are able, in some causal manner, to contribute to all sorts of situationally appropriate, reliable and robust forms of in-the-world behaviour (Clark 1993, pp. 4-5)

(Also Crane 2003, Ch. 3)

3.3.2 Causal Factors and Plasticity

In seeking to understand features of the Mind from a naturalistic perspective one will inevitably confront the question of *causes*. If mental states are physical events in the brain, then we may ask, in the most general sense, how were these events caused? If having a certain capacity, say to speak English, resides with the structures of the brain being ‘tuned’ in a particular way, such that spoken language can be reliably produced in situation-appropriate ways, then how was this state of the brain brought about?

Here I will adopt two working perspectives on these potentially difficult issues, based on current views from the biological sciences and the philosophy of science. Firstly, I suggest, we can usefully view the causal history of an occurrent mental state or cognitive capacity as involving several kinds of events, sometimes occurring over different time-spans; including:

- The formation of neural structure, including the ‘connective’ structure of axons, dendrites and synapses (including the initial formation of brain morphology during early development)
- Events which determine or change the ‘strength’ of the signalling connection between neurons (loosely, the potential of a neuron firing to trigger the firing of other neurons it is connected to) – call these ‘connection weights’
- And the immediate events of brain activity or stimulation from an external source which proximally cause some mental state to occur

And in each case, one can also say that there are four main kinds of factors likely to be implicated as causes of these events: i.e. as causes of neural structure being formed, or connection weights being set or changed, and so on:

- Gene expression, via processes of RNA and protein production
- Epigenetic processes, where gene activities (or products) interact with and regulate the activity of other genes; during morphogenesis or thereafter (Craver 2001)
- Other intrinsic brain activities (neuronal firing, release of neuro-chemicals, enzyme actions, etc)
- External events as stimuli for internal neural activity or growth

(See also: Churchland 2002, pp.322-328; Changeux 2004, pp.26-28; Quartz 1999; Greenfield 2000)

Factors of the first three kinds are internal to the organism, and those of the fourth kind, obviously enough, are external. The extent of the causal influence of factors of these different kinds may vary, according to the events in question. Genetic and epigenetic processes may be understood as the primary causes of neurogenesis; that is, the formation of gross brain morphology (the basic structure) prior to birth.

As background to the model of social reasoning and decision making of chapter 4, it will be useful to note two particular ways in which causal factors of several of these kinds, including external factors, may be understood to *interact*. Below I will consider how this occurs in the formation of neural structure, especially during early development. In the section to follow we will look at the interaction of causal factors of different kinds in the setting of connection weights. In both cases, the processes can also be understood as forms of learning.

Plasticity:

Quartz and Sejnowski (1997) call upon a wide range of empirical evidence in support of their claim that the pattern of connective structure between neurons of the neocortex, especially during early development², is causally influenced by both internal *and* external factors (of the four kinds noted above). External factors are understood to act as stimuli for neural activity, and *thereby* to also stimulate development of connective structure in the form of axon and dendrite growth, and the formation of new synapses. (1997, pp.539-550) For example, they discuss studies on the early formation of ocular dominance columns in the visual cortex. Here, they claim, evidence suggests that the formation of connective structure over time, while certainly influenced by gene expression, is also influenced by the activity of other developing structures elsewhere in the brain (via afferent connections), *and* by the external stimulation provided by the presence of a variegated environment. (1997, pp.542-54) (When an eye is masked during critical period, normal levels of axonal growth are inhibited. [p.344]) The propensity for the growth of connective neural structure to be influenced by external stimuli in this way is referred to as ‘plasticity’. (O’Leary 1996) Although plasticity is a particular feature of the neocortex, all neurons can increase or lose connective structure in response to changes in their level of activity. (Panksepp 1998) And although plasticity in the neocortex is a particular feature of early development, it continues to a lesser extent throughout life. (O’Leary 1996) There is evidence that plasticity, and the progressive development of connective structure within the neocortex, may play a role in the establishment of a range of cognitive resources including language and the executive control functions of the prefrontal cortex. (Quartz 1999; O’Leary 1996) Here then is one significant way in which internal and external factors interact to causally influence the development of cognitive capacities.

3.4 AFFECTIVE NEUROSCIENCE

Applying the methods of cognitive neuroscience to the study of emotions has led to the development of ‘affective neuroscience’ as a distinct domain of research. (Panksepp 1998) Studies from within this area will be a main source of evidence and theory in the next chapter. Concepts such as ‘affective state’ or ‘affective salience’ will feature prominently, and thus it will be useful to make clear what the term ‘affective’ connotes in this context, and locate my approach in relation to research in the area.

² Roughly, the first five years of life, post-birth

Given the background of the field, it is hardly surprising to find that, within the relevant literature, the concept of an ‘affective’ state or process is commonly treated as synonymous with that of an ‘emotional’ state or process. (E.g. Davidson and Irwin 1999; Posner et al. 2005) As research in the area has developed, however, this approach has come to be questioned, and there are several grounds on which it might be regarded as problematic. One point, for example, is that some activities carried out by identified affective structures that influence human cognition and/or behaviour appear to occur below the level of awareness, and do not result in any consciously experienced, reportable emotion. (Whalen 1998; Berridge and Robinson 2003) This would seem to indicate that, although the brain structures commonly labelled as ‘affective’ may be involved in mediating consciously experienced emotions in humans, their role/s within the overall cognitive economy may be broader and more varied.

For these and other reasons, which will become clear, this study will not engage with much literature on emotion as such. Instead, my approach, and a working definition of what is to count as an ‘affective’ structure or process, will continue to be guided by the naturalistic commitments noted above and by a number of theoretical and methodological perspectives employed within affective neuroscience research as outlined below.

3.4.1 Homology and Empirical Research Methods

As one might expect, the majority of empirical research in the cognitive neurosciences is intended, in one way or another, to enhance our understanding of human cognition. Within that broad enterprise, it seems that three main kinds of research method are employed. Firstly, there is research on animals, much of which uses invasive techniques to measure effects on parts of the brain, under various controlled conditions³. Subjects are typically mammals with brain structures understood to be homologous with structures in the human brain and (as noted above) it is on these grounds that results are taken to (potentially) inform the human case. (Panksepp 1998) The general validity of this approach is accepted here.

Secondly, there are ‘lesion’ studies, which investigate people who, due to accidents or birth defects, have damage to particular parts of their brain. The working supposition here is that distinctive behavioural deficits in such subjects may inform us about a usual role of that part in a non-damaged brain. (Damasio 1994) And thirdly, there is a rapidly expanding body of research on people using various ‘imaging’ techniques (e.g. fMRI or ‘functional

³ It should be noted that use of information arising from research on animals does not signal any ethical endorsement of such practices by the author.

Magnetic Resonance Imaging') to measure changes in brain activity, again as subjects are exposed to controlled conditions, or asked to do certain tasks. Either of these latter methods may produce findings consistent with results in animal studies (or vice versa), and where this occurs it may be seen as offering lines of convergent evidence for a particular hypothesis. (E.g. Schoenbaum et al 2003)

3.4.2 Affective Neuroscience Methodology and Some Working Definitions

The designation of a structure in an animal brain as ‘affective’ may be premised in part on evidence showing heightened arousal and activity in that structure when the animal is exposed to stimuli that are taken as innately attractive (e.g. food, for a hungry animal) or aversive (e.g. an electric shock). And stimuli are taken to be either innately attractive or aversive on the general grounds that they tend to directly elicit behaviour to either approach or avoid the stimulus, without the need for any learning. (Le Doux 1996)

Evidence in such studies shows that the presence of each type of stimuli tends to elicit heightened activity within certain (different) structures, and that this in turn, via neurochemical mechanisms, can trigger relatively large scale changes in activity in other brain areas, and/or within the body (which presumably play a role in the onset of the approach or aversive behaviour). Stimuli tending to elicit approach behaviour are often characterised as ‘rewards’ or ‘positive reinforcers’, and those eliciting aversive behaviour as ‘punishers’ or ‘negative reinforcers’. (Kringlebach 2005) Structures or systems tending to be preferentially aroused by either ‘rewards’ or ‘punishers’ may be characterised accordingly, as ‘reward’ systems, or ‘fear’ systems. (Kringlebach 2005) There is, of course, no way to directly assess how these changes correlate with any subjective experience in animal subjects. However, studies on humans can (sometimes) correlate activity in homologous structures, under similar or analogous conditions, with marked changes in subjective mood, or emotion, based on subjects’ reports. These correlations provide further grounds to designate particular structures as ‘affective’.

As we shall see, animal studies also routinely investigate the role of affective structures in learning and behavioural change. (Le Doux 1996)

Acknowledging that these perspectives will inform my approach, I offer the following preliminary definitions of the general terms on which I will treat particular neural structures or systems as ‘affective’, and the state changes they tend to regulate as ‘affective states’. The reader should understand that a main part of the work to substantiate these definitions will be done in the next chapter.

For any neural structure defined here as ‘affective’, I will say it is:

- a) A structure in which neuronal activity is typically preferentially aroused by the presence of stimuli which would seem reasonably to be understood as specially significant, attractive or aversive for the organism concerned
- b) A structure which projects kinds of excitatory or inhibitory neurochemicals to other parts of the brain, where these actions cause relatively large scale changes in patterns of neural activity; and where these changes reliably correlate with marked changes in the organism’s behavioural dispositions and/or behaviour (in animals or humans), and may correlate with changes in subjective mood (in humans). These wider changes may also cause change in arousal/activity of body states and within various organs; which may in turn trigger mechanisms of ‘feedback’ to modulate further changes in brain activities. The relevant wider states of neural activity, along with corresponding behavioural dispositions, and possibly including correlated changes in body state, I will sometimes refer to as *affective states*. (Davidson and Irwin 1999; Posner et al. 2004; Schore 1994) An affective state in humans may or may not be consciously experienced as any kind of emotional state. (Davidson and Irwin 1999, p.12; Whalen 1998, p.178)

Similarly, I offer the following preliminary definition of ‘affective salience’, as an attribute of an interaction between an organism and its environment. An occasion of affective salience is one where an encounter with a particular kind of stimulus in the environment, and/or the perceptual/cognitive representation of a kind of stimulus, causes the preferential arousal of affective neural structures and/or systems. And on these terms a stimulus can be regarded as *having* affective salience for that organism on that occasion.

I will also sometimes refer to stimuli which, on the evidence available, appear able to elicit an affective response in a particular organism without the need for the prior formation of a learned association between that kind of stimulus and an affective response, as having ‘primary’ affective salience. And those stimuli which appear able to elicit an affective response only after the formation of such a learned association I will refer to as having ‘secondary’ affective salience.

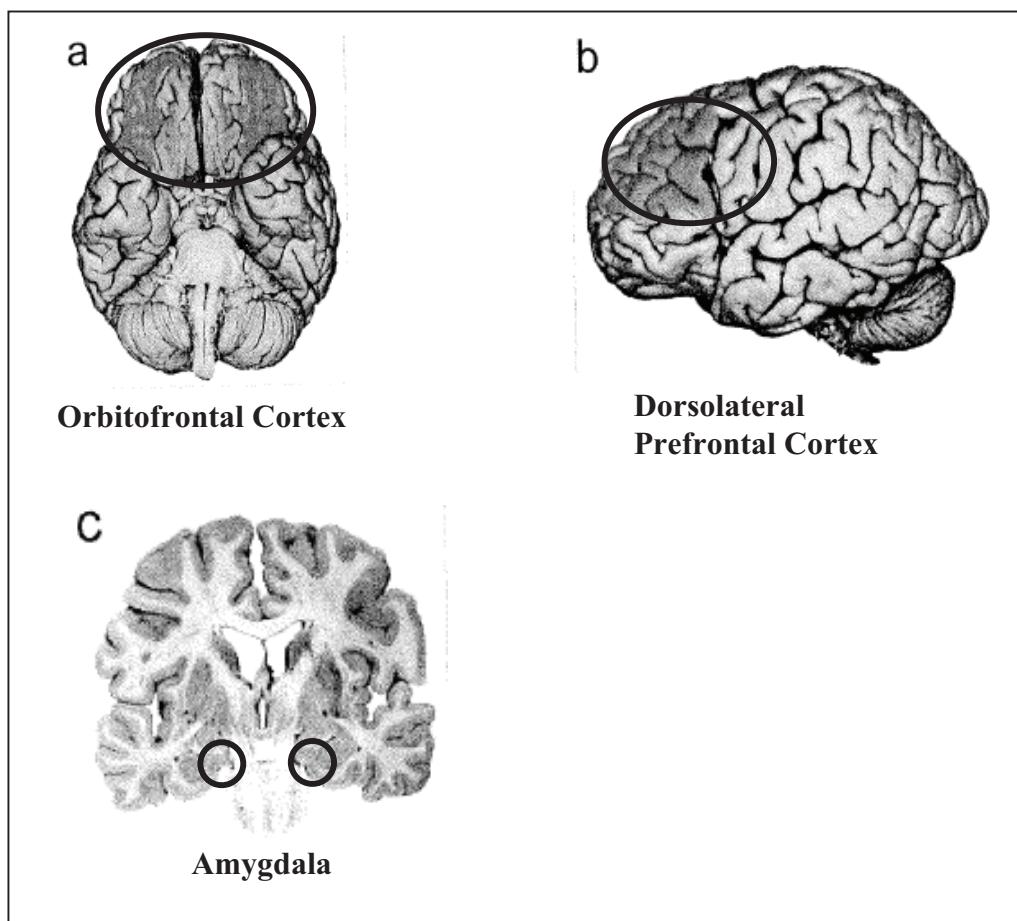
3.4.3 Cognitive and Affective Structures in the Brain

In the next chapter I will focus particular attention on two areas of the neocortex, the lateral prefrontal cortex and the orbitofrontal cortex; and one sub-cortical structure, the amygdala. This section will introduce these ‘main players’ and offer some basic

information about their structure, location and physiology. The location of these structures is shown in Figure 3.1, below.

The two *cortical* areas firstly, the lateral prefrontal cortex (PFC) and the orbitofrontal cortex (OFC), are located within the frontal lobe; the forward third or so of the neocortex. The main characteristic structure of the neocortical lobes making up the two main hemispheres of the cerebrum is a wrinkled, laminar sheet of grey matter, composed of neuron cell bodies grouped in columnar formation, and in six layers. Other, more medial (and generally considered to be evolutionarily older) cortical structures, including the cingulate cortex and hippocampus, also have a laminar structure, but with fewer layers. (Panksepp 1998, p.71-72)

Figure 3.1:



Both the PFC and OFC will be considered here as having primarily *cognitive* functions. To a first approximation, cognitive functions of the brain include: representing sensory information about the external world; information-processing tasks such as memory,

language use, or reasoning (Panksepp 1998; Schore 1994); or providing ‘executive’ control of complex sequences of action towards goals. (Fuster 2004)

The amygdala, on the other hand, is a *sub-cortical* structure. Unlike the sheet-like and layered structure of the cortex, many of these lower, more ‘interior’ parts of the brain have a nucleated structure, where densely interconnected groups of neurons form anatomically definable nuclei. (Panksepp 1998) A number of main sub-cortical structures have, for some time, been seen as strongly involved in mediating various emotion states, such as the nuclei of the thalamus and hypothalamus⁴. (LeDoux 1996) The amygdala itself is a common subject of research within affective neuroscience, and indeed has been implicated as having a key role in the onset of emotion states, particularly fear. (Le Doux 1996)

It will be understood here that each of these structures in humans shares some structural and functional characteristics with homologous structures in other mammals.

As was noted above, plasticity is a particular characteristic of neocortical neurons. (Quartz 1999; O’Leary 1996; Churchland 2002) Panksepp argues, by contrast, that the micro-architecture of several main sub-cortical structures and systems is more highly genetically specified. (1998, Ch.1) The case for this claim lies in part with the evidence for relatively close homologies between these structures in humans and other mammals. This suggests that their formation is constrained to a relatively high extent by similar parts of mammalian DNA, and that these genetic structures have been preserved across the evolution of different mammal species. (Cairns-Smith 1996, pp.125-127; Panksepp 1998, Ch.4) However, Panksepp also emphasises that micro-structures of affective nuclei still have some plasticity, and can undergo stable changes under the influence of environmental events. (1998, p.27)

3.4.4 Neuronal Signalling

The signalling or transmission activities of all neurons have two main profiles. The internal process of generating an axonal signal depends on the uptake or release of ions through the cell wall, which change the internal electrical charge of the cell and produce a current which runs down the axon. The inter-neural aspects of transmission, however, are chemical. In crude terms, the presynaptic neuron releases certain neurochemicals into the

⁴ These structures are amongst those which were identified in the 1930s by James Papez as the *limbic system*; in his view the locus of the emotions. (Le Doux 1996, pp.85-89) Interpretations of the make-up, or existence, of a functionally discrete limbic system vary somewhat within contemporary accounts. Although there is no need here to argue either way, I would favour the position of Le Doux, who sees this very variability of specifying the make-up of a limbic system as a problem, and concludes that the concept is no longer useful. (1996, pp.85-89; see also Cairns-Smith 1996, p.146-151; O'Reilly and Munakata 2000, p.212)

synaptic cleft, which when matched and taken up by receptor ‘gates’ on the postsynaptic cell, trigger ion uptake or release in that cell. (Drubach 2000, Ch.2; P, Ch.6))

Neurochemicals come in many forms, grouped as two main types: *neurotransmitters*, which are projected anatomically (via axons) and act directly to induce excitatory or inhibitory changes in electrical potential in the postsynaptic cell; and *neuromodulators* which, as the name implies, modulate the intensity of neuronal firing. (Drubach 2000, Ch.2) Like neurotransmitters, these inhibit or excite neuronal activity, and may be projected axonally. However their influence is more diffuse in that, by remaining in the synaptic cleft and spreading into cerebrospinal fluid, they can modulate neuronal activity across an area of brain tissue (a *paracrine* activity). Neuromodulators can also influence neuronal activity by being released directly into the bloodstream (an *endocrine* activity). (Panksepp 1998, pp.111-112)

Many neurochemicals are manufactured by DNA within neurons themselves, and transported down the axon to be released as required into the synapse. Neurochemical molecules remaining in the synaptic cleft may be broken down by various enzymes, or taken up again by the presynaptic cell for reuse. Some neurochemicals not only exert more immediate influences on neuronal firing patterns, but can also act to increase and stabilise the signalling potential between pre and postsynaptic neurons; a process known as *long-term potentiation*. This stabilisation (and sensitisation) of patterns of neuronal firing is a means by which learning and information storage is thought to occur in the brain.

(Churchland 2002, pp.342-250; Quartz 2003) This is a process of changing and setting ‘connection weights’ between neurons, as signalled earlier. External stimuli of various kinds, by stimulating increases in neuronal activity within cortical or sub-cortical structures, may also thereby influence the release of neurochemicals which act on long-term potentiation. So, this is another way in which external and internal factors may interact in causing changes in the information processing capacities of the brain.

A characteristic of some affective structures is to specialise in the manufacture and axonal projection of particular kinds of excitatory or inhibitory neurochemicals, enabling them to have significant and distinctive effects on large-scale patterns of neuronal arousal in other parts of the brain. The raphe nuclei of the brain stem, for example, specialise in production and projection of serotonin. Serotonin release appears to have an inhibitory effect, at least insofar as an increase in serotonergic activity appears to reduce a range of motivated behaviours, including eating, sex, aggression and play. (Panksepp 1998, p.111) On the whole, the ‘mix’ of neurochemicals present and available to affect neuronal firing patterns,

together with the presence and availability of receptor molecules (in the postsynaptic cell wall) for the uptake of specific neurochemicals, plays a major role in proximally determining the patterns of neuronal arousal and activity obtaining at any particular time.

3.5 TWO USEFUL TERMS

3.5.1 Role Function

Mahner and Bunge (2001) suggest that the terminology of ‘function’ appears widely in the fields of biology, social science and technology, but that in fact a number of different function concepts are being employed. (Here, use of the term will remain within a framework of biology, neuroscience and evolutionary theory.) In reference to literature describing the structure of complex organisms, Mahner and Bunge suggest that use of the term ‘function’ is commonly employed to mean either the internal activity of a structure (e.g. the heart), or the external activity or *role* of a structure within a larger system (e.g. the role of the heart in the circulatory system), or perhaps both. Furthermore, they say, both of these usages are sometimes extended to connote a ‘proper’ function, construed in terms of either system health or evolved system ‘design’; thereby creating several further distinct senses of the term. (2001, pp.76-79)

Here, either ‘function’ or ‘role function’ will refer to the external activity or *role* of a structure within a larger system. To continue our example, we might say that description of the heart as a *pump* for blood requires that its activities be understood as a contribution to the working of a larger system containing a number of other elements; blood, arteries and veins, etc. In other words, to describe the heart as a pump is to assign a role function which, in order to be recognised as such, ultimately requires understanding of the circulatory system as a whole. (Craver 2001) One has moved from describing internal activity per sé, to describing activity as it contributes to the operations of a larger system.

This approach is consistent with the naturalist methodology outlined above, including analysis and explanation of composite, biological structures via recognition of different levels of ordering and part-whole relationships. Craver captures the relevant matters well when he says:

[I]t is possible to describe an item’s activity in three distinct ways, depending on how one looks at it with respect to a hierarchy of mechanisms. Ignoring its context, one can describe x’s Φ-ing in isolation. Looking down to lower level mechanisms the activity is described constitutively.

And looking up to higher level mechanisms, the activity is described contextually. (2001, p.65)

So, it is this ‘contextual’ description of a mechanism’s activity as a contributor to the activities of a higher level mechanism or system which is a description of its role function. Again we may note that the concept of function can be applied at different levels. The activities of individual muscles play a functional role in the beating of the heart. The heart has functions within the operation of the circulatory system. An individual neuron in the visual system plays a functional role insofar as it acts as part of a network representing, say, vertical edges. The same network functions as part of the ‘larger’ system activity of seeing a box.

3.5.2 Regulation

The concept of regulation as I will employ it here is similar to ideas of feedback control within control theory, systems theory and cybernetics. Lewis defines feedback control as ‘the use of difference signals, determined by comparing the actual values of system variables to their desired values, as a means of controlling a system.’ (1992, Ch.1) A commonly used example of a feedback control system is the Watt governor, employed to regulate the operating speed of steam engines. Roughly speaking, the working engine is linked to the governor mechanism, and spins it at differing rates according to the current operating speed. The resulting centrifugal force affects the weighted arms on the governor, linked to a valve controlling steam pressure to the engine. Higher engine speed spins the governor faster, raising the arms, which reduces the flow of steam via the valve. The resulting lower speed slows the governor, lowers the arms and increases the flow of steam. (Lewis 1992, Ch.1; Bateson 1979, pp.104-109) The activities of the governor *regulate* engine speed insofar as they are directly instrumental in maintaining the activities of the system – its running speed – within certain parameters. Or, equally, we could say that the governor control fluctuations in system activity so the system stays close to an optimal median value (as designed into the system by an engineer).

Plentiful examples of regulation can also be found in the biological realm. For example, Panksepp describes how certain brain systems act to regulate oxygen levels in the blood, as it happens, by monitoring carbon dioxide levels, and automatically triggering increases in rate and depth of breathing when levels get too high. (1998, pp.165-166)

We may note in such cases that regulatory actions are also a kind of role function played by a structure or sub-system within a larger system. Here I will assume (in relation to biological systems) that the activities of a structure or sub-system have a *regulatory*

function if they serve to control activities in other parts of a system, such that the activities of the system as a whole are maintained within certain ‘optimal’ parameters, under normal conditions. ‘Optimality’ under this definition is to be cashed out against evidence about the health of the organism. That is to say, the relevant parameters are defined against empirical evidence showing that, where the activities of the system in question undergo a sustained departure from a certain observably normal range, the organism is more likely to suffer detrimental effects on its health. When this occurs then I will understand it as an instance of *dysregulation*.

Prime examples of regulatory functions in the human are the activities of structures and systems which serve *homeostasis*; that is the maintenance of certain crucial system features such as body temperature, glucose levels or blood oxygen concentrations close to median values. Clearly, we have more than enough evidence to know, for example, if body temperature departs from its normal (narrow) range for a sustained period, then the implications for health are very serious indeed. (McEwan and Wingfield 2003, p.3)

However, it should also be understood that the regulated activities of systems in the human body (and brain) are not always about maintaining activities within a narrow range. Some systems are ‘designed’ (by evolution in this case) to regulate a sustained period of heightened activity (away from equilibrium, so to speak) followed by de-arousal back toward a ‘base-line’ level. For example, activity in the dopamine nuclei in the brain stem normally follows a form of diurnal rhythm, maintaining a tonic level of activity, and a ‘background’ level of brain arousal, over the waking period, which drops off during sleep. (Panksepp 1998) We shall see that the amygdala plays a role in regulating the rapid arousal of the body’s stress-response systems in a way that is well suited to dealing with short-term challenges in a social environment. However, when that arousal is sustained over too long a period it tends to have a damaging effect on health.

CHAPTER 4.

A MODEL OF SOCIAL REASONING & DECISION MAKING

4.1 INTRODUCTION

In chapter 2, I offered the following working definitions of capacities for reasoning and self-determination as described in liberal political theories:

- Reason: an individual capacity to intelligently and/or knowledgably assess one's available options for future actions, and to evaluate those options in the light of one's needs, interests, desires and/or prior experience
- Self-determination: an individual capacity to make rational choices, formulate plans and take actions accordingly; and thereby to that extent to endogenously determine one's course through life

We considered naturalistic claims from libertarian and social-liberal theorists, describing universal human capacities in terms generally consistent with these definitions.

In looking once again at these initial definitions, it seems clear that they presuppose a number of *subsidiary* capacities, as (putatively) contributing to a person's overall ability to engage in acts of reasoning or self-determination. Specifically, I would suggest, these definitions appeal to something like capacities for:

- Having *goals* for action, and making *plans* to attain those goals
- Making use of one's prior *knowledge* and *experience*, which in turn supposes a role for both memory and learning
- Imaginatively '*looking forward*' to future scenarios and *anticipating* possible consequences of one's possible actions
- *Evaluating* one's present and/or possible future actions, and forming preferences about them
- *Decision making* as a selection of a course of action from amongst some alternatives

The first part of this chapter (in § 4.2 and 4.3) will present evidence from cognitive neuroscience about how certain structures in the brain mediate cognitive-affective capacities fitting these descriptions of subsidiary capacities. It will look at brain activities mediating functions such as executive control of goal-directed behaviour, evaluation of external stimuli, and decision making. This will constitute the first part of a proposed model of capacities for social reasoning and decision making. Structures within the

prefrontal cortex (PFC), along with the amygdala, will feature prominently, and on these grounds I will describe the work as presenting a ‘prefrontal-amamygdala’, or ‘PF-A’, model. Having shown how the PF-A model gives an account of subsidiary capacities meeting the descriptions above, I will claim that it offers a plausible, empirically-grounded account of genuine human capacities for everyday reasoning and self-determination; as described within liberal political theories.

Apart from implying subsidiary capacities, descriptions within liberal theories surely also suppose that a person can engage in acts of reasoning or self-determination which are generally *competent* insofar as they are well directed towards the meeting of her needs and interests, as she navigates the everyday social milieu. With this interpretation in view, the second part of the chapter will further elaborate the PF-A model, looking at how the more ‘generic’ capacities for goal-directed behaviour, evaluation, and/or decision making respond to social stimuli (other people, their behaviour); and how these capacities can subserve skilful navigation of complex social environments, goal-oriented behaviour in that setting, and flexible shifts in behaviour in response to social cues. Thus I will say that the PF-A model presents an account of capacities for *competent, everyday social reasoning and decision making* (sometimes abbreviated as ‘SRD capacities’). In chapters to follow, this model will be reintroduced to the libertarian–social-liberal debate as a plausible account of capacities which both sides claim to value.

There is no intention here to claim that the account to follow presents a complete model of how the brain mediates the capacities in question (whatever that might look like). The aim is only to present a limited, hopefully plausible description of structures and processes seen to be most relevant to the purposes at hand. I will largely overlook a number of neural structures which, on evidence available, would seem also to be involved in mediating SRD capacities. For example, there will be no in-depth discussion of the hippocampus, a structure implicated in the formation and storage of memories for affectively salient events and the context in which they occurred. (Davidson et al 2002)

The approach taken in this chapter will leave aside the third main aspect of liberal claims about human nature raised in chapter 2, about individuality as a ‘diversity of innate potentials for personal talents or character traits between individuals and across populations (such that the expression of specific talents and traits within a person, other things being equal, renders that person a distinctive individual)’. Hereafter, I will concede un-argued the view that there is such diversity.

4.1.1 An Aside on Normative Theories

Johnson-Laird and Shafir define normative accounts of reasoning and decision making as those which are ‘intended to specify what counts [respectively] as rational inferences and rational decisions.’ (1993, p.3) They suggest that the classical normative account of reasoning is logic, and that of decision making is the Expected Utility Theory first developed in its modern form by von Neumann and Morgenstern. (1993, p.5) The philosophical literature on reason (or rationality) tends to make a distinction between theoretical or epistemic reason and practical reason. Mele and Rawling, for example, suggest that the former ‘is concerned with what it is rational to believe, and sometimes with rational degrees of belief’, while the latter ‘is concerned with what it is rational to do, or intend or desire to do.’ (2004, p.3)

Johnson-Laird and Shafir also note that in recent decades, alongside the normative realm of philosophical theorising about reasoning and decision making, there has been other more descriptive and empirically-oriented investigations in psychology; and that the latter accounts, about how people actually reason about options or make and justify decisions in everyday life, tend to diverge considerably from normative accounts. They claim that this apparent mismatch has led some working within the normative tradition to avoid rather than engage with the evidences of empirical psychology; observing that ‘[t]he notion that humans abide by normative principles dies hard, especially amongst economists and philosophers’. (1993, p.6)

The approach here is clearly more of the empirically-oriented variety. It might be that information to follow has interesting implications for normative views of practical reasoning or decision making. However, there is no intention within this study to engage with any mainstream normative theory of reasoning or decision making as such.

4.2 THE PF-A MODEL: CONTRIBUTING STRUCTURES & SYSTEMS

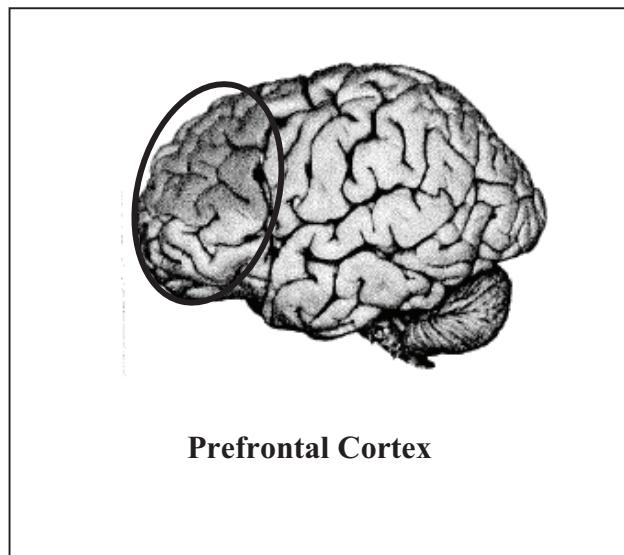
In this section I will consider the various neural structures which feature in the PF-A model, and discuss some of their respective activities and functions.

4.2.1 The Prefrontal Cortex and Executive Control

The prefrontal cortex (PFC) can be generally defined as that part of the frontal lobes of the cortex, lying anterior to the premotor cortex. It is comprised of several sub-structures, mainly the lateral prefrontal cortex, the orbitofrontal cortex and the anterior and ventral

cingulate cortex. (Koechlin and Summerfield 2007) The location of the PFC is shown in Figure 4.1.

Figure 4.1



In general terms the PFC is well positioned to perform various kinds of high level cognitive work, and to draw on information from various other parts of the brain. As Miller notes, the PFC is ‘an interconnected set of neocortical areas that have a ...pattern of connectivity with virtually all sensory neocortical and motor systems and a wide range of subcortical structures.’ And this is typically connectivity both to and from these other structures. (2000, p.59)

In this subsection I will focus on functions attributed mainly to ventrolateral and/or dorsolateral regions of the PFC, enabling a system capacity for what is sometimes referred to as ‘cognitive control’ (Miller 2000) or ‘executive control’, which is the term I will favour. (Koechlin and Summerfield 2007; Goldberg 2001). These terms are used to describe the apparent abilities of higher mammals (humans, non-human primates) to recruit and coordinate a range of sensory, cognitive, affective and motor resources in order to select, initiate and/or control complex patterns of behaviour, towards the attainment of a (possibly temporally distant) goal. Let us review some of the available evidence about properties or functions attributable to the PFC which may be understood to contribute to executive control.

Multimodal, associative learning:

Miller (2000) cites a range of studies with monkeys in which heightened activation of PFC neurons appears to be learning and (subsequently) representing salient relationships between the elements making up various kinds of tasks. In one conditioning task, for example, where different visual or auditory cues signalled whether a reward would or would not be delivered, certain lateral PFC neurons were activated by cues only when these signalled a reward; others by cues that signalled no reward. This suggests these neurons were encoding kinds of regular conjunctions across experiences, and subsequently representing not just cue or reward as such, but associations between them. Another study found that dorsal frontal neurons thought to control shifts in visual attention were sensitised for specific colours when the animal was trained to visually search for a target of that colour. Miller suggests that ‘the lateral PFC is critical for normal learning of arbitrary associations between sensory cues, rewards and voluntary actions.’ (2000, p.60)

Fuster et al found evidence suggesting particular monkey PFC neurons represent associations between different kinds of sensory stimuli, visual and auditory, and that activation levels show these associations can be sustained over time. They concluded that ‘prefrontal cortex neurons are part of integrative networks that represent behaviourally meaningful cross-modal associations.’ (2000, p.347) White and Wise found that between 30-50% of over 200 monitored PFC neurons showed selective activity for different kinds of reward tasks, depending on whether behaviour was guided by either a spatial (cue location) or an associative (matching cue shape) rule. (1999) In general terms, these kinds of studies are evidence for PFC activity in encoding, representing and sustaining higher-level associative information in order to control behaviour towards a goal.

Working memory:

The ideas of *sustaining* salient associative information over time points us to another likely PFC contribution to executive control, that of working memory; which can be understood as the ‘short-term storage and online manipulation of information necessary for higher cognitive functions such as language, planning and problem-solving.’ (Cohen et al 1997, p.604) Cohen et al suggest that, within the field, the concept of working memory has typically been seen to cover two types of process: one being an ability to simply *maintain* representation of information ‘on-line’ over relatively short-term periods; the other being the active *retrieval* and/or *manipulation* of information salient to goal-oriented behaviour.

In relation to the former, Miller again cites primate studies where monkeys are required (in order to receive a reward) to sustain the memory of a particular visual cue object over a

delay period ‘filled with visual distractors that each require attention and processing’.

Again activation levels in specific lateral PFC neurons indicate they are working to sustain the reward-related memory in the face of the other distractions. (2000, p.62)

In an fMRI study conducted on human subjects, Owen et al lent support to a maintaining/manipulating distinction, when they found evidence for different parts of the PFC which appear to mediate these different aspects of spatial working memory. They found that ‘[w]hen the task required the organization and execution of a sequence of spatial moves retained in working memory, significant changes in blood flow were observed in ventrolateral frontal cortex … bilaterally. By contrast, when the task required active monitoring and manipulation of spatial information within working memory, additional activation foci were observed in mid-dorsolateral frontal cortex’. (1996, p.31)

Rowe et al also investigated differential contributions to these aspects of spatial working memory; again with fMRI imaging of human subjects engaged in a spatial memory task. The experiment involved two tasks; firstly the maintenance of a number of spatial locations of visual stimuli over a delay period, and then the selection of the location of one item in order to guide a motor response of picking out that item with a joystick. They found that arousal in areas of both the frontal and parietal lobes was associated with the purely maintenance aspect of the task, whereas arousal in the dorsolateral area (Brodmann area 46) was associated with the task of selecting one item from memory in order to carry out the motor response. (2000)

Koechlin and Summerfield argue that a range of evidence points to a specific functional role for the dorsolateral PFC in what they refer to as ‘contextual control’; where neurons in that area have been shown to ‘code for the conjunction between a stimulus and a variety of contexts, including task set, spatial location and category membership.’ Again they suggest such coding work contributes to response selection, given that ‘monkeys with lesions involving the posterior parts of the dorsolateral PFC are impaired at selecting responses that are guided by contextual signals.’ (2007, p.233)

Recruitment of long-term memories:

A neurophysiological study on monkeys from Tomita et al. (1999) showed evidence that a top-down signal from the prefrontal cortex (for a specific visual stimulus) was able to activate neurons coding long-term visual memory storage of that stimulus within the inferior temporal area. They claimed that control experiments also showed that the signal was achieved via a direct frontotemporal pathway, rather than a subcortical path. Tanji and Hoshi (2001) argue that the ability of prefrontal cortex to recruit and integrate both

immediate perceptual information from the environment and information from long-term and short-term memory is essential for behavioural planning and generating purposeful actions.

Executive motor control:

Fuster (2004) proposes a hierarchical model of perception-action coupling in which the lateral PFC is seen to play an important executive role. (See also: Koechlin and Summerfield 2007) On this model, PFC regions and their higher-level, working-memory representational capacities are regarded as specifically tailored for executive control of action, and indeed as the highest level of a motor control hierarchy spaced along an anterior-posterior axis from rostral prefrontal areas to the premotor and primary motor cortices. He cites evidence to support his case that each level of a tertiary-secondary-primary hierarchy in motor control structures (thus conceived) also employs cross connectivity with corresponding levels of the primary, secondary-associative and tertiary-associative areas of the sensory cortices. Thus, Fuster suggests, '[t]he perception-action cycle is the circular flow of information from the environment to sensory structures, to motor structures, back again to the environment, to sensory structures, and so on, during the processing of goal-directed behaviour.' (p.143) According to this view, a lot of the control of more automatised or simpler behavioural routines can be 'managed' through sensory-motor cross linkages at primary and secondary levels. The higher, PFC-based activities can then be reserved for '[m]ore complex behaviour, guided by more complex and temporally remote stimuli ... [which] requires integration at higher cortical levels of both perceptual and executive hierarchies'. (p.144) Miller proposes that the 'top-down', coordinated control of multiple modalities of information and action (e.g. long-term memory, visual attention, body movement, speech) towards a goal could be achieved by excitatory signals from the PFC acting to bias the selection of action controls in 'lower' systems. 'By simultaneously biasing processing in different brain systems towards a common "theme" (the task),' he says, 'the PFC can select the neural pathways needed to perform the task.' (2000, p.63)

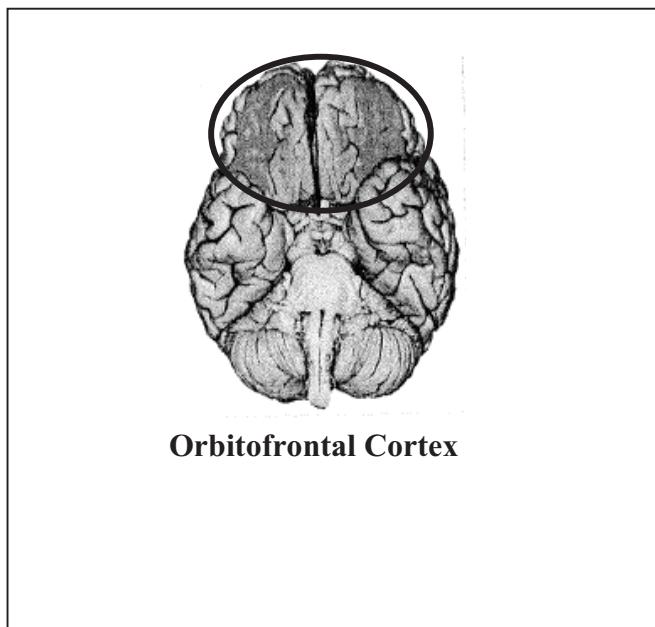
4.2.2 The Orbitofrontal Cortex

The *orbitofrontal cortex* (OFC) is part of the larger prefrontal cortex. There appears to be two main approaches to defining the structure within the current literature. On the one hand, writers such as Rolls (2000), Schoebaum et al (2006), and Kringlebach (2005) describe (in cytoarchitectural terms) that area of cortical tissue occupying the ventral (or

under) surface of the frontal lobe, where it extends rostrally above the anterior end of the temporal lobe, and includes the inferior (or lower) half of the adjacent medial prefrontal area (cortical tissue ‘facing into’ the medial longitudinal fissure between the frontal portion of the two hemispheres). The term ‘orbital’ refers to the position of this structure above the eye sockets.

Other authors and researchers, however, split this area into two; designating the orbitofrontal cortex as the more lateral parts of the orbital area only, and the *ventromedial* cortex (VMC) as occupying both the more mesial half of the orbital surface and the inferior medial prefrontal area. (E.g. Davidson and Irwin 1999; Bechara et al 2000) Here I will use the former, more ‘generic’ definition of the OFC and, when necessary, recognise the VMC as a subsection of that area. The location of the OFC is shown in Figure 4.2.

Figure 4.2:



The OFC has been widely implicated in processes of ‘learning, prediction and decision making for emotional and reward related behaviours.’ (Kringlebach 2005, p.691) Theory and evidence within a range of contemporary literature addressing the activities of the OFC would seem to converge around a couple of basic propositions:

- Firstly, that the OFC learns, represents and stores associations between affective states, possibly triggered by stimuli with primary affective salience, and other (otherwise) ‘neutral’ stimuli, being either other factors present in the environment at the time, or internal states of the person/animal including current goal states.

- Secondly, that the OFC is able to signal the affective valence of kinds of stimuli by actively re-representing, as it were, previously learned associations in similar enough present situations and thus re-triggers an affective response previously associated with that kind of situation. This enables the organism to anticipate or predict the likely occurrence of attractive or aversive events, according to cues in the environment, and its own current behavioural goals, and to tailor behaviour accordingly.

Davidson calls this latter capacity ‘affective working memory’ and argues there are good reasons to regard it as likely to yield considerable adaptive benefits.

Many theoretical accounts of emotion assign it an important role in guiding action and organizing behaviour towards the acquisition of motivationally significant goals. ... This process requires that the organism have some means of representing affect in the absence of immediately present rewards and punishments and other affective incentives. (2002, p.70)

It is a not uncommon understanding of those working in the area of affective neuroscience that at least some basic forms of affective response are innate, and may be specific to a species, presumably because of their survival value. Panksepp notes, for example, that fear states can be aroused in rats on exposure to the smell of cat fur, even where the lab-reared animals have had no prior exposure to cats or their smell. (1998, p.18) Where the contingencies are more complex, however, a greater demand may be placed on cortically-based associative learning and memory formation, *and* moment-by-moment abilities to interpret, appraise or anticipate affective salience in situations. (Le Doux 1996) On such an account, these higher level processes still need to be able to elicit ‘top-down’ arousal of affective responses, which can influence behaviour in generally adaptive ways. And this is where the OFC is understood to play a central role¹.

Let us consider, firstly, what general properties of the OFC contribute to these kinds of robust capacity. As with the PFC generally, the OFC is massively, reciprocally connected with many other areas of the brain, including the cingulate cortex, hypothalamus, hippocampus, and the dorsolateral PFC. (Kringlebach 2005, p.693) A number of writers

¹ This is not to suppose, however, that the structures of the OFC itself will encode all of the memory resources potentially contributing to its working memory functions. A range of cortical structures, including the hippocampus and temporal lobes, are understood to play a role in memory formation and long-term storage. (Davidson et al 2002) In general, it is agreed that the working memory functions of the OFC are likely to work in part by an ability to arouse long-term memory salient to situations, stored within other parts of the brain. (Tomita 1999; Bechara 2000, p.296)

suggest in particular that the OFC has the right connective structures to play a mediating role between the ‘higher’ executive activities of the prefrontal cortex and subcortical affective structures. (Schoenbaum 2006; Roberts 2006) Certainly, the OFC has the anatomical connections to exchange signals with two sub-cortical structures of interest here, the amygdala (Bechara et al 1999; LeDoux 1996) and dopaminergic (DA) nuclei located within the brain stem. (Schulz 2002; Rolls 2000) (The properties and activities of both the amygdala and DA nuclei as affective structures will be described below.)

Neurons of the primate OFC are known to receive inputs from the five senses – sight, hearing, taste, touch and smell (Roberts 2006; Rolls 2000) – and neuroimaging studies on human subjects also show OFC activation for all these forms of sensory input. (Kringelbach 2005, p.695)

Beyond these initial observations, the two main points of interest here are the associative learning and working memory properties of the OFC. In relation to the former, firstly, Rolls argues that some kinds of associative learning may be mediated directly by OFC neurons. (Critchley and Rolls 1996) Here we are particularly interested in more complex forms of learning involving interaction between the OFC and the amygdala (See Figure 4.3 below).

We can begin to develop an understanding of these processes by considering a conditioning experiment conducted with rats by Schoenbaum et al (2003), comparing the performance of normal animals with that of animals with lesions to the basolateral nucleus of the amygdala. The experiment tested the ability of normal and lesioned rats to learn to associate the onset of one of two particular odours (the conditioned stimuli, or CS) – with subsequent presentation of either a pleasant sucrose drink, or an unpleasant, quinine-laced drink (the unconditioned stimulus, or US). Both groups of animals were thirsty at the commencement of a task, and success was taken to be achieved (on a single task) when the rat consistently approached the drink container after the smell predicting the attractive outcome, or refrained from approaching after the smell predicting the aversive outcome. (Thus it is referred to as a ‘go/no-go’ task.) The whole experiment consisted of a series of such tasks, where the CS cues were changed, or simply reversed so as to predict the opposite outcome.

Both the control and the lesioned group of animals, in any one task, were able to achieve successful performance, in roughly the same amount of time. Both displayed OFC neurons which were initially aroused by the odour cue (CS), and specific populations selectively aroused by either the attractive or aversive US. In both groups during the

learning phase, neurons within one or other of these latter populations began to fire immediately before their ‘preferred’ US was delivered (and this process correlated with acquisition of successful performance).

However, two significant differences emerged in the patterns of neural arousal between the two groups (suggesting a specific contribution by the basolateral amygdala-OFC interaction). Firstly, in the intact rats, a significant proportion of the OFC neurons selectively firing immediately prior to one or other US during learning *also* began to fire in response to the relevant CS cue (the odour) as task success began to be achieved. In other words, these neurons appeared to *encode an association between the cue and the outcome it predicted*. In the lesioned group, however, relatively few neurons firing immediately before presentation of the US showed this change.

Secondly, the intact rats, after success, also displayed further groups of OFC neurons which responded selectively only to one or other odour, and *only when it continued to predict the learned associated outcome*. This property was shown by those neurons ceasing to respond to the odour, after a reversal. Conversely, neurons in the lesioned rats responding to the odour cue, continued to respond to the same cue after reversal. Again, the interpretation of the researchers is that the neurons in the intact rats were encoding the predictive-associative properties of the CS, while those of the lesioned rats were responding to its purely sensory properties.

According to the researchers, then, these results suggest that the basolateral nucleus of the amygdala plays a significant role in the encoding within the OFC of *valenced* associations between the CS cues and the ‘incentive value’ of the US outcomes. In other words, the OFC is encoding associations between certain, otherwise neutral, stimuli in the environment (the CS cues), goal-oriented behaviour and an attractive or aversive outcome of behaviour. The formation of these associations is a form of learning. (Schoenbaum et al 2003, pp.860-864)

These valenced associations are seen as *predictive*. That is, the arousal of a learned association on a subsequent presentation of a CS cue in effect now predicts an impending, affectively salient US outcome. (Schoenbaum et al 2003) On these terms, researchers in the field describe the re-arousal of a valenced association as a state of predictive *expectation* about an impending affect-salient event. In an article discussing the above experiment, Roberts proposes that ‘[t]he process by which a CS evokes a representation of

the incentive value of the specific reinforcer provides a mechanism for *reward expectation*.² (2006, p.86, italics added)

Schoenbaum et al also note a range of other neurophysiological studies in support of the claim that the OFC mediates an ability to ‘form expectations about the desirability or value of impending events’, for example:

- Neuroimaging studies which show blood flow in the human OFC changes during the anticipation of expected outcomes; or which show heightened OFC activation when incentive value of expected outcomes is being used to guide decisions
- Populations of OFC neurons in monkeys which fire selectively on presentation of visual cues associated with preferred or non-preferred rewards
- OFC neurons in primates which ‘fire differently for a reward depending on its expected size, the anticipated time required to obtain it and the possible aversive consequences associated with inappropriate behaviour’

(2006, p.116; see also Kringlebach 2005)

Furthermore, the results of the experiment for the non-lesioned rats show a correlation between re-arousal of neurons encoding a valenced association (in response to the CS) and success in then reliably producing the corresponding ‘appropriate’ approach or avoidance behaviour toward the predicted US. This would suggest that the actual re-arousal (and representation) of an OFC-based valenced association is playing a part in biasing behaviour one way or the other, and enabling the preparation of the ‘right’ behaviour to be triggered by the CS cue. In a later review article, Schoenbaum et al reflect on the implications of the 2003 findings, along with a range of other studies, in similar terms:

Our ability to form expectations about the desirability or value of impending events underlies much of our emotion and behaviour. In fact, two broad functions are crucially subserved by the formation of such expectations. On the one hand, expectations guide our immediate behaviour, allowing us to pursue goals and avoid potential harm. On the other hand, expectations can be compared with actual outcomes to facilitate learning so that future behaviour can become more adaptive. Both of these functions require that information about expected outcomes can be maintained in memory so that it can be compared and integrated with information about internal state and current goals. (2006, p.116)

The active representation of a learned association salient to goal-oriented behaviour conforms to our previous understanding of a working memory function. Following

² The notion of ‘reward expectation’ in this context refers to an expectation of either the attractive or aversive US.

Schoenbaum et al (2006), I will refer to arousal of learned, valenced associations within the OFC as a process of active representation of valenced *outcome expectancies*, or as the occurrence of an outcome expectancy state. In summary, the general hypothesis here is that the OFC by virtue of having acquired learned associations between various kinds of situations (or conditioned stimuli), behavioural responses and affective states, is then able to act as a form of predictive, valence-sensitive monitor on the present situation, and current behaviour. And the arousal of a valenced association is able to shape behaviour in ways suitable to predictions of attractive or aversive events. (Schoenbaum et al 2006)

If we accept the proposition of the OFC as encoding valenced associations, then we may ask *how* the re-arousal of such an association as an outcome expectancy might be able to influence behaviour. An important body of evidence addressing this question is the range of studies of cognitive and behavioural deficits displayed by human subjects with damage to the ventromedial cortex (VMC patients), conducted by Antonio Damasio and colleagues. (E.g. Damasio 1994; Damasio et al 1996; Bechara and Damasio 2004)

One form of experiment compared the decision making performance of patients with damage to the ventromedial cortex (VMC) with normal subjects, during a gambling task. The task involved subjects being granted an initial amount of ‘play money’, and then being asked to ‘gamble’ with their fund by selecting 100 cards from a set of four decks, which are referred to as A, B, C and D. Unbeknownst to the subjects, selecting cards from decks A and B results in relatively large payoffs, but also relatively large penalties, such that, if one played A and B alone, one would end up losing money; while C and D offer smaller payoffs, but also smaller penalties, such that if one played those two decks alone one would end up in front. Affective responses to the various selections were measured by recording skin conductance responses (SCRs³). (Bechara et al 1999)

The key results to note here are firstly that normal (control) subjects, while in an initial learning phase, tended to select cards from all decks, with some early preference for A and B, probably due to the higher payoffs. However, over time, they tended to shift their preferences strongly to decks C and D. VMC patients, on the other hand, tended to start in a similar manner, but then continued to show a preference for A and B, and did not shift to

³ A skin conductance response is a short term increase in the electrical conductivity of the skin, caused by increased activity of the eccrine sweat glands. The arousal of these glands in turn is mainly controlled by cholinergic fibres of the sympathetic nervous system (SNS). Generally speaking, skin conductance levels increase with higher levels of arousal or activity of an organism, and decrease with lower levels. There are a number of central nervous system structures which seem able to alter electrodermal activity via the SNS, including the hypothalamus. (Andreassi 2000, pp. 191-197) The amygdala in particular is recognised as having the necessary connectivity to trigger arousal of the SNS via lateral nuclei of the hypothalamus. (LeDoux and Muller 1997)

the (in fact) more advantageous decks. Secondly, all subjects typically registered SCRs on the immediate selection of either payoff or penalty cards, with the SCR typically more marked for the penalty cards, and this was true also for VMC patients. As the experiment proceeded, however, the normal patients began to develop SCR responses in *anticipation* of selecting cards, and these were most pronounced when considering cards from A and B decks. VMC patients, on the other hand, did not show these anticipatory SCRs.

The ‘somatic marker hypothesis’ developed by the researchers from these results, is that the VMC, in normal cases, is acting, firstly, to learn associative relationships between card selections and cognitive-affective responses. Bechara et al claim that:

Structures in ventromedial prefrontal cortex provide the substrate for learning an association between certain classes of complex situation, on the one hand, and the type of bioregulatory state (including emotional state) usually associated with that class of situation in past individual experience. (2000, p.296)

Once such associations are established, they argue, the VMC (contributing to working memory) forms outcome expectancies about the likely outcomes of possible actions, which act ‘top-down’ to trigger an affective response involving the amygdala initially, and then arousal of the hypothalamus-SNS path (causing a measurable SCR response). The arousal of this affective (and somatic) response then acts as a signal back to the cortex able to influence behaviour; in this case by biasing the choice of cards away from the disadvantageous decks. One might say the affective response is seen to act as a predictive error signal, in effect ‘suggesting’ to the subject prior to selecting a card, that decks A and B are a risky choice.

It should be noted, furthermore, that the onset of these anticipatory SCRs, and the behavioural shift to preference for C and D, typically occurs *before* normal subjects report any conscious awareness of an emerging preference, or indeed before any more reportable understanding that C and D are ‘better’, and why they might be so. The VMC patients, on the other hand, are interpreted as suffering a deficit in decision making in relation to the task goals.

Of particular interest here is the work done within these studies to investigate the particular contributions of the amygdala and the OFC-amygdala circuit to the effective formation and ‘use’ of outcome expectancies. In one study (Bechara et al, 1999), the researchers compared performance on the gambling task of patients with VMC damage but intact amygdala, to patients with bilateral amygdala damage but intact VMC. Just as with those with VMC damage, the patients with amygdala damage also failed to develop the

conditioned, anticipatory SCR (as described above), and did not shift from an initial preference for the A and B decks to the C and D decks; i.e. they continued to choose disadvantageously. One notable difference, however, is that while the VMC patients showed SCR immediately after selecting either ‘reward’ or ‘punishment’ cards, but failed to ‘translate’ these responses into anticipatory outcome expectancies; the amygdala patients did not display either the reward/punishment responses or the anticipatory responses.

Interpreting these results, the researchers conclude that, just as with VMC patients, people with amygdala lesions also display a deficit in adaptive decision making in relation to the gambling task. In terms of the differential contributions of the VMC and amygdala, they hypothesise that amygdala damage interferes with the processing of the ‘affective attributes’ of either reward or punishment stimuli, and thereby blocks the formation of VMC associations. Thus, in relation to the gambling task, the ‘[f]ailure to evoke somatic [affective] states after winning or losing money would preclude the reconstitution of such somatic states when deliberating a decision with future consequences.’ (1999, p.5480) In relation to the VMC patients, on the other hand, they hypothesise that the deficit lies with the failure to form predictive expectancies, which then can trigger affective changes which act in turn as a signal to guide decision making.

For present purposes, there are a few particular points to highlight from this research. Firstly, it lends further support to the idea of the OFC (which includes the VMC) as encoding valenced associations. Secondly, it suggests that for normal subjects after a period of learning, the behavioural inclination to select from the A and B decks triggered the arousal of an OFC-based aversive association of those decks with larger penalties, which led in turn to arousal of the amygdala, and flow-on arousal of the sympathetic nervous system. And thirdly (as per the somatic marker hypothesis), the differences in behaviour on the task between VMC patients and control subjects, correlating with differences in SCR responses, provides evidence that amygdala-based affective responses are acting somehow as a *signal* able to influence behaviour, in this case by biasing the choice of cards – the decision making process about which cards to select – away from the A and B decks.

This all appears to fit with the evidence from Schoenbaum et al (2003) about the formation of OFC-based valenced associations, and the proposed role of OFC outcome expectancy states in biasing behaviour in a way suited to approaching a predicted attractive (US) outcome or avoiding a predicted aversive outcome. And now it would seem we have

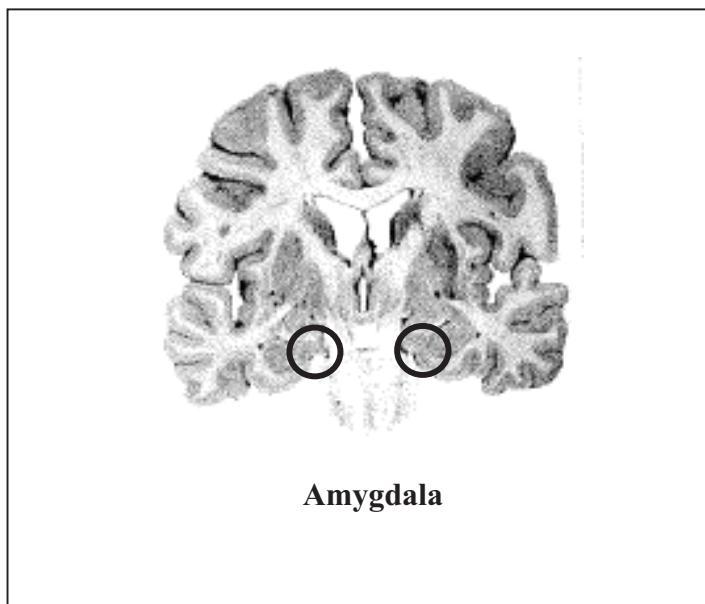
evidence in favour of a further point; that the ability of a negatively valenced outcome expectancy state to bias behaviour *away from predicted aversive outcomes* occurs via ‘top-down’ OFC arousal of the amygdala. This is a role of outcome expectancy states that we will take a strong interest in here.

However (notwithstanding Damasio’s somatic marker hypothesis), it still appears that a question remains about *how* a signal generated from the OFC to the amygdala might be effective in shaping behaviour in this way. For the moment it will be useful to suspend further discussion on that issue, in order to look in more detail at the amygdala itself, and then the corticolimbic dopamine system.

4.2.3 The Amygdala

Within all the animal and human brains we are considering here there are two amygdalae, located bilaterally. In the human brain, the amygdalae are situated within the cortical tissue of the ventral and medial part of the temporal lobe, where it curls under and upward, toward the diencephalon, as shown in the coronal section in Figure 4.3.

Figure 4.3:



There are a number of potential complexities to be aware of regarding the structure and function of the amygdala. Firstly, although many studies treat the amygdala as a unitary structure, in fact it is composed of a number of sub-nuclei. LeDoux and Muller, for

example, identify lateral, basal⁴, accessory basal and central nuclei. (1997; see also Whalen 1988) Secondly, evidence also suggests heterogeneity among the activities of these nuclei.

LeDoux and Muller (1997) describe the lateral nucleus, for example, as the major area for the reception of efferent connections from other parts of the brain, and the central nucleus as the main source of afferent signals to other structures. Thirdly, there is some evidence to suggest that left and right amygdala may sometimes carry out different functions.

(Davidson and Irwin 1999, p.18) In this section I will for the most part overlook these complexities, and treat the amygdala as a functional unit, and as operating bilaterally. In later sections, however, we will have some cause to (again) consider specific functions of the basolateral nucleus in particular.

One of the most widely researched and robust findings about the amygdala is that it plays a central role in the onset of negative, or aversive affective states, most particularly fear, in response to certain stimuli in the environment; and in fear conditioning. Joseph LeDoux (1996) has conducted a number of experiments in fear conditioning with rats, and argues that the physiological and behavioural responses to an aversive stimulus such as a small electric shock are the same fear responses that would be elicited in a natural setting, say when an animal encounters a predator. He suggests the typical suite of responses constituting a fear state in animals includes: freezing (immobility), autonomic arousal, an increase in cortisol levels in the blood, decreased sensitivity to pain and cessation of instrumental behaviour. In LeDoux's classical conditioning experiments, these responses were elicited by an otherwise neutral conditioning stimulus (CS), which reliably predicted the onset of an aversive, unconditioned stimulus (US). And he has found that lesions of the central nucleus of the amygdala 'interfere with essentially every measure of conditioned fear'. (1996, p.158)

A range of imaging studies with human subjects have also shown heightened amygdala activation for aversive stimuli such as pictures of bodily injury, nasty odours or tastes.

(Whalen 1998, p.182) Adolphs et al have found that bilateral amygdala damage impairs the recognition of the affective significance of fearful facial expressions, while leaving recognition of other kinds of affect-related expression (e.g. happiness), and of facial identity, intact. (1995) Neuroimaging studies have identified amygdala activation in patients with either post-traumatic stress disorder or obsessive compulsive disorder, when

⁴ As I read it, the basal nucleus, on LeDoux and Muller's terms, is the basolateral nucleus identified by Schoenbaum et al.

they were exposed to stimuli designed to trigger their respective symptoms. (Davidson and Irwin 1999, p. 15)

Collectively, such studies would certainly seem to suggest that the amygdala ‘plays an important role in both the perception and production of certain forms of negative affect.’ (Davidson and Irwin 1999, p. 15) However, other forms of evidence would appear to count against a supposition that amygdala function is neatly limited to the negative ‘side’ of affective arousal (or perception). For example, Bonda et al (1996) identified amygdala arousal in response to ‘biological movement’; i.e. visual sighting of movement of self-propelled objects. Breiter et al (1996) found that the amygdala responded preferentially to both fearful and happy facial expressions as compared with neutral faces. In the Schoenbaum study discussed above (2003) the basolateral nucleus of the amygdala appeared to play a role in the encoding of both positive and negative expectancies.

There is evidence to suggest that the amygdala may be predisposed to respond to certain kinds of stimuli without the need for learning. For example, as mentioned earlier, the smell of cat fur stimulates amygdala arousal in rats with no previous exposure to cats or their smell. (Panksepp 1998) In humans it has been proposed that the amygdala is predisposed to respond to stimuli such as loud noises, physical pain, biological movement or certain aversive smells or tastes (Davidson and Irwin 1999; Whalen 1998), human eyes and faces, and facial expressions (Herba and Phillips 2004; Adolphs 1999). According to my earlier definition, such stimuli would be regarded as having primary affective salience. In light of evidence considered above, it seems likely that the dispositions of the amygdala itself to respond to certain kinds of stimuli will provide a source of primary information for OFC-based associative learning.

One point of significant interest here is a range of evidence available suggesting that the amygdala plays a significant role in eliciting and coordinating multiple forms of heightened neural, somatic and/or behavioural *arousal*. (Goldstein et al 1996; Gallagher and Holland 1994; LeDoux 1996; Whalen 1998) There are a number of pathways discussed in the literature by which nuclei of the amygdala can, directly or indirectly, trigger forms of heightened arousal. There is evidence to suggest, for example, that, in both primates and rats, axons from the central nucleus of the amygdala project to the basal forebrain. And cholinergic neurons from this area are known in turn to project widely across the cortex, and particularly to neurons within the visual, auditory and somatosensory cortices involved in detecting environmental stimuli; and acetylcholine is known to arouse these neurons. (Gallagher and Holland 1994; Whalen 1998)

We have noted already, from the work of LeDoux, the suite of coordinated behavioural and autonomic responses that define a fear response (see also; Davis 1992); and he and others have shown that lesions to specific sets of efferent projections from the CN can interrupt each of these responses. (1996) Goldstein et al also found that lesions to the basolateral and central nuclei of the rat amygdala blocked a range of responses to conditioned fear/stress stimuli, including: freezing, vocalisations, and adrenal cortex arousal. (1996)

Two particular kinds of regulatory influence the amygdala is able to exert over other affective structures or systems are seen here as crucially important: stimulation of the hypothalamic-pituitary-adrenal axis; and influence over the functioning of the corticolimbic dopamine system.

In relation to the former, firstly, the central nucleus of the amygdala (CN) is known to project efferent fibres to the basal nucleus of the stria terminalis, which in turn projects (via the stria terminalis itself, a nerve tract) to the paraventricular nucleus of the hypothalamus (PVN). According to a number of leading researchers, it is via this path that the amygdala is able to trigger activity along the so-called hypothalamic-pituitary-adrenal (HPA) axis, leading in turn to a cascade of somatic changes. (LeDoux 1996; LeDoux and Muller 1997; McEwan and Wingfield 2003) As noted in the previous chapter, these changes are commonly characterised as the body's stress response. (Panksepp 1998, pp.118-119; McEwan 2002; Marmot 2004)

In operation, the HPA axis is involved in two main processes. The first is an endocrine-based process, whereby the PVN projects corticotrophin releasing factor (CRF) to the pituitary gland; stimulating the release of adrenocorticotropic hormone (ACTH) into the blood stream; which in turn triggers the release of cortisol (or corticosterone in rodents) by the adrenal glands. The second involves excitatory neural signals originating in the PVN that travel via the brain stem and peripheral sympathetic nervous system to the adrenal medulla, causing the release of adrenaline. (Panksepp 1998, pp.118-119)

The cascade of bodily changes brought on by the several actions of adrenaline and cortisol may be regarded as a short-term process of arousing and ‘channelling’ of energy resources well suited to the challenge of facing environmental threats. Adrenaline release triggers increases in heart rate, blood pressure and blood supply to muscles. Cortisol is instrumental in regulating energy storage and immune system activity. In the short term it can lead to conversion of food sources into glycogen or fat, and assist immune system functions. It may also have feedback effects on the activity of the PVN, to reduce its

arousal and thus down-regulate a stress response. However, in larger amounts, or in the longer term, it can act to suppress immune system function and cause resistance to insulin. (McEwan 2002)

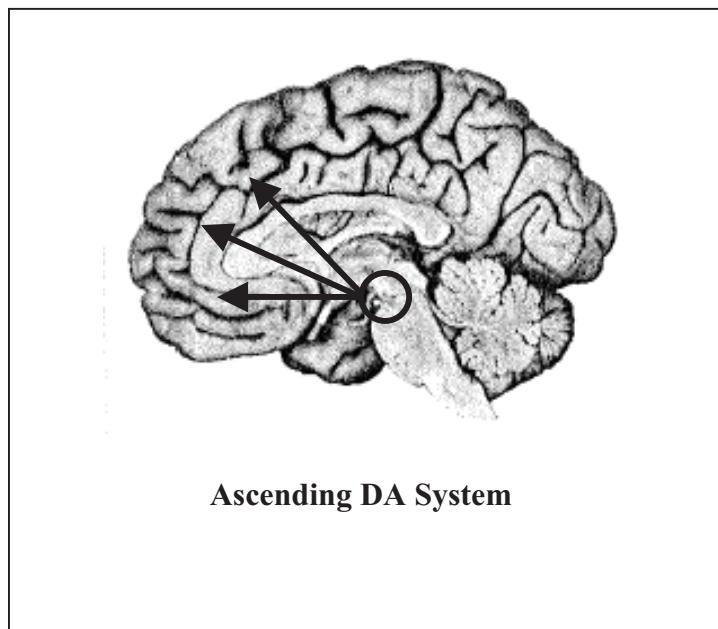
While it may well be the case that the HPA axis can be stimulated by a variety of means, there is ample evidence to suggest that the amygdala is a common source of influence, via the pathway outlined above. (Fuchs and Flügge 2003). Electrical stimulation of the amygdala is known to produce elevated levels of cortisol in the blood, strongly indicating excitatory effects on the HPA axis, and bilateral lesions of the stria terminalis reduce this effect. (Davis 1992) LeDoux has shown that lesions to the CN block autonomic nervous system arousal and the release of ACTH from the pituitary in response to conditioned fear stimuli. (LeDoux and Muller 1997)

Apart from the kinds of interactions with the OFC discussed above, and various kinds of basic conditioning, the amygdala has also been implicated in other forms of learning, such as the formation and retention of memory for contextual information surrounding affectively salient stimuli, via stimulation of the hippocampus. (LeDoux and Muller 1997; Canli 2000, p.1; Davidson et al 2002, p.556)

The role of the amygdala in regulating the activities of the corticolimbic dopamine system will be considered in the next main section. Firstly I will introduce the system itself and its main functions.

4.2.4 Dopamine Nuclei and the Corticolimbic Dopamine System

The essential components of the corticolimbic dopamine system are the dopaminergic (DA) nuclei located in the ventroanterior portion of the midbrain; specifically, the ventral tegmental area (VTA) and the substantia nigra. There are a number of DA nuclei in this area, and their ascending axons project variously to the dorsal striatum, and the ventral striatum including the nucleus accumbens (NAcc). The so-called A-10 nucleus in the VTA is noted for its projections to the neocortex, and particularly to the prefrontal areas (PFC), including orbital and medial regions. DA nuclei ascending axonal projections are grouped together along mesocortical and mesolimbic tracts. (Schultz 2002; Schore 1994) I will refer to this as the ascending DA system, as shown in Figure 4.4.

Figure 4.4:

Dopamine (DA) is one of several monoamine neurotransmitters, including noradrenaline (NA) and serotonin (5-HT). DA is an excitatory transmitter; the metabolising of DA by neurons synaptically linked to DA groups stimulates heightened arousal and signalling activity. (Panksepp 1998, Ch.6)

Brainstem DA nuclei typically display a ‘background’ or tonic level of aroused activity when a person or animal is awake⁵. Limited-term, or phasic, increases in arousal of DA nuclei, however, with consequent increases in DA efflux from their afferent projections, and DA metabolising in target areas, has been widely described in neuroscience research as a form of ‘reward’ system. Animals in experimental settings will preferentially self-stimulate, pressing a switch to trigger an electrode which arouses activity along ascending DA neural pathways. (Panksepp 1998) DA neurons display phasic activation when an animal senses an intrinsically rewarding stimulus, such as food, and in response to conditioned stimuli which reliably predict the availability of such appetitive stimuli, and this tends to correlate with increases in aroused, exploratory activity. In humans, heroin, cocaine, amphetamines and nicotine all induce increases in dopamine concentrations in the ventral striatum and PFC, suggesting that this change mediates the subjective pleasures attributed to use of these substances. (Schultz 2002)

However, simple characterisation of the ascending DA system as a reward system has been questioned, and in the light of other evidence, may be too simple. Panksepp argues at length that arousal of the DA system is ‘activated by unconditional distal incentive cues of

⁵ And this would not be regarded here as a contribution to an affective state as such.

rewards' (1998, p.147), and which tends to elicit states of behaviourally motivated 'engagement', 'excitement' or 'interest' (1998, p.144); and thus that it is better described as a 'seeking' rather than a 'reward' system as such. In other words, on this account the DA system's primary role is to mediate aroused, positively oriented, goal-directed cognitive activity and behaviour. (Panksepp 1998) Berridge and Robinson argue in a similar vein that arousal of the dopamine system registers 'incentive salience', and mediates motivated behaviour towards valued goals. (2003) This is the view I will accept here.

4.2.5 Goal-Directed Behaviour, Negative Outcome Expectancies and Affective Signals

It is time now to start to bring together information and ideas canvassed so far, and to further consider the question of how an affective signal generated via the OFC and the amygdala might influence behaviour (and in particular, human behaviour). More particularly, I want to focus on the role of negatively valenced outcome expectancies, which stimulate the amygdala and thereby generate affective signals disposed to bias behaviour away from predicted aversive outcomes; what we might call predictive error signals. Damasio's view of this as a basic element of decision making suggests it is relevant to the larger goals of the chapter.

However, for reasons which will become clear, it is equally important to ask what kinds of cognitive/affective and behavioural processes might be already underway at the onset of such negatively valenced outcome expectancies. Within everyday settings, what is quite likely to be already underway is some form of goal-directed behaviour, mediated in part by the executive control systems of the prefrontal cortex, and by arousal of the corticolimbic dopamine system. The latter is known to be tonically aroused during the performance of such behaviour, and efflux of dopamine via the ascending DA system is known to stimulate heightened activity within the PFC. In general terms, given what is known about these systems, it is to be understood that they will both be consistently active during aroused goal-directed behaviour. (Panksepp 1998, Ch. 8; Davidson and Irwin 1999) In animals they might be mediating behaviours to do with getting something to eat, or seeking out contact with conspecifics. In people, they will be significantly involved in mediating all sort of everyday behaviour – making the breakfast, catching the bus, meeting a friend, or carrying through a work task. It is in this context that I want to examine the role of an affective signal generated via the OFC-amygdala circuit.

So; we considered evidence above that the OFC can generate negatively valenced expectancy states, which act in turn to trigger amygdala arousal. Turning again to the question of pathways which might then be employed to carry an amygdala-mediated signal able to influence behaviour, a number of candidates have already been mentioned.

One of these, is amygdala-based stimulation of the HPA axis via the stria terminalis and hypothalamus, leading in turn to a cascade of effects including arousal of the sympathetic nervous system (SNS) and release of cortisol and adrenaline from the adrenal gland. (McEwan and Wingfield 2003; LeDoux and Muller 1997) The arousal of the SNS is the likely source of the skin conductance responses used as an indicator of affective arousal in the Damasio and colleagues' gambling task experiments. (Bechara and Damasio 2004)

Another form of amygdala-mediated arousal mentioned previously, lies with axons of the central nucleus (CN) of the amygdala, projecting to the basal forebrain. The general thesis here is that, by this path, the amygdala can regulate heightened arousal in primary sensory structures across the cortex. (Gallagher and Holland 1994; Whalen 1998)

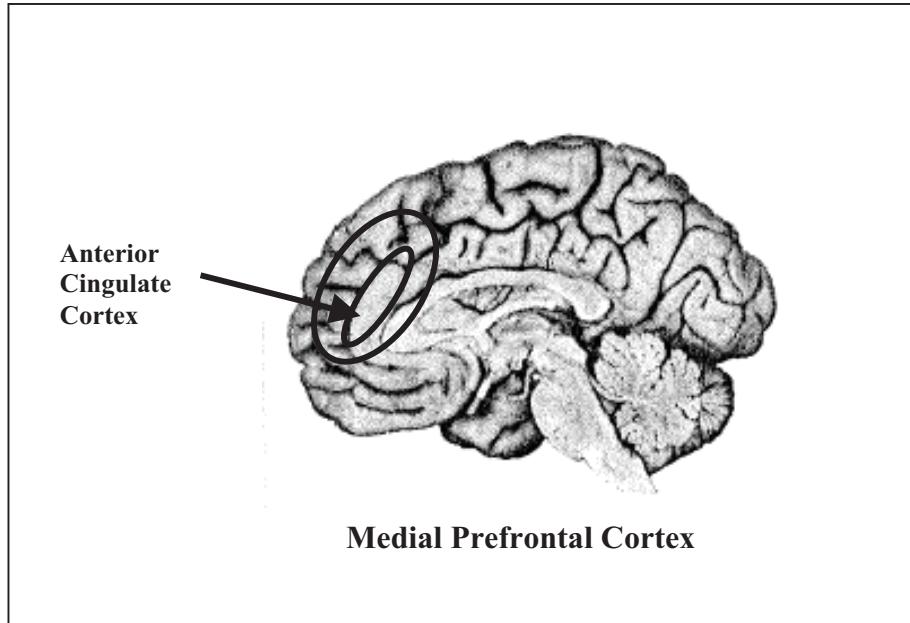
Both of these are regarded here as plausible forms of an amygdala mediated error signal able to influence cognitive arousal, learning and/or behavioural change. A third candidate process involves the basolateral nucleus of the amygdala having effects on the activities of the ascending DA system. On the face of it, this might appear curious; to suggest that a system proposed here as mediating positive, goal-directed behaviour might also be able to carry an error signal in relation to that behaviour. However, as we shall see, it may in fact be just the place for an error signal to be effective, by interrupting a current behavioural trajectory, and triggering heightened neural activity in structures well-placed to locate and implement an alternative behaviour.

An initial clue about possible effects of the basolateral nucleus of the amygdala (BLA) on the DA system can be found in research showing that a phasic (short-term) increase in the metabolising of dopamine (DA) within some of the main target structures of the system is a reliable response to a stressful stimulus. Goldstein et al suggest that increases in DA metabolism within the medial prefrontal cortex⁶ (m-PFC) and the striatum – both targets of massive efferent connections from DA nuclei – is ‘one of the most intensively studied central neurochemical correlates of the stress response’. (1996, p.4787) Furthermore, they also found that bilateral lesions of both the BLA and the central nucleus of the amygdala

⁶ I will take it here that references to the ‘medial PFC’ in the Goldstein et al study, and that of Phillips et al (2003) are consistent with that of Drevets, who says it refers to the anterior portion of the cingulate cortex (ACC), and the ‘dorsomedial/dorsal anterolateral PFC extending from the rostral ACC onto the frontal pole.’ (2001, pp.243-244)

(CN) block this effect. They suggest that this evidence ‘implicates the amygdala in afferent control of the meos cortical DA response to stress’, but also concede that ‘amygdala influence on m-PFC DA metabolism’ could be controlled via ‘reciprocating connections between the … basolateral amygdala nucleus and the m-PFC’. (1996, p.4795) It is this latter hypothesis that is of interest here. The medial prefrontal cortex and anterior cingulate cortex are shown in Figure 4.5.

Figure 4.5:



A study by Phillips et al (2003) is of particular relevance because it examines the effects of the BLA and CN separately on basal levels of DA metabolism in both the m-PFC and the nucleus accumbens (NAc). The latter is a nucleus located within the ventral striatum, which in turn is part of the basal ganglia motor control system.

Both the m-PFC and the NAc are targets of the DA system, and both project reciprocal axons back to DA nuclei in the ventral tegmental area (VTA) of the brainstem. Both also have abundant (glutamate projecting) afferent connections coming from the basolateral nucleus of the amygdala. (Phillips et al 2003 pp.544-546) While Phillips et al found evidence that the CN plays a role in directly regulating DA nuclei, their study also implicates the BLA in particular as regulating phasic (short-term) increases in DA ‘efflux’ (pre-synaptic release) and metabolising within both the m-PFC and the NAc. They conclude that, ‘activation of the BLA can evoke transient increases in DA efflux in the NAc [nucleus accumbens] and medial prefrontal cortex’; and offer the hypothesis that ‘rapid transient regulation of DA efflux in the NAc by the BLA plays an essential role in

the *selection and co-ordination of specific sequences of behaviours appropriate to incentive stimuli* in the environment', including 'when behaviour is altered in response to a decrease in the magnitude of food reward, as occurs with negative contrast or reinforcer devaluation.' (2003, p.543, italics added)

Taken as a whole, what this would seem to suggest is that the direct connections from the BLA are a likely path of regulatory control of the widely recognised increase in DA metabolism within the m-PFC and the NAc as a response to stressful stimuli, as alluded to by Goldstein et al⁷. (1996) What is more directly important for our purposes is the claim of Phillips et al that this short term increase in DA can be effective in selecting and implementing behaviours appropriate to incentive stimuli, and in changing behaviour in response to changes in affect-salient external conditions.

This proposition finds further support within current literature on one main part of the medial PFC, the anterior cingulate cortex (ACC). Botvinick et al provide a recent review of studies of the ACC, and the hypothesis that it functions to monitor 'conflicts in information processing'. (2004, p.539) Here they suggest that an increase in ACC arousal is associated with either of three 'behavioural contexts'; tasks that required either a behavioural shift from a 'prepotent response' to another behaviour, or selection amongst options for action; or which involved commission of errors. They also suggest that ACC activation would seem strongest for internal conflicts to do with 'response selection', and note in this context strong connectivity between the ACC and a number of areas mediating motor control. (2004, p.542) They also note a number of studies suggesting that the ACC responds '*disproportionately to outcomes considered aversive* or signalling reductions in reward'. (2004, p.544, italics added)

Botvinick et al also consider evidence suggesting that the ACC may play a role in 'compensatory adjustments in cognitive control' by influencing (or interacting with) heightened activity in areas of PFC mediating executive control, such as the dorsolateral PFC. (2004, p.539; see also, Kerns et al 2004, p.1025; Davidson 2002)

It would appear, then, that we have a convergence between two lines of theory and evidence. On the one hand, we have description of OFC outcome expectancy states registering stimuli which predict aversive outcomes, triggering heightened arousal in the amygdala. And evidence that this influences behaviour, or behaviour change, in relevant, adaptive ways. And on the other hand, we now have description of the BLA acting to trigger short term arousal in the m-PFC (including the ACC) and other structures, which is

⁷ This I would regard as a change in affective state according to my previous definition.

apt for interrupting a current behaviour and locating and implementing an alternate behaviour. And, it would seem, short-term heightened activity in these areas particularly occurs when selection and implementation of behaviour suited to affect-salient stimuli is required.

In view of this evidence, I will accept here that, during everyday goal-oriented activity, the arousal of a negatively valenced outcome expectancy in the OFC – in response to current external conditions – can generate an *affective signal* via the BLA, which in turn can trigger heightened arousal in the m-PFC which is apt for locating and implementing a behaviour suited to avoiding a predicted aversive stimulus⁸. For present purposes I will refer to this affective signal as a *change-behaviour* signal, reasoning as follows. Firstly, I suggested above that it would make sense to see the operations of an OFC-amygdala affective signal against a ‘background’ of everyday aroused goal-directed behaviour. In that context, the ‘arrival’ of an expectancy state which predicts an aversive outcome, and generates an affective signal as described above is likely (in its effects on the m-PFC and ACC) to thereby *interrupt* the current behavioural trajectory, in order to modify goal-oriented behaviour in a way suited to avoiding the aversive stimulus⁹. (Fuster 1987, p.974) This is what we conjectured to occur for normal subjects in the Damasio gambling task experiments; the inclination to choose a card from the more risky decks was inhibited by arousal of an aversive expectancy state, and behaviour redirected to the less risky decks. So, on these terms a change of behaviour does occur.

I will also take it that, if arousal of m-PFC or ACC structures in these circumstances doesn’t rapidly locate an already learned form of alternative behaviour well suited to avoid the aversive stimulus, then heightened activity in ‘higher-level’ dorsolateral areas of executive control may be recruited, in an attempt to formulate a new behaviour.

⁸ The case for a change-behaviour signal generated along an OFC-amygdala-medial PFC path is strengthened when we consider another distinct role assigned to outcome expectancy states, which also implies an ability to influence behaviour. Schoenbaum et al propose that outcome expectancy states contribute to rapid changes in behaviour, when changes in external conditions *violate* the prediction of an (attractive or aversive) outcome. (2006, pp.119-120) Again this appears to align well with the claims of Phillips et al that a BLA-mediated increase in DA efflux in the m-PFC and NAc plays an essential role in behaviour selection, including ‘when behaviour is *altered in response to a decrease in the magnitude of food reward, as occurs with negative contrast or reinforcer devaluation.*’ (2003, p.543, italics added)

⁹ A view of a ‘change behaviour’ signal as an interruption in this sense would also fit with interpretations in relevant literature of the dorsolateral and OFC areas as implicated in behavioural inhibition. (Kringlebach 2005, p.694)

4.3 SUBSIDIARY CAPACITIES CONTRIBUTING TO EVERYDAY REASONING

In this section I will begin to develop a higher level description of how the various neural structures, activities and functions described above contribute to human cognition and behaviour, and articulate more explicitly my account of the kinds of subsidiary capacities presupposed by classical liberal accounts of reason and self determination.

4.3.1 Evaluation and Decision Making

I suggested earlier that liberal views of capacities for reason and self-determination implied a subsidiary capacity for ‘evaluating’ options for action, and a capacity for decision making understood as selection of a course of action from amongst some alternatives. And, on these terms, it is to be supposed that acts of evaluation will inform acts of decision making. However, to begin with, let us consider what the above analysis may tell us about our putative capacity for evaluating features of the environment, and evaluating options for action.

In relation to the amygdala itself, in light of the evidence and theoretical views considered in § 4.2.3, I will take it here that in some instances, a short-term ‘burst’ of arousal in the amygdala triggered by some stimulus in the environment, may simply serve to mark that stimulus as a subject of heightened attention and preparatory behavioural arousal. In other words, such arousal may serve to evaluate a stimulus as affectively *salient* in a ‘generic’ way – neither distinctly aversive nor attractive.

However, considering the work of LeDoux (1996) and other evidence mentioned in § 4.2.3, it would seem clear that the amygdala is sometimes crucially involved in mediating aversive responses. An aversive response might be construed either in terms of behavioural arousal to avoid a perceived threat or an intrinsically repellent stimulus; or as a state of arousal found to be subjectively unpleasant (or both). Here I will take it that an amygdala-mediated aversive response occurs when amygdala arousal is relatively strong and/or sustained, and is coupled with a change-behaviour signal and arousal of the HPA axis. (As we shall see in the next chapter, the latter effect of amygdala arousal is well-recognised as a response to aversive stressors.) The main interest in this combination of responses as a form of negatively valenced, aversive *evaluation* is on the behavioural front; i.e. the arousal of dispositions to act so as to avoid some anticipated event. However, the range of evidence of amygdala-mediated fear responses in human subjects nevertheless suggests that the sustained arousal of this aversive behavioural state is commonly found to be subjectively unpleasant. (Davidson and Irwin 1999; Whalen 1998)

The orbitofrontal cortex (OFC) performs evaluative functions in several related ways. As we saw in the evidence of Schoenbaum et al (2003) and others, the OFC encodes valenced associations between stimuli in the environment and aversive or attractive events that are likely outcomes of a current behavioural trajectory. It should be understood that the taken-to-be unconditionally attractive or aversive qualities of the relevant outcome events (as stimuli) may be initially marked as such by other means. We have considered evidence that the amygdala is doing some of the basic work here. However, there is a range of other affective response structures or systems we've not considered, which could also be involved in 'marking' stimuli as affective salient¹⁰. (Panksepp 1998)

In any case, once valenced associations are formed, the OFC can then carry out a working memory role, by acting as a form of *valence-sensitive monitor* on current goal-directed behaviour, providing a 'running commentary on the relative value of the current state and of possible courses of action under consideration.' (Schoenbaum et al 2006, p.118) It is understood here that the OFC is able to do this by arousing previously learnt, valenced associations in response to an external stimulus in the current setting, or even just thoughts about such a stimulus (some evidence on the latter point will be described below). When this occurs, arousal within the OFC in effect predicts the impending arrival of an attractive or aversive outcome, and triggers behavioural dispositions suited to the predicted outcome. These actions of the OFC are generally seen here as occurring within a context of (as it were) already-occurring, aroused goal-directed behaviour mediated by structures such as the PFC and the ascending DA system.

Thus a positive expectancy state is to be generally construed as an OFC-based evaluation activity which is instrumental in reinforcing a current goal-directed behavioural inclination. The question of how it might do this is not something we'll address here. However, apart from the evidence of from Schoenbaum et al (2003), a wider body of research supports the general view that populations of OFC neurons encode both negatively and positively valenced associations. (Kringlebach 2005, p.694; Roberts 2006, p.87) And some researchers suggest that populations of neurons within the OFC might themselves be able to trigger increased activity within the ascending DA system, by stimulating DA nuclei in the brainstem. (E.g. Schore 1994; Goldstein et al 1996; Miller 2000; Schultz 2002)

¹⁰ The release of opioids within the brain, for example, is strongly correlated with consummatory behaviours such as eating pleasant tasting food or sexual climax, and in humans with feelings of satisfaction and pleasure. (Panksepp 1998, C.6; Berridge and Robinson 2003) Theoretical accounts of these might be quite different to the views offered here, regarding how arousal of certain structure or systems in the brain might imbue an experience with 'value'

A negative expectancy state, on the other hand, constitutes a form of evaluation because it predicts an aversive outcome, and triggers a change-behaviour signal via the amygdala; stimulating in turn a burst of heightened activity within the m-PFC and other structures which interrupts the current goal-directed behaviour, and is disposed to locate and implement a modified behaviour. In light of the evidence from the Damasio gambling task experiments, I will take it here that a negative expectancy state will also normally trigger increased activity along the HPA axis. This combination of aroused activity, occurring together, I now propose to refer to as an *uncertainty state*; a term I will continue to employ for the remainder of the study. And it is important to emphasise that, on these terms, an uncertainty state does not just involve a prediction of an impending aversive event, but is itself a state of preparatory arousal for aversive behaviour, *and* is itself likely to be subjectively unpleasant to the extent that it involves sustained arousal of structures involved in fear responses such as the amygdala and the HPA axis.

Use of the term ‘uncertainty’ here is intended to capture several points. If a goal-directed behaviour is already underway, then presumably it is ‘tracking’ toward an anticipated outcome, possibly as represented in working memory mediated by the PFC. The occurrence of an uncertainty state will presumably unsettle the stable predictability of that outcome, by introducing prediction of an aversive outcome. Secondly, there is the sense in which we expect a change behaviour signal and associated activity in the m-PFC to interrupt an extant goal-directed behavioural trajectory; creating a moment of hesitation, as it were, and setting off a phase of increased cognitive effort to locate a modified behaviour. And thirdly, the uncertainty state, being an aversive state, may be subjectively unpleasant.

We would expect an uncertainty state to subside when and if activity in the m-PFC or PFC locates and implements a behavioural scheme expected to successfully avoid a predicted aversive event; or when a relevant external, ‘cueing’ stimulus is no longer present.

Turning now to decision making; earlier I defined decision making as a selection of a course of action from amongst alternatives. In view of the evidence considered, I would claim that outcome expectancy states and change behaviour signals commonly play a significant role in the selection and implementation of a course of behaviour from among available options, in response to affect-salient stimuli. This role is clearly apparent in both animal and human subjects, in the experimental settings discussed above. In the Schoenbaum et al (2003) go/no-go experiments, the animal subjects were already thirsty,

and presumably already behaviourally motivated to drink something, as a learning task commenced. And the setting allowed two options for behaviour when a drink was actually presented – to approach the container and drink, or refrain from doing so. According to the research findings, the cognitive *selection* of one or other behaviour prior to a predicted US being presented was mediated by measurable activity in specific populations of OFC neurons.

Similarly with subjects in Damasio's gambling task, presumably their engagement with the task involved some level of 'background' arousal for goal-directed behaviour – to do the task successfully. And within the controlled conditions of the task, the options were available for subjects to select cards from one of four decks. Subjects typically began by exercising each of these four options. According to the analysis here, the contemplation by normal subjects of choosing from the two risky decks, after some learning, led to the arousal of an uncertainty state, and played a significant part in biasing selection towards the less risky decks. According to our working definition, then, this is a genuine decision making task, and the selections made by normal subjects in favour of the less risky decks – and with a view to the larger goal of task success – constitute the selection of a course of action from among available alternatives.

This conclusion is also supported by wider evidence that people with damage to the ventromedial cortex (VMC) not only display deficits in the gambling task, but also consistently display impaired social and personal decision making in everyday settings. Rolls discusses a range of such deficits, including: 'disinhibited or socially inappropriate behaviour; misinterpretation of other people's moods; impulsiveness; unconcern or under estimation of the seriousness of their condition; and a lack of initiative'. (2000, p.290) These deficits are also quite specific. Patients with 'discrete' VMC damage are often able to perform to normal levels in relation to a range of general cognitive capacities, including general intelligence, language comprehension, problem solving ability and general working memory. (Bechara and Damasio, 2004; Damasio 1994) Furthermore, as noted by Bechara et al, people with bilateral amygdala damage not only perform less well on the gambling task, but also 'demonstrate poor judgement and decision-making in their real-life social behaviour'. (1999, p.5480)

This evidence about everyday performance is also significant for another reason. If people with damage either to the VMC or the amygdala display these characteristic deficits in everyday decision making, it indicates that the normal workings of these structures as they contribute to success in controlled experimental conditions, are also likely to be significant contributors to adaptive decision making in relation to affect-salient

stimuli, during the course of everyday goal-directed activity. (Rolls 2000; Adolphs 1999; Damasio 1994)

4.3.2 Goals, Schemas and Plans

I suggested earlier that the subsidiary capacities implied by liberal accounts of reasoning and self-determination include goal-directed planning and action. § 4.2.1 surveyed a range of evidence and allied theory suggesting that the ‘executive’ lateral areas of the prefrontal cortex play a significant role in mediating these kinds of cognitive-behavioural functions. I discussed this evidence in terms of associative learning, working memory, and considered the work of Fuster, drawing these elements together within a larger model of executive control of goal-directed action.

Koechlin and Summerfield propose a similar ‘hierarchically ordered executive system lying along the anterior-posterior axis of the lateral PFC.’ (2007, p.233) They argue that the most anterior areas of the PFC mediate ‘branching control’, which involves ‘the arbitration among several past cues for action selection during multiple task performance. Anterior dorsolateral PFC is then seen as responsible for ‘episodic control, whereby a discrete past event defines a new set of rules for action selection’. Moving caudally, the posterior dorsolateral PFC is seen to deal with contextual signals from the immediate environment, while the ‘ premotor cortex, at the base of the hierarchy, integrates all those signals with those from the stimulus itself … to decide how to act.’ (p.233)

As with Fuster, Koechlin and Summerfield suggest that relatively well-established, routine behaviours will be mediated by lower parts of the hierarchy, and that higher levels ‘are only recruited when lower levels do not provide enough information to control action selection.’ (p.233)

On the basis of this, it will be assumed here that the lateral PFC, extending into the premotor cortex, in league with areas supporting long-term memory and/or motor control, mediates the stored accumulation and flexible, situation-sensitive use of many goal-oriented behavioural *schemas*. A schema I will understand here as a knowledge structure that supports a coordinated sequence of purposeful behaviour, targeted at a specific goal – ‘catching the bus’, ‘opening the fridge’, or what have you. As Fuster describes it:

[T]he prefrontal cortex plays a critical role in the temporal structuring of behaviour. That role is thought to be, essentially, the integration of sensory information and motor acts into novel, complex, and purposive behavioural sequences. (1989, p.195)

This view of the PFC executive control activities may also be considered alongside the evidence noted above, of the medial-PFC (m-PFC), and the anterior cingulate cortex (ACC) mediating behaviour change in response to a change-behaviour signal. I noted earlier the view of several researchers (e.g. Phillips et al 2003; Botvinick et al 2004; Kerns et al 2004), that heightened activity within the m-PFC appears to mediate interruptions of a current behaviour, and a shift to an alternative behaviour, in response to aversive stimuli or unexpected changes in predicted rewards. Here I will broadly assume that what gets interrupted here is the current implementation of a behavioural schema, and that the heightened m-PFC activity constitutes a form of aroused cognitive effort to locate and implement an alternative schema.

As we saw also, both Botvinick et al (2004) and Kerns et al (2004) canvass evidence that an increase of activity mediating changes in behaviour in the m-PFC may trigger, or occur concurrently with, higher-level activity in the executive, dorsolateral areas of the PFC as well. In this context, it is appropriate to recall our earlier discussion of the dorsolateral areas mediating working memory functions involved in the active *manipulation* of information salient to goal-oriented behaviour. (Owens et al 1996) With this in view, it would seem reasonable to suppose that heightened activity in medial areas of the PFC may be combined with activity in dorsolateral areas, when the ‘search’ for a modified behaviour does not locate an appropriate ready-to-use schema and the construction of a more novel response is required.

Researchers addressing high-level control functions directly also sometimes describe the activation of these functions as ‘reserved’ for situations that are *not* routine. For example, in speculating about consciousness and executive control, Ulrich Mayr observes that it is often ‘those aspects in the internal or external world that *interfere* [sic] or *interrupt* routine action – which are the very same events that typically elicit executive control operations.’ (2004 p.145, italics added)

When an uncertainty state triggers heightened activity within the medial or dorsolateral areas of the PFC, and this activity leads to the implementation of an alternative behavioural schema well suited to avoiding a predicted aversive stimulus; then the model on offer here would predict that this would lead to an OFC-based ‘re-evaluation’ of outcome expectancies, and a consequent attenuation of amygdala arousal.

This emerging system view fits with the evidence of an imaging study from Ochsner et al (2004), suggesting that PFC mediated schematic interpretation of a situation can exert some top-down influence on a person’s level of amygdala-based arousal in response to aversive stimuli. The study asked subjects to either ‘up-‘ or ‘down-regulate’ negative

emotion states by interpreting pictures of aversive scenes in different ways; either regarding them as self-relevant (and negatively arousing), or deliberately focusing on a more positive or neutral interpretation. They found that amygdala activation was ‘modulated up or down in accord with the regulatory goal’ (i.e according to the interpretive strategy adopted), and suggest that down-regulation ‘uniquely recruited regions of *right lateral and orbital PFC* implicated in behavioural inhibition.’ (2004, p.483, italics added)

Another subsidiary capacity implied by liberal descriptions of a faculty of reason was that of imaginatively ‘looking forward’ to future social scenarios, as a means of evaluating, or choosing between, possible courses of future action. I won’t investigate the question of neural mechanisms mediating imagination as such, although our previous discussions of working memory already assume a capacity to represent future goals. We may note, however, that the potential affective arousal which comes with directly observing affect salient stimuli such as the facial expressions or gestures of other people (Brieter et al 1996) can, it would seem, equally be elicited by simply imagining the same kinds of stimuli. A neural imaging study by Kim et al (2006) compared areas of activation in subjects asked to imagine either neutral or emotional (either positive or negative) facial expressions. Their results showed heightened amygdala arousal only for the emotional faces. Furthermore, imagining emotional faces also elicited heightened activity in a number of other structures including: the dorsolateral PFC (mentioned here in context of working memory), and the superior temporal sulcus, an area known to be involved in visual recognition of facial expressions. (Haxby et al 2000) Kim et al concluded that, ‘areas of the brain known to be involved in the actual perception of affective facial expressions are also implicated in the imagery of affective facial expressions.’ (2006, p.128)

On this basis, it appears that individuals are not only capable of imagining themselves in ‘future’ social scenarios, including those not directly related to or merely extending from their current circumstances; but are also capable of ‘reading’ affective salience in imagined social interactions in more or less the same manner as they are capable of ‘reading’ an occurrent situation.

4.3.3 Cognitive Resources

My earlier description of subsidiary capacities putatively contributing to reasoning also appealed to the use of prior knowledge and experience. Discussion in 4.2.1 noted evidence that working memory functions within the PFC are able to directly ‘recruit’ information from long-term memory, and to integrate it with current perceptual information. (Tomita

1999) Above we considered a role for the dorsolateral PFC in mediating the acquisition and use of behavioural schemas. And we have focused in particular on the notion of the OFC ‘building’ a fund of valenced associations available to be aroused as outcome expectancies. All of this would already seem to imply that, as we gain experience and move into adult life, we will normally acquire these various kinds of cognitive *resources*, subsequently available for use in interpreting and negotiating everyday environments.

The larger picture implied by this, of an adult person competently operating in everyday situations, is that existing schemas mediated within the lateral PFC motor hierarchy will be ‘at work’ in the conduct of many familiar activities, with the OFC acting as a valence-sensitive monitor of current behaviour and salient stimuli in the environment.

(Schoenbaum et al 2006, p.118) The occurrence of an uncertainty state in such circumstances I have described as a form of ‘interruption’ to the current behaviour. However in *some* instances – for the competent reasoner, armed with an array of cognitive resources – it would seem sensible to suppose that modifications to behaviour prompted by a change-behaviour signal may be relatively easily assimilated as minor adjustments to the current behavioural trajectory toward some goal. Or, it might be that an alternative pattern of behaviour, well-suited to ‘solving the problem’ is already familiar and available.

In this context it is also useful to note in Schoenbaum et al (2006), discussion of evidence that outcome expectancy states contribute to rapid changes in behaviour, when changes in external conditions *violate* the prediction of an (attractive or aversive) outcome. They refer in particular to conditioning studies with rats which include a ‘devaluation’ test. In these cases, after an association between a neutral CS cue and a rewarding US outcome is learned, the value of the outcome is changed; e.g. by changing a previously attractive food reward to cause sensations of illness. In this situation, normal animals will spontaneously and quickly reduce their behavioural approach to the devalued outcome. Both the OFC and the amygdala appear to contribute to this behavioural flexibility, because animals with lesions to the OFC or the amygdala, while able to learn the initial association, do not modify their behaviour nearly as rapidly or effectively when the US is devalued.

(Schoenbaum et al 2006, pp.119-120; Schoenbaum et al 2003, p.861)

What this evidence suggests, for present purposes, is that valenced associations giving rise to outcome expectancies which in turn shape behaviour, can be overridden by modified behaviour and further OFC learning in response to changes in external conditions leading to the formation of new associations. Presumably this allows that a negative expectancy state leading to behaviour which reliably avoids an aversive stimulus, may be

overridden with new learning which no longer associates the relevant cue stimulus with an aversive outcome. Thus we may suppose that, for an adult person, a history of OFC associative learning in response to changing environmental conditions (along with other forms of learning) will mean that some situations which previously have stimulated uncertainty states, now no longer do so. Perhaps, for example, if I had no experience with a custom of bartering over the price of goods in a market, the signals of expression, gesture, or voice coming from the seller might contribute strongly to the arousal of uncertainty states. A few months' experience, and familiarity with the 'correct' patterns of behaviour, is likely to reduce this effect.

We may note also that, with normal subjects engaged in Damasio's gambling task, it was found that as they engaged in modification of their strategies and gradually gained competence they also become more consciously aware of the salient contingencies, and could thereafter make more explicitly deliberative choices about which cards to select. (Bechara et al 2000 p.300)

On another front, we also noted evidence above, from the study of Ochsner et al (2004), suggesting that kinds of interpretive *attitudes* taken to a set of external events can also make a difference to the extent of affective arousal. What this would seem to suggest, somewhat more generally, is that different kinds of *information* brought to bear in interpreting external events can also be causally implicated in modulating states of affective arousal. If you woke in the middle of the night and heard a noise in the kitchen, you would be very likely to experience strong arousal of both the amygdala-medial PFC pathway and the HPA axis. If you then noticed a space in the bed beside you where your partner would normally be sleeping, this information might well lead to a rapid re-evaluation ('It's not a thief, it's my partner getting a drink of water'), and gradual attenuation of arousal. If this is so, then it would seem that the gradual acquisition of accurate and adequate information about aspects of one's experience may also play an important role in the task of navigating and 'reading' a social milieu.

4.3.4 Conclusion

The material covered in § 4.2 and in this section constitute the first major part of the proposed PF-A model of social reasoning and decision making. The specifically social element of the model will be the subject of the next section. For the moment, I would claim that theory and evidence presented above provides a plausible, empirically grounded account of how the OFC, the amygdala, the lateral and medial PFC and other associated neural structures mediate human capacities for:

- Goal-directed action and planning
- Evaluation of present activity or of options for future action, and the effective use of those evaluations in decision making and modification of behaviour
- Forms of learning and the acquisition of cognitive resources able to be retrieved and deployed in ways which subserve flexible, situation-appropriate forms of behaviour
- Imaginative ‘looking forward’ to possible future scenarios

And thus the model also gives an account of natural capacities matching the descriptions set out at the beginning of the chapter, of subsidiary capacities implied in liberal theorists’ descriptions of capacities for reasoning and self-determination. Therefore, I suggest, the proposed model, as elaborated so far, begins to offer a credible naturalistic account of capacities for everyday reasoning and self-determination as they are described within liberal political theory.

4.4 SOCIAL REASONING & DECISION MAKING

In this section I will explicitly locate my model reasoner and decision maker in a contemporary social context. The goal is to extend upon the model as developed so far, in order to explicitly introduce ‘other people’ into the equation as affectively salient stimuli, and provide a higher-level description of generally *competent*, adult capacities for reasoning and decision making within everyday social settings. Use of the term ‘competence’ here is intended to indicate that the expression of the capacities described is likely to be *apt* for individuals operating within those settings. Although the focus is on mature capacities, I will also venture a few comments in passing about the possible implications of the model in relation to issues of childhood development. *Social* reasoning and decision making I shall treat as the individual use of the various cognitive-affective capacities as outlined above in navigating everyday socio-cultural environments and relationships with other people.

As a preface to my picture of competent social reasoning and decision making, I will examine evidence suggesting that the same neural structures already featured in my PF-A model also play a role in some basic aspects of social cognition. The main intention here is to give some substance to the, perhaps, common sense intuition that *other people* are likely to be prominent sources of primary and secondary affective salience.

4.4.1 Aspects of Social Cognition

It may seem somewhat incongruous that limited attention has been paid here (until now) to the evidence for neural structures and processes involved in the perception or interpretation of specifically *social* information. The reasons for this, in essence, lie with the choice to focus on structures understood to have more general functions, and to view them in that light first. Nevertheless, we already have plenty of reasons to suspect that these structures, in the normal course of things, are likely to be extensively recruited in more explicitly social cognition; and are now well placed to consider that issue directly. Furthermore, research and theory on aspects of social cognition can expand our understanding of structures contributing more domain specific functions, and how these may interact with the ‘main players’ of the PF-A model.

The term ‘social cognition’ might mean a range of things, from cognitive processes in animals subserving behavioural responses to conspecifics, to those in humans mediating language comprehension. Adolphs argues the term tends to be applied particularly to ‘those higher cognitive processes subserving the extremely diverse and flexible social behaviors that are seen in primates.’ (1999, p.469) Here I will adopt that stance and look in particular at the processing of social signals conveyed in facial expression, and the so-called ‘theory of mind’ capacity to interpret the mental states of others.

In relation to facial recognition, firstly, Haxby et al identify two particular, specialised areas of cortical tissue involved in visual processing of faces, within the occipitotemporal cortex. The lateral fusiform gyrus specialises in the processing of invariant aspects of facial recognition; i.e. ‘reading’ stable facial features such that individual identity can be reliably recognised. The superior temporal sulcus (STS), on the other hand, is more involved in processing of changeable aspects of expression, direction of gaze, and so on which ‘facilitate social communication’. (2000, p.223) They argue that these more specialised structures interact widely with others in further mediating interpretation of the meaning of facial information.

It is a well-established finding of developmental behavioural psychology that infants prefer to look at faces more than at other objects more or less from birth; and that, from about six months, they will follow the directional gaze of another person. (Haxby et al 2000) Perhaps the lateral fusiform gyrus and the STS are good candidates for structures mediating innate, preferential biases for facial representation, attention for face-like stimuli, and gaze following.

Haxby et al also note a study showing stronger STS arousal in subjects asked to judge emotion from facial expression, followed closely thereafter by arousal of the amygdala.

(2000 p.228-229) We have already noted studies suggesting a role for the amygdala in recognition of fearful expressions (Adolphs 1995), and amygdala activation for both fearful and happy faces, as compared to neutral expressions. (Breiter et al 1996) An STS preference for variable, expressive aspects of faces, and an STS-amygdala link would seem consistent with these findings. In a later review article on social cognition, Adolphs notes several studies suggesting the amygdala plays a role in the monitoring and interpretation of direction of eye gaze. He discusses also a study of his own showing that patients with bilateral amygdala lesions ‘judged as abnormally trustworthy and approachable the faces of those people who are normally judged to look the most untrustworthy or unapproachable’. (1999, pp.472-473; see also Adolphs 2001) Neurophysiological studies on monkeys have demonstrated neuronal populations in the temporal cortex which respond preferentially to: visual sighting of faces, faces according to identity or social status, scenes of social interaction, and gaze direction. (Adolphs 1999, p.470) Rolls cites a range of evidence showing that populations of orbitofrontal neurons in monkeys respond preferentially to visual sighting of faces, or have different responses to different faces. Furthermore some of these ‘face-selective’ neurons also respond to facial expressions or movements. (2000 p.288)

Evidence of this sort suggests that abilities to identify and interpret faces are fundamental aspects of navigating social environments; that facial expressions are stimuli which will have either primary or secondary affective salience for human beings; and that the amygdala plays a key role in registering that salience.

On an allied front, similar considerations may apply to the social-cognitive ‘reading’ of body movement, orientation or gesture. Haxby et al note that biological movement also arouses neuronal activity in the STS region, and that this activity in human brains has been elicited experimentally in subjects viewing movements of the whole body, the hand, the eyes and the mouth. (2000, p.227) As noted earlier, amygdala activation has also been associated with observation of biological movement. (Bonda et al 1996)

Secondly, let us briefly consider the possible role of certain structures in our abilities to interpret (tacitly or explicitly) the mental states or dispositions of other people, or to understand or predict their behaviour. These abilities are sometimes referred to as the having of a ‘theory of mind’. Perner and Lang describe theory of mind (ToM) as ‘the ability to ascribe mental states, such as desires, beliefs, feelings and intentions to oneself and to other people.’ (1999, p.337)

There are some quite different approaches taken in research within this area. Here we will consider only one of these, looking at structures which may subserve a form of direct, experiential understanding of the behaviour and/or mental states of others by *simulating* actions or expressive behaviours that are observed in them¹¹. (Adolphs 1999, p.476) For example, in discussing the key contributors to social cognition, Adolphs (1999; 2001) highlights the ventromedial cortex (VMC) and the amygdala, but also points to the right somatosensory cortex as a third, more domain specific structure which may play a significant role. He notes several studies showing that individuals with damage in this area suffer from impaired performance on ToM tasks such as judging people's emotional states by viewing their faces; or more generally in their social behaviour. One possible explanation of such deficits, he suggests, is that this cortical area may normally be employed to generate somatosensory representations, or images, in person A that mirror expressions or gestures observed in person B , and that these in turn elicit a sympathetic affective arousal in A; *as if* he or she were making that expression or gesture.

Gallese et al offer a more extensive model, proposing that 'there are neural mechanisms (mirror mechanisms) that allow us to directly understand the meaning of the actions and emotions of others by internally replicating ('simulating') them without any explicit reflective mediation.' (2004, p.396) They propose partially separate mechanisms for understanding either the actions or the emotions of others. In the former case, they describe so-called 'mirror neurons' found in motor cortex areas of both humans and monkeys, which show aroused activity both for the self-performance of an action and the observation of a similar action in others.

In relation to emotions, Gallese et al focus on an emotion of disgust, again suggesting that certain neural structures – most centrally the anterior insula – are activated both for a direct feeling of disgust and the observation of disgust facial expressions (or hearing of disgust sounds) in others. (2004, pp.397-400) Like Adolphs, however, they are at pains to argue also that positing these kinds of direct mechanisms for direct, experiential understanding of others' actions or emotions need not rule out other more declarative, conceptual processes for reasoning about others' mental states.

An imaging study by Singer (2004) found that the 'core' neural centres activated in an experience of pain were also activated by a stimulus which signalled that a loved one was experiencing a similar pain.

¹¹ It should be noted that, aside from theories in neuroscience, 'simulation theory' is also a well established field in philosophy, especially Philosophy of Mind. Broadly speaking, simulation theory asserts that we represent the mental states of others by simulating them in ourselves. (Gordon 1999) I will not be drawing on this literature.

With the evidence canvassed above in mind, I will take it here that, for the normal person, *other people* as registered by the senses – their faces and expressions, voices and words, gestures and actions – are very likely to figure as stimuli having primary or secondary affective salience; and thus (as stimuli) are likely also to figure in valenced associations, outcome expectancy states, and so on.

4.4.2 Competent Social Reasoning and Decision Making

We are now in a position to bring together the analysis of § 4.2 and 4.3 with this idea of *other people* as likely subjects of primary or secondary affective salience, in order to generate a higher level description of competent social reasoning and decision making in everyday settings.

The larger picture now on offer, I suggest, is that the mature social reasoner is likely to have acquired a whole fund of behavioural schemas tailored to achieving certain ‘routine’ objectives within social settings. These existing schemas, as coordinated in working memory and implemented via the lateral PFC motor-control hierarchy will be ‘at work’ in the conduct of many familiar activities – buying something at a shop, talking to a work colleague, or what have you. In any social setting, however – talking with, looking at, touching, hearing or in any way interacting with *other people* – the model also suggests that the OFC will be actively playing its evaluative role, and a significant proportion of this work will amount to a more or less constant, value-sensitive reading of people’s eyes, expressions, words and tone of voice, gestures and actions. When, in the context of moving along some familiar goal-oriented trajectory (possibly reinforced by positive expectancy states), perceptions of or thoughts about another person trigger a negative association and prediction of an aversive outcome; then (I claim) this is likely to induce an uncertainty state, including arousal of a negative outcome expectancy state in the OFC and an OFC–amygdala–m-PFC mediated change-behaviour signal. The subsequent state of heightened m-PFC arousal can act to interrupt and inhibit the current behaviour, to assimilate the changes, and to modify behaviour. Similarly, if perceptions or thoughts about others trigger a positive association and predict an attractive outcome, then I take it that this will reinforce behaviour in that direction.

Within this picture, analysis and evidence from § 4.2 and 4.3 also suggests that uncertainty states in particular, as we’ve understood them, make significant contributions to *competent*

social reasoning; and that the affective contributions of the amygdala in generating change-behaviour signals play a vital role in social decision making.

As we saw, the lesion studies of Damasio and colleagues suggest that the more ‘calculating’, lateral PFC-based executive control functions, if *deprived* of affective error signals generated via the OFC-amygdala circuit, can more easily fail to implement goal-directed behaviours in social settings which are apt for the individual concerned. Subjects with damage to the ventromedial cortex (VMC) or the amygdala often display relevant declarative knowledge about factors relevant to their decisions, but still tend to make decisions which are impulsive, disadvantageous to their own goals and interests, socially inappropriate, and/or take little account of other people or cultural norms. In other words, the deficit here seems particularly marked for *social* decision making – about actions which involve or impinge on other people. (Bechara et al 2000; Rolls 2000; Adolphs 1999; Damasio 1994)

Brought together with the proposed model, this evidence suggests that what may be particularly lacking here is negative expectancy states aroused in the context of social decision making, able, as it were, to evaluate the social environment, anticipate possible disapproval or negative emotional reactions from others in response to one’s behaviour, and rapidly shape choices of action accordingly. And thus, competent social performance would appear to rely in significant part on having a ‘fund’ of valenced OFC-based associations, which can yield short-term arousal of uncertainty states in response to a range of social stimuli. These can then inform decisions which are apt for serving one’s interests and achieving goals in social settings, because, in effect, they render the decision maker ‘suitably’ sensitive to social cues and the interests of others.

It would not be appropriate to conclude, however, that competent social reasoning and decision making lies simply with the use of established associations to generate outcome expectancies and thus to be (consciously or unconsciously) guided by affective responses to stimuli in the environment. As discussed earlier, the PF-A model also supposes that processes of PFC and OFC based learning can contribute to the acquisition of behavioural schemas and other cognitive resources or skills, enabling sustained motivated behaviour toward possibly temporally distant goals. (Positive expectancy states predicting attractive outcomes may contribute to the sustaining of such behaviour.) Seen in this context, it is to be expected that intermittent, acute uncertainty states will almost certainly still have a part to play ‘along the way’, but the role may be more one of subtly modifying an extant behavioural trajectory, rather than radically interrupting or redirecting it. In this way we

might see the general profile of competent, everyday social performance as consisting substantially in the enactment of relatively familiar forms of goal-oriented action, sometimes reinforced and sustained by positive expectancies; with uncertainty states ‘playing off’ these schemas-in-action, enabling moment-by-moment changes in the social environment to trigger transient increases in higher level arousal and processing, leading to fluid modifications in behaviour.

On the whole, therefore, I would claim that the ability to *combine* the use of lateral PFC-based cognitive processing, dealing in information variables, behavioural schemas and executive action control, with OFC and amygdala-based processes of evaluation and signalling is likely (other things being equal) to be apt for individuals as they attempt to negotiate social environments and make decisions in ways which meet their own interests.

In relation particularly to the ‘forward looking’ aspects of social reasoning, we noted earlier some evidence suggesting that a capacity to deploy outcome expectancies as a means to evaluate options for action is not necessarily limited to behavioural schemas which are simply extensions of one’s current activity. This was a study suggesting that simply imagining affect-salient stimuli such as facial expressions was in itself sufficient to stimulate amygdala arousal. (Kim 2006) I took this to lend support to the idea that not only can we imagine ourselves in social settings beyond the horizon of the now¹², we can also thereby evaluate options for possible future action (or respond affectively to imagined actions of others) in more or less the same way as for our more immediate situation.

Along with the rest of the model, this idea also opens up other forms of analysis of the dynamics of interaction between individuals and the social environment. Let us consider a simple example, of adult male A, married with two children and employed in the mining industry. A has deep affective ties with members of his immediate family. This salience will be reflected in valenced expectancy states aroused during times of direct contact with family members, or just by thinking about them. If A has had an argument with his partner, this would likely give rise to uncertainty states as he contemplates what will happen tonight when they return from work.

According to the proposed model it would also be reasonable to suppose that these affective associations may also enter into A’s thoughts and behaviour in relation to aspects of the wider social world. For example, let us say that A is aware that his employment is dangerous; he knows of industrial accidents at his workplace where people have died, and

¹² Although, strictly speaking, it is probably more accurate to say that the imaginative construction of ‘future’ scenarios is in fact a process of, shall we say, creative reconstruction, based on previous experience. (Edelman and Tononi 2000)

has recently nearly been involved in an accident himself. Now, picture A engaged in imaginative contemplation about what would happen to his family if *he* were seriously injured or killed at work – he imagines their grief, their inability to pay the mortgage, etc. We have every reason to believe that such thoughts are likely to trigger negative affective associations, and the arousal of uncertainty states. These may then over time contribute to some changes in behaviour; A asks to be moved from a particularly dangerous kind of task, and decides to purchase some life insurance. Subsequently, perhaps, the affective ‘tone’ aroused in relation to thoughts about his future and that of his family is changed.

We begin to get a picture of how the cognitive-affective systems and functions we have considered may contribute to the kinds of longer-term consideration and evaluation of possible future actions, taking account of needs or interests, with which many will be subjectively familiar; and this perhaps brings us closer still to descriptions of everyday reasoning found in liberal theories¹³.

4.4.3 Self-management

I have suggested that the conception of self-determination found in liberal theories incorporates notions of using one’s endogenous resources of knowledge or experience in making decisions and acting accordingly. Alongside the description above, I would now add a further point. This is to suggest that our competent social reasoner, armed with an array of cognitive resources, able to generate outcome expectancy states in context-sensitive ways, may also be considered as having some capacities for *self-management* of either behaviour, or of affective arousal. In relation to the former, the PF-A model proposes that a ‘fund’ of OFC-based valenced associations can enable context-sensitive triggering of uncertainty states. This in turn can stimulate arousal in the m-PFC which can be effective in *interrupting* a current behaviour, or *inhibiting* a prepotent response, and implementing a modified or new behaviour. These are forms of behavioural control.

In relation to affective arousal, I also argued in § 4.3.3 that OFC-based associative learning could, in effect, recalibrate the affective valence of some stimulus over time, as greater experience and familiarity with that stimulus (or setting) is obtained. Thus, in those kinds of settings, one can acquire an enhanced capacity to sustain positively valenced, goal-oriented behaviour, and in effect reduce the influence of uncertainty states.

We have also considered evidence that the deployment of cognitive resources within the lateral PFC – as part of working memory functions – can also exert influence on levels of

¹³ As an aside about larger socio-political implications, one need only look at the vagaries of the stock market for evidence that the general tenor of *expectations* about the future across populations can have substantial impacts on whole economies

amygdala arousal. I have claimed that a PFC-based location and implementation of a modified behavioural strategy which solves an uncertainty ‘problem’ can lead to an attenuation of an uncertainty state and associated amygdala arousal. And we also have the evidence from the previously cited Ochsner et al study (2004), suggesting that PFC-mediated alterations of interpretive attitude to an affectively salient stimuli could influence amygdala activity up or down. Perhaps such capacities for self-management of affective arousal contribute to our apparent abilities to sometimes persist in the pursuit of a longer-term goal ‘in the face’ of negative affective signals about more immediate obstacles or problems.

Such considerations of SRD capacities as capacities for self-management can point us also to issues of childhood development; to ask whether processes of cognitive-affective development and the acquisition of endogenous cognitive resources (as we’ve understood them) encompass a broad movement from some initial forms of *external* ordering and structure to forms of endogenously sourced self-management. (Schore 1994) Our model of competent reasoning and decision making describes an interactive process involving uncertainty states ‘playing off’ extant goal-oriented schemas, leading to further associative learning, and increased behavioural flexibility. Employing that construct, one may ask whether processes of early development encompass the same kind of iterative process except that, in the absence of an already acquired ‘fund’ of structured, schematic information about processes of behavioural interaction with features of the environment, the onus is on the environment, so to speak, to *provide* forms of structured, consistent information, to which the child can respond.

One might consider for example certain forms of parental disciplining of child behaviour. If, to a first approximation, we suggest that early behaviour (say around 2-4 years old) is more strongly affect-driven, then one could suggest that an appropriate pattern of response from a parent to an inappropriate behaviour lies with *providing* some distinctive social cues of disapproval, plus a decisive interruption of the behaviour, along with some information about available pathways of alternative behaviour. If we assume that social signals of expression, voice or gesture can drive some amygdala arousal, and some concomitant arousal of the OFC, then the basic conditions for some associative learning about kinds of conditions and kinds of affective response are met. The process of being interrupted, and subsequently ‘choosing-with-assistance’ an alternative behavioural option, reinforced with signals of parental approval, perhaps becomes one small experience

of following what is perhaps essentially the same internal-functional pattern and iterative learning/problem-solving process.

Schore argues that, for children around 1-2 years of age, short bursts of highly aroused ‘approach’ behaviour interspersed with ‘readings’ of parental expressions and periods of comforting enable the development of capacity for more temporally extended and independent goal-directed activity. By these and other means, he claims, the parent can act ‘as a *crucial regulator* of the child’s development.’ (1994, p.4, italics added)

It is not my purpose to explore these questions in depth, but one suspects that they might be an entry point to a whole further set of issues about the ways *other people*, and social settings more broadly, can impact on the acquisition of competent capacities for social reasoning and decision making.

4.4.4 The Individual and Society

Some of the discussion above has been couched in terms of *individual* capacities for reasoning and decision making, and the use of those in pursuit of individual needs/interests. However, I would claim that the fulsome development and competent use of these capacities in social settings is also likely to involve close affective ties with others, and a disposition to sensitively take account of the goals of others and their likely emotional responses to one’s own behaviour. Evidence about theory of mind as simulation may also suggest in fact that experience with, and evaluative responses to, our own goal oriented behaviour might play a vital part in our capable ‘reading’ of the behaviour of others as purposeful, or in taking empathetic pleasure in other’s achievements. It is also likely to play a part, I suspect, in the pleasure to be found in participating in a successful *collective*, goal-oriented activity.

4.5 CONCLUSION

In this chapter we have arrived at an overall view of mature capacities for competent social reasoning and decision making which involve, amongst other things:

- ‘Executive’ control of goal-oriented behaviour, employing learned behavioural schemas and information salient to interpretation of current circumstances
- Learning of associations between kinds of situations and kinds of affective response
- Predictive anticipation and evaluation of likely outcomes of behaviour on the basis of prior learning

- High levels of sensitivity to other people – their expressions, gestures, eye movements, tone of voice, and words – as stimuli of primary or secondary affective salience

In particular, the evidence considered suggests that the everyday exercise of these capacities in social settings consistently involves the occasional onset of *uncertainty states* – states of heightened arousal in the orbitofrontal cortex (OFC)-amygdala circuit which register stimuli associated with aversive events, and act as a trigger for multiple processes of further neural and somatic arousal elsewhere. In particular, uncertainty states can give rise to ‘change behaviour’ signals from the basolateral nucleus of the amygdala to the medial prefrontal cortex (m-PFC). Evidence suggests these signals can lead to temporary states of heightened (dopamine-mediated) arousal in the m-PFC, and flow on effects on processing activity in the lateral prefrontal cortex apt for:

- Interruption of an extant behaviour, or inhibition of a prepotent behaviour
- Formulation and implementation of a modified behaviour which responds to the relevant changes in external contingencies

As contributors to the exercising of capacities for social reasoning and decision making, these processes are apt for fluent changes in moment-by-moment behaviour, in response to shifting conditions in a complex social environment.

I have also offered a picture of the competent social reasoner and decision maker as a person able to bring to bear acquired behavioural schemas and learned associations, and combine these with the influence of affective signals, in order to:

- Readily implemented forms of goal-oriented activity, ‘supported’ by positive expectancies
- Imaginatively assess and evaluate likely outcomes of behaviour in ‘future’ scenarios, and modify current behaviour, or plan future behaviour, accordingly
- Evaluate information about the wider world as it bears upon the attainment of valued goals, or the sustaining of valued states of affairs
- Employ endogenous cognitive-affective resources to achieve forms of self-management apt for sustaining goal-oriented behaviour over an extended period; or (to some extent) to self-regulate states of affective arousal

CHAPTER 5.

DETRIMENTAL EFFECTS ON CAPACITIES FOR SOCIAL REASONING AND DECISION MAKING

5.1 INTRODUCTION

According to the liberal political theories examined in chapter 2, human beings have an intrinsic potential for realising attributes of personality which ought to be regarded as valuable – including capacities for reasoning, self-determination and individuality – but the realisation of these attributes is also vulnerable to inhibition, deformity or damage under certain conditions; e.g. when a person is subject to an overt coercive threat.

We saw that part of the fundamental justification of a libertarian or social-liberal political scheme lies with claims that application of the preferred scheme will tend on the whole to foster our valuable attributes, and prevent or limit conditions which damage or inhibit them. Other political systems are to be opposed because they will engender social, economic or political conditions which will undermine the realisation of these valuable proclivities of our nature (in some significant portion of the client population). Claims about human psychology, and social psychology, become a fulcrum on which political schemes are weighed and justified.

In the previous chapter I claimed that the proposed PF-A model of social reasoning and decision making offers a plausible, empirically-grounded account of natural capacities for reasoning and self-determination as described in liberal political theories. In later chapters I will ask what the implications might be for libertarian or social-liberal political claims if this view is accepted. In order to do this effectively, it is important to ask how, if in any way, external conditions (especially social conditions) might indeed have damaging or limited effects on capacities for social reasoning and decision making (SRD capacities) as we have understood them.

In this chapter I will appeal to evidence suggesting that the same structures and functions involved in competent social reasoning and decision making are also implicated where social circumstances contribute to detrimental impacts on these capacities. Specifically, in the subsections to follow I will present evidence and argument in support of several main claims.

- That certain kinds of external, socially-mediated circumstances can cause *chronic uncertainty states* in people of normal cognitive capacity, leading to chronic arousal of the amygdala and other ‘flow-on’ effects

- That chronic amygdala arousal can cause changes in the morphology, activities and/or functions of the amygdala and other structures featured in the PF-A model
- That such changes can causally contribute to the onset of common forms of psychiatric disorder or to forms of compensatory ‘diversion’ behaviour
- That the onset of such disorders or behaviour change has detrimental impacts on SRD capacities; i.e. in either case, it constitutes a loss of capacity

Prefacing a part of the political argument to follow, I will also claim that that the same kinds of detrimental impacts would be a likely outcome of circumstances that would count as (wrongly) coercive for F.A. Hayek.

Within the case set out below in support of these claims, I would certainly allow that the particular innate or acquired cognitive-affective dispositions, or cognitive resources brought to a specific situation by different individuals might mean that they respond differently to it; or are more or less at risk of detrimental psychological impacts in those circumstances. (For example, individuals *may* be innately predisposed to produce different levels or durations of amygdala arousal for a particular kind of fear-making stimulus. [Kirschbaum et al 1995; Joëls et al 2007, p.78]) However, as we shall come to see in this and the next chapter, recognising such individual differences does not mean that external social causes cannot be identified in their own right, as causal contributors to detrimental impacts on SRD capacities.

5.2 CHRONIC UNCERTAINTY STATES AND DETRIMENTAL IMPACTS ON SRD CAPACITIES

5.2.1 Chronic Uncertainty and the Stress Response

An uncertainty state, as defined in the previous chapter, involves arousal of an aversive outcome expectancy state and a change-behaviour signal, leading to arousal in medial areas of the prefrontal cortex (m-PFC). It also involves amygdala-mediated arousal of the hypothalamic-pituitary-adrenal (HPA) axis. The PF-A model suggests that short-term arousal of uncertainty states is apt for interrupting current behaviour and finding an alternative well suited to avoiding an anticipated aversive outcome. It appears that acute uncertainty states make an important contribution to adaptive social decision making. However, an important question now arises. What happens if a person encounters a situation associated with an aversive outcome, which stimulates an uncertainty state, but no modified behaviour expected to avoid the predicted outcome is found? Perhaps this is a

situation where, given the particular cognitive resources available to that person at the time, heightened prefrontal arousal just doesn't locate a viable alternative behaviour (or doesn't do so in a relatively short period of time). Perhaps the obtaining external conditions themselves just don't contain any behavioural opportunities of the right sort. Perhaps all of the options for actions considered predict aversive outcomes. It would be appropriate to describe such a situation, I suggest, as one which offers low opportunities for behavioural *control*. The having of 'control' on these terms means an ability to identify and implement an effective 'problem-solving' behavioural strategy.

In these circumstances, our model would predict that the uncertainty state would be *chronically extended* – i.e. persist continuously or repeatedly – and that this would lead in turn to *chronic amygdala arousal*. (Whalen 1998)

In this section I will firstly consider research on stress responses which supports this basic prediction by showing evidence of a causal relationship between chronic exposure to situations which would count as likely-to-elicit-uncertainty states and extended hyperarousal of the amygdala. In keeping with approaches within this literature, I will here define 'stress' as the presence of any stimulus (the 'stressor') triggering a 'stress response', being aroused activity along the two pathways of the HPA axis, as discussed in chapter 4. (E.g. McEwen and Wingfield 2003; Panksepp 1998)

I have already cited evidence to show that amygdala activity is strongly implicated as a common trigger of stress responses, and this is borne out by the wider literature. (E.g. Vyas et al 2004; Goldstein et al 1996; Le Doux 1996) However, in addressing this relationship, it is important to understand that views about what constitutes acute or chronic 'stress' for a particular individual or species vary within the field, and not all of them will be relevant. Although the essential meaning of 'stress' remains tied to HPA activity, original research in the 1930's tended to focus on the impact of physical stressors such as heat or cold, or of toxic chemical substances such as formalin. (Fuchs and Flügge 2003; McEwen 2002) Such stressors can elicit HPA activity via the hypothalamus, without the need for much involvement from any other neural structures higher than the brain stem. However, more recent research has tended to focus more on responses to external stimuli as 'psychological challenges' (Fuchs and Flügge 2003, p.418) which require higher sensory-cognitive representation and evaluation, in order for the stress response to be activated. Fuchs and Flügge argue that:

Limbic circuits connecting, e.g., the hippocampus, amygdala, and the prefrontal cortex are sensitive to stressors such as restraint, fear or exposure to a novel environment. Common to

these stressors is that they stimulate – before the initiation/inhibition of the stress response – an intralimbic processing of information ...*strongly dependent on previous experience.* (2003, p.418, italics added)

And for this pathway, the amygdala is regarded as the main ‘mediator’ between the cognitive-affective interpretation, so to speak, and the endocrine/sympathetic nervous system response. (Fuchs and Flügge 2003; Le Doux 1996; Goldstein et al 1996; Tafet and Bernadini 2003; Schuklin et al 1993) (Based on the evidence in the previous chapter, I will generally take it that the orbitofrontal cortex [OFC] is a significant provider of information processing drawing on previous experience, as per the quotation above.)

As we saw earlier, activity along the HPA axis triggers the release of the steroid hormone cortisol from the adrenal cortex into the bloodstream (corticosterone in rodents). Given this, it is also common within the literature that a short-term increase in cortisol levels in the blood (or saliva), or a more stable increase in basal cortisol level over time, are treated, respectively, as reliable indicators of acutely or chronically heightened amygdala/HPA activity. (E.g. McEwen 2002; Fuchs and Flügge 2003; Le Doux 1996)

5.2.2 Chronic Stress, Uncertainty States and Amygdala Arousal

A number of paradigms of chronic stress are employed within contemporary research on animals (most often rats, mice or monkeys). Common methodologies include repetitive or continuous exposure to one form of stressor, such as periods of physical restraint, electric shocks, or cold. (Joëls et al 2007, pp.77-79) Another approach is to employ a ‘chronic variable stress paradigm...[where] animals are exposed to different physical and psychosocial stressors ... in a pseudorandom order’ over several weeks. Joëls et al report that, on the whole, animals exposed to such conditions over an extended period tend to show elevated basal corticosterone levels. (2007, p.81)

Of more direct relevance here are experimental methodologies employing ‘chronic, uncontrollable stress’ in the form of exposure to a ‘series of inescapable stressors’. Joëls et al report that ‘uncontrollable stressors generally induce a *stronger HPA-axis* activation than controllable stressors’ indicated by hypercortisolism in animals chronically exposed to those conditions. (2007, p.81, italics added) The salient point here, for our purposes, is that the ‘uncontrollable’ aspect of conditions in this form of research generally involves chronic exposure of subjects to aversive stimuli, or conditioned stimuli associated with aversive outcomes, in a way that they cannot behaviourally avoid.

One particularly interesting form of research in this vein involves the use of chronic, inescapable exposure to ‘psychosocial’ stressors, using animals which normally display hierarchical forms of social behaviour. (Fuchs and Flügge 2003) For example, Fuchs and Flügge argue that the dominant/ subordinate relationships among male tree shrews, and certain homologies with humans in types of neural receptors, make the species a good model for the effects of psychosocial stress in humans. Their research examines the effects on a subordinate male shrew of chronic, inescapable exposure to the sight or smell of a dominant conspecific, ‘by which it [the subordinate] has been defeated’. (2003, p.419) The experimental setting here would appear to meet all the conditions which we would expect to elicit a chronic uncertainty state. The sight or smell of the dominant conspecific is presumably a stimulus which the subordinate will associate with an earlier aversive outcome (being defeated in a fight). And there is no behaviour available to the subordinate animal to escape the situation; i.e. to avoid the aroused anticipation of another encounter. Again, on the terms specified earlier, the situation is one of low control. In this setting, the subordinate animal displays chronic hyperactivity of the HPA axis and elevated basal cortisol, indicating chronic hyper-arousal of the amygdala. (Fuchs and Flügge 2003, p.419)

The ‘learned helplessness’ model is another form of animal research on the effects of chronic uncontrollable stress. Here again, animal subjects are repeatedly exposed to an aversive stimulus such as an electric shock, which they cannot escape. (Animals conditioned in this way often subsequently display reduced escape behaviour, when an opportunity to evade the stimulus is made available.) In one such experiment, Hajszan et al (2009) exposed rats to inescapable foot shock over a period of several days. Blood testing of subjects 24 hours after the test period showed a several fold increase in baseline corticosterone levels.

Evidence from animal studies also suggests that activity within the HPA axis system may produce positive feedback mechanisms able to further sustain or increase amygdala arousal. (Joëls et al 2007, pp.76-77)

Taken as a whole, the evidence from animal studies strongly indicates chronic amygdala arousal as a likely result of chronic exposure to uncontrollable, aversive stressors.

Turning now to stress research on human subjects; once again a very wide range of literature is available. Following are some examples which, in one way or another, appear relevant to our present interests, namely a relationship between periods of predictive anticipation of possible aversive events, based on past experience, and chronic arousal or the amygdala, signalled by abnormally high cortisol levels.

Kunz-Ebrecht et al (2004) found differences in the waking cortisol responses¹ of 196 public servants, depending on factors of relative socioeconomic position, gender, and/or whether it was a work or weekend day. The waking response was greater across all subjects on week rather than weekend days. Participants also typically rated themselves as less in control and more stressed on those days. The increase for women was generally larger than for men on workdays. For both days, the largest increases in waking response were generally for those assessed as having lower socioeconomic status. The researchers suggest that waking cortisol responses may be ‘particularly sensitive to the influence of chronic stress and its anticipation, especially in women.’ (2004, p.517) These results suggest, in other words, that chronic *anticipation* of aversive events in the workplace (based on previous experience) may be a factor in increased waking cortisol responses, especially for women, and those of lower socioeconomic status; as compared to other groups. (The next chapter will look at particular workplace factors as potential sources of aversive outcome expectancies.)

Wüst et al conducted a study on differences in waking cortisol responses amongst pairs of identical or fraternal twins. Results showed a higher waking cortisol response for those assessed as more subject to chronic worry, social stress and lack of social recognition; as compared to their twin. The researchers suggest their findings show ‘that the cortisol awakening responses is [sic] consistently enhanced under chronic stress conditions.’ (2000, p.708) Again, the timing of the tests, in the first hour after waking, and associations between higher responses and psychological states such as chronic worrying, suggest that the anticipation of aversive events (as much as exposure to aversive events themselves) may be playing a significant role in stimulating HPA axis arousal.

Schommer et al (2003) investigated the effects of 3 episodes of psychosocial stress (impromptu speaking and arithmetic performance in front of an audience) over 3 days on 65 healthy men and women. They found significant increases in salivary cortisol in approximately three-quarters of participants during the first episode, with lesser increases over the subsequent two trials².

Ehlert et al (2001) discuss a range of studies showing increased basal cortisol levels in industrial workers, air traffic controllers and pilots, and increases in waking response levels in ambulance workers positively correlated with stress during their most recent shift. The

¹ Measured as the difference (typically an increase) between salivary cortisol levels on waking and levels 30 minutes later.

² Interestingly, roughly half of *these* participants, named as ‘high responders’, showed both higher initial cortisol responses and less attenuation of levels over time; while the ‘low responders’ had lower initial responses and a greater decrease in response. This would seem to indicate some differences in HPA sensitivity for social stressors prior to the experiments.

latter result might suggest that associations formed between aversive/stressful experiences and the previous work period were being re-aroused in anticipation of the upcoming shift. Interestingly, Ehlert et al also note a study on unemployed people which found increased basal cortisol during a phase of *anticipation* of unemployment, but not after the onset of unemployment.

Brier et al (1987) assessed the effects on human subjects of exposure to two hours of intermittent uncontrollable noise stressors, as compared to the same period of exposure, where subjects could exercise some control. Subjects in the latter case were able to switch off a noise stimulus by learning a simple sequence of button pushes. Despite in fact being exposed to the same global amount of noise, subjects for the uncontrollable condition reported higher subjective levels of helplessness, unhappiness, anxiety and depression. They also had higher levels of activity in both the HPA axis and the sympathetic nervous system. These results suggest that, apart from the stressful nature of the noise stimulus itself, a learned association between an aversive stimulus and an effective behavioural response to avoid it, may have been re-aroused on a subsequent presentation of the stimulus, and played a part in a relatively reduced level of sustained HPA activity.
(See also: Sabioncello et al 2000)

5.2.3 Chronic Stress and Amygdala Morphology or Function

The various studies cited above offer some reason to believe that episodes of chronic uncertainty states are likely to involve temporally extended and/or repeated hyper-arousal of the amygdala, causing in turn (amongst other things) increased activity along the HPA axis. We will now consider evidence for two (related) kinds of more long-lasting (perhaps permanent) effects on the amygdala of chronic exposure to aversive stressors; changes in morphology, and/or dysregulated changes in its functions³.

In a study with rats, Vyas et al (2004) investigated effects on amygdala morphology and anxiety-like behaviour of 10 days of chronic immobilisation stress (being held still for several hours); followed by a 21 day recovery period. They found that the period of stress caused significant increase in dendritic arborisation⁴ within the spiny neurons of the basolateral nucleus of the amygdala (BLA), as compared with control (non-stressed) animals. These changes persisted throughout and *after* the recovery period, and were correlated with equally lasting increases in ‘anxiety-like’ behaviours within a task of

³ In chapter 3 (§ 3.5.2) it was stated that *dysregulation* is understood to occur where the activities of a structure or system undergo a sustained departure from an observably normal range, such that the organism is more likely to suffer detrimental effects on its health.

⁴ Growth in the number and/or length of dendritic branches

negotiating a maze. (And previous research had shown that stress which did *not* produce the growth of BLA neurons, also was not associated with persistent behavioural symptoms.) The researchers propose that these findings support a view that effects on amygdala plasticity under chronic stress may be a trigger for the onset of anxiety and mood disorders. Joëls et al note that amygdala hypertrophy (increased size) is a consistent outcome in experiments exposing animals to chronic variable stress. (2007, p.78)

In a similar vein, Shekar et al (2005) review evidence for possible stable changes in the ‘excitability’ of synaptic transmission within the amygdala, and the BLA in particular, again as an effect of chronic stress. They point in particular to a role for an amino acid peptide called corticotropin-releasing factor (CRF). As the reader will recall, CRF release from the hypothalamus is a key trigger of HPA activity. However, neurons within the amygdala can also produce CRF, and many contain CRF receptors. In essence, Shekar et al argue that short-term regulation of firing activity within the amygdala is mediated by a balancing act between two common neurotransmitters, glutamate and gamma-aminobutyric acid (GABA); with the former up-regulating firing activity, and the latter inhibiting activity. During chronic stress, they suggest, increased levels of CRF are released into and within the amygdala, leading to more stable changes in receptors, such that the inhibitory effects of GABA are *reduced*. The global effect in functional terms may be that the amygdala, and the BLA in particular, become more sensitive, or liable to hyperarousal, as a response to subsequent episode of acute or chronic stress. The balance of evidence, they claim, supports a hypothesis that, ‘stress induced plasticity within the amygdala may be a critical step in the pathophysiology of the development of chronic anxiety states.’ (2005, p.209)

(See also: Schulkin et al (1993; Davidson et al 2002, p. 561)

Joëls et al also discuss evidence suggesting that neural changes arising from chronic stress can lead to increased amygdala sensitivity for further stress. For example, while amygdala firing for footshocks normally attenuates over time, where an animal has previously been exposed to chronic cold stress, firing rates in both the BLA and the central nucleus of the amygdala are enhanced. (2007, p. 83) In general, they conclude:

It seems that after chronic stress, areas involved in cognitive processing of stressful information like the BLA and the locus coeruleus become more excitable, especially in response to a novel (heterotypical) stressor against a history of chronic stress. ... Still, the predictability and controllability determine the degree of changes after chronic stress. (2007, p.83)

Beyond these kinds of effects on the amygdala itself, chronic stress would appear to be implicated in dysregulating the functions of other structures. One area of intensive investigation concerns effects on the hippocampus. In general terms, the substance of claims here is that chronically increased levels of cortisol can lead to atrophy of certain hippocampal neurons, and can compromise its functionality in areas such as spatial learning and memory. (Joëls et al 2007, pp.79-80; Tafet and Bernadini 2003; Magarinos et al 1997)

5.2.4 Psychiatric Disorders, the Amygdala and Other Structures

Abnormalities in the morphology, activities and/or functions of the amygdala and other structures featuring within the PF-A model are consistently found in people suffering various kinds of psychiatric disorders, including: major depressive disorder (MDD), bipolar disorder, and chronic anxiety disorders including obsessive compulsive disorder, panic disorder and post-traumatic stress disorder (PTSD)⁵.

I will deal with evidence regarding the amygdala first of all. In relation to gross morphological changes, Davidson et al report on a number of recent studies finding associations between enlarged amygdala volume and depression, and significant asymmetry in volumes between left and right amygdala in patients with MDD but not controls. (2002, p.560; see also Whittle et al 2006, p.515)

In terms of activity, Drevets reports that abnormal levels of amygdala activity, as indicated by elevated resting cerebral blood flow (CBF) and glucose metabolism, are consistently found in ‘depressives who have familial MDD or melancholic subtype⁶’ and less consistently found in people with bipolar disorder. He suggests the actual magnitude of increases in activity here, as compared with normal levels, may be as much as 50 to 70%! Also, he notes, ‘[a]mygdalar CBF and metabolism correlate positively with the severity of depression.’ (2001, p.242; see also Davidson et al 2002, p.560)

Whittle et al note that increased resting-state activation of the amygdala has also been consistently found in people with anxiety disorders, including obsessive compulsive disorder, panic disorder and PTSD. (3006, p.515) Davidson et al cite a number of studies

⁵ Currently, depressive and anxiety disorders are usually defined according to behavioural or phenomenological symptoms such as persistent dysphoric or anxious moods and thoughts, loss of motivated behaviour, disturbed sleep or appetite, or loss of libido. (Drevets 2001) A greater understanding of the neural basis of psychiatric illness may challenge such classifications (Davidson et al 2002; Drevets 2001) but this is not an issue I will address here.

⁶ ‘Melancholic subtype’ refers to people with major depressive episodes accompanied by one or several other mood, physiological or behavioural symptoms.

showing correlations between amygdalar hyperactivity and bipolar depression, and anxiety disorders, which ‘often show a high degree of comorbidity with depression’. (2002, p.560)

Drevets also reports that during antidepressant treatment leading to a remission of symptoms for people with MDD, ‘amygdala metabolism decreases to normative [sic] levels, compatible with preclinical evidence that chronic antidepressant drug administration has inhibitory effects on amygdala function’. (2001, p.242)

What then of evidence for the dysregulation of other structures and neural-somatic processes featuring in the SRD model, in people suffering psychiatric disorders? Below I will briefly summarise some recent reviews of relevant research. The reader should note, however, that there is no intention here to engage in any detailed analysis of putative relationships or correlations between the symptomology characterising particular disorders and an underlying pattern of neural functions or dysfunctions. The picture regarding changes in activity and/or function is, inevitably, complex and dysregulation can be displayed in either hypo- or hyper-activity; either of which may be measured as a more chronic feature, or one which only ‘appears’ as hypo- or hyper-sensitivity for some particular kinds of stimuli. The aim here is only to support a general view that abnormal activity and/or function within relevant structures is a consistent feature of some kinds of disorders.

Drevets claims that imaging studies of MDD patients with early onset familial illness or melancholic subtype consistently show abnormally elevated CBF and glucose metabolism within a number of structures featured in the PF-A model, including: the ventral anterior cingulate cortex, the orbitofrontal cortex, and the dorsolateral prefrontal cortex. However, he suggests also that abnormal levels of activity in these structures tend to be more dependent on prevailing mood state, and that activity may ‘increase or decrease to mediate or respond to the emotional and cognitive manifestations of the depressive syndrome.’ Furthermore, he says that the pattern of activity in these other structures would seem to suggest that ‘brain structures implicated … in mediating emotional and stress responses (e.g. the amygdala) are pathologically activated’. (2001, p.241)

In relation to specific structures, Drevets claims that activity in the pregenual area of the anterior cingulate cortex (ACC) is hyper-aroused during depressive episodes for some MDD patients, and for people with anxiety disorders. Activity in this area is also increased in healthy people during induced anxiety states. Abnormal levels of activity in the subgenual ACC are associated with familial MDD and bipolar disorder, and an increase

in activity occurs in this area for subjects with PTSD when they are asked to imagine situations of past emotional trauma. (2001, p.244)

Drevets also notes evidence suggesting that the subgenual anterior cingulate cortex (ACC) can have effects on levels of firing activity in dopaminergic (DA) nuclei in the ventral tegmental area (VTA), and notes a general role of dopamine in arousing motivated, reward-related psychomotor activity. He suggests, therefore, that changes from hypo- to hyper-metabolism in the subgenual ACC which correlate with the depressed and manic phases of bipolar disorder, may be causing those behavioural changes by dysregulating VTA-DA nuclei functioning. (2001, p.246-247) There is evidence that chronic arousal of the basolateral nucleus of the amygdala (BLA) plays a role in inducing such a destabilised pattern of ACC activity. Philips et al (2003) note evidence showing that 10 minutes of stimulation of the BLA caused a long-lasting increase in DA efflux within the medial PFC.

Davidson et al suggest that, ‘the ACC is one of the most consistently activated regions in patients with different anxiety disorders, such as obsessive compulsive disorder ..., simple phobia ..., and posttraumatic stress disorder’. In line with the model presented here, they also note more general evidence suggesting that ‘ACC activation may be present when effortful emotional regulation is required in situations in which behavior is failing to achieve a desired outcome’ and that hyper-activation in patients with anxiety disorders may reflect a persistent or recurring state of conflict between response tendencies and environmental conditions. They also claim that decreased activity in the *dorsal* ACC is consistently found in patients with major depression, and that remission from depression is characterised by increased activity in that area⁷. (2002, p. 553)

In light of the model developed above, it would seem to make sense that activity in the ACC might be particularly involved in anxiety states. From that perspective, phenomenal symptoms of chronic anxiety might reflect a persistent triggering of change-behaviour signals – an internal imperative to ‘do something!’ – which is inappropriate to external contingencies, or as a response to facts about the situation at hand which militate against any ‘problem-solving’ behavioural response.

Drevets cites evidence showing that activity in the posterior and lateral areas of the orbitofrontal cortex, and in the ventrolateral prefrontal cortex ‘is abnormally elevated in resting, unmedicated subjects with primary MDD’, and that activity is increased in those areas for people undergoing episodes of obsessive compulsive disorder, simple phobia and

⁷ There is a considerable literature on different parts of the ACC having different functions, particularly in terms of ventral areas as mainly involved in emotional processes and dorsal areas in cognitive processes. (E.g. as reviewed in Davidson et al 2002, pp. 551-553)

panic disorder. (2001, p.245; see also Davidson and Irwin 1999) With the more dorsal and lateral areas of the PFC, however, the opposite would seem to be more typical; that is, abnormal reductions in activity in dorsolateral and dorsomedial areas for patients with MDD. It may be that such changes in activity have functional implications in people with mood and anxiety disorders, perhaps reducing the ability of the lateral PFC to mediate situation-appropriate inhibitions of, or changes in behaviour, or to influence down regulation of affective structures such as the amygdala. (Davidson et al 2002; Drevets 2001)

Drevets reports that people with MDD tend also to have abnormally elevated levels of noradrenaline and cortisol, and in light of this he suggests that '[a]mygdala dysfunction in mood disorders may also conceivably alter the initial evaluation and memory consolidation related to sensory or social stimuli with respect to their emotional significance.' (2001, p.243) Indeed, hypercortisolism in people with depression has been a consistent finding in research since the 1950's. (Ehlert et al 2001) On the other hand, a proportion of people with disorders such as PTSD, fibromyalgia, chronic fatigue syndrome and atypical depression display abnormally low levels of blood cortisol. (Fries et al 2005; Ehlert et al 2001)

Schulkin et al note that elevated levels of CRF have been found in the cerebral spinal fluid of people with depression, schizophrenia and obsessive compulsive disorders. (1993, p.390-391)

5.2.5 Detrimental Impacts on Reasoning and Decision Making

If chronic uncertainty and associated stress responses can and do contribute to the onset of psychiatric disorders, why then, and how, does such a change count as a 'detrimental' impact on capacities for social reasoning and decision making?

The general picture offered in the previous chapter proposed that forms of 'balanced' interaction between the higher level cognitive-behavioural functions and affective functions subserve mature competencies of social reasoning and decision making. It was argued that these interactions provide for flexible, forward-looking evaluation of options and planning/selection/implementation of actions which can be sensitive to social context and individuals' affective interests. And I claimed that the combined influence of cognitive and affective functions can support forms of self-management, including abilities to inhibit a prepotent action, interrupt an extant behavioural trajectory, generate phases of increased cognitive effort to locate and implement a modified behaviour, and maintain goal-directed

behaviour over extended periods. The model would therefore predict that dysregulation of functions underlying these system capacities would show up in the cognitive-behavioural domains in areas such as:

- A loss of scope in the consideration and evaluation, or selection and implementation, of options for action which are apt for meeting one's own needs and interests
- A diminution of endogenous capacity to deploy forms of self-management
- A diminution of capacity to respond flexibly, and in a context-sensitive way, to other people and/or to navigate complex social environments

Evidence is readily available showing that deficits of these kinds are found within the symptomology of the most prevalent kinds of disorder, namely depression and anxiety disorders. (Drevets 2001; Marmot 2004)

Evaluation:

Macleod et al (1997) argue that heightened pessimism about future events, relative to others, has been consistently found in people with anxiety disorders – indeed it might be regarded as a defining characteristic of anxiety – and in people with depression. Their study examined attitudes of pessimism about affect-salient (personal, emotion-related) future events in patients with either clinical depression or anxiety. They found that both anxiety and depression were associated with judging negative future events to be more likely, and positive events to be less likely, as compared with judgements from a control group. Also, both the depressed and anxious were able to supply more explanatory reasons why negative events would occur (and less reasons why they would not), and more reasons why positive events would not occur (and less reasons why they would).

Fu et al (2005) found that in estimating performance on a 4-part decision making task, after task completion, subjects with MDD consistently estimated their performance at a level lower than controls (even though both groups underestimated performance). Keller and Nesse (2006) suggest that pessimism is considered one of the ‘standard’ symptoms of depressive disorders. What this would suggest more generally is that the scope of perceived opportunities for action in pursuit of valued goals has been truncated.

Keller and Nesse also say that rumination, ‘or the obsessive replaying of negative events, feelings, and implications of those feelings, is a common concomitant of depression’. (2006, p.318) Drevets suggests that ‘excessive amygdalar stimulation of cortical structures involved in declarative memory may account for the tendency of

depressed subjects to “ruminate” on memories of emotionally aversive or guilt-provoking life-events.’ (2001, p.243)

Decision making:

Must et al (2006) found that subjects with MDD, compared with healthy controls, had impaired performance on two kinds of affect-salient (reward-punishment) decision making tasks; the Iowa gambling task (previously discussed in relation to the work of Damasio and colleagues) and the Wisconsin card sorting test⁸. They concluded that patients with MDD had altered sensitivity to reward and punishments, which led to decision making deficits in relation to the task goals.

Pietromonaco and Rook (1987) found that (non-clinical) depressed subjects showed greater inhibitory sensitivity to perceived risks in decision making than did non-depressed controls. They also showed greater inhibition for social decisions, whether to actively initiate social contacts or seek to establish intimacy with others, where again the perceived risks (of social rejection) were interpreted to have carried more weight.

Maner et al compared the performance of three groups with, respectively, diagnosed anxiety disorders, mood disorders (presumably depression), and learning difficulties, with a control group on a risk-taking decision making test thought to reliably predict risk-taking behaviour in naturalistic settings. They found that a substantially higher degree of risk-averse decision making was displayed by those with anxiety disorders, as compared with all other groups; and suggest that one way to explain this is because ‘anxiety promotes pessimistic appraisal of future events’. (2007, p.666) Members of the mood disorder group were also generally more risk-averse than the controls.

In discussing their results, Maner et al suggest that forms of temporary, mild anxiety are a part of everyday competent decision making; subserving a capacity to recognise and avoid aversive outcomes. In the case of people with anxiety disorders, however, this affective-aversive aspect of decision making would appear to be over-sensitised for perceived, possible aversive outcomes; creating an abnormal bias within the decision making process. (2007, p.672)

Tavares et al (2003) note that a symptom of impaired decision making is one of the standard diagnostic criteria for both major depression and bipolar disorder.

⁸ This involves subjects matching patterned cards with others according to criteria which they have to work out by being told if a choice is right or wrong. The criteria can also be changed without warning during the task.

Self-management & executive functions:

Tavares et al (2003) discuss several studies showing people with depression suffering impairment in their ability to respond ‘constructively’ to changes in task conditions. For example, one study on MDD patients showed that perceived failure on a problem-solving task had significant detrimental impact on subsequent task performance. Another study showed that while MDD patients could use ‘negative’ feedback in a manner comparable to controls when it included information about how to improve performance, their response was relatively impaired when the feedback came only in the form of cues signalling task failure. Tavares et al suggest that such findings correlate with wider evidence showing that depressed people tend to magnify the significance of the perceived failures, while underestimating the significance of their successes. (2003, p.964)

Murphy et al conducted a study comparing the performance of bipolar and depressed patients with controls on a ‘novel affective shifting task that requires inhibitory control over different components of cognitive and emotional processing’. (1999, p.1307) They found, firstly, significantly impaired performance in those with bipolar disorder on planning and memory tasks. Secondly, they found some differences in the two disorders around the issue of inhibitory control, with manic patients ‘impaired in their ability to inhibit behavioural responses and to focus attention’, while the depressed patients were ‘impaired in their ability to shift the focus of attention’ and showed an affective bias for negative stimuli.

Tavares et al (2003) also review a range of studies providing evidence of impaired cognitive functions for people with either major depression or bipolar disorder incorporating episodes of mania. In relation to MDD sufferers, they note experimental evidence for deficits or abnormal performance in areas such as: planning, psychomotor response times and information processing, recollection memory, and negative affective bias.

Social relationships:

Following is a selection from a broad range of literature addressing the potentially damaging effects of the more common psychiatric disorders within the micro-social environment of the family. (Several of the studies cited will be discussed in more detail in chapter 6.)

Manning and Gregoire (2006) provide a broad overview of the risks to children presented by parental mental illness. Apart from genetic factors, they argue that stress and mental illness in parents can contribute to a range of negative impacts on children. They

cite some evidence suggesting, for example, that increased levels of maternal cortisol during pregnancy can cross the placenta and have long-term effects on stress responsivity in the child. They also argue that mental illness can adversely affect parenting styles in ways likely to impact directly on infant attachment, cognitive development, and social, emotional and behavioural development. Furthermore, mental illness, they say, is likely to put parents at increased risk of economic disadvantage, unemployment, and relationship conflict or breakdown; and thus can have a range of further indirect effects on the child's development and life prospects. They claim that combinations of psychopathology, substance abuse and social disadvantage within families are strong predictors of older children displaying: poor academic performance, poor self esteem, depression, substance abuse, and antisocial attitudes. One study they discuss found that depression in mothers when the child was 3 months old positively correlated with subsequent cognitive deficits for the child at 11, including lower IQ. The difference on performance IQ between subjects and controls remained even when social disadvantage and parental IQ were controlled for.

((Manning and Gregoire 2006, p.11)

Kurtz et al (1993), in a study of 140 U.S. school children, found clear correlations between parental depression and increased likelihood of child abuse or neglect; and between parental depression and child behaviour problems at school. Children subject to either abuse or neglect showed significantly worse performance at school.

Berger (2004) examines survey results of over 2,700 families, and reports that incidence of depression in either one or two-parent families is a significant predictor of physical violence towards children.

Schumacher et al (2001) report a correlation between depression in men and an increased risk of their subsequently subjecting their female partner to physical abuse.

Meller and Borchardt (1996) argue that a broad range of evidence in child psychiatry shows that depression in children and adolescents is commonly (in roughly a third to half of cases, depending on the population sampled) comorbid with so-called 'conduct disorder'.

5.2.6 Chronic Uncertainty and 'Diversion Behaviour'

The above argument and evidence shows that chronic uncertainty states can be plausibly implicated as a causal factor involved in the onset of various common forms of psychiatric disorder. I now want to address the potential for another related kind of detrimental impact, involving changes to *behaviour* as a response to the subjectively aversive quality of chronic uncertainty states. To begin with, let us consider what the PF-A model might

predict about such changes – how they may come about, and the general form they may take.

Firstly, according to our model, a chronic uncertainty state (as it occurs and recurs) will also be an *aversive* state, involving: increased arousal of the amygdala; a change-behaviour signal leading to heightened arousal of structures in the medial prefrontal cortex involved in locating and implementing changes in behaviour; and arousal of the HPA axis.

But, of course part of what characterises the kinds of individual interactions with external contingencies giving rise to chronic uncertainty is that they offer limited or no perceived opportunities for a behavioural response able to ‘solve the problem’. What then might we expect of a behaviourally motivated, discomfited individual in such circumstances? One possible response, I would suggest, is for the person to locate and implement some kind of compensatory behavioural strategy, directed at a tacit goal of *gaining relief from* the relevant external stimuli, and/or the aversive nature of the chronic state itself. Given that chronic uncertainty states, of their nature, respond to circumstances extended or recurring through time, we might also predict that the behaviour in question may be re-employed, perhaps to the point of becoming habituated, and thus to become a stable *pattern* of response. (Hayes et al 2004; Gratz et al 2008) Within relevant literature, such forms of behaviour are sometimes referred to as ‘avoidance’ behaviour. Here, however, use of this term risks confusion with the proposed role of a change-behaviour signal for competent social decision making and action; i.e. to locate and implement a behaviour to successfully avoid a predicted aversive event. Therefore I will use the term *diversion behaviour*; to capture that sense in which the behaviours in question seek temporary relief from the aversive nature of a chronic uncertainty state, but do not actually resolve the recurrent re-arousal of aversive outcome expectancies. (The relevant stimulus conditions, whatever they are, are still chronically or recurrently present, and still arouse aversive associations.)

These predictions can find a measure of support within empirical studies and allied theory, in this case (as we might expect) within the field of psychology. There, ideas about diversionary behavioural avoidance have had a longstanding place in both clinical and therapeutic approaches to a range of psychological problems and pathologies. (Hayes et al. 2004; Salters-Pedneault et al. 2004)

For example, Hayes et al describe ‘experiential avoidance’ as behaviour, ‘that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, images, behavioral predispositions) and

takes steps to alter the form or frequency of these experiences or the contexts that occasion them' (2004, p.554); and claim that such behaviour has been 'implicated in a wide range of clinical problems and disorders'. (2004, p.554) They suggest, for example, that various forms of substance abuse may in fact be understood as forms of diversion behaviour, adopted in an attempt to mask aversive states; and that more than half of actual or attempted suicides involve an attempt to escape aversive events. (2004, pp.554-555)

A research review by Salters-Pedneault et al. addresses the topic as 'behavioral avoidance of emotions and emotional material'. (2004, p.95) The range of human studies they consider explore such behaviour mainly in the form of subjective attempts made to suppress either thoughts about aversive/ distressing stimuli, or negative emotional states as such. The article makes several points of general interest to our present purposes. Firstly, they reinforce the general point that diversion behaviour is widely regarded in psychology as a common form of human or animal response to generic anxiety states, and anxiety-making circumstances. Secondly, they argue that the use of diversion behaviours in response to 'everyday' anxiety states may also play a part in both the early aetiology of a range of anxiety disorders and the maintenance of such conditions over time. And thirdly, they review a range of further evidence and allied theory suggesting that diversion behaviours are a common symptom of conditions such as: obsessive-compulsive disorder, post-traumatic stress disorder and social anxiety disorder.

On a point of more specific interest, Salters-Pedneault et al. also discuss current theoretical perspectives suggesting that a pattern of diversion behaviour may develop not simply as a response to an occurrent anxiety state per sé, but through the formation of an association between a stimulus and a negative affective response. In this event, they say, it becomes possible for cognitive representations alone (i.e. thoughts about the stimulus) to trigger anxiety; and perhaps for the onset of anxious feelings to elicit thoughts about an aversive future outcome. Thus, a particular behavioural response may be reinforced and repeated, even when the relevant stimuli are not present. (2004, p.96) All of this would seem to resonate well with the analysis proposed here; especially the view that chronic uncertainty is fundamentally an evaluative *expectancy* state, involving chronically extended anticipations of possible aversive events in the future, based on prior associative learning.

Gratz et al suggest that people displaying 'anxiety sensitivity', understood as a 'propensity for developing beliefs that anxiety related symptoms will have negative somatic, cognitive, and/or social consequences' (2008, p.550), may also be more likely to adopt diversion behaviours in response to anxiety states. Evidence gathering in their study

on subjects with borderline personality disorder (BDP) lent some support to a view that the adoption of diversion behaviours by those with anxiety sensitivity increased their risk of going on to develop BDP.

A commonly recognised form of diversion behaviour is the excessive and repetitive use of alcohol or drugs. According to our sketch model above, this may be understood as a strategy with a tacit goal of gaining *relief* from the aversive nature of a chronic uncertainty state. And this suggests in turn that part of the motivation for repeating diversion behaviours may lie with their apparent *efficacy* in this regard. Again, these are themes which appear in relevant research.

For example, Cooper et al., in a study with over 1,300 adult drinkers, found that the presence of stressors was ‘highly predictive of both alcohol use and drinking problems among men who relied on *avoidant forms of emotion coping* or held strong positive expectancies for alcohol’s effect’ (1992, p.139, italics added) In other words, they suggest, there are two prior conditions, each increasing the likelihood of drinking problems; a tendency to deal with negative emotions through diversionary avoidance, and a belief that alcohol use is effective as a form of relief from ‘tension, anxiety and other stress-engendered negative emotions’ and for promoting relaxation. (1999, p.139)

Reynolds et al (2005) found that, amongst a population of approximately 50 people receiving treatment for drug/alcohol abuse or dependence, 94% had previously experienced a traumatic life episode assessed as a likely contributor to post-traumatic stress disorder (PTSD). (However, only 52% had in fact gone on to experience an episode of PTSD at some later time, and 31% met criteria for current PTSD.)

On a somewhat different front, Quayle et al claim that ‘there is increasing evidence that people use the internet to avoid negative emotion states’ (2006, p.1), and their study found in particular that a desire to avoid unpleasant emotion states is associated with increased use of internet pornography by sex offenders.

In the next chapter we will explore evidence for the effects of uncertainty states across populations, and as a response to certain contemporary kinds of socio-economic or cultural conditions. One point of concern which will emerge is that the detrimental effects of chronic uncertainty and stress in modern societies are probably not limited to that proportion of the population which, at any particular time, is subject to a diagnosable mood or anxiety disorder (although the indications there are concerning enough). I will argue that, in fact, these people represent only a part of a spectrum of effects which spreads

further than many would expect, and cuts across any neat, comforting divisions between people with psychiatric disorders (who are ‘just unwell’) and ‘everyone else’. (Keyes 2002) Salters-Pedneault et al (2004) also claim that diversion behaviours are associated with ‘everyday’ distress and non-clinical psychological ‘problems’, as well as with recognised disorders. (Indeed, they suggest such behaviours themselves may play a role in a transition from ‘everyday’ distress into the onset of a diagnosable disorder.)

Let us consider some hypothetical scenarios, to gain some sense of how diversion behaviours might occur in familiar kinds of social situations. Let us say that a woman ‘A’ is married, and in a relatively low-paying job in manufacturing. A has recently become aware that the factory where she works is likely to close in the next 12 months. Her husband has recently become unemployed, so the family is dependent on her income. He is increasingly prone to bouts of anger, and has started to hit her during arguments. For A, this is a situation ripe for chronic uncertainty. She is not displaying the full symptoms of a diagnosable psychiatric disorder, but nevertheless would describe herself as regularly feeling worried and unhappy. In such circumstances, I would suggest, it would not be unexpected for A to increasingly behave in ways which attempt to avoid triggering an argument with her husband. An occasional drink of alcohol to ‘calm the nerves’ might become more frequent. A monthly visit to poker machines, found to be an effective diversion, might become weekly.

Or we might imagine a man in his 20’s, ‘B’, working in middle management in the public sector. One day B’s senior manager gives him an aggressive ‘telling off’ for some minor infraction, in front other staff. B feels an impulse to speak out but does not do so. Later he mentally rehearses this event repeatedly to himself. He does not see anything he can do to repair the relationship, without risking further humiliation. Again, underlying these more overt psycho-social dynamics, this situation (*following* the acutely aversive event) is one where we would expect B to experience chronic uncertainty states, by the recurrent re-arousal of associations between the workplace setting or the person of the manager (or thoughts about them), and the aversive nature of the original encounter. In such a situation one might not be surprised to also see B’s behaviour change; perhaps he becomes more reserved and distant, and no longer voices his ideas, especially when the manager is present.

The onset of these kinds of changes might not count (or be quantifiable) as a detrimental impact on SRD capacities in the same way, or to the same extent, as a diagnosable psychiatric disorder. They might not (although they also might) contribute to the onset of a disorder. However, on the basis of the model proposed, I say they ought to be regarded as a

limitation of capacity nonetheless, because, so long as they last, *they preclude other possibilities for action*; that is the formulation and implementation of some form of response to resolve and dissipate recurrent arousal of the aversive associations in question. If such a pattern of behaviour persists then, even if it is successful (on its own terms) in avoiding repeat episodes of an acutely aversive event, or gaining temporary relief from aversive internal states; it would continue to be reinforced by negatively valenced associations and expectancies. It would be a behavioural response to a kind of situation, but not one characterised by short-term uncertainty, learning and behaviour modification, leading to the formation of new associations. Instead it would be characterised by the stabilisation of a behavioural response ‘designed’ around diversionary avoidance. More loosely, perhaps, one might describe it as an on-going response defined by fear. (Gratz et al. 2008)

On these grounds, I would claim that a pattern of diversion behaviour in response to certain stimuli must also count as a diminution of capacity. Within our model of competent reasoning and decision making, processes of evaluation and uncertainty states evolving into plans and/or behaviours to constructively respond to social challenges and pursue goals are part of what defines the *scope* of options available for action. (They are also essential contributors to the growth of capacity.) It follows, therefore, that the failure of such processes in some domain of a person’s life, their evolution into chronic uncertainty and the subsequent onset of a stable pattern of relief-seeking diversion behaviour represents (at least in that domain) a *narrowing of scope* for reasoning and decision making over possible actions.

5.2.7 Coercion and Diversion Behaviour

In chapter 2 I considered the idea of coercion as it appears within liberal political theories, and in particular as defined within the work of the libertarian theorist, F.A. Hayek. Prevention of widespread, arbitrary coercion is central to his argument justifying the basic liberal state, precisely because coercive acts are (for those subject to them) understood to damage or inhibit expression of capacities for reasoning and self-determination. In order for my account of SRD capacities (and the potential for detrimental impacts on these capacities) to serve as a credible alternative to claims about human psychology within liberal theories, it needs to address coercion.

The essence of coercion as defined by Hayek lies with party A intentionally making a *threat* against another, party B, such that B’s use of his endogenous capacities for free choice of action are severely constrained, and he is effectively forced to ‘choose’ to act (or

refrain from acting) in some manner dictated by party A. (Hayek 1960, pp.133-135) The archetypal case here, according to Hayek, would be the threat intrinsic to a owner-slave relationship; to the effect that, ‘If you [the slave] refuse to do my will, then I [the owner] will have you imprisoned / tortured / killed.’ It is presumably required for a threat to be effective that it *predicts* an event Party B both desires to avoid, and believes to be possible. In other words, coercion by threat makes no requirement that party B is actually subject here-and-now to an event he wants to avoid, only that the future possibility of such an event is recognised as real. And finally, for the threat to be effective as coercion it must be supposed that party B actually does what A requires of him of his own volition, without being directly, mechanically forced to do so. According to the Hayekian view, therefore, an effective threat must be assumed to work some kind of internal effect on its subject, such that their internal dispositions for actions are changed and limited, are subject to the constraints of doing *a* and refraining from *b*, purely on the basis of *anticipation* of a possible future event.

On the basis of the PF-A model developed in this and the previous chapter, I would propose that the coerced ‘choices’ made and actions taken by individuals under an effective threat, may be plausibly interpreted as a form of diversion behaviour adopted as a response to chronic uncertainty states, mediated by structures such as the orbitofrontal cortex and the amygdala.

5.2.8 Conclusion

In the previous chapter I proposed that acute uncertainty states could play a significant role in mature capacities for competent social reasoning and decision making. However, the evidence considered in this chapter suggests that uncertainty states can be a two-edged sword. An individual may be recurrently or continuously exposed to stimuli associated with aversive outcomes, but due to the cognitive resources they have available or constraints in external conditions (or both), fail to locate and implement a behaviour suited to decisively avoiding or resolving the predicted aversive event. An individual in this position is liable to undergo what I have called a chronic uncertainty state – extended or repetitive arousal of aversive expectancy states mediated by the orbitofrontal cortex, coupled with extended hyperarousal of the amygdala and other ‘flow-on’ effects.

Evidence considered above suggests that this in turn can lead to changes in amygdala morphology, or levels of basal activity, and/or functional changes, especially increased sensitivity to further encounters with the salient kinds of arousing stimuli. And these kinds of changes are strongly associated with common kinds of psychiatric disorder. The

symptomology of such disorders typically include a loss of flexibility in some of the very same subsidiary capacities which enter into competent social reasoning and decision making: evaluation, self-control and decision making. People suffering such disorders often engage in behaviours which can have detrimental impacts on their social relationships. By any reasonable assessment, therefore, the onset of such disorders would seem to typically involve a loss of SRD capacities, because the scope for reasoning and decision making over possible actions has been diminished.

The aversive nature of chronic uncertainty states can also contribute to the adoption of diversion behaviours, and the stabilisation of a pattern of such behaviour. In respect of those domains of activity in which these behaviours are applied, they also represent a loss of scope for reasoning and decision making over possible actions; and a detrimental impact on SRD capacities.

CHAPTER 6.

SOCIAL AND ECONOMIC IMPACTS ON CAPACITIES FOR SOCIAL REASONING AND DECISION MAKING

6.1 INTRODUCTION

As we have seen, both libertarian and social-liberal political philosophers place a value on human capacities for everyday reasoning, decision making and self determination.

According to their various claims about human psychology, both sides also would accept that the development and/or expression of these capacities in individuals can be subject to inhibition or damage. And, in one way or another, both claim that such detrimental impacts can occur systemically and unequally, or be largely prevented from occurring, within populations, according to the prevailing political conditions.

It is the essence of a social-liberal critique of a classical liberal or libertarian view to assert that some of the socioeconomic conditions commonly created within a small-State, *laissez-faire* system will tend to have such detrimental and unequal impacts; and that this justifies some State intervention in the workings of the market. A key element of the defence mounted by libertarians against such a critique is to present a view of their own preferred system, where such impacts (on capacities they too claim to value) do not occur in a systemic way.

In chapter 4, I developed the PF-A model of everyday capacities for social reasoning and decision making ('SRD capacities'), and claimed that it offers a plausible naturalistic account of capacities for everyday reasoning and self-determination as they are described within liberal political theory. In chapter 5, I showed how these capacities are vulnerable to certain detrimental effects, caused in part by certain kinds of external circumstances. However, in order for this view (in due course) to be critically applied to the social-liberal – libertarian dialectic, in a way which is relevant to today's conditions, a further preparatory step remains. The question now at hand is not just whether external circumstances *can* have detrimental effects on SRD capacities, but whether certain socioeconomic conditions characteristic of liberal-democratic, free market societies as we know them *are* (or are not) contributing substantially to such effects within whole populations.

The business of this chapter is to explore this question, and to do so in the main by showing a convergence between the PF-A model as proposed, and theory and evidence found in current epidemiological research.

6.1.1 Mounting a Case for Social Causes

The model proposed provides evidence for a ‘pathway’ of mechanisms by which certain kinds of social circumstances, namely those conducive to eliciting chronic uncertainty states, *can* have detrimental impacts on everyday SRD capacities. It provides evidence that human beings are normally strongly disposed to perceive other people, and the socio-cultural world they make up, as matters of affective salience, and thus are rendered ‘open’ to the potential influence of other people in this respect; for good or ill. Thus, given that the mechanisms and functions involved are a part of our normal neurophysiological make-up, and that typically we are immersed in complex social environments everyday; to this extent we are universally vulnerable to the identified detrimental impacts.

However, in the course of setting out this case I have also recognised that, because of variability in our genetic and phenotypic make-up, and innate dispositions, and/or variation in life experience, two people *might* respond to the same kind of external circumstances quite differently. An encounter with a particular set of potentially stressful conditions might be a trigger for the onset of chronic uncertainty and other effects in one person but not in another. The question of what happens for a specific individual in specific set of circumstances will ultimately depend on the precise *combination* and relative influence of causal factors such as genetic predispositions, acquired dispositions and/or resources, and the obtaining external conditions. Thus, the occurrence of circumstances likely to cause chronic uncertainty within a population group may have different individual effects. However, a claim of a causal relationship between that kind of circumstance and the occurrence of certain detrimental effects within a population can still be supported. Several things are required:

1. A theory and a body of evidence explaining how and why certain kinds of external circumstances can lead to certain kinds of detrimental or damaging internal effects;
2. Preliminary predictions (based on 1.) that the rate of occurrence of the relevant internal effects within a group F which *has* been exposed to the kinds of circumstances in question, will be significantly higher than in a comparable ('control') group G which *has not* been exposed (or has been exposed to a lesser extent)

3. Empirical evidence for the predicted differential effect, along with supplementary evidence that no other factor/s (other than exposure to the circumstances one specified) can be plausibly implicated as causing the whole of the relevant differences between F and G

With these things in place, then one could support a claim that the kind of circumstances to which those in F were exposed caused a population effect. One would also have evidence to support a claim that exposure of any group comparable to F to the kinds of circumstances in question would constitute an *increased risk* to the members of group of being subject to the relevant effects. Such a method of demonstrating and explaining causal relationships between environmental factors and health effects is commonly found in public health research (Marmot 2004); for example, in evidence and theory supporting claims that cigarette smoking substantially increases the risk of lung cancer.

The previous two chapters are intended, in this context, to meet the first of the evidentiary requirements as per point 1 above. Building on that foundation, in what follows I will offer evidence in support of three claims:

- That certain kinds of circumstances commonly encountered in free market societies are likely to stimulate chronic uncertainty states
- That groups exposed to *those* kinds of circumstances tend to show higher rates of the relevant detrimental effects than do comparable groups not so exposed, or exposed to a lesser extent
- That this population effect is not adequately and plausibly explained as a social selection effect, or other evidence gives us further reasons to see social circumstances as causally implicated in their own right

Much of the discussion of the following two main sections will focus on the onset of one of the more common mood or anxiety disorders; in part because the incidence of such conditions within populations is a common topic of epidemiological research. However, in the latter parts of the chapter I will also discuss diversion behaviours as another main form of response to chronic uncertainty states, across populations.

6.2 EPIDEMIOLOGY AND SOCIAL GRADIENTS IN MENTAL HEALTH

There are two general kinds of epidemiological research and evidence of interest here. The first shows that sample populations within most contemporary human societies typically

feature *gradients* of physical or mental health outcomes within certain dimensions (e.g. life expectancy, incidence of heart disease or obesity; or incidence of psychiatric disorders); such that the average rate of incidence of ill-health (in one or several of these dimensions) typically is highest amongst people defined (according to some quantifiable measure/s) as occupying the lower end of the socioeconomic scale; decreases as one goes up the scale, and is lowest amongst those occupying the higher end.

A second main sort of public health research shows that marked *changes* in the socioeconomic conditions of a population tend to be followed by marked changes in the pattern of health outcomes. For example, across the period of the break-up of the Soviet Union (1989-1996), the Gini coefficient¹, a measure of income inequality, for Russia increased from 26 to 48. Average life expectancy for men at age 15 in Russia went from the low 50s in 1985 to below 45 in 1994. In the year 2000, the difference in life expectancy for men between the European Union countries and Russia was 15 years. (Marmot 2004, Ch.8)

Leaving aside the second form of research for the moment, let us consider the matter of these ‘social gradients’ in health. There is a body of evidence which seems to show, on the whole, that rates of many common forms of adverse physical and mental health conditions tend to increase as one moves ‘down’ the socioeconomic scale. For example, Figure 6.1 below shows data on average male life expectancy within different social classes in England and Wales, during the 1970s and 1990s. As can be seen, there is a reduction in life expectancy from one class grouping to the next, and a gradual reduction, moving from higher (I & II) to lower (IV & V) class status (assessed by occupation). This pattern constitutes a social gradient in one measure of physical health - longevity.

¹ A Gini coefficient rating of 0 means absolute equality of income; a rating of 100 indicates maximal inequality. (Marmot 2004, p.207)

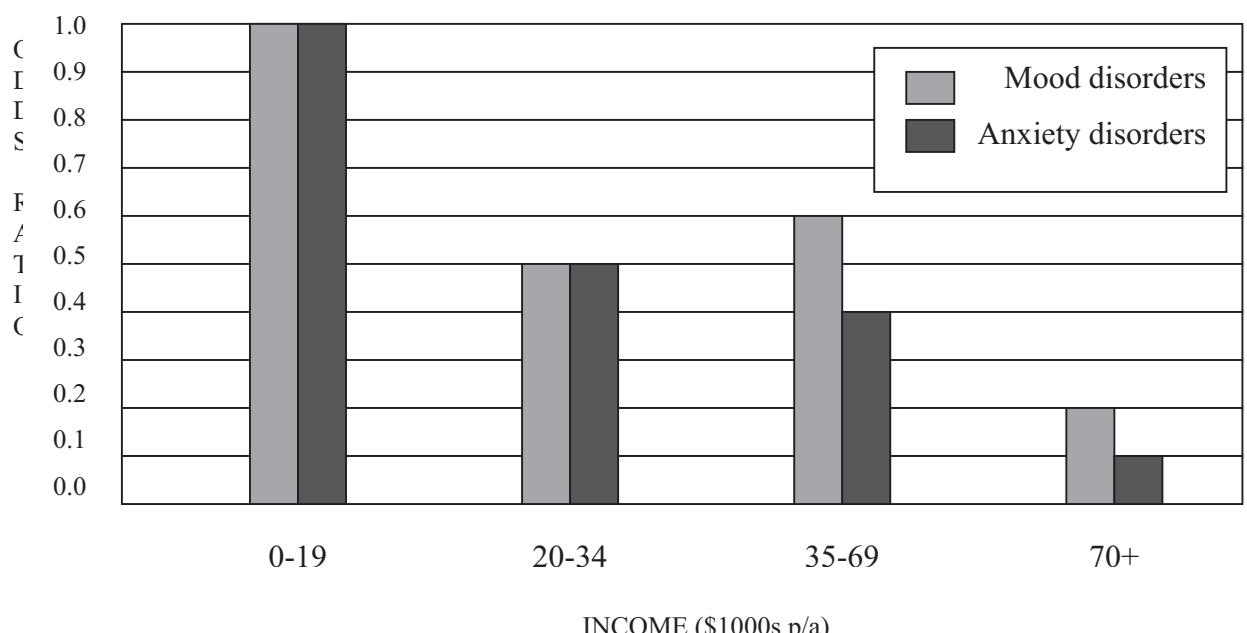
Figure 6.1: Life expectancy for men by social class in England and Wales (adapted from Marmot 2004)

NOTE:

This figure is included on page 145 of the print copy of the thesis held in the University of Adelaide Library.

Or, as another example, Figure 6.2 below shows data on the rates of mood or anxiety disorders within income groupings in the U.S.A. Again, one can see a gradual decrease in the rates of adverse health effects as one moves up the income scale.

Figure 6.2: Odds Ratio² of 12 Month Prevalence of Mood or Anxiety Disorders by U.S. Income Group (adapted from Muntaner et al 1997)



² In this format, the odds of having a disorder amongst members of the lowest income group are arbitrarily counted as '1', and the relative odds for other income groups are calculated as a ratio of that.

While the cause or causes (or social policy implications) of such social gradients in aspects of physical or mental health may be a subject of debate in public health circles and elsewhere, the fact of their existence is generally accepted³. Attempts to explain social gradients might (and variously do) appeal to a range of possible causal factors. Choice of factors-most-likely may depend on the circumstances of the population in question.

Consider for example, as per Figure 6.1, gradients in average life expectancy, inversely correlated with socioeconomic status; which tend to show up in societies both rich and poor, to one extent or another. (Marmot 2004) In relation to a relatively poor country, one might be tempted to explain this as a by-product of material deprivation or poor access to primary health care at the lower end of the income scale. In a wealthier nation where absolute material poverty is relatively rare, and (let's say) there is a universal public health system, attempts to explain the gradient might appeal instead to 'lifestyle choices' reflected in different patterns of smoking or poor diet, or lack of exercise. Or one might advance a *social selection* explanation; that people disposed to poor health are more likely to: gravitate toward, or remain in, less well-paid occupations; become or stay unemployed; or fail to attain higher levels of education; *and* are more likely to die at a younger age.

(Marmot 2004; Dohrenwend et al 1992)

Of course, we previously encountered examples of social selection explanations in chapter 2, as employed by libertarians; and here the same form of explanatory strategy is particularly relevant, being sometimes regarded as a main counter to explanations appealing to socioeconomic causes of health gradients. Crudely put, the two forms of competing explanation can be described as a debate about whether low socioeconomic status tends to lead to ill-health, or whether ill-health tends to lead to low socioeconomic status. Claims appealing to these different forms of putative explanation are sometimes employed to support familiar political positions; with the former more usually employed by the left and the latter by the right. (Marmot 2004)

In general terms, it is important to understand in this context that the two kinds of explanation are not mutually exclusive, and generally are not treated as such within epidemiological research. The point may be neatly encapsulated in an analogy, adapted from the writings of Michael Marmot. (2004) Let us say we have two garden beds, one filled with fertile soil (bed A), the other with nutrient-poor soil (bed B). We sow the two beds with a single variety of poppy seeds, water them equally, and ensure equal amounts of light. When the flowers reach maturity, differences in growth and health between two

³ Some research on socioeconomic status and physical health would be indirectly relevant to our interests here, in that it examines effects of chronic stress. (e.g. Marmot et al 1997) However, the main focus here will be on research into social gradients in mental health

individual flowers from the same bed – given that they grew in the same environmental conditions – might lead us to suspect a genetic difference as the most likely explanation. However, a difference in average growth and health between bed-A and bed-B would recommend a different explanation, being that the two groups grew in different soil conditions. Each of these approaches is appropriate to explaining an aspect of difference amongst the flowers. Each points our explanatory efforts towards quite different causal factors.

Globally, of course, we may also reasonably suppose that *both* genetic and environmental factors were at work in substantively shaping the variation in growth and health across the whole population of flowers. And to do so is to invoke an interactionist (or weak nativist) form of explanation of that variation, as I defined it earlier. (See also Marmot 2004, pp.31-32)

6.2.1 Social Circumstances Assessed in Mental Health Studies

In § 6.3 below I will examine evidence from a number of recent studies on social gradients in mental health, and other epidemiological research. Before that, however, it will be useful to look more generally at several kinds of common socially-mediated circumstances, and differences in circumstances, these studies often attempt to measure. The main point here will be to ask whether these are kinds of circumstances my own model would predict as likely sources of chronic uncertainty; or whether differences in people's circumstances, assessed according to a particular variable, could plausibly render them more or less likely to undergo chronic uncertainty states.

Socioeconomic status:

Public health research has had a long-standing interest in associations between socioeconomic status (SES) and health, including mental health. A U.S. study conducted by Edward Jarvis in 1855 found that, 'the pauper class furnishes, in ratio of its numbers, sixty-four times as many cases of insanity as the independent class'. (Cited in Dohrenwend et al 1992) SES is quantified in a range of ways within the relevant literature, and sometimes according to a combination of factors. The criteria most commonly employed as reliable objective indicators of a person's SES include level of personal or household income and/or asset wealth, level of educational attainment, and status of occupation (including being unemployed). (Muntaner et al 1998) Lewis et al (1998) compare SES graded according to occupation status with an assessment of 'standard of living', quantified in terms of housing tenure (owning or renting) and access to a car. Given the

range of variables that may be considered pertinent to a person's SES, it will be more useful here to consider some of the relevant factors individually⁴.

Income/wealth:

Within contemporary Western, free-market settings it is self-evident that relatively high levels of income or asset wealth are likely to support greater degrees of choice about some elements of one's substantive life conditions: where to live, how to get around, what to wear, what to eat, what job to do, what school one's children should attend, and so on.

More specifically, the PF-A model would predict that higher income and/or wealth security is more likely, other things being equal, to contribute to broadly positive expectations about one's current and future abilities to achieve certain affect-salient goals. The kinds of common goals involved might include: paying bills and covering debt, purchasing consumables, sustaining stable housing, taking care of significant others, sustaining wider social relationships and engaging in social activities. If one's ability to meet such various demands becomes more marginal (due to low income, coupled perhaps with rising prices, changing interest rates, or threats to job security), then anticipatory expectancy for possible aversive outcomes is likely to increase. If the anticipated future implications of financial problems (for a particular individual, within a particular setting) are more severe; if they forecast little or no ability to avoid adverse outcomes by relying on extended family, social security payments, or what have you, if the need arises; then the risk of those problems leading to chronic uncertainty states is likely to increase. Increased demands on one's ability to 'make ends meet' may result in more extended periods of cognitive-affective activity focused on potential adverse events (worrying), and thus decreased offsetting of arousal within periods which would otherwise allow for relaxed, undemanding activity.

On this analysis it should be noted, however, that the possibility of low financial security contributing to the onset of chronic uncertainty states is not directly attached to absolute income/wealth as such. (Sapolsky 2005) What is more at issue are the psychological implications a particular financial position carries with it *within a particular socioeconomic setting*, and what implications it is understood to have by the person concerned. I would emphasise that this is *not* to assert that severe material poverty or deprivation cannot have significant effects on health in its own right. However, my focus

⁴ It is also not uncommon for researchers to distinguish between a person's objective SES, assessed according to such measures, and their subjective SES. Assessment of the latter typically seeks from the subject some more general, 'personal' rating of their social status relative to others. (Franzini and Fernandez-Esquer 2006) Subjective rating of SES are not a form of data I will consider here.

here is on Western developed liberal democratic States, and the more putatively ‘psychological’ impacts of income which is relatively low, but nevertheless sufficient to meet basic material needs.

Education:

Clearly, in Western societies, higher levels of education are on the whole more likely to deliver access to better paying jobs, and jobs that may also allow greater degrees of autonomy over decision making and the use of skills. Aside from implications about income, this is also likely to influence one’s expectancies in relation to gaining or changing employment, or to the potential for promotion.

More specifically, I would suggest that, other things being equal, higher levels of education are more likely to support the acquisition of behavioural schemas and other cognitive resources likely to be apt for dealing with social challenges in ways which address one’s own needs and interests. Some specific kinds of resources might include: facility with written and spoken language; ability to find and use a range of information sources; or an ability to understand and navigate institutions. More generally, it would seem reasonable to suppose that education is likely to offer experience in exercising a more generic ability which goes to the heart of our model; an ability to sustain attention and deal with uncertainties, within extended, goal-oriented activity.

Once again, however, the implications for an individual of having or lacking cognitive resources acquired within a particular educational setting – the implications for their capacities to navigate social settings, deal with uncertainty, etc – will to some extent be contingent on the kind of socio-cultural environment they occupy.

Occupation and unemployment:

SES is also sometimes assessed according to some form of grading kinds of occupation. This might be based on presumptive judgements about the social status accorded different kinds of occupation, the income level they tend to attract, or the kinds of skills or education they require. However, beyond the ways in which a person’s occupation may influence factors such as income and income security (above), housing, control at work, or job demand (below), I have nothing in particular to add here by way of any further possible effects of occupation per sé on uncertainty states. Therefore I will discuss the relevant issues under those headings.

So far as unemployment is concerned, some similar ‘overlap’ with other factors is again likely to apply. Other things being equal, unemployment typically also means low income

or, perhaps, may involve reduced levels of social support (see below). However, the proposed model also give reasons to predict that being or becoming unemployed may have particular implications in its own right. Firstly, I would suggest, the workplace may provide a structured environment for the successful practice of sustained, goal-oriented behaviour, possibly supported by positive expectancy states. It may also be a locale of regular engagement with other people, and present opportunities for short-term uncertainty states to contribute to social learning. In other words, it may provide an environment for exercising and/or further developing competent SRD capacities. Long-term unemployment, on the other hand, may result in a relative deficit in this regard. Secondly, it is reasonable to suppose that a process of moving into or being threatened with unemployment is likely to arouse extended uncertainty states in anticipation of aversive outcomes such as an inability to meet financial or family obligations, loss of an established social role, or the demands of seeking another job. (Although, people with highly ‘tradable’ skills may anticipate an ability to quickly avoid these outcomes.)

Housing:

It is not uncommon for epidemiological studies to gather data on housing tenure, or problems with maintaining secure housing, as part of a profile of a person’s overall socioeconomic position relative to others. (E.g. Lewis et al 1998; Stansfeld et al 2003) It is reasonable to suppose that, in most Western countries, level of income will influence the ability to sustain stable housing, to choose between forms of housing tenure, or to live in close proximity to one’s workplace. Also, in countries which strongly favour home ownership, other options such as private rental can be relatively insecure by comparison.

On the account developed here, it is to be expected, in general terms, that a secure ‘place to call one’s own’ is likely to play a vital role as a venue for relaxation and offset of sustained goal-oriented behavioural arousal, and a reduction in the demands made by acute uncertainty states responding to the everyday challenges of the wider social world. In particular, the model would predict that people experiencing difficulties with sustaining reliable access to affordable, secure housing would be more likely than others to undergo chronic uncertainty states in response to issues such as keeping up with rent, meeting landlord expectations, or the potential for having to move house. Other things being equal, rental housing is more likely to be located in areas of low socioeconomic status, which may involve a relative increase in perceived threats to personal security compared to wealthier areas. Moving house may make ancillary demands associated with children having to move schools.

The domestic environment, of course, might also be the locale for other likely causes of chronic uncertainty, such as domestic violence.

Social support and social settings:

Assessment of social support within public health research attempts to capture information about the extent or quality of subjects' relationships with other people; perhaps within a particular setting such as the workplace, or within their wider social networks. Stansfeld et al (2003), for example, employed questionnaires asking subjects to report on frequency of contacts with relatives, friends and social groups. Stansfeld et al employed similar methods to assess social support within a public service workplace, in terms of 'support from colleagues, support from supervisors, and clarity and consistency of information from supervisors.' (1999, p.303)

In a similar vein, some studies also seek information about the demographic or physical characteristics of the places in which people live, or the attitudes that people express about their local area, their neighbours, etc; for example how safe they feel, or how involved they are in local groups or activities. (Stansfeld 1999a)

On the basis of evidence considered in the previous chapter, we already have reasons to believe that other people with whom an individual has regular contact or proximity are highly like to figure as affectively salient stimuli for that person, one way or another. And there are many kinds of things that might occur within such relationships that could give rise to chronic uncertainty states; events one might describe as one person subjecting another to: violence, threat, intimidation, ridicule, ostracism, disrespect, rejection or something similar.

It is intrinsic to the model as proposed that relationships with others which are warm or merely benign, stable and *predictable* are those likely to be the subject of positive expectancies. Events, information or beliefs pertaining to social relationships may affirm or extend on these expectancies.

Control, job demand, and effort-reward or demand-control combinations:

There are at least two general ways in which public health research assesses the degree of 'control' a person has in a particular setting. One of these focuses on factors in the external environment, such as discretion to make decisions. The other asks individuals to self-assess how 'in control' they feel. (E.g. Chandola et al 2004) Here the main interest is in the former approach as it is used to assess control within hierarchically structured work

environments. For example, Bosma et al (1997) assessed job control in a public service setting according to both subject and third party (managerial) descriptions of aspects of the work environment. The two main factors assessed in both cases were ‘decision authority’ and ‘skill discretion’. Questions on the first issue sought information about the latitude of choices on how and when work tasks are taken on and carried through. Questions on the second issue sought information on the extent to which a job is repetitious and requiring only simple skills, or, conversely, various and skill-demanding.

Muntaner et al, in a study of authority relations within hierarchically structured workplaces assessed ‘organizational control’ in terms of two putatively interacting variables: ‘influence over company policy’ and ‘sanctioning authority’, meaning decision-making control over factors such as promotions, pay rates, hiring and firing. (1998, p.2044)

Contemporary research may also assess ‘job demand’ in terms of the pace, intensity, time constraints and exposure to conflicting demands associated with different kinds of work situation. (Bosma et al 1997) Difference levels of demand according to these criteria are generally supposed to require different levels of sustained physical or mental effort from the person concerned. (E.g. Stansfeld et al 2003; Stansfeld et al 1999)

Some research also takes an interest in particular combinations of factors which appear to increase the risk of adverse mental or physical health outcomes. Two models in particular feature within relevant literature. One of these is a ‘demand-control’ model, where a combination of a high demand and low (extrinsic) control – especially in work settings – is hypothesised to be a particular risk factor. The other is an ‘effort-reward’ model, where effort is seen as associated with job demand, and reward is assessed in terms of level of pay, or prospects for promotion. Here again, a combination of high effort and low reward is seen as a risk factor. (Stansfeld et al 2003; Stansfeld et al 1999)

Of course, in chapter 5, I have already defined ‘control’ for my own purposes as the perception and implementation of opportunities for effective problem-solving behaviour within a particular uncertainty-arousing situation. The intention here is not to conflate this with the approach described above, but to ask what the PF-A model might have to say about the issues raised in this research (on its own terms) regarding control, job demand, or high demand coupled with low control or low rewards – especially within hierarchically structured workplaces.

It is consistent with the proposed model to suppose that undertaking any kind of work role within an organisation is likely to have affective salience for a number of reasons. Firstly,

of course, a work environment is typically a social environment, and other people, as we have seen, are pre-eminent as likely sources of affective salience. People will bring their own history of previously learned, valenced associations and behavioural responses into the work setting. Secondly, an individual in a work setting is likely to undergo some regular arousal of outcome expectancies concerned with *how other people might react*, in relation to carrying out particular tasks he or she is assigned. There will be affective associations to do with meeting the expectations of the job, so to speak. And thirdly, issues arising in relation to one's paid employment may bear upon other matters of affective salience to do with one's family or personal life.

According to the proposed model, it is certainly possible for short-term uncertainty states to contribute to processes of learning, behaviour modification and so on, apt for 'getting the work done' and more generally for skilful navigation of a work environment. However, I would also suggest that chronic uncertainty states might arise under the influence of specific workplace factors such as the latitude for choice and decision making, use of skills, time constraints or others the demands of the work itself, or combinations of such factors. How so?

Consider a work situation which makes high demand on sustained effort and involves the factors that researchers assess as characteristic of lower control: time-constraints, inflexibility, lack of choice, or repetition; e.g. work on a construction line. Suppose also that this work is subject to 'management' constraints such as close supervision of output, and formal penalties for failure or non-compliance. Involvement in such work, I would suggest, may be more likely to incorporate frequent or extended uncertainty states, simply because the possibility of 'doing something wrong' (making a mistake, falling behind the work schedule, etc), and thereby attracting social disapproval from a supervisor or co-workers, or even putting one's job at risk, is just more constantly or repetitively available for anticipation; whether it's every 5 minutes or every 30 seconds. Exposure to conflicting demands from supervisors or employers, another factor assessed in relation to job demand, would tend to exacerbate the situation further.

To offer a simplified example, imagine the difference between doing a crossword in your own free time, and being required and expected to complete several on end within a demandingly tight timeframe, with regular progress assessments by an authority figure, and a known possibility of disapproval if you fail. Even a confident, mature person, for whom nothing else but the 'telling off' is at stake, would be likely to find the latter task 'feels' very different to the former.

If the nature of a person's employed work is experienced as intrinsically aversive – perhaps by being repetitive and boring, physically or mentally taxing – and is coupled with relatively low expectations of any promotion or change in the situation; then the anticipation of the same work demands extending into the future may be the subject of uncertainty states. If no other options for behaviour expected to avoid that event are perceived (perhaps consideration of alternatives such as quitting also arouse aversive associations), then the work setting itself, or thoughts about it, may become a subject of chronic uncertainty. (E.g. Brier et al 1987)

Other factors:

There are several other common aspects of life circumstances which epidemiological research on population health and health gradients sometimes takes into account. Three main aspects hitherto unmentioned are the possible impacts of differences in race or ethnicity, gender or early life events within specific socioeconomic settings. In relation to the former, for example, it is commonly recognised that in a number of racially mixed societies, those within minority or lower SES racial groups tend on average to have worse mental and physical health. For example, Farmer and Ferraro (2005) investigate interactions between race and SES status as possibly explaining the marked differences in average incidence of major illness, reduced longevity and poor self-rated health between black and white Americans. Dohrenwend et al (1992) explore similar disparities in the incidence rate of some psychiatric disorders between black and white Jews in Israel.

On the matter of gender; as one example, Chandola et al found, amongst a cohort of male and female British public servants, that low self-rated control at home predicted incidence of heart disease amongst women, but not among men. They suggest that, 'low control at home among women results from a lack of material and psychological resources to cope with excessive household and family demands.' (2004, p.1501)

On the third point, for example, a study by Lundberg (1991) on data from a 'level of living' study conducted with over 5000 Swedes found that economic hardship during childhood had a statistically significant effect on a subsequent gradient in aspects of adult physical health relative to SES. Power and Manor (1992) found that living in rental housing at 11 (as an index of early life economic circumstances) predicted an increased likelihood of symptoms of depression amongst low-SES 23 year olds in Britain.

The main interest here is on socioeconomic factors likely to feature in any real-world application of the libertarian political scheme, and the impacts of these factors on everyday capacities for social reasoning and decision making. Therefore, within this section, I will

not offer any particular predictions that the PF-A model might make about differences in the impacts of socioeconomic circumstances according to race/ethnicity or gender. Nor will I elaborate on the brief discussion in the previous chapter about the possible impacts of early life experience. This is *not* to suggest, however, that these matters are unimportant, nor that they do not have their own particular implications for risk of psychiatric morbidity in certain circumstances. Indeed, I will later consider in more depth the results of some studies which address the implications of poor psychological health in adults for children in their care.

On another point, as mentioned earlier, marked *changes* in the socioeconomic conditions of a particular population are also sometimes the subject of epidemiological research. Some such studies will be considered below as a form of evidence affirming a causal relationship between socioeconomic conditions as such and risks of psychiatric ill-health (and making social selection explanations of gradients in psychiatric health less plausible). For the moment, I would say that, if factors such as income, employment, housing security and work conditions can influence the onset of chronic uncertainty states, then it ought to come as no surprise that unexpected and unwelcome changes in one's circumstances in these same domains might also have an effect. In other words, I will take it here, for example, that a change from secure to insecure employment, or secure to insecure housing, or even just the anticipation of such a change, is likely to render one more susceptible to chronic uncertainty states, largely for the same sorts of reasons we've already discussed above.

Finally, it bears reiterating the point that none of the above factors would be expected to influence the cognitive-affective states of an individual in a way entirely insulated from other factors. And in relation to their influence on health outcomes, this is generally not what any public health researcher would claim for his or her results.

6.2.2 Some Predictions

It is now possible to formulate a set of more specific predictions about results we would expect from public health research on the population effects of exposure to the various relevant conditions canvassed above. (These will extend on the initial points in § 5.1.1, indicating main claims which the chapter would support.)

Firstly, extending on discussion of the PF-A model, we now have some further reasons to expect that individual engagement with the wider social world is likely to require periods of sustained arousal of systems subserving social reasoning, decision making and goal-

oriented action; and regular arousal of acute uncertainty states. This will constitute a form of ‘background’ demand load on the system as a whole.

Secondly, the discussion above give reasons to suppose that certain facts about an individual’s socioeconomic circumstances may contribute to chronic uncertainty states. And chronic uncertainty increases risk of the more common psychiatric disorders, especially mood and anxiety disorders, including major depression. Therefore we would expect to see in the research, evidence that population groups exposed to the relevant conditions of low income or asset wealth, limited education, insecure employment or unemployment, insecure housing, or certain kinds of social, family or work circumstances (or some combination of such factors) will show higher rates of these disorders, as compared to groups not so exposed, or exposed to a lesser extent.

However, thirdly, the above analysis also suggests an important qualification on such a prediction, in relation to the main factors used to define socioeconomic status (SES); income/wealth, education and occupation status. In light of our model we are led to suppose that, regarding the potential impacts of *these* socioeconomic factors (on the aetiology of uncertainty and psychiatric disorders), what will matter is not *absolute* levels of income, wealth, education, or status of occupation as such, or the mere fact of differences as such, but the real-world cognitive-affective (psychological) implications of one’s actual financial position, education, employment and so on, *within a particular, wider socioeconomic and cultural setting*⁵. This, I would emphasise, is not to say that objective facts about a person’s level of income/wealth, education, or type of work relative to others are not important. It is to say that, in relation to the effects we’re interested in, these facts *become* significant in the way they enter into the *interaction* between an individual’s cognitive-affective states and his or her immediate, substantive, social and material conditions. And therefore we would predict that the research which ‘looks behind’ the broad facts about SES gradients in aspects of mental health will yield some evidence to support this claim.

Fourthly, we have reasons to expect that adverse and unexpected changes in one’s income, work, employment, housing etc, or even just anticipation of such changes, may exert influences in their own right on uncertainty states and risks of psychiatric disorders.

And finally; the claim here is that certain kinds of social and/or economic circumstances will have significant, detrimental effects *in their own right* on the mental health of a

⁵ In simple terms this means, for example, that the contribution of factors of income to the risk of chronic uncertainty states (leading to detrimental effects on SRD capacities), might be considerably less for someone on an income equivalent to \$200 U.S. p/week in, say, a rural Greek village, as compared to someone on the same income in outer-suburban Sydney. (Sapolsky 2005)

proportion of the people exposed to them. Therefore we will expect to see evidence that associations between population groups exposed to the circumstances in question, and increased rates of psychiatric disorders, are not wholly, or even mostly, caused by social selection effects.

6.3 RESEARCH EVIDENCE

We will now turn to consider a number of epidemiological studies which, in one way or another, investigate the relationship between the above factors common to life in Western societies, and the incidence of psychiatric disorders within populations. The disorders most commonly investigated in these studies are those which are widely understood to be relatively common within the relevant populations, especially mood and anxiety disorders, including depression. (E.g. Weich and Lewis 1998; Lewis et al 1998; Muntaner et al 1998; Stansfeld et al 2003) It is these I shall mostly be interested in. However, as we shall see, a number of other conditions come in for consideration, including some also regarded as widespread such as alcohol and drug abuse disorders (Muntaner et al 1998), and other less common conditions such as schizophrenia (Dohrenwend et al 1992).

The evidence considered here will cover the range of factors considered above, but will not deal with them separately. Instead, I will begin with several larger studies on SES gradients in mental health within the broader population. Then I will look at some studies addressing more specific issues, and/or more narrowly defined subject cohorts. I will consider together a number of studies on the so-called Whitehall II cohort of approximately 10,000 British public servants. In some of these studies measures are taken to address the ‘selection versus social causation’ issue, and weigh the likely relative influence of innate/prior dispositions and socioeconomic factors in causing gradients. I will mention relevant points as we proceed, and later we will consider one particular piece of research specifically structured to explore this issue.

In many of the studies we will consider there is basic evidence about SES gradients in mental health within a population, or about associations between specific factors and rates of problems; and then, as we might expect, there are efforts to ‘get behind’ this basic picture, and speculate on underlying psychological causes. It will be useful to note some of the latter ideas as we proceed, because they explicitly point to a question posed by much of this kind of research, namely a question about neuropsychological mechanisms linking exposure to certain kinds of external circumstances with the onset of a psychiatric disorder. However, I ask the reader to recognise that my account of such mechanisms is already on

the table, and is *that* which I claim is explanatorily relevant to the results of the studies discussed.

Finally, discussion to follow will regularly refer to certain *adjustments* made to empirical data by the researchers in question. The term generally refers to statistical methods employed to manipulate ‘raw’ data in order to interpret its implications more effectively, or in more detail. Adjustments may be made, for example, in an attempt to make information gathered from a particular population sample better reflect the make-up of a whole national population. For the most part, however, use of the term will refer to methods employed to separate and measure the particular influence of individual causal factors, from amongst a number of factors seen to be involved in influencing a particular result. What this means, and the context in which such methods are used, will become clearer as discussion proceeds. I will not be commenting on the methods as such, but only reporting as adequately as possible on the results as presented.

6.3.1 Several Larger Studies of SES Gradients in Mental Health

I suggested earlier that the raw facts of social gradients in mental health are not generally in dispute. According to Perry, an inverse relationship between socioeconomic status (SES), or social class, and the prevalence of certain psychiatric disorders, ‘is one of the most well established in the field of mental health epidemiology.’ (1996, p.17; see also Rogler 1996) Prevalence rates of depression and anxiety disorders by SES are widely researched, and psychiatric conditions grouped under these headings are also recognised as amongst the most widespread within Western social settings. Lewis et al (1998), for example, cite evidence suggesting that, in the late ‘90s, approximately 14% of the population in the U.K. was suffering from a depression or anxiety disorder. Such conditions can also have significant social and economic consequences. Weich and Lewis claim that, in the U.K., ‘the common mental disorders account for more than a third of days lost from work … and one fifth of general practice consultations’, and that annual losses to economic productivity at that time might be as much as £6 billion. (1998, p.8)

Muntaner et al (1998) investigated the prevalence within the previous year of mood disorders (major depressive episode, manic episode, and dysthemia), anxiety disorders (panic disorder, agoraphobia, social phobia, simple phobia, and generalised anxiety disorder), and alcohol and drug abuse or dependence disorders, by social class within a cohort of approximately 8,000 adults (15-54 years) from across the US mainland, using data from the National Comorbidity Sample of 1990-1992. Social class was defined

according to measures of years of education, occupation status, household income, and total asset wealth. Incidence of disorders was assessed using the DSM-III-R diagnostic interview.

The study produced a number of significant results. When participants were grouped according to any one of the main SES criteria, the grading was found to be ‘inversely related to the prevalence of psychiatric disorders.’ (1998, p.2046) In other words, on the whole, prevalence of the disorders assessed, as a single measure, increased as one moved down the scale of education, occupation, income or wealth. For mood disorders the inverse associations were strongest for levels of income and wealth; for anxiety disorders, there was a statistically significant gradient found for each of the four criteria; although somewhat weaker for occupation. The researchers report: ‘an inverse and linear relationship between years of education and mood and anxiety disorders’; that ‘[t]he best educated experienced the lowest prevalence of both alcohol and drug disorders’; and that ‘[a]nnual household income showed an inverse association with the prevalence of all five disorders.’ (1998, p.2046) Results showed the relative odds of a subject having a disorder in the \$0-19 thousand household income band was approximately five times the odds in the \$70+ band. This is all evidence for an SES gradient in the specified disorders.

The researchers adjusted data under each criterion for age, gender, race/ethnicity and social class measures, in part to eliminate the effects of differences in the distribution of ages, gender, and race/ethnicity between the study cohort and the general population. The adjustments for social class measures, however, were used to isolate the effects of each SES factor from the weighted effects of the others⁶. Under this test, household wealth in particular continued to show a significant inverse association with the prevalence of both mood and anxiety disorders.

The researchers suggest the results of the study offer support for ‘the hypothesis that income is a fundamental determinant of health as it is associated with multiple risk and protective factors.’ (1998, p.2049) The risk factors they consider include: lack of social and material resources, increased exposure to stressful life events, and high levels of demand coupled with low autonomy in the workplace. In other words, they are here suggesting that the reason income makes a difference may be *because* it directly influences, or is associated with, increased risk of exposure to these kinds of substantive circumstances. In relation to wealth, they argue that their study shows a ‘strong and generalized association’ between lower household wealth and increased risk of psychiatric disorders, and propose

⁶ So, for example, if the statistical gradient for anxiety disorders by education level disappears when the weighted influences of occupation, income and wealth are factored out; this suggests that education, in its own right, is exerting less of an influence on the overall gradient.

that, '[w]ealth might have a protective effect on mental health through a sense of control and predictability in workplace, leisure and consumption activities.'⁷ (1998, p.2051)

In a cross-sectional⁸ study of approximately 10,000 adults (16-65 years) in the U.K., Lewis et al (1998) selected subjects by household social class according to a U.K. Registrar General scale of occupation status (graded according to level of skill required). The study used a single measure of 'neurotic psychiatric disorder' (likely to register mostly depression and anxiety disorders) assessed by structured clinical interview. The researchers assessed four main SES factors: social class by current occupation; standard of living according to housing tenure (own/purchasing own home or renting) and/or access to one or more cars; and four levels of educational qualifications. Other factors assessed as potential confounders were economic activity in terms of current paid or unpaid work, and family unit type.

The study showed that both men and women in the five lower social classes (as assessed) had higher rates of disorders than those in the highest class; and in women, a modest gradational increase in the rate from high to low class groups. When adjusted for age and all the other variables, the data suggested some increased risk for the mid-level social classes in men (compared to men in other classes), and no significant differences in risk between classes in women. In other words, the evidence for a clear gradient in disorders by social class graded on occupation alone was relatively mild; and social class/occupation status in and of itself did not appear to play a strong role in the differences that were found.

However, the researchers reported:

A strong univariate relation between several socioeconomic variables and the prevalence of neurotic disorders. Lower social class, no access to cars, home renting, and low educational attainment were associated with higher prevalence of neurotic disorders. ... The most robust finding was that car access and home ownership were independently and inversely associated with the prevalence of neurotic disorder. Standard of living therefore seemed a much more important measure of socioeconomic status than either educational attainment or Registrar General's Social Class. (1998, p.608)

In discussing the findings, the researchers conclude that low income as it influences standard of living is likely to increase risks of psychiatric disorder. They suggest that low

⁷ Discussion of some studies specifically addressing control and predictability in the workplace will follow below.

⁸ A cross-sectional study, in essence, captures information during one limited period. A longitudinal study, on the other hand, follows subjects, and changes in variables, over an extended period.

income and less secure housing may increase exposure to uncontrollable and unpleasant events; and that this might illuminate a ‘possible psychological mechanism for linking poor socioeconomic circumstances with neurotic disorder.’ (1998, p.608)

The main point of interest here is that, again, what appeared in the end to matter more for an increased risk of disorders, was the psychological implications of dealing with substantive social and material conditions likely to be associated with lower income within that social setting.

In a somewhat similar cross-sectional study, Weich and Lewis selected a sample of approximately 9,000 adults (16-75 years) from U.K households spread across postcode areas of different socioeconomic status. The goal of the study was ‘to test the hypothesis that the association between the prevalence of common mental disorders and poor material standard of living is independent of social status as measured by occupational social class.’ (1998, p.8) This study also defined social class according to the Registrar General’s occupation scale, and assessed common mental disorders as a single dimensional category using a self-administered General Health Questionnaire (GHQ)⁹.

The project gathered data on seven variables, as indicators of material standard of living: annual household income, savings from income, access to car or van, number of domestic appliances (e.g. TV, video, microwave), housing tenure, overcrowding, and structural problems with the household residence.

On unadjusted results for risk of disorders by social class-as-occupation, the study found that the two lowest classes out of five (combined) generally had increased prevalence of disorders, compared with the highest two (combined). Although the relatively higher rate was shown across all ages for women, and increased with age, it only reached significant levels in men in the 56-75 age bracket. After adjustment for standard of living measures these differences decreased below a statistically significant level, or were eliminated.

On the standard of living measures, however, the researchers reported, ‘significant univariate associations … between common mental disorders and all seven of the measures of (poor) standard of living’. (1998, P.11) And five of these; low household income, no savings from income, housing problems, rental housing, and no car/van access, were independently associated with increased prevalence after other standard of living measures were factored out. The first four of these factors were also independently associated with

⁹ The GHQ is commonly used in public health research (e.g. Stansfeld et al 1999), and ‘has been widely validated against standardised clinical interviews.’ (Weich and Lewis 1998, p.9)

increased rates of disorders after adjustment for age, sex and social class. On a five-point scale combining all standard of living measures, 45% of those at the lowest end were found to have symptoms of psychiatric disorder, compared to 16% of the highest standard of living group. Even after adjustment for multiple factors (including age, sex, social class, employment status, education, and marital status) the lowest group had twice the risk of disorders as the highest, and there was a clear gradient of increasing risk moving down the scale. (1998, p.11)

The researchers concluded that:

[O]ur findings indicate that the socio-economic gradient in the prevalence of common mental disorders results predominantly from differences in material standard of living, rather than differences in social status or other factors associated with specific occupations. (1998, p.12)

Power and Manor (1992) investigated the relationship between psychological health and social class in over 12,000 British 23 year-olds, drawing on longitudinal data from a national Child Development Study of a 1958 birth cohort. Information was available about this group at birth, and at ages 7, 11 and 16. Subjects were interviewed at age 23 and completed a questionnaire assessing symptoms of ‘malaise’ (depression), including anxiety and depressed mood. Information was also gained on ‘psychological morbidity’, which registered when subjects had sought specialist medical help with a psychiatric condition; with anxiety and mood disorders the most commonly reported problems. Again, social class was assessed using the Registrar General scale. The longitudinal data provided information on:

- Early life circumstances : social class at birth (usually according to father’s occupation), mother smoking during pregnancy
- Socioeconomic circumstances: housing tenure at age 11 (owning vs renting), age at birth of first child (females), and a period of unemployment by age 23
- Education: qualification at end of schooling
- Health: absence rates from school at age 15-16, smoking at 16, behaviour at school at 16 (the latter being based on assessments at the time by teachers)

Thus the study was able not only to report on a distribution of symptoms of depression, and of psychological morbidity, across class-based groupings; it also could assess the relative contributions of earlier life circumstances, both on psychiatric condition and class position at age 23. For the purposes of analysis, class comparisons were sometimes condensed to classes IV and V combined (defined by manual-type occupations) versus I

and II combined (non-manual). As will be discussed below, weighing of the relative influence of social class at birth, compared to other factors, also provided evidence relevant to the selection versus social causation issue.

Results on associations between class position and symptoms of depression, firstly, showed clear inverse gradients by class, although with a much steeper gradient, and higher ratings of symptoms, in women. For psychological morbidity (which might register incidence of more severe conditions), social class gradients were again present for both men and women, although less steep than those for depression. These results affirm a general social gradient in mental health.

The researchers then tested the relative odds of psychological ill health (by each measure) between sub-sections of the larger cohort defined according to the earlier life variables: i.e. those born to a lower class family versus those not; those who lived in rental housing at 11 versus those who lived in owned housing; those with school behaviour assessed as ‘deviant’ at 16 versus those assessed as ‘normal’, etc. Interestingly, comparison of groups defined according to class origins only showed significantly higher odds in the lower class-origin group for women, and only on one measure, morbidity. In contrast, the odds of poor health at 23 within a sub-group defined according to poor school behaviour at age 16 were 3 to 4 times higher on both measures, as compared to those assessed as displaying normal school behaviour. (1992, p.288) This suggests that being born into a lower social status group in and of itself, by comparison with other factors, *is a relatively weak predictor of poor mental health at 23.*

Another form of analysis in the study looked first at the unadjusted relative odds of classes IV/V versus I/II of having poor psychological health; by gender, and according to each measure in turn, yielding four analyses: relative odds by class grouping for men and depression, women and depression, men and morbidity, women and morbidity. For example, consider the relative odds found between male class groupings for symptoms of depression. According to the standard methodology, the odds in class group I/II are designated as 1.00, and then the higher or lower odds of group IV/V assessed against that (e.g. 0.50 = half the odds, 2.00 = twice the odds). In this case the unadjusted relative odds measure of group IV/V was 3.90.

The researchers then progressively adjusted the data to factor out the weighted effects of each early life factor, in an order than reflected their actual chronology: i.e. class at birth only, then class at birth *and* housing tenure at 11, then these two *and* behaviour score at 16, etc. At each step, the effect on the overall relative odds was measured. Adjusting firstly for social class at birth had some effect on the relative odds in three of the four analyses, more

particularly for both men and women in relation to depression. For example, for men and depression it went from the unadjusted 3.90 to 3.48, or down by 11%. (In other words, when the specific influence of social class at birth on the prevalence of depression at age 23 is factored out, those in classes IV/V [at 23] are still assessed as 3.48 times more likely to have depression, as compared to those in classes I/II.) However, a number of other factors had more significant effects. For men and depression, even *after* adjustment for social class and housing tenure at 11, behaviour score at 16 reduced the relative odds by a further 29%.¹⁰ (1992, p.289) The factors the researchers judged (by this method) to be most influential on the relatively higher chances of depression at 23 for both lower class men and women, included school behaviour at 16, and end-of-school qualifications. For men, unemployment before 23 was also especially significant; for women, rental housing at 11 and first child before 23 also showed a marked effect. In relation to psychological morbidity, behaviour at 16 and unemployment were particularly significant for both men and women. (1992, p.289)

On a third form of analysis, which I won't detail here, the researchers found that behaviour score at 16 and end-of-school qualifications were also (one way or the other) much stronger predictors of *social class* at 23, than was social class at birth.

In the view of such evidence arising from a number of related analyses of detailed longitudinal data, it is not surprising to find the researchers claim, 'that while class origins are relevant to differences in psychological health, they are not the only, nor indeed the major, explanation.' (1992, p.289) This, of course, is significant here in relation to the larger question of the contested claims of social selection and social causation explanations of social gradients in health, including in mental health. It should be emphasised that Power and Manor do not rule out selection processes having *some* impact on social gradients in mental health; perhaps by prior physical health problems increasing later chances of poor psychological health. (1992, p.285) However, they also explicitly argue that their results would challenge any claims of social selection wholly, or even mostly, causing the gradients they found. (1992, p.290)

I would suggest that the implications of the results of this study might be read in this way. An advocate of social selection causes of gradients in psychological health would presumably argue that the relatively higher rates of poor health outcomes that would be present among the lower class *parents* of a proportion of these 23 year olds were primarily a product of *their* innate dispositions for poorer health, which when realised tended to see

¹⁰ Note that, if school behaviour at 16 were *itself* strongly related to social class at birth, then the previous factoring out of the weighted effects of social class should have largely eliminated this further 29% change in the relative odds (of those on classes IV/V versus those in classes I/II at age 23 having depression).

them descend the social scale or fail to rise. If so, then we would expect, on the whole, that these genetic characteristics would pass to their children, and therefore social class at birth would be a relatively strong predictor of poor health, and subsequent lower class status, in these children as adults. The results of this study undermine such an explanation.

6.3.2 Unemployment

As with SES gradients in mental health generally, the existence of higher rates of mental and physical health problems among the unemployed compared to the employed is now fairly well established by a weight of research evidence. And, as one might expect, unemployment tends to be more prevalent amongst those at the lower end of the socioeconomic scale. (Bartley et al 1999) What is more at issue is the matter of what causes the difference, and once again the issue of social selection versus causation comes to the fore. As Montgomery et al describe, it is a question of, ‘whether unemployment causes deterioration of health or whether those at higher risk of unemployment were in poorer health prior to becoming unemployed.’ (1999, p.96) (Although, one might also argue for another form of social selection explanation; that an association between unemployment and poor health came about because both were caused by some other prior factor. [Bartley et al, 1999])

As noted above, Power and Manor (1992) found that men who experienced a period of unemployment were at greater risk of subsequent psychological morbidity. Bartley et al cite a number of other relevant studies showing, for example; associations between unemployment and higher rates of mental health problems, and improvements in rates of mental health amongst people who regain employment, regardless of financial circumstances either before or after re-employment. (1999, p.87-88)

I also suggested earlier that the change in employment status, or even simply anticipation of such a change, might also be a cause of chronic uncertainty states and increase the risk of psychiatric disorders. A number of these issues are explored in a study by Montgomery et al (1999) on unemployment and mental health within a U.K. cohort of 3,200 33 year-old men. The study used longitudinal information to investigate the role of prior risk factors, and to test the relative merits of selection or social causation explanations. As with Power and Manor above (1992), this study also drew its subjects, and background data, from U.K. National Child Development Study on the 1958 birth cohort.

The study gathered information from subjects on the first onset of an episode of anxiety or depression leading to consultation with a GP or specialist, between the ages of 24 and

33. This was then assessed against a number of earlier-life variables including: pre-existing tendency to depression at 23; becoming unemployed in the 12 months prior to first onset of anxiety/depression; and total accumulated time of unemployment between 23 and this first onset.

This allowed the researchers to weigh the relative impacts of recent or longer-term unemployment as risk factors for mental ill-health, *and* to assess whether unemployment was only a risk for those with pre-existing signs of ill-health, or also for those who have previously been healthy.

In relation to the relative impacts of longer-term versus relatively recent unemployment, the study found firstly that those with >37 months of accumulated unemployment (within the relevant period) showed significantly higher risk of a subsequent episode of anxiety/depression than those with less, or none. Although, when these figures were adjusted to eliminate the weighted influence of potential confounding factors (inc. social class at birth, education level, and depression score at 23), the difference dipped below a statistically significant level. Recent unemployment, however, was found to significantly and independently increase the risk of an episode, even after adjustment for these other factors.

Most significantly of all, perhaps, when all those with pre-existing tendency to depression assessed at 23 were removed from the analysis altogether, the adjusted relative risk for both >37 accumulated months of employment, and for recent unemployment both *increased*. If, as per the selection hypothesis, it was those with a prior disposition to mental ill health who were predominantly at risk of later unemployment (thus causing the association between the two), then removing them from the analysis should have *reduced* the relative risks amongst the rest (of unemployment leading to ill health). As the researchers conclude:

Because the measures of unemployment used here pre-dated onset of symptoms and a measure of pre-existing depression was included in the model, it is unlikely that the relationship of unemployment with depression and anxiety could be due to poor mental health. ...

It is not only men with pre-existing poor mental health who are vulnerable to the psychologically damaging consequence of unemployment. (1999, p.99)

Overall, this study shows that a relatively recent shift from employment to unemployment is a risk factor in its own right for the onset of common psychiatric disorders. Bartley et al also mention a study with a cohort of Italian workers who experienced increased rates of psychological illness in the period after becoming unemployed, even though at the time

still receiving the whole of their normal wage. (1991, p.88) Such evidence seems to suggest that the psychological experience of a recent change in employment status can itself have detrimental effects on psychological well-being.

Notwithstanding such evidence, however, it is also likely, of course, that for many people becoming unemployed will result in a drop in income/wealth, and that longer-term unemployment will be associated with low income; and these may have effects of their own. Studies by Michael White and colleagues (1991), for example, showed that, amongst a group of the long-term unemployed, those who had recently borrowed money were at significantly higher risk of depression than those who hadn't.

Bartley et al also discusses a number of studies in which job insecurity and/or the threat of job loss were also implicated in increased rates of psychological disturbance and ill-health (relative to those with secure employment).

6.3.3 Social Support and Social Settings

As Stansfeld (1991) describes, social support is generally quantified in public health research in terms of a person's social contacts, either within a specific setting such as a workplace, or in 'wider' life relationships with family, friends, associates, neighbours, etc. Measures of social support may sometimes distinguish between contacts with those few people to whom a person is closest – husband, wife, siblings, etc – and their other less intimate contacts. Stansfeld suggests that such measures can provide, 'an index of social integration, how much an individual is part of a community of mutual obligation and exchange'.

I have suggested that any people with whom one has regular contact are likely to be a locus of affective salience to some extent; and chronic arousal of uncertainty states in relation to some other person would be likely to negatively influence one's assessment of the 'supportiveness' of that relationship. Conversely, it would also be consistent with the proposed model to suppose that having a reliable network of close family and friends – who are generally the subject of positive expectancies – might mitigate the strength or time-extent of response to some new uncertainty-making stimulus which happens to arise. It would seem reasonable to suppose that, in the face of some acute or chronic life crisis, a supportive social network might obviate the kinds of chronic uncertainties one might otherwise undergo in facing the situation alone, or in the belief that one is alone. Apart from anything else, contact with other people might provide a form of relief from perseverative focus on 'the problem'.

There is a body of research support for this kind of ‘buffering’ effect of social networks on the effects of exposure to acute or chronic stressors. Stansfeld discusses a number of studies, including a longitudinal study of depression in women, showing that among single mothers, assessment of a relatively strong social network at baseline was associated with decreased risk of depression in response to a subsequent life-crisis event. (1999, pp.165-166)

Stansfeld also notes evidence from his own work on the so-called Whitehall II cohort of British public servants, suggesting that, for women, protective effects of social contacts tend to come from a network of close social support; whereas for men it tends to come from good support from the closest person, most usually the wife. (1999, p.166) (A number of Whitehall II studies will be considered directly below.)

Regarding the possible effects of social setting on the incidence of common psychiatric disorders, an interesting study addressing these issues was undertaken by Halpern. (1995) This research focused on the refurbishment of a British housing estate, previously having a reputation for high crime rates and low public safety, and showing various signs of being ‘run down’ – damaged buildings, car bodies, etc. The intervention program involved a number of measures, including: changes to traffic and pedestrian access to improve security, upgrading of fencing and housing, and construction of new playgrounds and other community facilities. The study interviewed local residents before and after the program took place. Results showed that the percentage of residents who rated the area as safe doubled, from approximately 40% to 80%. Of particular relevance for our purposes here was that the assessed rates of anxiety and depression amongst residents also showed a marked decline.

Turning now to the family environment, it is appropriate here to mention some studies which directly address the question of a link from socioeconomic conditions, to detrimental impacts on parental mental health, to subsequent negative impacts on children or other family members.

Kurtz et al (1993) undertook a longitudinal study exploring the effects of abuse or neglect in the home on school-aged children. The study cohort consisted of approximately 140 U.S. children attending school, between the ages of 8 and 16, roughly half of whom had been reported by a caseworker as either abused (physical or sexual) or neglected within the previous 18 months. The study assessed various SES factors in the parents, including income, education, and housing, and symptoms of depression. The study found

that between 50-80% of either abuse or neglect took place in families rated either in the lowest income band, or the lowest education band. The researchers also reported that, '[p]arents of abused children reported high levels of depression, and for both abusive and neglectful families, child behaviour problems were related to high levels of parental depression.' (1993, p.85) On figures adjusted for SES measures, those who were subject to either abuse or neglect still showed significantly worse performance at school on a range of behavioural, socialisation and academic performance measures compared to the non-maltreated. Victims of abuse showed the worst performance across the range of measures.

Schumacher et al (2001) undertook a review of a wide range of studies into risk factors for male-to-female partner physical abuse. They identified a number of risk factors which showed a moderate to strong association with men subsequently becoming perpetrators of abuse, including: low SES, low education, history of child sexual abuse, depression, and alcohol and drug abuse. Risk factors most associated with women becoming victims of physical abuse by male partners included low education and unemployment.

A U.S. longitudinal study by Schilling et al (2008) investigated the effects of adverse childhood experiences on mental health in over 1,000 young adults in the phase of transition from high school into adulthood. Controlling for a number of demographic factors – including gender, family income, parent's education and family structure – they found that several forms of adverse early-childhood experience had significant independent effects on a high level of depressive symptoms in early adulthood, including: sexual abuse or assault, physical abuse, physical assault, and serious neglect.

6.3.4 Work Conditions – The Whitehall II Studies

The Whitehall II study is a longitudinal research program which commenced in 1985 with an initial cohort of over 10,000 British public servants (approx 2:1 male to female), and continued in several phases for over a decade. The subject cohort included representation from all of 12 non-industrial grades of employment ranked by salary, from clerical and office support workers at the lowest grades to senior administrators at the highest. In broad terms, the study has investigated social gradients in various measures of both physical and mental health across these employment grades (as an SES index), and various changes in people's health status and/or employment conditions over time. In seeking to explain gradients which have been found, and other patterns of difference in health status, there has been a particular focus on work conditions, although substantial data has also been collected on life circumstances outside of work.

The study has features which make it relevant to the wider issue of SES health gradients, and how they may be explained. The selection of this particular cohort (all with access to the British public health system) largely rules out explanations of health gradients which might variously appeal to differences between: levels of access to health care, employment and unemployment, or material sufficiency and abject material poverty. Thus, it becomes possible to focus on other possible causes, and especially the psychological demands that may be exerted by features of the work environment. The long-term longitudinal nature of the study allowed investigation and weighting of likely causes/risk factors for ill-health, and testing of selection versus causation explanations. Again, on the whole, analysis and attempted explanation tends to go ‘behind’ the plain facts of income or status differences as such, and point to aspects of more substantive, day-to-day conditions and demands.

The study collected data on a broad range of baseline variables, and assessed changes in these over time. Some of the main measured characteristics of the subjects themselves, and their life circumstances, included:

- SES status by employment grade/income, plus information on education, housing tenure, car ownership, father’s occupation.
- Symptoms of common psychiatric disorder (depression and anxiety) assessed by the General Health Questionnaire (GHQ)
- Recent adverse life events, or financial, housing or neighbourhood difficulties
- Support from close others outside the workplace
- Physical health and health-related lifestyle behaviours

Work characteristics were measured (mostly by subject self-assessment) in terms of:

- Social support at work: from colleagues, or supervisors, including clarity and consistency of information from supervisors
- Degrees of decision latitude or *control* over work: choices over work activity, opportunities for initiative, learning or use of skills, work variety or repetition
- Level of job *demand*: the pace or intensity of work, or exposure to conflicting demands
- Levels of *effort* as: competitiveness, over-commitment to work, or hostility
- Levels of *reward* as: promotion or career prospects
- And combinations of high effort-low reward, or high demand-low control

(Stansfeld et al 1998; Stansfeld et al 1999)

In a relatively early, cross-sectional analysis of phase 1 data, Stansfeld et al (1998) found a clear gradient in depression by employment grade in men but not in women. So far as the men were concerned – based on adjustments intended to delineate and weight the relative influence of various factors – key factors found to account for the gradient were social support (outside the workplace), life events and material difficulties, and work characteristics¹¹. On SES measured according to rental or owned housing and car access, however, both women and men with rental housing/no car showed significantly higher rates of depression than owner-occupiers/with car, even after adjustment for work characteristics.

A study by Stansfeld et al (1999) explored the longitudinal relationship between work characteristics and incidence of psychiatric disorders, assessed at baseline (1985-88), phase 2 (1989) and phase 3 (1991-93). Taking into account the baseline GHQ score, they investigated the extent to which work characteristics at an earlier phase predicted psychiatric outcomes at a later stage. In one set of findings, low decision authority (control) and low skill discretion both independently predicted higher risks of disorders at a later phase, compared to high decision authority. And high job demand predicted greater risk of disorder, compared to low job demand. These differences were still present after adjustment for age, employment grade and baseline GHQ scores. Even after all cases of disorder at baseline (phase 1) were removed from the analysis, low control and skill discretion, and high job demand still predicted higher rates of disorders at a later phase. (1999, p.304) Conflicting demands from others, and inconsistent information from supervisors, were both also found to be significant risk factors for subsequent onset of disorders, after adjustment for age, grade and baseline GHQ. A combination of high effort and low reward strongly predicted increased prevalence of disorders at a later phase, again even after adjustment, and removal of baseline GHQ cases from the analysis.

Another later study (Stansfeld et al 2003) again looked at earlier risk factors as they might relate to later incidence of psychiatric disorder, this time as assessed at phase 5 (1997-99). This study found that both men and women in the two lowest employment grades had approximately twice the risk of depressive symptoms at phase 5, compared to those in the 6 highest grades (considered as single group). Results of the 1999 study mentioned above, suggest that these gradients might be at least partly explained by the work-related risk factors tending to be more common in the lower grade jobs. And indeed the 2003 study found that, for men, the gradient in depressive symptoms was mostly

¹¹ They suggest the result in women may reflect that employment grade for women is less likely to accurately reflect differences in household income. [1998, p.7])

explained by earlier differences in work characteristics, ‘decision latitude, job demands, work social supports and effort-reward imbalance’ (2003, p.364); although material problems, external social supports and marital status also appeared to play a role. For women both work characteristics and material problems (financial, housing and neighbourhood difficulties) were assessed as particularly influential.

Some of those forms of analysis referred to in the 1999 study above – adjusting out the weighted influence of baseline GHQ score, or removing those registering disorders at baseline – were specific attempts to test the plausibility of a form of selection explanation: that an association between lower status/more adverse kinds of work and higher prevalence of disorders is brought about because people with a prior, higher risk of disorders tended to gravitate towards that kind of work, or failed to achieve promotion. The fact that the relevant differences in risk remained even after baseline measures of disorder were factored out, or those with symptoms at baseline removed from the analysis, undermines such an explanation.

The plausibility of social selection explanations for social gradients in mental health is also challenged by a further study on the Whitehall II cohort, addressing issues of change in workplace conditions. Ferrie et al employed longitudinal data to investigate the possible effects of chronic job insecurity, or recent *changes* in job security, on health outcomes including ‘minor psychiatric morbidity’ assessed by the GHQ, and prevalence of depression. (2002, p.450) Data was gathered from approximately 3,300 subjects, assessed in 1995-96 and again in 1997-99. The study compared outcomes in four groups, being those whose employment status during the study period: remained continuously secure (the control group); moved from insecure to secure; moved from secure to insecure; or was chronically insecure.

Results of the study, adjusted for age, employment grade and baseline GHQ scores, showed that even those who moved from insecure to more secure employment conditions subsequently tended to have higher rates of morbidity and depression than the control group, especially for men. Worse results on both psychiatric measures were displayed amongst both men and women who moved from secure to insecure employment, although again the effect was more pronounced for men. And finally, chronic job insecurity was significantly associated with the highest prevalence of both morbidity and depression in both sexes. (2002, pp.452-453)

In relation to those whose job conditions changed, these results suggest that job insecurity, even when it was later alleviated by improved conditions, continues to have

some residual effect on mental health. Both groups showed higher risk of morbidity and depression compared to the controls, even after adjustment for employment grade and baseline GHQ score. Collectively these findings strongly suggest that it was the employment conditions themselves, and changes in those conditions, which were having significant effects on psychological health. Given that the data were adjusted to factor out baseline GHQ scores, it is difficult to see how a social selection hypothesis could plausibly account for the results of this study.

The researchers concluded that their findings, ‘confirm those of numerous studies that have reported an association between perceived job insecurity and psychological morbidity.’ In relation to the effects on those whose jobs remained insecure through the study period, they suggested that, ‘[a]ssociations between chronic job insecurity and poor self rated health and a greatly increased risk of minor psychiatric morbidity reflect evidence from previous studies.’ (2002, p.453)

Beyond the results of specific studies, it should be also noted that some of the theoretical constructs developed around this body of research display some clear points of convergence with the proposed PF-A model. There are direct appeals to the kinds of stress research considered in the previous chapter; and to psychological processes of appraisal (or evaluation) as triggers for stress responses¹². (E.g. Marmot 2004; Sapolsky 2005; Marmot and Wilkinson 1999; Wilkinson 2005; Kunz-Ebrecht et al 2004) There is explicit recognition of a key difference between acute and chronic responses, and the potential of the latter to impact on health. (E.g. Brunner and Marmot 1999) There is direct appeal to a body of allied research about the potential effects of chronic stress arousal and associated elevated hormone levels on aspects of physical health, including risk of heart disease, diabetes, obesity and compromised immune function (Sapolsky 2005; McEwan 2002); and evidence about how these ‘play out’ as differential effects on physical health across populations. (E.g. Marmot et al 1997; Bosma et al 1997)

6.3.5 Research Directly Addressing the Selection Vs Causation Debate

Finally, for this section, let us consider one study specifically structured to directly test selection versus causation arguments for social gradients in mental health.

¹² The case here tends to be based on correlations between psychological data in the forms of subject’s self-assessments of their psychological or emotional responses to external conditions, and physiological measures such as cortisol levels. It is hoped that the model developed in chapter 4 might contribute to improvements in explanations appealing to such a psychological state→physiological response link, by proposing a possible ‘pathway’ of relevant neural mechanisms, activities and interactions.

Dohrenwend et al (1992) undertook a study investigating social gradients in a range of disorders amongst two groups of Israeli-born Jews between the ages of 24 and 33: one group of white European heritage, the other of black North African heritage. The study worked with roughly 4,900 subjects in all, selected to ensure that both white and black groups adequately represented the full range of SES status, and assessed incidence of schizophrenia, major depression, anti-social personality disorder, and substances abuse disorders within the cohort. Higher rates of all these conditions were generally found in those assessed as of lower SES, according to measures such as educational achievement.

In weighing possible explanations the study assumed firstly, based on other evidence, that Jews of North African heritage generally suffer a level of socioeconomic disadvantage and social prejudice within Israeli society. Therefore they reasoned that, if social factors were mainly causing a specified disorder, then blacks would tend to suffer the ‘stress and strain’ associated with both SES status *and* ethnic disadvantage, and therefore rates of that disorder would be generally higher in black than white across the SES scale. Thus a social causation view would predict a pattern of results as shown in Figure 6.3 below:

Figure 6.3: (Adapted from Dohrenwend et al 1992)

NOTE:

This figure is included on page 174 of the print copy of the thesis held in the University of Adelaide Library.

Conversely, they reasoned, a social selection view would predict firstly that among blacks, because of prejudice, those predisposed to good health would find it harder (than comparable whites) to rise in SES status, and thus their continued ‘presence’ at lower SES levels would therefore dilute (or decrease) the *rate* of disorders among blacks at those levels. And the relatively difficulty for blacks of rising in SES status would mean only

those disposed to be most healthy and able would tend to make it to the higher SES levels. Therefore, rates of disorders at the higher levels would tend to be relatively low as well.

For whites, a social selection view would predict that those predisposed to be healthy would tend to rise in SES status more easily (than blacks), leaving relatively high rates of disorder among whites at the lower SES levels. Furthermore, whites predisposed to be less healthy, as members of the generally advantaged ethnic group, would be less likely to ‘fall’ down the SES scale; and thus (compared to blacks) rates of disorder would tend to be higher at the higher SES levels as well.

Therefore, the researchers concluded, a social selection view overall would predict that rates of disorder would be generally higher amongst whites than blacks across the SES scale, as shown in Figure 6.4.

Figure 6.4: (Adapted from Dohrenwend et al 1992)

NOTE:

This figure is included on page 175 of the print copy of the thesis held in the University of Adelaide Library.

The study found evidence that social gradients in schizophrenia between the two groups conformed more closely to the second pattern of differences, suggesting that, globally, social selection plays more of a role in explaining an overall association (across both groups) between low SES status and higher rates of schizophrenia. What might explain this is that the onset of schizophrenia is more strongly determined by genetic factors. For all the other disorders, however, results tended to fit Figure 6.3 above, suggesting that a social causation explanation of social gradients in those disorders was more plausible. This was most markedly the case for higher rates of depression at lower SES levels, especially among black women; and higher rates of anti-social personality and substance abuse at

lower SES, especially amongst black men. We may note here that the different findings for schizophrenia and the other assessed disorders lends credibility to the methods employed by the study.

(See also: Link et al 1993)

6.3.6 Summary

We are now in a position to summarise the substantive points emerging from this body of research, in relation to the several predictions ventured earlier and the goals of the chapter. Firstly, it is largely self-evident that the kinds of socioeconomic circumstances assessed in the research considered above – circumstances variously shaped by factors of income/wealth, education, occupation or work conditions, family and neighbourhood life, and so on – *are* commonly encountered in modern free-market societies such as Australia, the U.S. or the U.K. Indeed, most of the studies considered above look at samples of people within the latter two countries.

On the whole, the research discussed in this section affirms the existence of a social gradient in mental health. It shows that population groups in these Western social settings, subject to conditions of low income or asset wealth, limited education, insecure employment or unemployment, insecure housing or certain kinds of work or family circumstances (or some combination of these) do display higher rates of the more common psychiatric disorders, as compared to groups not so exposed or exposed to a lesser extent. Some research also shows an association between higher rates of these disorders and adverse changes in one's substantive conditions such as a change from secure to insecure employment, or from employment to unemployment.

A number of the studies we've considered take steps to explore whether the associations between lower socioeconomic status (according to various measures) and higher rates of mental ill-health might be the product of a social selection effect: i.e. they are brought about because people predisposed to mental ill-health tend to do less well in attaining or maintaining a higher socioeconomic position. On the whole, the evidence considered which addresses this issue – especially in relation to the more common mood and anxiety disorders – suggests that social selection effects do not plausibly explain much of the relevant associations. Thus, to this extent, a social-causal explanation is recommended; that the socioeconomic circumstances in question are causally contributing to compromised mental health in a proportion of those exposed to them.

From this position, and having in mind that we're talking about possible effects of external circumstances on internal psychological states, then this suggests some form of

psychological *pathway* by which external conditions can get ‘inside the head’ and have effects on mental health. The research we’ve discussed points to a number of psychological conditions as potential causes of distress, possibly leading to a psychiatric disorder; for example, an experience of low autonomy or control, or an experience of stressful life events. As noted above, theoretical perspectives on some such public health data appeal to psychological processes of appraisal whereby some external stimulus is perceived as a threat or a challenge, leading to arousal of stress responses. (McEwan 2005; Marmot 2004; Sapolsky 2005)

The approach adopted here is to view this research in public health in relation to the earlier analysis of SRD capacities, and in particular, the discussion of chronic uncertainty states (aroused by external stimuli) as potential contributors to the onset of a mood or anxiety disorder. With both lots of material in view, it would seem that the evidence considered in relation to SRD capacities and chronic uncertainty states – the role of the orbitofrontal cortex and the amygdala in evaluating external stimuli, the evidence linking chronic arousal of the amygdala and other structures to the onset of psychiatric disorders – does describe the kind of pathway required, whereby certain kinds of external conditions can indeed get ‘inside the head’ and have effects on mental health. And in § 6.2.1, I gave reasons why individual exposure to the kinds of socioeconomic circumstances we’re interested in, within a Western social setting, might give rise to chronic uncertainty states. On these grounds I will proceed here on two assumptions: a), that, considered as a whole, the evidence supporting the proposed PF-A model offers a plausible, partial explanation for the higher rates of mood and anxiety disorders among people in lower socioeconomic groups; and b), that the socioeconomic conditions in question are significant causal factors, contributing to detrimental effects on SRD capacities – in one or other form of the most common psychiatric disorders – in a proportion of those exposed to them.

In light of my initial discussion of how certain social or economic circumstances might give rise to chronic uncertainty states, I also predicted something else for epidemiological evidence. I suggested it would show that what matters for mental health is not the absolute level of income, educational attainment or job status as such, nor one’s relative position to others as such, but the day-to-day psychological implications of getting by with a particular income, housing situation, or what have you within a particular, larger social setting. Some of the evidence we’ve considered here in relation to a developed, Western social setting appears to bear this out; for example, the evidence of Weich and Lewis (1998), or Power and Manor (1992) that increased risk of psychiatric disorders was much more strongly associated with factors to do with everyday living – housing, access to transport, school

performance, early pregnancy, etc – than with socioeconomic status assessed according to occupation.

6.4 DIVERSION BEHAVIOUR

In chapter 4, I described two broad kinds of possible detrimental impact on capacities for social reasoning and decision making, arising from chronic uncertainty states. Hitherto, in this chapter, I have focused on evidence relating to the first of those; the onset of some form of the more common mood or anxiety disorders. In this final section, I want to now consider the other kind, namely diversion behaviour. Below, I will propose several kinds of behaviour which I believe can be fruitfully understood in these terms. As the reader will see, the forms of behaviour discussed – interpreted *as* diversion behaviour – begin to expand the scope of possible detrimental impacts of chronic uncertainty beyond that proportion of the population which, at any particular time, is recognisably subject to a diagnosable mood or anxiety disorder.

To some extent, in light of discussion in chapter 4 about the nature and aetiology of these common disorders, this is something we ought to already expect. The occurrence of internal changes implicated in the onset of mood and anxiety disorders is not something which happens all at once. By definition, chronic uncertainty states are extended over time. And the way that individuals respond to similar kinds of likely-to-cause-uncertainty conditions will vary. In some of the studies already considered we have encountered subjects assessed as anxious or depressed to a degree that places them somewhere between the non-depressed/anxious, and the diagnosed sufferers of anxiety or depressive disorders. (E.g. Pietromonaco and Rook 1987) Thus it is plausible to believe that the boundaries here are more like transitional zones. (Keyes 2002)

Also, when we first considered diversion behaviours (§ 5.2.6), discussion of relevant literature in psychology suggested that diversion behaviours of various kinds may be associated with ‘everyday’ distress and non-clinical psychological ‘problems’; or might themselves form a part of the early aetiology of mood/anxiety disorders, or of other conditions such as borderline personality disorder. (Salters-Pedneault et al. 2004; Gratz et 2008)

We have already seen evidence that some contemporary Western societies are commonly generating certain kinds of social conditions likely to causally contribute to chronic uncertainty states; increasing the risk of common mood and anxiety disorders in sub-

populations exposed to those conditions. And the proportion of the adult population currently subject to these conditions at any one time, in countries such as the U.K. or the U.S.A., has been estimated to be in the order of 15-18%. (Weich and Lewis 1998; U.S. National Institute of Mental Health 2008) This alone may be cause for significant concern. If those same kinds of conditions are having detrimental effects within broader sectors of the population, and in a variety of ways, then it may be that the portion of the population recognised at any particular time as having a diagnosable neurotic disorder may represent only a part of a wider spectrum of effects which cuts across any neat divisions between people with psychiatric disorders (who are ‘just unwell’) and ‘everyone else.’ (Keyes 2002) The following discussion is intended to explore this proposition. And if such a wider spectrum of detrimental effects is understood to be occurring, this may in turn influence our interpretations of the social, economic or political implications which would follow. This issue will be addressed in the next chapter.

6.4.1 Some Forms of Diversion Behaviour

I have claimed that diversion behaviour can be adopted as a response to the aversive nature of chronic uncertainty states; which themselves are a response to circumstances which are affectively salient and unpredictable (in the relevant sense), and offer low opportunities for behavioural control to ‘solve the problem’. Diversion behaviour is a form of activity employed with a tacit goal of temporarily *evading* the relevant uncertainty-making stimuli and gaining *relief* from the aversive nature of the chronic state itself. Given that chronic uncertainty states, of their nature, respond to circumstances extended or recurring through time, the form of behaviour may be re-employed, perhaps to the point of becoming habituated, and thus become a pattern of response. Part of this process of habituation may lie with the behaviour in question being experienced as (superficially) effective in gaining a temporary measure of the sought relief. (Hayes et al 2004; Gratz et al 2008)

Addictive behaviour:

Within the previous analysis of the vulnerability of SRD capacities, I argued that the general, everyday business of engaging in goal-oriented activity within complex social environments is likely to require sustained states of cognitive arousal and ‘effort’, and regularly include acute uncertainty states. What is also clear to everyday observation is that many people, after a period of sustained, goal-focused, socially engaged activity, tend to seek out some form of relief in other kinds of activity. *Prima facie*, it would seem reasonable to suppose that such changes in behaviour are often effective in shifting

cognition (and associated affective states) out of a mode of sustained, goal-oriented activity. Examples of the kinds of behaviour are ready to hand: reading, eating, sleeping, watching television, playing, exercising, sexual activity, drug taking, going out with friends, or what have you.

If this is so, then perhaps it is not surprising that, for someone undergoing the extended, aversive arousal of a chronic uncertainty state, some of these forms of ‘recreational’ activity might come to hold a particular attraction. In other words, engagement with some such activity may be found, in the short term at least, to be effective as a form of psychic relief, and thus may be reinforced and adopted as a form of diversion behaviour. And the proposition here is that this process may, over time, contribute to an addictive attachment to that behaviour.

In the previous chapter we considered evidence from Cooper et al., that the presence of stressors was predictive of alcohol use and drinking problems among 1,300 adult men who relied on ‘avoidant forms of emotion coping’ (1992, p.139); and from Reynolds et al (2005) who found that over 90% of a group of 50 people receiving treatment for drug/alcohol abuse or dependence had previously experienced a severely traumatic life episode. We noted the study from Quayle et al, showing that that a desire to avoid unpleasant emotion states is associated with increased use of internet pornography by sex offenders. The studies by Muntaner et al (1998) and Dohrenwend et al (1992) cited earlier also provided evidence showing higher rates of substance abuse at lower ends of the socioeconomic scale.

Conformity with group norms backed by threats:

I have argued that we are, by nature, disposed to be highly sensitive to other people as stimuli of special significance and, over time, to be acutely responsive to a range of social signals from others. On this basis, it is plausible to assert that as individuals we are generally disposed to be highly sensitive to the behavioural norms of any social group in which we are involved, and likely to adapt our behaviour to meet those norms. These abilities can be conducive to social learning and the development of behaviours apt for maintaining good social relations.

However, according to the proposed analysis, it is also possible for other people’s behaviour towards us to contribute to the onset of chronic uncertainty states. One kind of situation in which this may occur, I would suggest is that where, in the context of one’s membership of a social group of some kind, the nature and behaviour of others – and of the group norms themselves – conveys some incipient or overt *threat* of sanction for non-

conforming behaviour. The threatened outcome might take many forms: disapproval, criticism, anger, ridicule, violence, isolation, threats to things one values, or perhaps simply rejection from the group itself.

Consider for example, membership in a religious group. Within that setting there will very likely be a whole range of behavioural norms in terms of attesting to a shared world view, using particular kinds of language, participating in ritual activities, recognising authority relationships, etc. It would seem clear that, for many, participation in such norms can be a source of social identity and camaraderie. (Packer 2000, p.352-353) However, especially with smaller, ‘clannish’ and doctrinaire groups, it is not uncommon for such ‘positive’ elements of ‘successful’ participation to be married with some form of tacit threats for non-conformity, in one or other of the forms noted above. (Packer 2000, p.354) You might be told that those outside the group are lesser kind of people – not in the proper relationship with God. You may see that someone who leaves is criticised and rejected. On my proposed account it is quite plausible to suppose that people in such a situation, might well thus become subject to recurring uncertainty states, if and when they display any hint of non-conformity and are confronted with the threatened sanction. ‘Why aren’t you participating?’ ‘Why do you say *that*?’ ‘That’s not what we do here.’ And one form of possible response is just to adopt a pattern of ‘careful’, perhaps passive, conformity with the relevant norms. In this way it may then be that an individual (faced chronically, as it were, with the tacit choice of conformity, or the aversive *anticipation* of the consequences of non-conformity) will adopt conformity as a form of diversion behaviour. (Packer 2000; see also Zimbardo 2002)

And something else that we know about the way cognition works – hitherto not mentioned – is that people are quite capable of taking on, or confabulating for themselves, ex post facto, folk ‘explanations’ for behaviours in fact caused by unconscious affective responses to stimuli. (Nisbett and Wilson 1977) Perhaps then, it is possible in this way to construct positive reasons for continued, conforming participation in a group, which is in fact partially sustained simply by the incipient fear of what would happen if you left.

‘Extreme’ or sectarian beliefs:

As contemporary descriptions of kinds of beliefs, words such as ‘extremism’, ‘terrorism’, ‘sectarianism’ are often replete with pejorative and politically loaded connotations. (One person’s terrorist may be another person’s freedom fighter). The point here, however, is not to attempt in any sense to define what ought to count as an ‘extreme’ form of belief (although ‘sectarian’ is easier, and is used here to refer to groups beliefs which loosely

identify with those of a larger religion or political movement, but are typically more doctrinaire, ‘hard-line’, militant, or separatist). It is only to reflect on the kinds of experiences that might bring an individual to subscribe to some of the beliefs that are commonly described in these terms.

Let us suppose, for instance, that ‘A’, a single man in his 20’s, is a citizen of a relatively wealthy society, and his city is subject to an apparently random, ‘terrorist’ attack – perhaps a bomb is set off, innocent people are killed. He is informed by his Government that this attack was carried out by an ‘extreme’ religious group motivated by nothing more than hatred for his whole society, and which is planning further attacks. This is a situation likely to stimulate chronic uncertainty states in A. It is quite possible that his day-to-day goal-oriented activity, encounters with other people with whom he has close affective ties, will become coloured with a pervasive anxiety, a felt imperative to ‘do something!’, and an inability to do anything much to ‘solve the problem’.

And now, let’s say, A is exposed to the messages of a quasi-political movement which claims that his Government is failing to address a threat of more attacks, because it is allowing people of the same ethnic and religious affiliation as the suspected terrorists to emigrate to the country where A lives. Let us say that, lacking some countervailing ways of looking at the world, A begins to consistently ‘read’ his immediate social milieu through those messages – ‘*That* person might be a terrorist, and *that one* ...’ Here we have an even greater potential for highly aroused chronic uncertainty states to persist over extended periods, along with repetitive focus on ‘the problem’, and thus for the aversive nature of these states to become, as it were, *unrelenting* – lacking an ‘appropriate’ measure of relief.

In such a condition, I would argue, A is just more susceptible that he would otherwise be to the ‘appeal’ of beliefs which purport, in ‘neat’ us-and-them terms, to explain the world of the terrorist act; which hold out the prospect of security within the group, *and* appear to offer a way to respond, and regain some sense of control. (Perhaps the group promotes a ‘return’ to an idealised earlier nationalism united by ethnic and religious ‘purity’; it openly advocates a policy of deportation, and an end to immigration; and less openly carries out violent attacks.) A joins the group, and adopts their beliefs.

In seeking to deeply understand such an outcome – how *that* person came to be in that position – it might well be necessary in the end to know a lot more about the life history of the individual concerned. However, on the basis of this simple scenario, and to a first approximation, there appears to be two explanatorily relevant sets of factors at work;

which would lead us to regard A's behaviour (the adoption of certain beliefs) as a form of diversion behaviour. Firstly, given the prior conditions and A's response to them, part of the underlying aetiology of the outcome (I say) lay with the development in A of an unconscious imperative for relief *from* chronic, aversive arousal, and cognitive attention on a potential threat. (And in this way the conditions themselves – the attack, the Government's response, A's family circumstances – are causally implicated in what followed; even though it is nevertheless true that not everyone exposed to those circumstances would respond as he did.¹³)

And secondly, this nascent disposition for action became coupled with, and supported by something else, namely the adoption of a more explicit (mistaken) structure of belief about the world, along with the tacit expectation that this action will be effective in attaining a 'relieving' outcome.

There is a body of empirical evidence which shows that conversion to sectarian political or religious groups tends to rise during times of increased societal stress. (Packer 2000)

It is intended here that evidence and discussion in this section add to the picture of the possible detrimental social effects which may arise in a society which widely promulgates (or allows) conditions likely to give rise to chronic uncertainty states.

¹³ And, furthermore, nothing about this description assumes that A ought not to be considered personally responsible for his adopted beliefs, or any actions informed by them.

CHAPTER 7.

TWO ARGUMENTS AGAINST LIBERTARIANISM

7.1 INTRODUCTION

With the material of the last several chapters in place, the remainder of the study will examine the implications for matters of political philosophy raised in chapter 2. It will be useful, I think, to briefly outline the general approach I will take to this overall task, before setting out the goals of this chapter in particular.

As we saw in chapter 2, theories in both libertarian and social-liberal philosophy incorporate forms of psychological theory, consisting of various naturalistic claims about universal features of human psychology, and the realisation of these features under different kinds of socio-political conditions. These claims are deployed in support of normative claims about features of human nature we ought to regard as valuable, and the political system we ought to prefer.

Specifically, I showed that social-liberals and libertarians offer similar descriptions of capacities for everyday reasoning and self-determination, as a fundamental and valuable feature of human nature. And we saw that both libertarians and social-liberals accept a system combining a liberal State, defending certain basic rights and freedoms, and a free market economy. Libertarians in particular justify the State on the grounds that it will protect the expression of capacities for reasoning and self-determination from systemic interferences possible under other political systems.

However a key point of disagreement, I claimed, lies with differing social-liberal and libertarian claims about what then will happen for people *within* a liberal State-free market system, and what matters about what happens. Each side makes different (social-psychological) claims about how the realisation and expression of individual capacities for reasoning and self-determination will fare within a competitive market system tending to generate wide differences in economic success. And these claims support differing conclusions about the role of the State.

At the start of chapter 4, I claimed that libertarian and social-liberal descriptions of capacities for reasoning and self-determination presuppose a number of contributing, subsidiary capacities; and showed that accounts of cognitive or behavioural capacities meeting descriptions of all these subsidiary capacities can be found within cognitive neuroscience. Therefore, I claim that my own analysis of capacities for social reasoning

and decision making (or ‘SRD capacities’) offers a plausible, empirically grounded, contemporary account of capacities described, and treated as valuable, in social-liberal and libertarian theories.

On that basis grounds, the general strategy hereafter is to ask: given the proposed account of SRD capacities is accepted on these terms; and given that (based on material in chapter 6) we now have reasons to recognise a causal relationship between certain socioeconomic conditions occurring inside free market systems and detrimental impacts on SRD capacities; what then are the implications for key social-psychological claims on either side and the differing political claims they support? In order to tease out relevant issues, we will also begin to look more concretely at the activities of contemporary States following a social-liberal or libertarian prescription, to see how they may influence socioeconomic conditions in ways likely to alter the relative extent or severity of detrimental impacts on SRD capacities, across populations¹.

In this chapter, I will employ this general strategy to mount two arguments (as forecast in chapter 2) against the libertarian positions of F.A. Hayek and Robert Nozick. The first of these will claim that libertarians’ preference for a system combining a minimal or limited State with a free market economy, when we consider the likely effects of that scheme in action, is inconsistent with their arguments justifying the basic liberal State over other possible political systems. The second will claim that the consequentialist argument for their scheme – that it will tend to deliver increased material wealth to most over time – fails to recognise other relevant, countervailing consequences likely to arise, which make the libertarian system self-undermining, and may constitute a long-term threat to the viability of a liberal State-free market system as a whole.

7.2 THE ETHICAL INCONSISTENCY OF LIBERTARIANISM

A key move in making this argument will consist in affirming a connection between the kinds of socioeconomic conditions likely to occur under a system adopting libertarian

¹ I am not intending to contest the general (and similar) claims of both social-liberals and libertarians that human beings *do* commonly realise and express capacities for reasoning, decision making and self-determination. Indeed, the proposed model lends some qualified support to these claims. I have also conceded un-argued, the similar claims from both sides that human beings considered as a group display variability in their innate dispositions to develop certain talents or personality traits. I am not contesting the view that individual capacities for reasoning and self-determination ought to be regarded as valuable – given that this is something about which social-liberals and libertarians broadly agree – but (for the moment) asking only about the implications if my neuroscience-based view is accepted of capacities which both sides already agree are valuable.

principles, and detrimental impacts on human capacities which libertarians claim to value. And with the PF-A model in view, we have already canvassed a range of empirical evidence in public health research which (I say) shows that certain conditions commonly occurring within some existing societies *are* implicated in causing detrimental impacts on the SRD capacities of a proportion of those exposed to them. However, for this evidence to be brought to bear against the libertarian position, a further step is required. Although the societies featuring in the research cited – mainly the U.K. and the U.S.A. – no doubt are liberal-democratic, free market societies, none of them can yet be construed as implementing (wholly or partially) a libertarian scheme as recommended by either Hayek or Nozick; simply because we haven't to this point considered in sufficient detail, or in more practical terms, what those schemes do recommend. Therefore, we now need to examine the two schemes more closely, in order to make our best estimate of the kinds of socioeconomic conditions they would likely produce if fully implemented today.

One or two comments about the rationale to be employed here are in order. As we shall see, Hayek's theory is explicitly concerned with the actual historical development of liberal-democratic States embracing free market economic processes. And indeed he sees some of these States, perhaps mostly notably the U.K. and the U.S., as working examples of States enacting the very principles and practices he recommends, albeit to a greater or lesser extent over time. This makes the exercise of speculatively describing his scheme in action a relatively easy one. Nozick's preferred scheme, on the other hand, is constructed far more in the abstract. However, it nevertheless is clearly recommending a form of *laissez-faire* capitalism based on strong individual property, exchange and inheritance rights; overseen by a minimal State.

Furthermore, a number of political systems in which we are taking an interest have been directly informed by those working within the stream of Anglo-American liberal political philosophy, of which our selected theorists are part. Hayek is recognised as one of the most influential political philosophers of the twentieth century, and we have reasons to believe recent political leadership and substantial changes in policy in countries such as the U.S.A., the U.K. and Australia have been particularly influenced by his work. (Harvey 2005; Heywood 1998; George 1999) And amongst the many publications accompanying the emerging neoliberal movement in the U.S. during the 1970s, 'Nozick's *Anarchy, State and Utopia* [was] perhaps the most widely read and appreciated'. (Harvey 2005, p.44)

For these reasons, it is appropriate to consider the likely 'real world' effects of various policy moves consistent with Hayek's and Nozick's respective schemes – especially their views about the proper role of the State – by making our best estimate of the effects of

those policies if fully implemented within a socio-political and economic system similar to the U.S.A., the U.K. or Australia as we find them today. In what follows, some reasonably well-informed, background knowledge about how these societies work will be taken for granted.

7.2.1 The Basic Libertarian Scheme

As we have seen, in justifying their preferences against other possible political schemes, both Hayek and Nozick begin by arguing for a system combining the basic liberal State (having certain essential functions) and a ‘free’, competitive, market economy. The State here is to be understood as an *institution* (or set of institutions) which has as clients the members of a sizeable populace, occupying some defined geographic area/s. And by dint of exercising a monopoly on legitimate use of coercive force, and using taxation to garner resources, this State carries out a certain ‘minimal’ range of functions and is itself subject to certain constraints. Fundamentally, it makes and enforces certain rules (laws) with the aim of deterring and preventing the commission of acts which would interfere with individuals’ lives in certain ways; namely preventing them from freely exercising, as they choose, certain recognised universal rights or freedoms. And, of course, the State (or those exercising power within it) is to be subject to its own rules.

The State’s role also includes regulating activity within the market setting itself, in order to protect private property, ensure compliance with contracts, and so on. (Nozick 1975, Ch.5; Hayek 1960, pp.139-142) And it is understood that, by the having of a State exercising coercive force in these ways, by *creating* a secure and to some extent predictable ‘space’ for economic agency and activity; individual activity and the spontaneous forces of market activity are ‘unleashed’, and ‘flow out’ to occupy that space. (Hayek 1960, Ch.2; Nozick 1975, p.177)

In its essential outline, this basic liberal State, which does just enough to secure certain rights/freedoms, and the ‘space’ of free market activity and spontaneous ordering, is the minimal State preferred by Nozick. As we shall see, Hayek, by comparison, explicitly discusses in more practical terms a range of further structural or operational characteristics which, under his scheme, the State ought to have; or further activities it might legitimately undertake. And in this sense he does not recommend a ‘minimal’ State directly comparable to Nozick’s. However, the legitimate range of State functions allowed by Hayek is still *limited* in crucial ways, and specifically rules out various kinds of ‘extended’, egalitarian State activity which social-liberals (amongst others) would recommend. In this way the

two schemes are relevantly similar, and each is appropriately regarded as a form of libertarian scheme.

7.2.2 Hayek's Limited-State Scheme²

Hayek offers us a view of the historical development of liberal State-free market societies. He argues that these societies have been more economically dynamic and productive, more durable than other systems, precisely because they have embraced and protected individual freedoms: thereby ‘unleashing’ individual drive, acquisitiveness, entrepreneurship or what have you, and exposing it to the disciplines of market forces. (1960, Ch.2). As market forces do their work, and people whose talents and personal attributes are found to be valuable to others (with the ability to pay for them) rise to the top, it will very likely be the case, according to Hayek, that disparities in wealth and income will open up. This is not to be objected to but welcomed, because, even though some may ‘fall behind’ (p. 48), the new forms of activity and consumption available to the few are part of the dynamism and drive which ends up delivering greater material wealth to all. Thus, Hayek concludes, ‘it is difficult to see ... in what sense it could ever be legitimate to say that any one person is too far ahead of the rest or that it would be harmful to society if the progress of some greatly outstripped that of others.’ (p.46)

The *essential* task of the State, therefore, is to protect the individual liberty which enters into the space of market activity and undergoes the rigours of competition; it is to create a ‘protected sphere’ (p.139) of individual rights and freedoms, codified in general rules. Amongst other things, these will secure private property and personal security rights, protect against fraud and deception, and ensure enforceability of contracts. (pp.139-145) In this way, the fundamental ‘task of the lawgiver is not to set up a particular order but merely to create conditions in which an orderly arrangement [the market] can establish and ever renew itself.’ (p.161)

However, there is a range of further kinds of State activity which Hayek recognises as consistent with this essential task, or as expedient and not inconsistent with it. For example, in the vein of regulatory systems and controls, Hayek proposes: regulation of a ‘reliable and efficient monetary system’; some control on ‘techniques of production’ in the interests of public health, control of building codes, and licensing of professional practitioners such as doctors. In the vein of direct provision of public services, he suggests: defence and security, provision of roads, public sanitation measures and some major public works. (Ch.15)

² In this section all references are to Hayek (1960)

In the major areas of health and education provision, Hayek would allow that the State might fund some services itself, or fund a basic level of universal service. In either case, however, Hayek regards it as essential that the State *not* directly provide and control all or most of such services itself, but ‘make space’ for substantial private provisions – albeit perhaps partially funded from the public purse. Thus, in relation to education specifically, he advocates universal access to a certain (unspecified) minimum level, and favourably discusses a voucher system of funding, allowing parent choice within a mostly private system of providers. (pp.376-382) Beyond this minimum, he advocates access to more advanced levels of education on the basis of capacity to pay (and *not* merit or ability as such) and suggests that ‘it would be unreasonable to deny that society will get a better elite if ascent is not limited to one generation … and if children are not deprived of the chance to benefit from the better education and material environment which their parents may be able to provide.’ (p.90; see also pp.384-386)

As for health services, Hayek argues strongly against any form of universal provision of free or subsidised health care, and says that, ‘[i]n a field that is undergoing as rapid a change as medicine today, it can, at most, be the bad average standard of service that can be equally provided for all.’ Instead he favours a system of private health insurance. (pp.298-299)

On questions of social security payments, Hayek accepts a role for the State in provision of some funding support and perhaps services for the aged, unemployed and the ‘indigent, unfortunate and disabled’. (p.257) In relation to unemployment payments in particular, he recognises a need to prevent ‘severe physical privation’ and allows that all should enjoy the ‘security of an equal minimum income’. (p.259) Once again, however, he insists that this must not extend beyond the level of a necessary minimum; and certainly should not be undertaken on the basis of funding a certain standard of life which a person is thought to ‘deserve’. The motivation, in other words, ought to be more pragmatic than moral. The argument for a universal minimum, he says, ‘rests as much on the desire of individuals to protect themselves against the consequences of the extreme misery of their fellows as on any wish to force individuals to provide more effectively for their own needs.’ (p.286; see also Ch.19) Again, Hayek is in favour of private insurance arrangements against the risk of unemployment.

This attitude is extended also to the issue of aged pensions, where Hayek argues that the State must only aim to secure a minimum provision for all, and any move beyond this, to provide directly not merely for minimum requirements but for a lifestyle deemed, in some sense, to be ‘adequate’ would be in his view a serious mistake. Instead, he also strongly

favours a system of private insurance or saving for individuals to provide for their own retirement, or to fund a standard of life above the bare minimum which state payments ought to cover. (pp.295-297)

And in a similar vein, he also opposes any form of public housing provision beyond the marginal amount that might be required to provide for the most needy and destitute within the community.

These positions reflect a more general view, which goes to the heart of what defines Hayek's limited State. Although, as Hayek recognises, these kinds of measures are redistributive to an extent, the key for him is that, while they may be expedient to the general cause by supporting social stability or satisfying certain popular moral sensibilities, they can be so without crossing a principled limit beyond which the State ought not to venture. What the State should *not* do is seek to apply any form of egalitarian sentiment or principle as such, having the effect of redistribution, to the workings of the market itself. Or, to put it another way, beyond the marginal measures noted above, it should not attempt, in any sense, to systematically redress or modify economic inequalities which the workings of the market generates. (pp.41-46) This does not mean that Hayek would object to a greater level of equality were it to arise spontaneously *through* the working of the market, but it must not be a goal of the system. 'Economic inequality', he says, is just, 'not one of the evils which justify our resorting to discriminatory coercion or privilege as a remedy.' (p.88) And 'coercion and privilege' here refer precisely to taxation for any form of redistribution for egalitarian reasons – which, in Hayek's view, amount to treating both the less and the more talented/hardworking/fortunate *unequally*, in a misconceived attempt to render them more equal. (p.87)

What sort of socioeconomic conditions might one then expect, if Hayek's principles and policy framework were put into action today, in a free market economy and society similar to those in contemporary U.S.A., Australia or the U.K.? What is quite clear, firstly, is that across the field of developed Western economies over the last 10-20 years, these three stand out as nations which have, albeit to differing extents, embraced a *neo-liberal* policy program encompassing all or most of the elements of the Hayekian prescription. Specific policy measures characteristic of this program include:

- Privatisation of public services
- Deregulation of labour markets and employment conditions, and marginalising of trade unions

- Fostering substantial systems of private provision of education and/or health services, and private health insurance; systems of ‘user-pays’ access to higher education
- Favouring private provisions/insurance for retirement over publicly funded aged pension schemes
- Favouring private home ownership and private rental over public housing provision

Of those three, the U.S.A. would appear to reflect the Hayekian prescription most closely; for example, in its longstanding commitment to private, ‘user-pays’ health, welfare and education services.

(Harvey 2005)

In order to assess the recent performance of these nations it will be useful, in this context, to compare it with that of Scandinavian nations such as Norway, Sweden, the Netherlands or Denmark. Among developed Western, liberal-democratic nations with market economies, these are countries which, over the same period, have most consistently implemented a range of policies and programs fitting a social democratic (and social-liberal) formula. These include:

- Minimum-wage setting, regulation of employment conditions, and involvement of trade unions
- A strong emphasis on universal public systems of education and health services; and relatively small private sectors
- Comprehensive, publicly funded welfare/pension systems
- Emphasis on education of a skilled, flexible workforce; support and retraining for the unemployed
- Large scale provision of public housing

(Panic 2007; Harvey 2005)

In light of these contrasting policy descriptions, what kinds of socioeconomic conditions might we then expect to occur in countries pursuing a Hayekian/neo-liberal program, as compared to those employing a social-liberal program? For one thing, I suggest, we might anticipate that a program of privatisation of public services, labour market deregulation, and encouragement of private education would result in comparatively wide disparities of income and wealth across the population. Public service wage levels tend to be better protected by trade unions. An unregulated labour market will tend to drive wage levels up

for those with highly marketable skills, and down in areas of relatively unskilled work. Disparities in the quality of private and public education may translate into differences in skills and work opportunity. These suppositions would appear to be borne out in a number of key indicators of income differences. For example, the Gini coefficient is a widely recognised method of rating overall income inequality by nation, where a rating of 0 represents absolute equality and 100 maximal inequality. Recent assessments relevant to our discussion are shown in Figure 7.1.

Figure 7.1:

NOTE:

This figure is included on page 192 of the print copy of the thesis held in the University of Adelaide Library.

(UNDP 2008)

Income inequality in Australia was assessed on this measure at 35.2 in 1994, and a range of measures suggest that income inequality increased further under the reign of the neo-liberal government led by John Howard. The reader should note that these inequalities can and do occur, and may increase, even when the economies in question are growing; as has happened in Australia. (Stilwell and Jordan 2007; Saunders 2003)

Or as another indicator of income inequality, consider the data from the United Nations Development Program, as shown in Figure 7.2.

Figure 7.2:

NOTE:
This figure is included on page 193 of the print copy of
the thesis held in the University of Adelaide Library.

(UNDP 2005)

We might note also in comparing the below-the-poverty-line figure for the U.S. and Sweden in Figure 7.2, that unemployment rates in the two countries around the same time were both around 5-6 % of the workforce. (Panic 2007, p.156)

The Hayekian/neo-liberal prescription summarised above strongly emphasises private provision of both education and health services, and endorses differential levels of access to some of these services according to an ability to pay (either for the services direct, or for the necessary private insurance). If we assume relatively wide disparities in income/wealth, then we would reasonably expect such policies in action to produce over time relatively wide differences in use of and access to such services. In education, we would expect a pattern of differential access to both higher quality institutions, and higher levels of education, based on differences in capacity to purchase the relevant services, or indeed to live in places where they are available. In health, we would expect a similar pattern of differential access to higher quality, or more than basic, health care services.

It should be noted that, in this respect, the U.K. and Australia do not reflect the Hayekian model as strongly as the U.S.A., insofar as they both have a record of comprehensive public education *and* health systems, and policies supporting access to these systems based (for education) on merit or (for health services) on need. Nevertheless, by comparison with the Scandinavian countries mentioned, in the U.S., the U.K. and Australia there has in recent decades been a much greater emphasis on supporting a ‘mixed’ system, with a substantial role for private education and health services. In Australia in recent years there has been a substantial shift in policy and funding support

³ This indicator estimates the total of individual per-annum incomes across a population, then assesses the amount of that total figure received by the wealthiest 10% and the poorest 10% of the population, and calculates the difference between these two amounts as a ratio.

towards private health services, and access based on private insurance arrangements or capacity to pay. (E.g. Stanton 2001)

As a broad indicator of the likely pattern of outcomes from the two approaches to education provision, consider the data on basic literacy rates as shown in Figure 7.3.

Figure 7.3:

Country	% of those 15-65 lacking basic literacy skills (2005)
U.S.A.	20.0
U.K.	21.8
Netherlands	10.5
Norway	8.9
Sweden	7.5

(Panic 2007, p.163)

Or, consider data from the World Health Organisation in Figures 7.4 and 7.5 below as likely indicators of differential levels of access to quality health care.

Figure 7.4:

NOTE:

This figure is included on page 194 of the print copy of the thesis held in the University of Adelaide Library.

(WHO 2009)

Figure 7.5:

NOTE:
This figure is included on page 195 of the print copy of
the thesis held in the University of Adelaide Library.

(WHO 2009)

In relation to housing, wide disparities in income and wealth, along with a Hayekian policy against any substantial provision of public housing, are once again likely over time to drive differences in access to home ownership, reduce long-term housing security and increase reliance for those at the lower end of the income scale on the relative insecurity of private rental housing or charity services.

7.2.3 The Nozick Minimal-State Scheme

By contrast with Hayek, Nozick's *Anarchy, State, and Utopia* (1975) offers very little by way of description of what his scheme might look like in operation, except in the concluding stages where he outlines a 'framework for utopia'. (Ch. 10) This is a world protected by a minimal State, which otherwise consists in, 'a wide and diverse range of communities which people can enter if they are admitted, leave if they wish to, shape according to their wishes; a society in which utopian experimentation can be tried, different styles of life can be lived, and alternative visions of the good can be individually or jointly pursued.' (1975, p.307) Whatever the value of these speculations, they are not the 'real world application' of Nozick's scheme I intend to discuss here.

Despite the abstract nature of his description, Nozick does offer us the combination of a recognisably liberal State and a free market economy constrained by protected rights of acquisition, holding, exchange and/or gifting of property. He defines his own project as an extension of the Lockean liberalism which did so much to inform the political culture of his own country, the U.S.A. Within his scheme, Nozick's State is an institution which carries out the functions of the basic liberal State outlined above, and as with Hayek, the essence of these functions is to create a protected space for the exercise of individual agency within the constraints of a Smithian free market. Unlike Hayek, however, within this arrangement Nozick does not allow *any* taxation for *any* redistributive purpose beyond that required for the carrying out of the basic State functions. (1975, Ch.5)

In practice, therefore, within a contemporary setting, such a stance would rule out the existence of any form of public education or health services. It would most certainly rule out any kind of welfare system as such, notwithstanding what might or might not occur through acts of private charity. Indeed it would even rule out any form of public roads, sanitation, water storage or supply, energy provision, and so on – unless perhaps the State received some close-to-universal endorsement to tax and spend for such purposes. Furthermore, in light of his commitment to the Smithian free market, and given the inflexible commitment to private rights of property holding, exchange and inheritance, it can be reasonably assumed that Nozick's scheme applied today would over time result in wide disparities in income and accumulated wealth. And of course, this is something which Nozick is more than content to accept. (pp.157-158; pp.161-163)

Overall, then, we are led to conclude that, provided the process did not involve violation of rights, Nozick's scheme might very well arrive at a point combining great wealth for some with substantial material poverty for others; and that in this situation the poor would be likely to face *very* limited opportunities to attain secure housing, education for themselves or their children, or health care when they are sick. Would this 'gap' somehow be covered by private philanthropy? Well, who is to say? The fact is that, on Nozick's story, established rights in property simply must not, in any way, at any time, be compromised with taxation for any redistributive purposes, *no matter what the consequences*.

7.2.4 Conclusions

In the previous chapter we considered a range of evidence and argument to show that, within contemporary Western societies, conditions of low income/wealth, limited education, insecure employment, insecure housing, deprived neighbourhoods, and/or stressful, poorly rewarded work causally contribute to higher rates of the more common psychiatric disorders among those exposed to them. The majority of studies that show evidence of this causal relation were conducted within the U.S.A. and the U.K. – two States where Governments during the last 30 years have adopted libertarian-style policies and principles. (Harvey 2005) In light of this, together with the above more extended review of (especially) Hayek's and Nozick's political schemes and comparison of relevant indicators, two related conclusions are now warranted. Firstly, a liberal State-free market political system adopting libertarian principles is likely to generate those kinds of socioeconomic conditions understood here to contribute to detrimental impacts on SRD capacities. Secondly, such a libertarian-style system is likely over time to generate such

conditions to a significantly greater extent⁴, or in a more severe form, than a comparable system following a social-liberal program. (Or, to put it another way; other things being equal, we have reason to expect that, by comparison, a social-liberal suite of policies would be likely to mitigate the extent and/or severity of the relevant conditions.)

This claim finds some further support in comparisons of rates of common psychiatric disorders across countries, as shown in Figure 7.6 below.

Figure 7.6:

Category of disorder	Incidence rates (% of adult population) by country (year of publication of study)				
	Netherlands (1998) Rate/12 months	Europe* (2004) Rate/12 months	Australia (2000) Rate/12 months	U.K. (2003) Rate/1 week	U.S.A. (2005) Rate/12 months
All Mood disorders	5.7	4.2	5.8	-	9.5
All Anxiety disorders	8.3	6.4	9.7	-	18.1
Any neurotic disorder				16	
Depressive episode				21	
Source	Bijl et al 1998	ESEMeD committee 2004	Henderson et al 2000	Jenkins et al 2003	NIMH 2008

(*combined data Belgium, France, Germany, Italy, Netherlands, Spain)

These comparisons, however, are qualified on a number of counts. As the reader will see the data cited in this table spans a seven year period. The cohort assessed, period of assessment and/or diagnostic criteria/tools employed may also vary between studies. Furthermore, in relation to my own case, there is no intention here to assert that the particular kinds of socioeconomic factors we are presently discussing will be the only factors at work in influencing prevalence rates of these disorders, or differences of rates between countries. Factors of culture, gender, race or others may also be at work, and the influence of these may vary between countries. Nothing said here is intended to imply that the Scandinavian countries mentioned in comparisons above get their public policy perfectly right, or do not have relevant issues of their own to deal with.

If there are differences between neo-liberal policy programs adopted in States such as the U.S.A. or U.K. and the prescriptions of either Hayek or (especially) Nozick, then, I would

⁴ Proportionately to the size of population

submit, the elimination of those differences would only be likely to render the relevant conditions more widespread and/or severe.

7.2.5 Ethical Implications for Libertarianism

We are now in a position to draw together the several elements of the first proposed argument against the libertarian position.

We previously saw that libertarians place a fundamental value on everyday capacities for reasoning and decision making, as key elements of individual agency. Hayek describes these capacities as positive and valuable features of our nature which are distorted or diminished under the ‘evil’ of arbitrary or excessive coercion. (1960, p.21) Nozick describes SRD capacities as essential qualifying conditions for intrinsic rights, and as valuable in their own right. (1975, p.48) And we are proceeding now on the basis of accepting an evidence-based account of these capacities.

Within their respective arguments justifying the basic liberal State over other possible scheme, both Nozick and Hayek then extend the value they place on SRD capacities into their political arguments. They charge the State with the essential, egalitarian task of protecting certain spaces of non-interference in the expression of these capacities, and doing so equally for all. And they assert that *this* scheme ought to be preferred to others, precisely because it will protect us against a systemic potential for such interferences (unequally visited on some by others) within other political systems. Aspects of certain social or formal relations (e.g. master-slave relations), or State-individual relations likely to occur under these other systems, we are told, are likely to have detrimental *psychological* impacts on SRD capacities. For Hayek, a relation of coercion is likely to undermine and distort the free decision making *capacities* of those subject to it. (1960, p.133) For Nozick, one’s capacities can be undermined by fear. (1975, p.65-71)

The fully-fledged libertarian scheme, of course, then combines this basic egalitarian role for the State with a minimally regulated free-market economy. From the first, the negative rights or freedoms enshrined within the scheme favour non-interference in forms of ‘free’ individual *economic* agency and exchange. The essence of the minimal (Nozickian) or limited (Hayekian) State is that it not interfere in any systemic (redistributive) way with the spontaneous workings of market forces, or the substantial differences in socioeconomic position that are likely to emerge.

However, it now turns out that a contemporary liberal State-free market political system adopting libertarian principles, in virtue of the socioeconomic conditions it is likely to produce, will *itself* (systemically) tend to generate unequal and detrimental, psychological

impacts on SRD capacities. And we can now weigh that conclusion directly against libertarians' ethical commitments to these capacities, their political commitments to the essential role of the State, and the grounds of their fundamental objections to other possible systems. Clearly, if they are to be consistent with these commitments and arguments, the damaging effects of their own preferred system on capacities they claim to value ought to create an ethical requirement for action by the State; the agency charged with protecting these capacities. Given that it is the socioeconomic conditions, and inequalities of conditions, which are implicated, then the State according to its own primary mandate, ought to act to change those conditions, in ways that will be effective in mitigating the inequality of detrimental effects.

But, of course, it is precisely these kinds of action by the State which libertarians' normative commitment to the minimal/limited State definitively rules out. If that commitment were to be abandoned the libertarian scheme as such would cease to exist. Thus, libertarians' preference for a minimal or limited State-free market scheme, when we consider the likely effects of that scheme in action, is inconsistent with their fundamental ethical commitments made in justifying the liberal State over other possible political systems.

In relation to Hayek in particular, the strength of this argument is reinforced when we review his views of coercion. As we saw in chapter 2, Hayek gives us a range of descriptions of the reasoning and decision-making capacities which he values, and argues that coercion is wrong precisely because it puts psychological obstacles in the way of the expression of these capacities; such that 'I [may] still choose, but my mind is made someone else's tool'. (1960, p.133) A person under coercion, Hayek says, 'is unable to use his own intelligence or knowledge or to follow his own aims and beliefs...[and] Coercion is evil precisely because it thus eliminates an individual as a thinking and valuing person'. (1960, p.21)

In chapter 4, I argued that according to our analysis of vulnerability we could agree that a significant coercive threat might indeed have inhibiting or damaging psychological effects on SRD capacities. I argued that coerced 'choices' made by individuals under an effective threat, might be cogently interpreted as a form of diversion behaviour, adopted as a response to chronic uncertainty and aversive expectancies.

Hayek would have us prefer his recommended political scheme because it will effectively prevent (or avoid) the tendencies in other possible systems to allow or engage in excessive or arbitrary coercion, and (he says) precisely because coercion will have these kinds of debilitating psychological effects. However, I have shown that Hayek's preferred

scheme, in virtue of *its* systemic characteristics, would in practice be highly likely to contribute to detrimental psychological impacts on the capacities he claims to value, and do so unequally. Hayek's State, charged as it is with acting to prevent such impacts as they might occur under other systems, is specifically prevented from acting to take available measures to mitigate directly comparable kinds of impacts occurring within his own preferred system.

Robert Nozick would have us prefer his minimal State-free market system to other kinds of possible political formation – anarchism (1975, ch.2-3), socialism (pp.162-163), or Rawlsian social-liberalism (ch.7) – because, in one way or another, in virtue of some systemic characteristic of their own, they would in his view allow some more-than-incidental forms of interference with rights. If my account of SRD capacities is accepted, however, it becomes clear that Nozick's preferred scheme in action would, in virtue of *its* systemic characteristics, create socioeconomic conditions which would act to undermine these capacities in a proportion of those exposed to them. And this must then count as an ‘attack’ on the very capacities which qualify one for Nozickian rights in the first place (1970, pp.48-49), and which enter into the enactment of rights (pp.216-227). Nozick's minimal State is justified on the basis of protecting rights, and is licensed to constrain various kinds of actions – theft, fraud – within the realm of market activity because they would count as a threat to rights. Some actions such as assault, we are told ought to be prevented by the State because they will create psychological obstacles (states of fear) to the enacting of rights. (1975, pp.65-71) And yet, Nozick's State is in principle disbarred from interfering in or modifying socioeconomic conditions highly likely to occur under its jurisdiction, which will contribute to aversive psychological states, and other significant detrimental effects on the psychological capacities which underpin and enter into rights.

As an important rider to this argument, we can now also recognise that the libertarian social selection explanation of the success distribution simply fails to acknowledge or describe ‘feedback effects’ likely to occur within their preferred system; whereby certain socioeconomic conditions *are* implicated in causing unequal, detrimental impacts on capacities which libertarians claim to value. And, of course, it is (broadly speaking) just those kinds of unequal effects which social-liberals such as T.H. Green were concerned to point to as a by-product of classical, *laissez-faire* liberal systems in action.

Furthermore, in the course of considering a range of epidemiological evidence in chapter 5, we also encountered some reasons to strongly suspect that having some form of common psychiatric disorder (not surprisingly) is likely to compromise one's work

performance. For example, Weich and Lewis report that ‘common mental disorders account for more than one third of days lost from work because of ill-health’. (1998, p.8) We also saw evidence that the occurrence of a mood or anxiety disorder in parents is likely to compromise their children’s performance at school. (E.g. Kurtz et al 1993) And it is more than reasonable to suppose that this in turn may have a longer-term, limiting effect on that child’s work opportunities. Thus it is likely that the kinds of detrimental impacts we are considering may also influence the success distribution, due to selection effects operating over people whose capacities have already been compromised. We can therefore conclude that the libertarian social selection explanation of the success distribution – as market forces operating over variability in innate talents and traits – is wrong.

7.3 FLAWS IN THE LIBERTARIAN CONSEQUENTIALIST ARGUMENT

In chapter 2, we considered a form of consequentialist argument proffered in defence of the libertarians’ limited/minimal State-free market scheme. This argument also draws upon a Smithian, ‘invisible-hand’ view of the market. It claims that, under a libertarian-style system, market forces (unencumbered by State intervention) will create ‘incentives’ for individual effort, reward those with talents others are willing to pay for, etc; in a way likely to produce a dynamic, competitive economy and, over time, greater overall material benefits (greater than would be achieved under other kinds of system). (Hayek 1960, p.51; Nozick 1975, p.177)

In this section I will argue that the libertarians’ consequentialist argument simply fails to recognise certain significant risks and liabilities which, over time, are likely to arise under their preferred system (as a consequence of its propensity to cause detrimental impacts on SRD capacities). And if we are meant to prefer libertarian-style economic settings on the basis of a social consequence they are putatively likely to deliver, then shouldn’t other likely consequences of those settings also be considered? If the system which will deliver certain supposed benefits is also disposed in the process to generate risks and costs, shouldn’t we be in a position to weigh both sides of the equation? I will conclude that the risks and costs identified below constitute a self-undermining tendency in the libertarian system, and this severely weakens the consequentialist argument. Furthermore, I will say that the realisation of this tendency might in certain circumstances come to constitute a threat to the viability of a liberal State-free market system as a whole. In this case, the libertarian scheme would fail to meet a basic condition of its own justification.

7.3.1 Risks and Liabilities

Physical health:

Although this is not an issue I have explored, it has been previously noted that a considerable body of evidence exists in support of the view that adverse socioeconomic circumstances, by causing chronic arousal of stress response systems, can have considerable, detrimental impacts on physical health. A significant body of evidence is available suggesting that chronic arousal of stress systems increases risk of a number of physical health problems, including: cardiovascular disease, diabetes, and obesity. And all of these conditions (and an overall level of reduced longevity) tend to be more prevalent at the lower end of the socioeconomic scale. (Marmot 2004; Sapolsky 2005; McEwen 2002)

If socioeconomic conditions are indeed contributing to increased risk and/or incidence of such problems, it is likely to have significant social and economic implications.

Increased rates of physical ill-health will impact on absenteeism from work and decreased productivity. Extra demands are likely to be made on health services; in the numbers of GP or hospital visits, rates of drug prescription, or of long-term hospitalisation. All of these will have cost implications. If a State relies heavily on private health insurance and under-funds public services, the health of those at the lower end of the SES scale may decline further, and increase a gap between the health outcomes of rich and poor. For a State maintaining a public health system, costs will be larger. Those who cannot sustain work will make cost demands on welfare systems, and there may be increased demands on well people to act in the role of carers for ill family members.

Mental health:

A very similar kind of case can be made for some of the potential, broad economic implications of increasing rates of mental illness; and the signs for Western societies are concerning. As public health researcher and author, Richard Eckersley, points out:

Depression is the leading cause of disability in the world. In the global ranking of the burden of disease, measured in terms of both disability and death, major depression is projected to rise from fourth in 1990 to second in 2020. In high-income countries, depression and other neuropsychiatric conditions account for more disease burden than heart disease or cancer. (2006, p.255)

Weich and Lewis report that, in 1998 within the UK, the most common psychiatric disorders were estimated to account for one third of days lost from work, one fifth of GP consultations, and an overall annual cost to the nation in the order of £6 billion pounds, two thirds of which is attributable to lost productivity. (1998, p.8) A more recent estimate from American research firm, Rand Corporation, suggests that depression alone cost American employers \$51 billion (U.S.) in absenteeism and lost productivity, not including medical costs. (Rand Health 2004) The U.S. National Institute of Mental Health reports that as of 2005, more than 20 million U.S. adults will have a mood disorder, and 40 million adults will have an anxiety disorder in any given year. (2008) There is evidence to suggest overall population rates of disorders in the U.K. and U.S.A. have increased over recent decades. (Lewis and Wilkinson 1993; Twenge 2000; Eckersley 2006)

Beyond these kinds of implications, there is another area of concern which has not yet been canvassed directly; one which is distinctive and important, and has considerable social and political implications of its own. In the previous chapter we considered a range of evidence reflecting on the potential family impacts of psychiatric disorders within contemporary Western social settings, for example:

- Depression in parents is positively associated with both abuse and neglect of children; and 50-80% of abuse or neglect took place in families rated in the lowest income or education bands (Kurtz et al 1993)
- Child victims of abuse or neglect displayed impaired school performance (Kurtz et al 1993)
- Depression or alcohol and drug abuse in men increased the subsequent risk of physical violence against their female partners (Schumacher et al 2001)
- Muntaner et al (1998) found an inverse association between years of education, and wealth, and the prevalence of alcohol abuse or dependence
- Adverse early childhood experience increased the risk of developing symptoms of depression in early adulthood (Schilling et al 2008)
- Manning and Gregoire (2006) argue that stress and mental illness in parents can adversely affect parenting styles in ways likely to impact directly on infant attachment, cognitive development, and social, emotional and behavioural development; and claim that combinations of psychopathology, substance abuse and social disadvantage within families are strong predictors of older children displaying: poor academic performance, poor self esteem, depression, substance abuse, and antisocial attitudes

Cumulatively, such evidence clearly suggests a potential for detrimental impacts on mental health, to be in effect transmitted from one generation to the next via the home/family environment, especially in areas of relative socioeconomic disadvantage. In other words, it would seem that contemporary Western societies have the potential to generate and sustain ‘pockets’ of concentrated pathology; and we would do well to ask whether, without effective action to address it, pathological effects may actually tend to get worse as generations pass.

Described in more general terms, I believe such evidence signals the potential for a kind of ‘toxic cocktail’ or *combination* of poor external conditions, socially maladaptive behaviours, and negative internal impacts, creating micro-social conditions which simply fail to produce appropriate conditions for constructive cognitive-affective development in children, or directly damage and distort such development. And such children grown up would seem, on the evidence, more likely to fail their own children in the same ways.

Potential ingredients in the ‘cocktail’ would appear to include:

- Poor psychiatric health in parents
- Diversion behaviour in the form of alcohol or drug abuse and dependence (especially by men), or other addictive behaviour
- Violence or abuse by men against a female partner
- Abuse or neglect, including sexual abuse, perpetrated by parents against their children
- Loss of parental capacity to sustain home conditions positively conducive to cognitive-affective development
- Lower educational attainment, increased risk of mental health problems, substance abuse and unemployment for children subject to abuse or neglect

Apart from the costs paid by both adults and children involved in such situations, what might some of the potential implications be for society at large? For one thing, it would seem very likely that the detrimental impacts on children might have considerable implications for an education system. Children arriving at school with impaired cognitive-affective development, or having undergone severe stress within the home environment, may demand considerable extra investment in remedial programs simply to allow them to achieve even relatively basic forms of learning.

The dislocation from ‘mainstream’ activities and opportunities may divert behaviour into other areas, such as crime, which of course carries social cost implications of its own.

For a modern, technological economy, which demands an increasingly well-educated workforce, the creation of such pockets of compromised performance represents a considerable loss to potential productivity. The loss of some kinds of low-skill manual work may simply mean that people in such a position are more likely to experience intergenerational unemployment, or under-employment.

Cognitive-affective development:

The above discussion, of course, already raises issues regarding potential damaging impacts on childhood development. And it bears reiterating that the matter of detrimental impacts on SRD capacities as it may relate specifically to issues of childhood development is not an issue I have addressed in any depth. However, I have suggested in general terms how parental interaction with young children might offer forms of external regulatory constraint which subserve forms of social learning. (Schore 1994)

It would seem legitimate to ask in this context, then, whether the social development of ‘pockets’ of more severe problems within the family environment might itself represent the worse end of a spectrum. In other words, is it possible that contemporary kinds of socioeconomic conditions are undermining in more subtle and wider ways, the abilities of parents to consistently engage in constructive, beneficial interactions with their young children?

Economic pressures placed on both parents to work, or for mothers to return to work relatively soon after having a child, are a source of possible concern. Or, the impacts of technology and the media in the home (and the use of technology as a substitute for direct parent-child interaction) may also be an issue. (Huesmann et al 2003) The increased rates of family breakdown, fragmentation of extended families, and the loss of acculturated skills in child-rearing may all be factors to consider. We have reason to understand that the occurrence of psychiatric disorders, or addictive behaviours such as substance abuse, may contribute to problems such as domestic violence. (E.g. Schumacher et al 2001)

Of course, it is not intended here to imply that the PF-A model, and overall analysis offered here, can adequately encompass all that might be relevant within cognitive neuroscience and psychology, *for* these issues. What the model does do, however (as discussed in chapter 4), is support a view that forms of direct, attentive *parent-child interaction* *may* be able to provide vital forms of cognitive-affective activity (for the child) which are conducive to development and social learning, and the gradual development of capacities to sustain goal-oriented activity and skilfully navigate social environments. (Schore 1994) And, allied to that, we have seen how contemporary social conditions can

impact in several ways on behaviour, which is likely to include forms of behaviour which parents engage in with their children.

If wider societal factors are able to negatively impact on the quality and extent of constructive parent-child interactions, or increase detrimental interactions, even if only in subtle ways, then it seems the potential exists for a more widespread, gradual diminution of SRD capacities. And if such a process were underway, its ‘full’ sociological implications might not become readily apparent for some time.

Cultural fragmentation and extremism:

In the previous chapter I claimed that, in certain circumstances, a person undergoing chronic states of uncertainty might be more susceptible to the superficial attractions of an extremist organisation. I suggested that membership in such a group, and adoption of the ideology, could represent a form of diversion behaviour. In my hypothetical case, the circumstances in question were unusual; the aftermath of a terrorist act. However, we have no reason to believe that adoption of similar kinds of diversion behaviour might not be influenced by more ‘banal’, everyday sources of chronic uncertainty. Indeed, I would claim that people living in low-SES conditions, with relatively low educational achievement, and consequently more likelihood of experiencing chronic uncertainty states, are also (*ceteris paribus*) more likely to be more susceptible to the superficial attractions of gangs, cults, sects, or extremist political movements. There is some evidence in support of such a contention. As Packer reports, ‘Individuals undergoing personal stress and lifestyle shifts are statistically more likely to get involved with unusual or innovative religious movements.’ (2000, p.349)

Such a social process, over time, might contribute to a range of risks within liberal-democratic societies: cultural fragmentation, exploitation of the vulnerable, criminal gang activity, or politically motivated violence⁵.

7.3.2 Implications for the Libertarian Consequentialist Argument

Over the course of several chapters, we have seen that certain kinds of socioeconomic conditions commonly present within existing liberal State-free market societies can influence the onset of chronic uncertainty states, and are likely to have significant, detrimental psychological impacts on a proportion of those exposed to them. We have seen

⁵ The proposed analysis might also have cogent things to say about risks which societies may create for themselves when they promulgate or support wars or State-sponsored repression in other countries; or when they engage internationally in economic practices which ignore social development needs in less wealthy countries.

evidence that such impacts will tend to fall disproportionately on those within the lower socioeconomic strata of the population. We have reasons to believe that a contemporary society adopting libertarian principles (*ceteris paribus*) is likely to generate the relevant conditions to a greater extent than it otherwise would, and thus to significantly increase the incidence of these detrimental impacts.

In the several subsections above, I have attempted to encapsulate some of the relevant detrimental effect in terms of their broader sociological or economic effects and/or implications. The salient point, therefore, is to say that, if a liberal-democratic free market system embraces libertarian-style principles and policies, and continues to do so into the future, then certain consequences are likely to result. Tendencies we can already see at work are likely to ‘play-out’ even further. Forms of pathology in parents, or in families, are likely to have effects on the next generation, etc. If this occurs, and no effective remedial actions are taken, then we have some reasons to suspect that that society may be creating longer-term risks not only to individual physical or mental health, but to its own broader social stability and viability. Existing cost pressures on health, welfare or education systems services might well increase further. If these are not met with direct public spending in those areas, then it seems likely the problems in question would be likely to generate cost pressures elsewhere, such as in police services, prisons and the justice system.

The consequentialist argument in favour of a libertarian system says, briefly, that we ought to favour a minimally-regulated, competitive market system (overseen by a non-interventionist State) because over time it will tend to deliver a greater material wealth overall (albeit likely to be distributed very unevenly). Thus, most will be materially better off (than they would be under an interventionist socialist, or social-liberal system). The libertarians’ favoured Smithian description of market forces at work, and their social selection explanation of the success distribution, appears favourable to this claim (and does not point to any likely source of possible, countervailing problems). However, *whether or not* the claim proves to be true, we now have a plausible case to say that the preferred socioeconomic settings are likely in practice to generate *other* consequences; and these can come to have significant social and/or economic *costs* (or potential costs) of their own. The propensity to generate damaging impacts on some of the basic capacities required for constructive and productive social relations, and to create such costs, constitutes a self-undermining tendency in the libertarian system. The consequentialist argument which

would have us prefer a libertarian-style economic system is simply inadequate because it fails to take account of these countervailing tendencies⁶.

Furthermore, I suggested earlier that other implications would follow for the libertarian cause, if in fact the identified risks and costs ever began to constitute a threat to the viability of the system itself. In light of our current social analysis, are there circumstances in which such a turn of events might plausibly come about? One possible source of such concern, at the time of writing, lies with the occurrence of a protracted economic downturn (especially if it were accompanied by an on-going adherence to libertarian principles, which would rule out State intervention)⁷. In this situation, all the tendencies noted above may be exacerbated by the psycho-social effects of large-scale unemployment, loss of secure housing, decreasing wage rates and so on – all likely to be concentrated at the lower end of the SES scale.

If such changes, and exacerbation of risks and costs, were to begin to destabilise the socioeconomic order itself, then clearly the liberal State would have failed to satisfy one of the basic reasons libertarians claim for its existence, being to create and sustain a secure social ‘space’ in which the market can operate effectively. (Hayek 1960, p.161) If strict adherence to libertarian principles were to have the consequence of undermining such a basic operational tenet of the preferred system itself, the consequentialist argument and the libertarian scheme as a whole would collapse into self-contradiction.

Finally, there is another possible consequence of libertarianism which, if realised, would contradict its commitment to a value of individual freedom. In short, I would claim that in certain circumstances a libertarian politics will be inclined to shift toward authoritarianism. The origins of this tendency, I would suggest, can be seen in the following terms. To begin with, it is reasonable to assume that people with political power who have embraced libertarian political principles, are likely, in the process, to have adopted the structure of beliefs about human psychology and social psychology that we have seen underpin the political theory. One key element of this psychology, I have argued, is the libertarian appeal to a social selection explanation of the success distribution. We have seen how such

⁶ States such as the U.K. and U.S.A. which pursued libertarian-style, neo-liberal programs in the late 1980s to early 2000s, generally experienced considerable economic growth during that time. (Harvey 2005). However we have some evidence suggesting that rates of the more common disorders increased during that time in the U.K. (Lewis and Wilkinson 1993); were higher in both countries than in comparable social-democratic countries (Bijl et al 1998; Jenkins et al 2003; NIMH 2008); and were markedly higher in the 90s than in the 50s. (Twenge 2000) I have also cited evidence from Australia in the same period (under the neo-liberal Howard government), showing that differences between rich and poor increased, even when the economy as a whole was growing. (Stilwell and Jordan 2007; Saunders 2003)

⁷ On current evidence, however, it would seem neo-liberals in the U.S. are more than happy to support massive State intervention when their own interests are threatened.

an explanation suits the associated commitment to a limited/minimal State, by omitting description of any system features likely to undermine capacities for individual agency and self-determination. Differences in how well people do, we are told, are generally the product of market forces operating (impartially) over innate differences between people.

Perhaps then, it comes as no surprise to learn that the political right is also inclined to appeal to social selection explanations of the results of public health studies showing, for example, associations between low SES status and increased rates of mental ill-health. (Marmot 2004, pp.133-139) And, indeed, we see Nozick himself do this in relation to a putative correlation between dull, repetitive forms of work and ‘deadened’, unsatisfied individuals. He says, ‘given selective entry into certain kinds of jobs, the correlation may be due to the fact that those predisposed to show low independent activity are just those who are most willing to take and remain with certain jobs involving little opportunity for independent flowering.’ (1975, p.248)

It would seem, then, that a person with political power holding to a libertarian politics and this form of social psychology is likely to strongly reject the whole analysis proposed here, or other evidence showing social problems or inequalities caused in part by socioeconomic conditions commonly occurring under the economic system he favours. But, if the analysis proposed here is correct, then clearly that person is in a very poor position to recognise or understand the nature and causes of the significant social risks described above.

If those risks were realised (or realised more extensively than they are already), and as a consequence we begin to see, lets say, increasing rates of violent crime, social or political unrest or what have you, how then would we expect our power-holding libertarian to respond? I would suggest that, in the absence of another explanatory perspective, from which other policy responses might be derived, he is quite likely to extend the use of the very State mechanisms which are supposed to secure the social order; the coercive tools of law, policing, court system and imprisonment. And, it is in this way, I would claim, that a libertarian politics can in certain circumstances shift toward an authoritarian politics – *extending* the coercive role of the State in defence of established economic interests.

(Harvey 2005, pp.36-38)

It is of interest that Hayek himself recognises some substance to both the above concerns. He acknowledges that the on-going stability of the system he prefers will rely to a significant extent on a background level of co-operative social relations; which he

construes as conformity with moral or social norms. And he explicitly signals a libertarian tendency to respond with an increased use of coercion, if this background of social co-operation begins to dissipate.

Of these conventions and customs of human intercourse, the moral rules are the most important but by no means the only significant ones. We understand one another and get along with one another, are able to act successfully on our plans, because, most of the time, members of our civilization conform to unconscious patterns of conduct, show a regularity in their actions that is not the result of command or coercion, often not even of any conscious adherence to known rules, but of firmly established habits and traditions. The general observance of these conventions is a necessary condition of the orderliness of the world in which we live ... In some instances *it would be necessary, for the smooth running of society, to secure a similar uniformity by coercion, if such conventions and rules were not observed often enough.* Coercion, then, may sometimes be avoidable only because a high degree of voluntary conformity exists, which means that voluntary conformity may be a condition of a beneficial working of freedom. It is indeed a truth ... that freedom has never worked without deeply ingrained moral beliefs and that *coercion can be reduced to a minimum only where individuals can be expected as a rule to conform voluntarily to certain principles.* (1960, p.62, italics added)

7.4 CONCLUSION

In the end it appears that libertarian political philosophy incorporates an overly idealised view of its own preferred socio-political system – how it will work and what its effects are likely to be. It is clearly convenient to their political cause for libertarians to portray a *laissez-faire* system as if it has no intrinsic tendencies to cause damaging impacts on basic human capacities they claim to value – capacities for everyday reasoning and decision making in social settings. However, when the nature of these capacities is better understood, this implicit claim, so central to the self-consistency of the libertarian case, is shown to be false. The preferred libertarian system will create socioeconomic conditions which causally contribute to significant detrimental impacts on SRD capacities. Although libertarians justify the basic liberal State on the grounds of preventing such systemic impacts as they would putatively tend to occur under other political systems, it is barred from intervening in the socioeconomic conditions in question within the system it governs, in ways which we know are likely to mitigate their negative impacts.

The likely extent and severity of detrimental impacts on SRD capacities over time, under a libertarian style system, will give rise to significant social and political risks and

costs. These could be largely avoided by a political system with a more adequate and realistic view of the relationship between social conditions and individual psychology.

CHAPTER 8.

TOWARDS A NEW SOCIAL-LIBERAL POLITICAL THEORY

8.1 INTRODUCTION

The previous chapter examined some of the main implications of my approach for libertarianism. The first task here will be to consider directly what it might mean for a contemporary social-liberal politics. In this chapter I will not specifically address the work of any individual theorist, but continue to see social-liberal theory in terms of the general position outlined in chapter 2. More particularly, however, I will look at a contemporary social-liberalism in an applied form; that is, in the form of a contemporary social-democratic State implementing the characteristic suite of social-liberal, egalitarian policies and programs described in chapter 6.

I will argue that we have reasons now to prefer a social-liberal State to a libertarian State, but also claim that a social-democratic egalitarian politics has significant limitations.

With a critical analysis of both social-liberal and libertarian positions in hand, I will conclude by outlining an alternative position – described in part as the activities of a ‘new social-liberal State’ – and claim that this provides several elements of a new social-liberal political theory and practice.

8.2 ASSESSING THE SOCIAL-LIBERAL POSITION

In this section I will continue to assume that the proposed model of social reasoning and decision making is accepted as a plausible account of capacities for everyday reasoning and self-determination as described (and valued) in social-liberal and libertarian theory.

What then are we to make of the social-liberal position outlined in chapter 2, in light of the overall analysis? We saw that social-liberals employ an interactionist perspective to explain patterns of difference in success within the competitive conditions of a market system; seeing the outcomes as determined by interaction between variation in people’s innate dispositions and potentialities, and variation in their exposure to particular socioeconomic circumstances. (E.g. Rawls 1971, p.72) It is now clear that, in general terms, the social psychology proposed here is more in keeping with this interactionist view than with the libertarian, social-selection position.

We saw also that social-liberals criticised an earlier form of *laissez-faire* liberalism on grounds that, by exposing significant numbers of people to deprived socioeconomic

circumstances, it was in effect severely limiting their chances of making the best of themselves, relative to others. And commitment to a small, non-interventionist State stood in the way of public measures able to reduce this form of inequality.

I have shown that several kinds of socioeconomic condition commonly occurring in liberal State-free market societies do causally contribute to detrimental impacts on SRD capacities in a proportion of those exposed to them. And we have sound reasons to believe that a State adopting libertarian principles is likely to render the relevant conditions more widespread and severe than they otherwise might be, and exacerbate the damaging effects. The kinds of commonly occurring conditions include: low income/wealth, limited access to good quality education, insecure housing, and insecure or stressful employment conditions.

We know that SRD capacities are regarded as fundamentally valuable by both libertarians and social-liberals, and both charge the State with a responsibility to prevent systemic and unequal impacts on the expression of these capacities. On these terms, therefore, I would conclude that, instead of a libertarian State, we ought to prefer a social-liberal State which pays attention to inequalities in people's exposure to socioeconomic circumstances such as those above; and take steps to address these inequalities in ways likely to reduce detrimental impacts on SRD capacities. Any measures implemented in this vein I have described as egalitarian measures.

Furthermore, if the risks and liabilities identified in the previous chapter do constitute a longer-term threat to the stability of existing liberal-democratic systems, then the members of those societies would also be justified in preferring a social-liberal State on the grounds of defending social stability and cohesion.

An ability to make and support such claims is seen here as politically important, given the continuing strong influence of neo-liberal thinking and values within Western political and economic elites. (Harvey 2005) And clearly we are now in a position to endorse a number of familiar forms of egalitarian social-liberal policies and programs in areas such as public education and health, housing, welfare or minimum wage setting. The analysis in the previous chapter suggests that these are likely to reduce disparities of exposure to socioeconomic conditions such as low income, as they would otherwise occur under libertarian policies; and so are likely to reduce the relative scope and severity of the relevant detrimental impacts.

However, for reasons to be outlined below, the intention here is *not* to uncritically or simply endorse a conventional social-liberal program over a libertarian/neo-liberal alternative. In order to see why, I will need to bring to the fore certain limitations in

familiar forms of egalitarian policy or program as implemented by social-democratic States.

8.2.1 Challenges for Egalitarian Social Policy

The liberal State is a set of institutions which, amongst other things: holds a monopoly on use of legitimate force, creates laws binding over all its clients and the actions of the State itself, employs coercive mechanisms to enforce those laws, and is subject to limitations or checks on its powers. The State can garner resources through taxation to pay for its legitimate functions. And it is clear that contemporary liberal-democratic States use these mechanisms in various ways, with many different objectives in view. So far as their use for egalitarian purposes is concerned, however, I would suggest that such mechanisms offer two direct, primary means for the social-liberal State to shape the broad, external conditions within which its clients operate. Firstly, the State can create or change what I will call *formal conditions*, namely its own regime of laws; for example, to codify and enforce certain universal rights, legislate against sexist or racist labour practices, institute minimum wage requirements, or make education compulsory to a certain level. And secondly it can deploy resources to change people's *material conditions* (broadly defined); for example, by directly funding universal health and education services, public housing programs, income protection for the unemployed, or aged pension schemes. In both cases, it is of the essence of egalitarian measures instituted by the State that they will typically address what I will call 'broad-scale' formal or material conditions. In other words, egalitarian measures will typically be State actions or programs designed, in some sense, to change formal or material conditions across a whole client population, or the conditions of one sub-population vis-à-vis another. The examples above, I suggest, would all meet that description.

Given that the widespread, fulsome realisation of SRD capacities is regarded as valuable and important; what does the overall analysis now have to say about this suite of egalitarian measures, commonly to be found in the contemporary practices of social-democratic States such those discussed in chapter 6? Well, if we compare conditions likely to obtain under these practices as an alternative to conditions under a strict libertarian/neoliberal regime, the answer, in the most general terms, is this: we would expect those kinds of egalitarian policies and programs to do some considerable good, *but only to an extent*.

The rationale behind the first part of that statement has already been made clear; but why the caveat? Here I wish to argue that, in relation to the issues we're interested in, the

broad-scale application of these policies and programs has significant *limitations*; both in terms of the scope of what it can achieve, and its merit as the main, on-going social-policy methodology of a social-democratic State. In order to expose these limitations it will be useful to briefly reiterate some of the key features of my own approach.

This study, of course, has certainly been concerned to investigate causal relationships between social, economic or cultural conditions and effects on individuals within populations. But, let us say, these relationships are not taken to be simple or direct. (There is no claim here, for instance, that ‘low income just *causes* mental ill-health.’) In particular, the argument has invoked neuropsychological processes of cognitive perception and *affective evaluation* of external conditions as playing a key ‘mediating’ role between certain external conditions and detrimental effects on individual psychological (SRD) capacities. And, simply put, it is in virtue of this ‘mediating’ role that the determination of *these* outcomes – the onset of chronic uncertainty states, a psychiatric disorder or a diversion behaviour – will in each concrete instance depend on the nature of the interaction between the internal, cognitive-affective resources and dispositions of the individual concerned, and the precise nature of the obtaining external circumstances.

It is in recognition of a key role played by processes of cognitive-affective evaluation (or appraisal), I think, that a number of leading thinkers in epidemiology now sometimes find it appropriate to describe social conditions implicated in causing psychological effects, leading to stress responses, and effects on either mental or physical health, in terms of *psychosocial conditions*. (E.g. Marmot 2004; Eckersley 2006) I find this an appropriate description, and will continue to employ it here.

So, when it comes to assessing the relative influences of different kinds of social conditions on the populations exposed to them, we have certainly come to the conclusion that differences in people’s conditions matter. But, equally, in relation to the matters we’re interested in, we have seen that it is not material or formal conditions *as such* which matter, so much as it is psychosocial conditions. It is exposure to different kinds of psychosocial conditions – specifically, conditions defined in terms of their propensity to stimulate chronic uncertainty states – which is understood to entail different degrees of risk of detrimental effects on SRD capacities. Or, to put it another way, material conditions matter insofar as they form a part of psychosocial conditions. The same essential point was made in chapter 5 when I argued that, in relation to some of the main kinds of socioeconomic conditions we considered, it is not absolute levels of income, wealth, education, or status of occupation as such which matters (for chronic uncertainty etc), but

the neuropsychological implications of one's financial position, education, employment or what have you, within a particular social context.

It is in virtue of the way neural systems such as the orbitofrontal cortex and the amygdala are normally structured, and how they normally respond to external conditions, that certain kinds of circumstances will reliably *tend* to trigger chronic uncertainty states, etc; and increase the subsequent risk of a psychiatric disorder. And this, I claim, is relevant to explaining the statistical associations we saw in chapter 5, between increased rates of common psychiatric disorders and lower SES status (according to various measures). Equally, however, differences in innate or acquired traits between two individuals may also see them respond differently to the same circumstances. Thus, it may only be a proportion of those exposed to some kind of conditions who subsequently become subject to a disorder, or come to habitually employ a diversion behaviour.

And via this analysis we can come to see that, for someone living within a contemporary Western society, a 'problem' with low income, for example, may not be about severely deprived material conditions (abject poverty) as such. (And, indeed, a person on a relatively low income in that setting might well be regarded as wealthy by global standards.) They may have enough money for an adequate if basic supply of food, clothes, housing, etc – perhaps via a government welfare payment. Instead, the 'problem' (vis-à-vis SRD capacities) may be that a relatively low income renders them more likely to undergo chronic uncertainty states in relation to, say: paying school fees or a dentist bill, or buying new shoes for the kids. Or, again, a problem with housing may be not so much about deprived material conditions (being homeless or living in a slum shanty) as about chronic uncertainty states stimulated in part by exposure to short-term tenure and high rents in rental housing.

I would recognise, of course, that these problems may nevertheless be reduced to an extent by familiar kinds of egalitarian welfare programs, and one should always ask how things would be if such programs were not in place. However, the point remains that these 'other' issues – being in fact to do with psychosocial conditions – might continue to have effects even when those programs *are* in place.

Furthermore, via the same analysis we are now in a position to identify within contemporary Western settings a range of other factors likely to contribute to detrimental effects on SRD capacities, which appear even less readily amenable to mitigation by State-based, broad-scale manipulation of formal or material conditions. Let us now consider

some of the relevant factors which have come up in previous discussion, and one or two we have not yet considered directly.

Work conditions:

In chapter 5 we looked at the so-called ‘Whitehall II’ project of Michael Marmot and colleagues. This research deals with over 10,000 British citizens who, as employed civil servants with access to universal public health and education systems, are generally *not* subject either to any ‘obvious’ material deficits of poverty, homelessness, unemployment, etc; or to ‘obvious’ formal obstacles such as sexist labour laws, or lack of wage regulation. And clearly, on the whole, they are not the people at the lowest end of the SES spectrum in that society. (Marmot 2004) However, the research shows that, despite these benefits, work conditions for these people can still have significant detrimental psychological and behavioural impacts of the kinds we are considering. (See also: Muntaner et al 1998)

Conditions implicated in this research as risk factors for the onset of a psychiatric disorder, include factors to do with workplace culture and hierarchy, high levels of responsibility or job demand, low levels of skill discretion and control, or high demand coupled with low control. *Prima facie*, such factors as these – as they may occur within work settings of many kinds, both public and private – do not appear as directly or easily amenable to change by State manipulation of formal or material conditions. Why so? It would appear that the conditions in question arise in part as a result of entrenched societal beliefs or behavioural norms to do with work, competition and occupying different positions within a hierarchy. These stressful conditions are generated in part within interpersonal relationships, and might be found within thousands of workplaces, small or large. Some within the private sector might be concerned to defend these conditions, on the grounds that they are unavoidable features of the organisations and production methods which characterise a modern economy.

On the other hand, other work-related factors I have mentioned such as long working hours, insecure employment conditions, or economic imperatives for both parents to work full-time may be more amenable to direct State intervention¹.

Family conditions:

It was suggested in the previous chapter that the potential exists for pathological conditions to arise within family settings, and be sustained through generations, under the influence of

¹ There is also some evidence available suggesting innovation changes in management practices or production techniques within workplaces can substantially improve the psychological conditions of work. (E.g. Semler 1993)

a ‘cocktail’ of both internal and external factors. Although there is no doubt (here) that external factors amenable to change by State mechanisms (e.g. secure housing, or the lack of it) can and do influence the formation and perpetuation of such conditions; it seems likely nevertheless that the psychological and behavioural dynamics of such situations, once established, are likely to resist easy resolution by manipulation of external conditions alone. For children subject to neglect and abuse, damage may be done (or deficits created) which will be very difficult if not impossible to undo later, no matter what the extent of resources applied to the task. I have also mentioned sociological factors such as increased rates of family breakdown or domestic violence as likely to influence the loss or downgrading of parent-child interactions conducive to early cognitive-affective development.

Social conditions:

There is clear evidence to show that, over time, the numbers of single person households in Western societies is steadily increasing. While this may be a choice for some, it is often also a side-effect of divorce/separation, relationship failure, or family breakdown. (Bennett and Dixon 2006) In chapter 5 we considered evidence suggesting the importance of close social relationships as a ‘buffer’ to the effects of acute or chronic stress. (Stansfeld 1991) So, it is likely that increases in the number of single person households, or other forms of social isolation will generally increase the incidence of disorders such as depression.

(Stansfeld 1999) Demographic changes such as increased social and international mobility, or large scale population shifts from rural/regional communities to major cities may also influence social isolation or diminution of supportive, local social ties. Again, it is difficult to see how manipulation of formal or material conditions by a liberal-democratic State might have any easy or direct effects on moderating such socio-cultural trends. Breakdown in marriages or family relationships occur within intimate inter-personal spaces of interaction. Changes to laws or family-targeted welfare payments do not necessarily reach into these spaces. Demographic changes such as those mentioned above occur under the influence of strong economic imperatives, and may involve significant private sector interests in their favour.

Potentially addictive activities:

There is little doubt that members of modern, industrialised societies have a historically unprecedented level of access to a wide range of activities which, according to the previous analysis, are likely candidates for addictive, diversion behaviour. Alcohol, cigarette and

drug consumption, gambling and pornography are obvious examples. Other forms of addictive avoidance behaviour might include eating, ‘shopping’, internet gaming, or TV watching. Some such factors are in theory amenable to State intervention but, as the contemporary Western experience with regimes of prohibition shows, use of the commonly illegal addictive substances is notoriously difficult to control with formal instruments and/or punitive measures alone. This is likely to be even more so with activities which are not designated as illegal.

Information and the media:

The general point of concern here lies with the way new and existing forms of media can ‘import’ information, imagery, and cognitive-affective activity into the home, and more pervasively into people’s lives. In chapter 4, I argued that forms of information used by higher-level cognitive processes for interpretation of a stimulus could influence evaluation processes in the orbitofrontal cortex (OFC), and levels of amygdala arousal. One study cited in support of that claim showed that consciously adopted interpretive attitudes to affectively-salient stimuli could increase or decrease amygdala arousal (depending if the subject imagined themselves as personally involved, or uninvolved, with affect-salient situations depicted in photos). (Ochsner et al 2004) We also saw evidence that simply imagining emotional facial expressions can increase amygdala arousal. (Kim 2006) On such grounds, I claimed that information from the environment pertaining to existing OFC-based valenced associations could be a factor in triggering acute or chronic uncertainty states. And there is no reason to think that such information could not be drawn from a media source. If a news report on television led you as a parent of young children to believe that your single male neighbour might be a paedophile, it is very likely that this would elicit a state of chronic anticipatory uncertainty, aroused by the nearby presence (or just imagined presence) of that person. (And it would make no difference if, unbeknownst to you, your beliefs about your neighbour were false.)

Therefore it seems reasonable to conjecture that repetitive exposure to information about violent crime, terrorism, ‘illegal immigrants’, climate change or other damage to the environment², could contribute to chronic uncertainty states; especially perhaps if one does not have cognitive resource available to interpret information in a way less likely to be chronically affectively arousing. Furthermore, it would seem that some political leaders are

² The possible psychological effects of increasing number of environmental ‘disaster’ events I believe are a serious and legitimate concern in their own right.

willing to use the scope and immediacy of contemporary media to play on people's anxieties, for short-term political gain.

On another media related front, we also previously noted the evidence of a study suggesting that exposure to violent TV and gaming imagery has detrimental effects on behaviour in children. (Huesmann 2003)

The proliferation of forms of electronic media, and individualised access via the internet to millions of sources of information, the major economic interests tied up with these industries, along with cultural values to do with individual choice or the role of a free media in a democracy, make this a very difficult area for governments to control.

Cultural Factors:

Australian author and researcher, Richard Eckersley, argues that the evidence (in epidemiology and elsewhere) of 'psychosocial' processes of *interaction* between social conditions and individual psychology, behaviour and health; opens the way to consider the potential influence of culture itself. 'Culture' he defines as 'the language and accumulated knowledge, beliefs, assumptions, and values that are passed between individuals, groups and generations'. (2006, p.253) He discusses the potential impacts of two kinds of belief he takes to be widespread in Western societies: materialism (or consumerism) as 'attaching importance or priority to money and possessions' (2006, p.253); and individualism as 'placing the individual at the centre of a framework of values, norms, and beliefs and celebrating personal freedom and choice' (which fit neatly with a libertarian view of society as a arena of competitive individual interactions within a market setting).

This is a complex issue, which deserves more adequate treatment than can be offered here. However, we certainly have some reasons to take seriously the idea that beliefs, values or behavioural norms promulgated within a defined socio-cultural group can play a role in the neuropsychological processes we're considering. We've looked at aspects of 'fringe' religious groups for example, or the possible attractions of an extreme political ideology for someone subject to chronic uncertainty states. And there is little doubt that, via new forms of electronic media and communication, members of Western societies have access to a plethora of sects, cults, gangs, and sub-cultures of every description. Furthermore, there's no particular reason to think that factors leading to states of uncertainty and diversion behaviour could not operate at a significantly larger scale. I would suggest that culturally promulgated views about gender roles, or ethnic/racial differences might fruitfully be considered in this context.

Whether there are particular beliefs, values or norms characteristic of a Western capitalist society as such which might themselves influence individual psychology and psychological health is another question. Apropos of the concerns raised by Eckersley, I would indeed suspect there is a case to be made for a cultural climate of individualism and competition, as it enters into individuals' beliefs about the self and others, having effects of its own on the prevalence of uncertainty states across whole populations.

What can we draw from these reflections? It would seem that, within a contemporary Western setting, there is a range of factors which can form a part of psychosocial conditions likely to cause detrimental impacts on SRD capacities. In relation to some – e.g. low income, limited access to good quality education, insecure housing, unemployment – we have reason to believe that well-recognised egalitarian policies and programs (manipulating broad-scale formal or material conditions) are likely to have mitigating effects on the extent or severity of detrimental psychological impacts, as compared to the likely effects of a neo-liberal program. However, there would appear to be these other factors at work (as noted above) which are less amenable to remedial change by direct 'top-down' application of the familiar State mechanisms. The more 'difficult' factors in this respect appear especially to be those operating within the micro-social spaces of interaction within families, workplaces, neighbourhoods, or social groups, or in the fluid domains of information exchange and culture.

This need not imply that the State will necessarily be impotent to act in relation to these putatively more 'difficult' areas. It is to suggest that here the State may need to act in different, sometimes less direct ways; some of which will be discussed in the next section. And beyond that, a wider onus may also fall on civil society itself to undergo some change.

The identification of these limitations of familiar egalitarian social policy measures signals the possibility of two political problems, in the here and now. Firstly, it would be a problem if the social-democratic State continues to mainly use the manipulation of broad-scale formal or material conditions as its preferred social policy methodology in response to both longstanding and emerging social issues. A government or public agency behaving in this way is tacitly treating both the social 'problems' it is supposed to address, and the social 'benefits' it is supposed to achieve as by-products of certain formal or material conditions (amenable to manipulation by the State). In other words, these established, institutional methodologies have an implicit rationale: if the broad-scale State action in the form of welfare payments, a bill of rights, job training for all unemployed, or a public

housing program is tacitly regarded as an appropriate response to a social problem; then (it is easy to assume) ‘the problem’ being addressed just is exposure of people to conditions of (respectively) material poverty, a lack of formal rights, a lack of job opportunity, or a lack of housing. Of course, such programs are not regarded here as unjustified. However, in this way broad-scale egalitarian policies and programs are not well disposed to *see problems with psychosocial conditions as such*. And, the institutions whose *raison d'être* is to implement these policies and programs are not well-placed to recognise limitations in their own methodology.

Secondly, a related problem will arise if leftist-liberal political actors within governments, political parties, public agencies or elsewhere continue to conceive their own social policy aims primarily in terms of broad-scale egalitarian actions by the State. In other words, this is about political beliefs, discourse and debate which elaborate goals for action around a standing supposition; that the ‘right’ thing to do in response to some social issue is usually for the social-democratic State to manipulate broad-scale formal or material conditions (in order to address some perceived, systemic inequality of conditions).

Of course, according to the analysis here, political commitment to those kinds of State activities is not seen as entirely misplaced; quite the contrary. Apart from the benefits they may deliver for the wide realisation of SRD capacities (as compared to a libertarian style program), there is a range of other ways in which such policies and programs may be seen to serve the public good. In well-recognised ways, publicly controlled delivery of water and sewerage systems has served to greatly reduce risk of exposure to certain diseases. A universal public education program may be seen to produce economic benefits by providing a well-educated workforce.

However, once again there is a caveat. Again it would seem perfectly feasible for political beliefs and debates which predominantly (or exclusively) trade in commitments to broad-scale actions by the State, to thereby tacitly embrace what is (from our point of view) a too-simple calculus of social ‘problems’ and ‘solutions’. And there is anecdotal evidence that this indeed does occur.

I earlier referred to an observation from epidemiologist, Michael Marmot, that those from the right tended to appeal to social selection explanations of demonstrated associations between, say, unemployment and poor mental or physical health. To borrow his description, they would tend to say that, ‘[u]nemployed people have worse health than those who are employed because people who are sick find it difficult to get and hold a job.’ (2004, p.134) Those on the left, on the other hand, according to Marmot, will tend to

appeal to a straightforward social-causal explanation and say that, ‘[u]nemployed people have worse health than employed people because unemployment leads to poverty and poverty leads to poor health.’

It is this latter kind of view that I am now pointing to, and in particular its operating premise, in this case, that poverty just *causes* ill-health. And people who adopt such a political position may of course bring to bear their own underlying assumptions about human psychology, and belief about psychological states or capacities which ought to be regarded as a valuable or problematic.

If a social-democratic politics is constructed in this manner, as commitments to State policies and programs dealing in broad-scale formal/material conditions, underpinned by too-simple suppositions about problems and solutions, causes and effects; then it is to that extent poorly placed to recognise and respond to problems with psychosocial conditions as such, and especially those which (I say) are just not as readily amenable to remedial change by the use of those mechanisms.

What might we expect of a social-democratic political system characterised by both of these political tendencies, as it attempts to respond to some of the emerging issues described above? In general terms the answer is plain enough: we would expect to see governments or public agencies attempting to ‘manage’ such issues, either by altering or extending the formal structures of law and public policy, or by manipulating material conditions in the form of publicly-funded social services and the organisations which deliver them. And we would expect to see political activity which trades in support for existing measures, or calls for change, in the same terms.

And indeed, it is not uncommon to see contemporary social-democratic States governments and/or political parties who advocate or implement policies and programs along the following lines:

- The preferred response to social unrest, violent crime or drug addiction is an increasingly punitive regime of laws, and pressuring the justice system to take a ‘tougher’ approach
- The preferred response to high levels of mental health problems is to demand more of institutional, remedial health services such as hospitals, or to fund prescription drug treatments
- The preferred response to severe dysfunction within families or localised communities is institutional intervention, after problems have already occurred

- The preferred response to symptoms of compromised development in children and adolescents is to demand more of the public education system

And, furthermore, it is not uncommon to see political actors and agencies from outside government or the main political parties, calling for the State to institute other kinds of changes to formal or material conditions, again as putative solutions to perceived social problems. For example: calls to increase welfare payments, codify a bill of rights, build more public housing, spend more on public education or what have you.

Finally, if the everyday conduct of social-democratic politics is not-uncommonly subject to such limitations, then it is surely appropriate to conclude that part of what keeps this situation in place is the lack of an alternative, systemic analysis able to identify the limitations in question. I would also recognise that the social-democratic State's institutional activities may very well not be *completely* of the character I've described; and it may be that political actors or agencies already see a need for other kinds of activity. However, I am identifying problems with certain political tendencies, and the potential for these tendencies to dominate political activity (and the deployment of State resources). What I claim is lacking is not 'other kinds of activity' per sé, but a political system which explicitly recognises a relationship between psychosocial conditions and SRD capacities, and adjusts its politics, policies and programs accordingly. The limitations of familiar broad-scale egalitarian policies and programs will become more vivid, one hopes, when set beside some proposals for other kinds of political activity, based on the proposed alternative analysis.

8.3 TOWARDS A NEW SOCIAL-LIBERAL THEORY

In relation to the works we're considering, it would seem that a political *theory* as such amounts to a work of sustained argument, which incorporates certain claims about human nature and fundamental values, and draws upon these claims to justify preference for a comprehensive political scheme, over other possible schemes. On these terms, I will claim that this study offers some elements of a genuinely new form of social-liberal theory and political practice.

According to this definition, one element of a putatively new position will be that it stands in critical relation to claims in other theories, or to features of other political schemes as they are put into practice. Drawing on the SRD model and allied evidence in

epidemiology, I have now critically evaluated theoretical claims and practices characteristic of a libertarian and a social-liberal politics, and identified flaws on both sides. Having done so, it now appears possible to extend this critical stance another step, by taking a higher-level perspective on the libertarian–social-liberal dialectic as a whole. In this concluding section of the thesis, I will set out such a meta-theoretical view, and then proceed to some proposals for an alternative approach.

8.3.1 A Meta-Theoretical Perspective

I have argued that both social-liberal and libertarian political theorists present us with some set of broadly naturalistic claims about human psychology and social psychology. The claims of any one theorist (as couched within a political treatise) I say constitute a form of psychological theory. We have now seen in some detail the kind of work these naturalistic claims do, on either side, to inform normative claims. A key point of divergence has emerged in the contrasting claims about the social psychology of reasoning and self-determination within a market setting. In that vein, libertarians offer a social-selection explanation of the ‘success-distribution’ as a product of market forces acting over variability in innate talents and traits. As we saw, this claim serves indirectly to support arguments justifying a minimal/limited State. Social-liberals adopt an interactionist view, explaining variability in ‘success’ as a product of both variation in innate traits and exposure to different kinds of socioeconomic conditions. And this lends support to arguments for an extended role for the State.

I have found the libertarian social psychology to be out of step with evidence in neuroscience and epidemiology. A social-liberal interactionist view appears the better fit. It certainly does enough to recognise that certain conditions commonly occurring within free market systems can have certain detrimental effects on a proportion of those exposed to them. However, as we saw in chapter 2, as critics of classical, *laissez-faire* liberalism, social-liberals tend to focus on an interventionist role for the State in addressing broad-scale inequalities of certain formal or material conditions; e.g. in income, housing or employment conditions, or access to education and health services. The social-liberal social psychology just doesn’t capture the complex interactions between individual neuropsychology and social conditions we’ve explored here. It does not describe the potentially damaging impacts of psychosocial conditions as such on SRD capacities. It does not explain the way social or cultural conditions can continue to have these kinds of detrimental impacts on individuals, even when stark inequalities in broad-scale formal or material conditions have been addressed. Therefore, to this extent (as it turns out), it is not

in a good position to point out the limitations of the main egalitarian policies and programs it recommends; as political strategies to address those impacts.

With all this in mind, it would now appear that limitations arising in both sides of the dialectic (for the issues we're considering) can now be cast in another light. I would begin by asserting that the psychological theories offered by all of the theorists we've examined are elaborated in a way which draws directly and substantially on the terminology and conceptual structure of everyday *folk psychology*. (Stich 1983, Ch.1)

Defining a 'folk' psychology lies in observing that within our everyday parlance and social exchange, we commonly ascribe both to ourselves and to others, a range of *mental* states and capacities. We typically describe these states in everyday terms such as: 'belief', 'memory', 'feeling', 'intention', 'reasoning', 'preference' and so on; and we often invoke such states as internal causes of our behaviours; which can be appealed to in *explaining* our actions. The term 'folk psychology' refers to this collection of everyday descriptive concepts, ascriptions and commonsense explanations of behaviour. (Fodor 1987, Ch. 1; Clark 2001; Stich 1983, Ch.1)

I would describe the claims about human psychology within social-liberal and libertarian theories as *folk-level*. The term is intended to indicate, firstly, that the theorists in question tend to draw heavily on folk parlance and readily invoke types of mental state/capacity described in folk psychology; but also deal with that material in a more considered, rigorous and formal way; in this case within the structure of a political theory. As Stephen Stich suggests:

From antiquity to the beginning of the twentieth century, such systematic psychology as there was employed the vocabulary of folk psychology. Those who theorized about the mind shared the bulk of their terminology and their conceptual apparatus with poets, critics, historians, economists, and indeed their own grandmothers. (1983, p.1)

Hayek, for example, invokes mental states or capacities such as 'considered will ... lasting conviction' and moral weakness (1960, p.15); or 'foresight', 'knowledge or insight' (pp.76-77), as part of his arguments. Nozick speaks of 'free will' (1975 p.48), 'temperaments' and 'aspirations' (pp.309-310); and distinct states of being envious, jealous, begrudging, and spiteful. (pp.238-239) Similar examples can be readily found in social-liberal theories.

Secondly, my use of the term 'folk-level' connotes something more; that is, not only that the mental state types in question are drawn from folk parlance, but also that they are

directly invoked as distinct, factually-existing natural types, and as postulates for theory formation, without further critical treatment of a particular kind, being:

- a) The critical examination and testing of mental state types as described in folk psychology (or as drawn from there) against the best theory and empirical evidence available from contemporary cognitive neuroscience and other sciences;
- b) And the formulation of an account of the aspects of psychology one is interested in, which is well aligned with evidence in these other disciplines³

(Griffiths1997)

My own commitments in this regard were spelt out in chapter 3. Description of political theories as ‘folk-level’, then, is intended to mark this difference between one way of formulating naturalistic claims about human psychology relative to another. A folk-level theory draws directly and (in the relevant sense) uncritically on the parlance, explanatory forms and mental state types of folk psychology. This material may be subject to intellectual scrutiny as part of the formulation of a theory, *but*, it would seem, in a way which nevertheless remains at that ‘folk’ level of description. This is not to suggest, of course, that a political theorist writing in the 19th or early 20th century was ever in a position to test their claims against theory and evidence in neuroscience as we now know it. However, the distinction still stands.

Why is this distinction relevant here? An argument advanced by some is that a more ‘wholehearted’ naturalistic approach enables us to critically assess folk-type classifications of mental states in a new way. In particular, one of the strategies available is to test them against classifications of cognitive or affective states according to homologies between species. (Griffiths1997) (This strategy featured in some of the neuroscience research discussed in chapter 4.) By this and other means we may come over time to conclude that certain folk-psychological categories align well with scientific understanding, others may require revision, and some may need to be rejected. And if this is so, it is argued, some onus falls on theorists in disciplines such as philosophy who posit mental states, and purport to be naturalistic, to see their claims as open to critical examination in this way. (Russell 2003; Griffiths 1997, Ch.1) The material in chapter 3 is intended to indicate how my own approach is grounded in such a view of what naturalism about the Mind now demands of philosophy.

Apart from this, I would argue that a case would begin to be made for this distinction being directly relevant and important for our issues in political theory, if a number of

³ It is probably true to say that any naturalistic investigation of the Mind, including in contemporary cognitive science, *begins* with folk psychology. (Fodor 1987, Ch. 1; Clark 2001; Stich 1983, Ch.1) The question at issue here is what happens then.

criteria were met. Let us say we have an analysis which *begins* with folk-level ascriptions of mental states or (in this case) capacities, which are regarded as important and valuable (and potentially at risk) in certain political theories; and *does* test these against theory and empirical evidence across a number of scientific disciplines. And let's say that this approach appears to produce an account of the capacities in question which is more in line with a range of current theory and evidence in the sciences, and offers greater descriptive and explanatory purchase on social and/or psychological matters already regarded as important within the political theories in question. And finally, let's say that the process of testing the folk-level descriptions, categories, explanations or what have you against the scientific evidence appeared to play a crucial role in getting the result: i.e. it provides tools for understanding social and psychological matter relevant to normative interests in political theory; in a way that comparable folk-level approaches appear poorly placed to match.

Now, I would claim that, broadly speaking, those criteria have been met here. If so, then a critical, meta-theoretic perspective is available, to the effect that, in virtue of their folk-level nature, the psychological claims within theories on *both* sides of the dialectic are shown to have limitations; and thus the tenor of the dialectic *as a whole*, as we've encountered it, is thus also limited. The folk-level nature of theories on both sides, as such, becomes a problem for the adequacy of those theories, and for the choice they offer between political systems. If the conduct of Western political debate is informed by a libertarian–social-liberal theoretic argument (which I believe it is), then is it not in danger of trading in normative assertions informed on either side by less than adequate, folk-level psychological theories and explanations?

An appropriate response to flaws of a too-simple libertarian social-selection psychology, informing a politics of the neo-liberal right, is not to replace it with a too-simple social-causal psychology, informing a ‘standard’ politics of a social-democratic left. If these underlying folk-level conceptions do indeed inform the left-right dynamics of contemporary Western political debate, then the political culture *as a whole* is revealed as less than well-placed to respond effectively to some significant risks faced by liberal-democratic societies.

After all, the metaphysical context we've been in all along is naturalism, broadly considered. We now have methods to enquire into our nature as evolved, intelligent social beings which were not previously available. If a more rigorous naturalism produces better information, why would it not be used?

8.3.2 Reasons for Valuing Competent SRD Capacities

Hitherto, I have asked what the normative political implications are for either libertarians or social-liberals (or for the dialectic as a whole) if one adopts an alternative view of basic psychological capacities which both sides regard as fundamentally valuable. It would now seem, however, that my own analysis as presented begins to offer grounds of its own for regarding well-realised, competent SRD capacities as valuable and important.

Aside from ethical arguments as such, which I won't consider here, I would claim firstly that the overall argument as presented already offers strong and plausible *prudential* reasons to regard well-realised SRD capacities as valuable, especially (but not exclusively) for members of Western societies. I have argued that certain conditions created within such societies can have detrimental impacts on basic psychological capacities, and may do so to an extent which constitutes a significant risk and/or cost to those socio-political systems. Other things being equal, I claim these risks are likely to be exacerbated, in countries where recent conditions have been significantly shaped by a libertarian-inspired, neo-liberal suite of policies and programs⁴.

Thus, it would seem, the members of liberal-democratic societies, and their political institutions, have reasons to regard SRD capacities as a valuable social resource, which cannot be simply taken for granted in the current context. When well-realised SRD capacities are widely promulgated within the populace, it is likely, in effect, to obviate social risks and problems which might otherwise occur (or occur to a greater extent), and (I claim) supports a general climate of co-operative, considerate social relations. And the widespread, effective realisation of these capacities, or a significant degree of failure in that regard, is a matter that will be partially determined according to the prevailing socio-political conditions. So, it would seem there are genuine common interests at stake.

Secondly, a well-developed SRD capacity might be accorded a significant value because it is apt for achieving states of being, or for carrying out activities which many people commonly regard as valuable and important. For example, it would appear that competent SRD capacities are apt for promoting activities fitting a value of *individual autonomy*, such as sustained pursuit of valued goals, and socially adept decision making over possible future actions. And conversely, where chronic uncertainty states contribute to the onset of a psychiatric disorders we have reason to regard this as a loss of autonomy, insofar as those

⁴ And that description would currently apply to many societies, not just those countries where governments have most explicitly embraced neo-liberalism in recent decades, such as the U.S.A., the U.K. and Australia. (Harvey 2005)

conditions limit the scope of activities such as evaluation of options for action, decision making, and ‘executive’ control.

According to my account, having competent SRD capacities is also reasonably regarded as an aspect of individual *health and well-being*. I have shown that a number of the same brain structures and systems that mediate competent SRD capacities, are also those implicated in the onset of chronic uncertainty states, potentially leading in turn to the onset of a diagnosable psychiatric disorder. It is conventional to current medical practice to regard common psychiatric disorders are a form of ill-health, and this view is supported by empirical evidence of dysregulated functions in relevant neural structures, as a common symptom of such disorders. On these grounds it would seem reasonable to say that the having of well-realised SRD capacities counts for good health.

A case for valuing SRD capacities on such grounds, might be formulated in way similar to the virtue ethics-capabilities approach of Martha Nussbaum and Amartya Sen.

(Nussbaum 1993; Sen 1992; Sen 1993)

8.3.3 The Role of the State

If SRD capacities are regarded as valuable and important, then my proposed analysis will support a number of claims about the role of the State. In order to explicate my position, I will posit a contemporary liberal-democratic polity and State, combined with a developed free market economy (a combination which, for present purposes, is accepted without further discussion); where, for both ethical and prudential reasons, a high social and political value is placed on the widespread, fulsome realisation and expression of SRD capacities (as we have understood them). Of course, this is not to assume this is the only political value in operation. I will refer to the usual set of liberal-State institutions and agencies operating in this setting as the ‘new social-liberal State’. What role may be justified for this State?

Firstly, let us review a basic role accorded the liberal State by both libertarians and social-liberals; to enshrine and enforce certain basic (negative) rights or freedoms, in part as a preventative against the possibility of systemic coercion either by the State itself, or one set of social actors over another. It is as clear today as it ever was that political systems can, in one sense or another, institutionalise basic inequalities of formal and/or material conditions. The South African apartheid regime, with its disenfranchisement of the non-white majority, or the current Burmese military dictatorship are good examples. If history is anything to go by, it would also seem clear that such structural inequalities will usually require overt coercive practices by the State apparatus or a political elite to keep them in

place, e.g. forcible repression of dissent. And they are also likely to result in widespread differences in socioeconomic conditions. Apart from any other objectionable effects they might have, according to my account psychosocial conditions within such systems are very likely to contribute to detrimental impacts on SRD capacities in a significant proportion of their population. On these terms, the proposed analysis would most certainly stand in favour of a State which recognises and protects certain basic freedoms or rights, and is bound by its own laws, over any such State which systemically engages in or allows overt coercion of its citizenry. The formal recognition of basic ‘negative’ rights such as freedom of speech, religion or association, or democratic principles such a universal franchise, are justifiable as preventatives against the historical possibility of repressive States.

Secondly, we have already recognised a role for the new social-liberal State to address certain inequalities of socioeconomic circumstances liable to arise under free market systems; and take steps to address such circumstances in ways likely to reduce inequalities in, and/or the global extent of, detrimental impacts on SRD capacities. The evidence we’ve considered clearly suggests that strong public policies and programs in areas such as education and health care, housing, support for the unemployed, regulation of minimum wage levels and other employment conditions, are likely to mitigate detrimental effects on SRD capacities which could otherwise occur under a strict neo-liberal program⁵.

However, by hypothesis, the institutions and agents of the new social-liberal State will also, in some sense, take adequate account of the relationship between psychosocial conditions, competent, well-realised SRD capacities, potential detrimental impacts on those capacities, and associated socio-political risks. They will recognise the limitations associated with a methodology of broad-scale manipulation of formal or material conditions (under contemporary conditions) and be prepared to adjust their role, policies or programs accordingly. Something more or something different is required; and as I hope to show, this ‘something’ will go beyond a mere ‘fine-tuning’ of a ‘standard’ social-liberal political practice.

In the next subsection, I will outline some specific proposals for socio-political activities by State institutions and agents, and other political actors within the new social-liberal polity. Before that, however, I offer some general considerations for the role of the new social-liberal State, vis-à-vis the members of the polity itself. These considerations

⁵ Nothing about this claim presumes that the State ought to act in ways which are indifferent to the effective operations of a market economy; or that it should aim to achieve some kind of *absolute* equality of conditions or opportunity.

also lend some qualified affirmation to intuitions on *both* sides of the libertarian–social-liberal divide about the potential for, or limitations on, actions by a liberal State that places high value on SRD capacities.

The proposed model says that we normally come into the world equipped with cognitive and affective structures and systems, which grant us the potential to acquire SRD capacities. However, the matter of what actually happens – how these prior dispositions play out over the course of a life – is understood to be largely resolved via the *interaction* between individual and a socio-cultural environment.

Within this realm of interaction, then, it would seem that the *endogenously motivated activity of the individual clearly must play a crucial part* in both the developmental realisation, and mature expression of SRD capacities. (Changeaux 2004) In other words, both the development and mature expression of these capacities will require the individual *exercise* of the relevant endogenous activities and functions. At the same time, the model also supposes that these endogenous activities are socially situated, insofar as they are highly responsive to exogenous social conditions; and the actual exercise of capacity often involves, and may require, behavioural interaction with other people. Therefore; if SRD capacities are to be consistently developed and/or expressed, and this is what we want, it will require the exogenous, social environment to provide *appropriate conditions* for individual responses and behaviour. And what counts as appropriate for our present purposes are conditions which are positively conducive to, or at least permissive of, the *exercise* of SRD capacities; and which are not likely to causally contribute to chronic uncertainty states, etc. This is an ‘open’, qualitative criterion, which could be satisfied (or breached) in a variety of quantifiable ways. But it is certainly *not* necessarily satisfied by the mere presence of a social environment of any kind.

This much is fairly obvious. More importantly, it is to be generally understood that a pathway of development from childhood into *well-realised* competent, adult SRD capacities, will involve a change in the mix of exogenous and endogenous contributions; and thus the requirements made on what counts as ‘appropriate’ conditions and constraints from the social environment at different stages may also change. In relation to early development, our previous discussions suggest that important elements in the actual exercising of nascent SRD capacities by a young child are probably *exogenously* provided by other people, especially adults. *Their* behaviour forms a vital part of the environment with which a child interacts, and (I claim) can *constrain* (guide, sustain, interrupt, arouse, redirect, modify) the child’s cognitive activity and behaviour in ways which contribute in

relevant ways to social learning and the structuring of the child's internal milieu.

Furthermore, if these exogenous contributions are missing, or the child's environment offers inappropriate conditions; then we have reason to suppose that significant and potentially permanent deficits may result. (§ 6.3.3)

A significant part of the exercise of mature, competent capacity, on the other hand, is understood to lie with deploying already-acquired cognitive resources and behavioural dispositions which (relative to earlier life) provide a greater measure of *endogenous constraint* on our socially-situated, goal-oriented behaviour. There is a significantly greater ability to skilfully navigate a range of complex social environments, to read and respond to a variety of social cues, etc. The positive exercise of mature capacity can and does occur in diverse ways. And to the extent that this capacity is widely present in an adult population, the onus on the social environment to provide 'appropriate conditions' can change accordingly. The emphasis on providing certain positive constraints from the 'outside', which is appropriate for child development, can shift to providing a more permissive environment, allowing a variety of opportunities for 'constructive' adult activity; while ensuring as far as possible that certain common kinds of *inappropriate*, likely-to-be damaging conditions are avoided.

In light of these thoughts, what considerations arise for the role of the State as such?

Firstly, it would seem that the new social-liberal State has particular reason to take an interest in the kinds of exogenous conditions that obtain within the micro-social environments of children and adolescents. Apart from the potential benefits to individuals, it would seem that *if* early childhood development (of SRD capacities) at large reliably goes well, and if other things are generally in place so far as adult social settings are concerned, then society can likely rely to a significant extent on the endogenous resources of individuals, acting as apt constraints on their goal-oriented behaviour within social settings. If, on the other hand, a society allow systemic conditions to obtain which are likely to have detrimental effects on the development of SRD capacities; then to this extent it has *undermined its own ability to rely on those kinds of endogenous resources*. It may then either have to maintain expensive programs of remedial intervention (to address problems already set in train), increase the use of coercion perhaps, or risk perpetuating and worsening the problem if it does nothing.

Secondly, recognition of the necessary endogenous element within the development and/or expression of SRD capacities – the requirement for such capacities to be *exercised in order to be realised* – reintroduces a desirable element of self-determination into the

picture. In childhood, on the above account, this must be in a more limited form. But nevertheless, the essence of the task for adults in relation to children, as understood here, is to provide constructive constraints for something which, at a fundamental level, the child must *do* for itself.

The same essential principle will apply in the adult world. Appropriate social conditions (as influenced by the State and many other social actors) may be present, but the on-going realisation of SRD capacities still requires the ‘other side’ of the interaction; namely certain forms of endogenously motivated, individual activity. So far as the State is concerned then, we arrive by a somewhat different route, to a similar conclusion as before. While activities of the State can and do play an important role in the widespread availability of certain appropriate social conditions, it would seem that no amount of manipulation of formal or material, external conditions as such can substitute for the motivated exercise of capacity by individuals, within their own social settings. So, this offers a form of conditional affirmation of an intuition tending to be expressed by the right; that egalitarian aims dogmatically enacted as manipulations of formal or material conditions may fail to take account of a vital element of individual ‘initiative’ or motivated action from the person or persons being ‘helped’. The general goal, it would seem, is to foster the development and expression of endogenous resources, wherever that is possible.

8.3.4 Proposals for Social Policy and Socio-Political Action

In order to give substance to a new social-liberal theory, it is important to describe how the analysis might inform a variety of State social policies and programs, or other forms of socio-political activity. I have already endorsed in principle a number of the familiar State policies and programs in areas such as public education, health and housing. Below I will suggest some ideas for changed priorities or practices within such programs. In light of the limitations of ‘top-down’ State-based programs, the need for ‘something different or something else’ will be addressed here in part with proposals for more *indirect* forms of State activity. These are activities where Governments and/or public agencies offer leadership and deploy resources, so as to encourage and support forms of change within civil society; engaging non-government organisations or individuals as active agents to address problem areas, or to generate improved social conditions on their own behalf. And some of the proposals will assert a need for concerted activity and change within civil society itself, and in popular culture.

None of the policies, programs or activities suggested below will strike the reader as entirely new. Some are already practiced to some extent, and/or already figure in public

debate. There are no proposals for any radical social change. The intention, however, is to assert that a disparate range of extant ideas or practices may be reconceived, extended or revitalised as part of a coherent political program, and perhaps be conducted in a more effective and complimentary way, *because* they are informed by a consistent underlying analysis.

Exercising SRD capacities as rehabilitation:

Discussion in the previous section draws our attention to one matter which may relevant to many kinds of socio-political activity, within a polity where well-realised SRD capacities are regarded as valuable. One general goal, presumably, is to assist people who are, in one way or another, chronically subject to psychological distress, some form of common psychiatric disorder, and/or some form of diversion behaviour. For the great majority of people in such a position, I suggest, it will be appropriate to presume that they nevertheless have some relevant capacities, *and* retain the potential to realise and express SRD capacities more fully. Now, I would accept that many existing forms of therapy might contribute to recovery from a psychiatric disorder, or behaviour change away from a pattern of diversionary avoidance; including the use of drugs, or existing forms of therapy and counselling etc. However, on the grounds of evidence and argument presented here, I would suggest on my own terms, that the exercising of what might be compromised, inhibited or under-realised SRD capacities within some form of structured activity, is likely (*ceteris paribus*) to enhance one's subsequent capacities, and their expression in other areas of one's life.

Thus, an analysis of competent, well-realised SRD capacities (and associated subsidiary capacities) might serve as a tool for the design of structured activities or social development programs, intended to achieve rehabilitative benefits for an individual, or within a community. (I will discuss what this might look like in practice below.) And as such, it might complement other methods, or offer fresh rationale or insight to existing practices.

Furthermore, if a person's circumstances are implicated in causing detrimental effects on SRD capacities, then we have some reason to draw the hopeful conclusion that a change in circumstances can contribute to beneficial, remedial effects. We saw some evidence of this in chapter 5, with the Halpern study showing decreased rates of depression within a community where the physical environment was changed and improved. (1995) (Or, as I would put it, the psychosocial conditions were improved.)

Government and international governance, political debate and leadership:

An understanding of SRD capacities, and of a causal relationship between certain social conditions and detrimental impacts on these capacities across populations, enables us to identify certain socio-political risks and liabilities facing liberal-democratic societies. The quantum of detrimental impacts, and of social risk, is likely to be significantly influenced by the matter of whether a libertarian/neo-liberal or social-liberal politics holds sway. Thus, in the face of recent dominance of libertarian/neo-liberal thinking in certain quarters, the analysis offers a way to reassert a legitimate role for the State in regulating or intervening in aspects of the economy or social activity; in the common prudential interest, and according to common, well-established liberal values.

Libertarian philosophy, I would claim, has played its part in the recent dominance of neo-liberal thinking within the U.S. and British governments, institutions such as the World Bank and the International Monetary Fund, and within multi-national corporations. (Harvey 2005) To this extent, I suggest, it has supported the institution of neo-liberal political programs in countries around the world, tacitly informed by a too-simple social psychology. Consequently, the social and economic changes made, broadly speaking, have tended to undermine basic social-psychological capacities in economically vulnerable sectors of the population, or to ignore a need for social development, within many of the countries involved. (Harvey 2005) At an international level, therefore, an need also arises for co-operation between States to assert more regulatory control over a globalised capitalist system.

It is in the interest of economically powerful corporations and individuals in the private sector to recognise how these failures undermine the basic social and political stability on which their own activities ultimately depend.

Specific efforts are required from political actors within and outside State institutions to confront political debates across a left-right divide which trade in counter-posing of positions informed by inadequate folk-level social psychology. Consider, for example, a rhetorical stance sometimes used people on the political right about terrorism and the appropriate responses to it. Firstly, one can assert a too-simple social-causal explanation and argument as the tacit position of the left:

- That people become disposed to commit terrorist acts because of the (usually) poor social and economic conditions in their countries; conditions contributed to in part by wealthy nations

- Therefore terrorists are in fact victims of Western economic dominance or military adventurism, and thus not really responsible for their crimes
- The appropriate long-term solution to terrorism is economic development, with well distributed benefits

And against this one can pose a form of social selection explanation:

- That individuals who become terrorists knowingly choose to adopt an extremist ideology and are motivated by hatred of Western values
- And therefore they are individually responsible for their terrorist acts
- The appropriate response is to oppose their ideology politically and, if necessarily militarily, and to treat their acts as crimes

For example, as the rightist media commentator, Greg Sheridan, argues:

There is an extreme distaste, especially among academics, for even using such terms as good and evil. Extreme behaviour is much more comfortably dealt with if it is explained away by sociology, or even psychological dysfunction, than if it is the logical outcome of a coherent ideology. (2005)

Conduct of a debate about terrorism which characterises opposing positions in such terms is, I would submit, largely an exercise in futility. The analysis proposed here has suggested that both chronically stressful psychosocial conditions and a limited form of intelligent choice are likely to be at work in the adoption of an extremist ideology – as a form of diversion behaviour. Such an analysis would seem to be better placed than a crude social-causal view, to explain, for instance, how it is that some people who join terrorist groups are in fact not poor, and don't live in poor countries. On the other hand, it would also reject a tacit assumption, as per the crude social selection view, that external socioeconomic and political conditions do not influence the extent to which people within a certain population are disposed to be attracted to extremist ideology.

It is also important, I suggest, that political leaders reject the easy temptation to marshal support by trading on popular anxieties or prejudices, with claims that only they will be ‘tough enough’ on criminals, bikies, illegal immigrants, perverts, or what have you.

Childhood and parenting:

I claimed above that the new social-liberal State has reasons to take a particular interest in the micro-social settings of children and adolescents. If the development of basic SRD capacities is widely achieved, then (I say) the society at large can rely on endogenous constraints to play a significant part in securing generally co-operative, cohesive social relations; and can count on the transfer of well-realised capacities from one generation to the next. If the development of basic SRD capacities is not well achieved in a substantial proportion of the population, then the society and the State is likely to face significant costs, and risks to its own long-term viability.

If, in a country such as Australia, micro-social conditions conducive to the development of well-realised SRD capacities remain the current norm (which may be questionable⁶), it is not tenable to simply assume they will continue to be so. It would be foolish to ignore the potential for ‘pockets’ of pathological conditions to emerge, and to be sustained across generations; or the potential for a more widespread and gradual ‘down-grading’ of the relevant conditions.

This is not to suppose, however, that the answer must lie with heavy-handed State attempts to directly dictate family conduct, or ‘manage’ the domestic environment. On the contrary, effective change in this area will require a suite of measures, including some direct or indirect actions by the State, and activity within civil society. Areas of activity might include:

- A State-funded, universal system of basic education and hands-on training in parent skills and child health, both for secondary students and new parents
- Universal, community-based support programs for parents of pre-school children
- Increased provisions for maternity/paternity leave, and flexible work arrangements for parents
- High quality child-care services
- Efforts to foster a public culture which places greater value on responsible, skilful parenting, and on the societal contributions made by parents and others who care for children.
- Increased regulatory control on forms of media or technology likely to introduce violent or sexualised material into children’s domestic environments

⁶ It might well be argued that the general tenor of social relations in the present is in significant part a product of social conditions of 20-50 years ago.

Such recommendations imply a more general societal and cultural challenge to specify in clear and practical terms what good-quality parenting (for these purposes) does and does not look like, and to promulgate these practices widely within the community.

There may well be a need for more direct, ‘paternalistic’ intervention by State agencies, in the short term at least, to address more severe and protracted pathological conditions within a particular community or family. It is also to be expected that a number of familiar egalitarian programs such as public housing, and high-quality, universal primary education, or other measures proposed in this section, may complement the strategies suggested above.

The health system:

Firstly, I believe the analysis developed here would support a substantial shift in emphasis and State spending away from remedial or curative forms of health care (e.g. hospitals), to community-based, preventative programs. If, as the evidence suggests, a number of public health problems are exacerbated because of certain psychological responses to psychosocial conditions (leading to chronic arousal of stress systems, etc), then some potential preventative measures immediately suggest themselves. Public education is an obvious example, informing people about the relationship between certain life/work conditions, chronic uncertainty and stress, and increased health risks. This may not do anything to change social conditions as such, but it may improve what is sometimes referred to as psychological ‘resilience’.

At a broader level, it would seem to me that health systems in most Western countries predominantly tend to characterise and respond to the most common mental health problems as just organic conditions of individuals, to be subject to interventionist treatment with drugs. It may be that individual health practitioners will recognise an individual’s circumstances are implicated in their condition. However, what the system as such, or practitioners as a group generally tend *not* to do is to publicly identify a causal relationship between social, economic or cultural conditions and the occurrence of psychological distress and common psychiatric disorders within populations. (Mirowsky and Ross 2002; Mirowsky and Ross 2003) This is a significant problem. It may signal, of course, that such a relationship is not as well or as widely recognised as it might be. It may indicate a certain underlying hesitancy on behalf of that group to raise an issue with such potentially controversial political implications.

In any case, a failure to explicitly recognise underlying social causes of psychological distress and common psychiatric disorders hinders recognition of the potential for

preventative State measures targeting the relevant causal factors. It stands in the way of the medical community itself working for social or political changes likely to mitigate the extent and/or severity of these problems. One can see also how the omission fits with the common tendency by States to direct the bulk of health spending toward remedial forms of treatment. Furthermore, it is also quite clear how such a position might implicitly lend support to a social selection view of the association between low SES groups and higher rates of common psychiatric disorders. Thus, the tendency to treat psychiatric disorders as a fact about individuals, against a neutral social background, may lend unwitting support to political beliefs which have an interest in *not* recognising social causes of such disorders.

One may still certainly recognise the use of licit drugs as one appropriate treatment strategy (or part-strategy) for existing conditions. We have seen ample evidence to suggest that the onset of common psychiatric disorder is accompanied by changes in brain functions mediated in part by the ‘mix’ of neurochemicals present in various parts of the brain. And psychiatric medications generally work to change the mix, or alter the relevant effects on neural activity. An over-reliance on drug may also fail to recognise potential therapeutic effects of behaviour change, and constructive, self-motivated activity.

The justice system:

I suggested earlier that a government adopting a libertarian view of the world is more likely to respond to symptoms of crime or social unrest with increased or more punitive use of the coercive tools of the State; the police, court system and prisons. It suggested also that social-democratic governments may also display such a tendency, because these are mechanisms they can manipulate in a relatively direct way (e.g. by changing a law, or funding more police). And, it would seem, there is a temptation to garner ‘cheap’ political support by manipulating public anxiety about crime, and proposing increasing ‘tough’ measures against it.

Regarding the politics of crime and punishment, once again, I suggest, there is a way of defining and conducting a debate across the left-right divide here which appeals to a crude and too simple dichotomy between a social-causal and a social selection explanation of crime as a social phenomenon. So, again from someone on the right, this might be to assert something to the effect that: ‘bleeding hearts’ on the left see criminals as victims of deprived circumstances, with limited responsibility for their action. Their ‘soft’ response lies with improved social conditions and rehabilitation. In fact, criminals are just bad people, who chose to perpetrate criminal acts, and therefore are rightly held responsible. The proper, ‘tough’ response is to lock them up for as long as possible.

In general terms, I believe the analysis here would support a re-weighting of emphasis away from a strongly punitive system; with a greater proportion of effort and resources put into rehabilitation and restorative justice programs. However, this is not to deny the obvious fact that some people who commit crimes are seriously psychologically disturbed, and have to be confined in the interests of public safety.

Furthermore, we have seen evidence that socioeconomic conditions can contribute to psychiatric conditions such as depression which subsequently increase the likelihood of becoming a perpetrator of violence against a spouse, or abuse or neglect of children. I have also claimed that people undergoing chronic uncertainty states are more likely, other things being equal, to seek relief in membership of gangs, or extremist political groups. On the whole, I suggest, we have some reasons to believe that measures to mitigate social conditions which have detrimental impacts on SRD capacities may also act as a preventative to forms of criminal behaviour.

Employment and work environments:

My analysis suggests a number of areas where the new social-liberal State might undertake direct legislative and/or spending measures, for example:

- Legislative measures to ensure adequate minimum wages, prevent excessive work hours or improve security of employment
- Financial support and retraining programs for the unemployed
- Legislation and spending to ensure some availability of paid maternity/paternity leave

Beyond these matters, we have also considered evidence pointing to problems created by psychosocial conditions within workplaces, involving factors such as: hierarchy and authority relationships, high job demand or responsibility coupled with limited control over decisions, conflicting demands, or limited discretion to use one's own skills etc. These issues I suggested may not be readily amenable to direct intervention by the State, but perhaps are better addressed through a process of changing values, work practices or culture within workplaces. As per the discussion of parenting skills above, I would suggest a similar need in this area to develop a more practical description of appropriate workplace practices, from theory and evidence in areas such as neuroscience and in epidemiology. Ideas about limiting periods of intense work demand, more discretionary choice over work hours, schedules, or practices, and changed leadership or decision making practices might all be relevant.

Self-understanding and personal values:

Everyday folk psychology is of course not a static phenomenon. It can and does absorb ideas from a broad range of sources, and over time these can influence wider change in popular description of mental states, or explanations of behaviour. Consider, for example, how the Freudian concept of ego, or the idea of ‘stress’ have become part of popular parlance. Thus, as part of an aspiration for social and political change, it would not seem unreasonable to aim for longer-term changes within popular psychology which bring it into better alignment with the proposed view of competent SRD capacities, their vulnerability to detrimental impacts, and so on. It would be unrealistic to expect widespread detailed understanding of relevant information in cognitive neuroscience, but for everyday purposes of self-understanding or interpretation of the social environment, a simplified account at the level of psychological description would seem more useful⁷.

And it might also be that a revised understanding of the self in terms of SRD capacities, uncertainty states, or what have you could lead an individual to change aspects of their social conduct, or to revise their personal or political values. On the former front, for example, the proposed analysis suggests that the potentially negative effects of chronic uncertainty may be mitigated, simply by ‘balancing’ periods of sustained goal-oriented activity in complex social environments with other kinds of more relaxed activity. Perhaps such a view might lead a person to place less value on working ever harder in order to attain greater material wealth, and more value on leading a ‘balanced’ life.

Social development programs:

It is implicit to the case argued in this study that attaining a desirable level of well-realised SRD capacities within our societies is not something which can be taken for granted. Furthermore (I say), it is not appropriate to suppose that broad-scale State programs in areas such as education or health will be wholly adequate to the task of sustaining this form of basic social capacity. Instead, it is a task which will be achieved or not, in significant part, within the micro-social spaces of family and friends, communities and workplaces – and thus is something in which we may all play a part.

An important alternative approach available to governments and public agencies here is to foster and support structured activities within localised social spaces, which (as per the discussion earlier) engage the capacities of the people who actually make up those

⁷ Perhaps we might say that an understanding of oneself in line with the proposed analysis might in fact itself become a part of a one’s SRD capacities.

communities, as leaders or participants in development programs aimed to improve their own social, economic or psychosocial conditions. It is about recognising and tapping into that vital element of endogenously motivated individual activity toward a valued goal.

There are many ways in which this might be done, and State-supported programs in that general vein are certainly not uncommon. However, the general supposition here is that they probably need to occur more often (more systematically), and are more likely to be effective if designed and implemented with an appropriately rigorous understanding of the capacities one is trying to engage. It is also essential, I suggest, for State agencies to strike an appropriate balance between support for such programs, and excessive attempts to control and manage them by proxy, with ever more stringent policy dictates or ‘accountability’ demands to be met.

Furthermore, of course, it is more than possible for such initiatives to be taken by people within their own local environments, without any need for initial prompting, coordination or financial support by the State. It is also possible, and not uncommon, for private sector organisations to support social development programs of one sort or another within their own locale.

At a broader level, I would suggest that localised and micro-social spaces are fundamental as places where our basic social capacities are built, and reproduced from one generation to another. It is important for Governments to recognise this explicitly, and tailor their policies and programs accordingly.

8.4 PROJECT CONCLUSION

Beliefs about human nature play a vital role within libertarian and social-liberal political philosophy. In particular, both sides offer similar descriptions of universal human capacities for everyday reasoning, decision making and self-determination as key elements of individual agency, and as fundamental and valuable parts of our nature. In both forms of theory we also find claims – in the vein of social psychology – about the realisation of these capacities within populations under different kinds of socio-political and economic conditions. Differing views about how things will tend to go within a liberal State-free market system lead libertarians and social-liberals to different political conclusions about the role of the State.

The approach taken here has been to test claims about human nature within the libertarian–social-liberal dialectic against contemporary scientific theory and evidence,

especially in cognitive neuroscience and epidemiology. I have proposed the PF-A model as a contemporary evidence-based account of capacities for reasoning and self-determination described in liberal political philosophy. In relation to claims about social psychology, the analysis has developed fresh perspectives on a causal relationship between social conditions and detrimental psychological effects. In particular, I have put forward evidence and argument in favour of the following main claims:

- That acute uncertainty states involving arousal of aversive outcome expectancy states in the orbitofrontal cortex, and change behaviour signals mediated by the amygdala, play an important role in competent capacities for social reasoning and decision making
- That uncertainty states can become more chronic in conditions where cognitive resources and/or behavioural options to decisively avoid a predicted aversive outcome are not available
- That chronic uncertainty states, incorporating extended hyperarousal of the amygdala can contribute to the onset of a psychiatric disorder or a diversion behaviour
- That certain social and/or economic circumstances commonly encountered in Western settings are plausibly implicated as causal contributors to chronic uncertainty states
- That a recognition of the potential role of chronic uncertainty in this regard offers a cogent explanation of higher rates of psychiatric disorders and diversion behaviours among those of lower socioeconomic status

In light of the PF-A model and a body of public health research, I have argued that the kind of political system recommended by libertarians will tend to generate conditions which have significant detrimental effects on SRD capacities, which they claim to value; and do so to a greater extent than a social-liberal system. This puts libertarians out of step with their own espoused, fundamental values and their initial justifications for a basic liberal State over other political structures. I also suggested that a strict libertarian-style politics in action will tend to create significant social risks and costs, with the potential to undermine some basic conditions of social cohesion, and drive political tendencies toward authoritarianism. A social-liberal system will tend to mitigate these risks and costs.

So, according to these arguments, if SRD capacities are regarded as valuable and important, we have reason to prefer a social-liberal system over a libertarian system. However, the ‘standard’ suite of social-liberal policies and programs carries with it implicit, too-simple beliefs about the nature of the relationship between social conditions

and perceived social problems. The tacit explanatory psychology here is not adequate to clearly identify or describe a relationship between psychosocial conditions as such, and detrimental impacts on SRD capacities. A standard social-liberal, egalitarian politics endorses the manipulation of broad-scale material and formal conditions as the primary form of State intervention. State programs in this vein do partially address some psychosocial conditions implicated in undermining SRD capacities, and are important. However, there are other aspects of the problem which are outrunning the usual methods. The associated social risks and liabilities are still cause for prudential concern. A more creative and psychologically astute politics is required.

The merit of the approach adopted here is not so much to affirm the considered intuitions of political philosophers that we do indeed normally realise capacities for everyday reasoning and decision making, and use these for pursuing valued goals within complex social environments (although that is one outcome). Instead, the most significant benefit of engaging with research in both cognitive neuroscience and epidemiology lies with better understanding of the relationship between social, economic or cultural conditions and well-realised or diminished SRD capacities. The fact that beliefs about human nature operating on both side of a libertarian–social-liberal dialectic are constructed and remain at a folk-level of description means that they’re not well-placed to describe this relationship. (Indeed, a libertarian position also has specific political interests in refusing to acknowledge it.) A political culture of left and right which trades in well worn folk-level social-psychological beliefs and explanations drawn from libertarian or social-liberal political philosophy may thus become an impediment to effective action, in response to some genuinely problematic social issues.

I would hope the body of evidence and analysis put forward in this project presents a challenge to social and political leaders, and others within liberal-democratic societies. I believe it offers a set of tools for understanding social dynamics and diagnosing problems which is markedly different to current norms. It directs our thinking towards some different social and political priorities. It demands of us to understand that despite all of our demonstrated powers of technology, organisation and production, and our historically unprecedented levels of material wealth, we are also in danger of undermining our own psychological health and equilibrium, and compromising basic capacities to sustain the social fabric of our lives in good order.

I suggested earlier that a political theory is a work of sustained argument, which incorporates certain claims about human nature and fundamental values, and draws upon these claims to justify preference for a comprehensive political scheme, over other possible schemes. The overall approach taken here builds an account of certain aspects of our nature from the neuroscience up (so to speak), and explores the wider social implications of that account through the medium of public health research. I have used this account to test certain fundamental claims about human nature and social psychology identified within both libertarian and social-liberal political theory. I have investigated the normative implications of my own position in relation to the contested political argument between libertarians and social-liberals, put forward a critical perspective on the dialectic as a whole, and made proposals for an alternative political practice diverging from norms on both sides. On these grounds, I would claim that the proposed analysis and argument offers some elements of a new social-liberal political theory.

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BIBLIOGRAPHY

- Acton, H. B., (1991). "Chronology and introduction" *On Liberty and Other Essays* New York, Oxford University Press.
- Adler, N. E., Epel, E. S., Castellazzo, G.I, Jeanette, R.E. (2000). "Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy white women" *Health Psychology* 19(6): 586-592.
- Adolphs, R., Tranel D., Damasio, H., Damasio, A.R. (1995). "Fear and the human amygdala" *Journal of Neuroscience* 15(9): 5879-5892.
- Adolphs, R. (1999). "Social cognition and the human brain" *Trends in Cognitive Sciences* 3(12): 469-479.
- Adolphs, R. (2001). "The neurobiology of social cognition" *Current Opinion in Neurobiology* 11: 231-339.
- Alonso, J. et. al (2004). "Prevalence of mental disorders in Europe: results from the European study of the epidemiology of mental disorders (ESEMeD) project" *Acta Psychiatrica Scandinavia* 109(Suppl. 420): 21-27.
- Andreassi, J. L. (2000). *Psychophysiology: Human Behavior and Physiological Response* Mahwah, N.J., L. Erlbaum Publishers.
- Auyang, S. Y. (2000). *Mind in Everyday Life and Cognitive Science* Cambridge, Mass., MIT Press.
- Barker, R. A. and S. Barasi (1999). *Neuroscience at a Glance* London, Blackwell Science.
- Barry, N. P. (1986). *On Classical Liberalism and Libertarianism* Basingstoke, Macmillan.
- Bartley, M., Ferrie J., Montgomery, S.M. (1999). "Living in a high-unemployment economy: understanding the health consequences" *Social Determinants of Health*. M. G. Marmot and R. G. Wilkinson. Oxford, Oxford University Press: 81-97.
- Bateson, G. (1979). *Mind and Nature: a Necessary Unity* New York, Dutton.
- Bechara, A., Damasio H., Damasio, A.R., Lee, G.P. (1999). "Different contributions of the human amygdala and ventromedial prefrontal cortex to decision-making" *The Journal of Neuroscience* 19(13): 5473-5481.
- Bechara, A., Damasio H., Damasio, A.R (2000). "Emotion, decision making and the orbitofrontal cortex" *Cerebral Cortex* 10: 295-307.
- Bechara, A. and A. R. Damasio (2004). "The somatic marker hypothesis: a neural theory of economic decision" *Games and Economic Behaviour* 52: 336-372.

- Bechtel, W. and A. A. Abrahamsen (1991). *Connectionism and the Mind: an Introduction to Parallel Processing in Networks* Cambridge, Mass., USA, B. Blackwell
- Bennett, J. and M. Dixon (2006). *Single Person Households and Social Policy: Looking Forwards* York U.K., Joseph Rowntree Foundation.
- Berger, L. M. (2004). "Income, family characteristics and physical violence towards children" *Child Abuse and Neglect* 29: 107-133.
- Berlin, I. (1969). *Four Essays on Liberty* London, Oxford U.P.
- Berridge, K. C. and T. E. Robinson (2003). "Parsing reward" *Trends in Neurosciences* 26(9): 507-513.
- Bijl, R. V., Ravelli A., van Zessen, G.(1998). "Prevalence of psychiatric disorder in the general population: results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS)" *Social Psychiatry and Psychiatric Epidemiology* 33: 587-595.
- Bonda, E., Petrides M., Ostry, D., Evans, A. (1996). "Specific involvement of human parietal systems and the amygdala in the perception of biological motion" *Journal of Neuroscience* 16: 3737-3744.
- Bosma, H., Marmot M. G., Hemingway, H., Nicholson, A. C., Brunner, E., Stansfeld, S.A. (1997). "Low job control and risk of coronary heart disease in Whitehall II (prospective cohort) study" *British Medical Journal* 314.
- Botvinick, M. M., Cohen, J. D., Carter C. (2004). "Conflict monitoring and the anterior cingulate cortex" *Trends in Cognitive Sciences* 8(12): 539-546.
- Breier, A., Albus, M., Pickar, D., Zahn, T. P., Wolkowitz, O. M., Paul, S.M. (1987). "Controllable and uncontrollable stress in humans: alterations in mood and neuroendocrine and psychophysiological function" *American Journal of Psychiatry* 144(11): 1419-1425.
- Breiter, H. C., Etcoff N. L., Whalen, P.J., Kennedy, W.A., Rauch, S.L., Buckner, R.L., Strauss, M.M., Hyman, S., Rosen, B.R. (1996). "Response and habituation of the human amygdala during visual processing of facial expression" *Neuron* 17(5): 875-887.
- Brunner, E. and M. Marmot (1999). "Social organization, stress, and health" *Social Determinants of Health* M. Marmot and R. G. Wilkinson. Oxford, Oxford University Press: 17-41.
- Bunge, M. A. (1977). "Levels and reduction." *American Journal of Physiology* 2(2): 75-82.

- Bush, G., Vogt B. A., Holmes, J., Dale, A. M., Greve, D., Jenike, M.A., Rosen, B.R. (2002). "Dorsal anterior cingulate cortex: a role in reward-based decision making" *PNAS* 99(1): 523-528.
- Cairns-Smith, A. G. (1996). *Evolving the Mind* Melbourne, Cambridge University Press.
- Canli T., Zhao Z., Brewer, J., Gabrieli, J.D.E., Cahill, L. (2000). "Event related activation in the human amygdala associates with later memory for individual emotional experience" *The Journal of Neuroscience* 20(RC99): 1-5.
- Chalmers, D. J. (1997). *The Conscious Mind: in Search of a Fundamental Theory* New York, Oxford University Press.
- Chandola, T., Kuper H., Singh-Manoux, A., Bartley, M., Marmot, M. (2004). "The effects of control at home on CHD events in the Whitehall II study: gender differences in psychosocial domestic pathways to social inequalities in CHD" *Social Science and Medicine* 58: 1501-1509.
- Changeux, J.-P. (2004). *The Physiology of Truth: Neuroscience and Human Knowledge* Cambridge, Ma, Belknap Press.
- Christensen, W. (2006). "The evolutionary origins of volition" *Distributed Cognition and the Will: Individual Volition and Social Context* D. Spurrett, H. Kincaid, D. Ross and L. Stephens. Cambridge, Mass., MIT Press.
- Churchland, P. S. (1986). *Neurophilosophy: Toward a Unified Science of the Mind-Brain* Cambridge, Mass., MIT Press.
- Churchland, P. M. (1999). "Eliminative materialism and the propositional attitudes" *Mind and Cognition: an Anthology* W. G. Lycan. Oxford, Blackwell publishers: 120-132.
- Churchland, P. S. and T. J. Sejnowski (1999). "Neural representation and neural computation" *Mind and Cognition: an Anthology* W. G. Lycan. Oxford, Blackwell publishers: 133-152.
- Churchland, P. S. (2002). *Brain-Wise: Studies in Neurophilosophy* Cambridge, Mass., MIT Press.
- Clark, A. (1993). *Associative Engines: Connectionism, Concepts, and Representational Change* Cambridge, Mass., MIT Press.
- Clark, A. (1997). *Being There: Putting Brain, Body, and World Together Again* Cambridge, Mass., MIT Press.

- Clark, A. (1999). "An embodied cognitive science?" *Trends in Cognitive Sciences* 3(9): 345-351.
- Clark, A. (2001). *Mindware: An Introduction to the Philosophy of Cognitive Science* New York, Oxford University Press.
- Clarke, S. (2006). "The self-development argument for individual freedom" *Minerva* 10: 137-171.
- Cohen, G. A. (1995). *Self-Ownership, Freedom and Equality* New York, Cambridge University Press.
- Cohen, J. D., Perlstein W. M., Braver, T. S., Nystrom, L.E., Noll, D.C., Jonides, J., Smith, E.E. (1997). "Temporal dynamics of brain activation during a working memory task" *Nature* 386: 604-608.
- Cohen, J., I. (2000). "Stress and mental health: a biobehavioral perspective" *Issues in Mental Health Nursing* 21: 185-202.
- Cooper, M. L., Russell M., Skinner, J.B., Frone, M.R., Mudar, P. (1992). "Stress and alcohol use: moderating effects of gender, coping and alcohol expectancies" *Journal of Abnormal Psychology* 101(1): 139-152.
- Corning, P. A. (1977). "Human nature *redivivus*" *Human Nature in Politics: Nomos* 17. J. R. Pennock, J. W. Chapman New York, New York University Press: 19-68.
- Crane, T. (2003). *The Mechanical Mind: A Philosophical Introduction to Minds, Machines and Mental Representation* London; New York, Routledge.
- Craver, C. F. (2001). "Role functions, mechanisms and hierarchy" *Philosophy of Science* 68: 53-74.
- Critchley, H. D. and E. T. Rolls (1996). "Olfactory neuronal responses in the primate orbitofrontal cortex: analysis in an olfactory discrimination task" *Journal of Neurophysiology* 75: 1659-1672.
- Damasio, A. R. (1994). *Descartes Error: Emotion, Reason and the Human Brain* London, Picador.
- Damasio, A. R., Damasio H., Christen, Y. (1996). *Neurobiology of Decision-Making* New York, Springer.
- Davidson, R., J. and W. Irwin (1999). "The functional neuroanatomy of emotion and affective style" *Trends in Cognitive Sciences* 3(1): 11-21.

- Davidson, R., J. (2002). "Anxiety and affective style: role of prefrontal cortex and amygdala" *Biological Psychiatry* 51: 68-80.
- Davidson, R. J., Pizzagalli D., Nitschke, J. B., Putnam, K. (2002). "Depression: perspectives from affective neuroscience" *Annual Review of Psychology* 53: 545-574.
- Davis, M. (1992). "The role of the amygdala in conditioned fear" *The Amygdala: Neurobiological Aspects of Emotion, Memory, and Mental Dysfunction* J. P. Aggleton. New York, John Wiley and Sons: 255-306.
- De Caro, M. and D. Macarthur (2004). *Naturalism in Question* Cambridge, MA, Harvard University Press.
- De Caro, M. and D. Macarthur (2004a). "Introduction" *Naturalism in Question* M. De Caro and D. Macarthur. Cambridge, MA, Harvard University Press.
- Dennett, D. C. (2003). *Freedom Evolves* New York, Viking.
- Dewey, J., Ratner J., Post E.A. (1939). *Intelligence in the Modern World: John Dewey's Philosophy* New York, Modern Library.
- Dewey, J. (1963). *Freedom and Culture* New York, Capricorn Books.
- Dewey, J. and J. J. McDermott (1973). *The Philosophy of John Dewey* New York, Putnam's Sons.
- Dohrenwend, B. P., Levav I., Shrout, P.E., Schwartz, S., Naveh, G., Link, B.G., Skodol, A. E., Stueve, A. (1992). "Socioeconomic status and psychiatric disorders: the causation-selection issue" *Science* 255(5047): 946-952.
- Drevets, W. C. (2001). "Neuroimaging and neuropathological studies of depression: implications for the cognitive-emotional features of mood disorder" *Current Opinion in Neurobiology* 11: 240-249.
- Dreyfus, H. L. (1992). *What Computers Still Can't Do: a Critique of Artificial Reason* Cambridge, Mass., MIT Press.
- Drubach, D. (2000). *The Brain Explained* Sydney, Prentice-Hall.
- Dunleavy, P. and B. O'Leary (1987). *Theories of the State: The Politics of Liberal Democracy* Basingstoke, Hants, Macmillan Education.
- Dupré, J. (2004). "The miracle of monism" *Naturalism in Question* M. De Caro and D. Macarthur. Cambridge, MA, Harvard University Press: 36-58.
- Dworkin, R. M. (1977). *Taking Rights Seriously* London, Duckworth.

- Dworkin, G. (1999). "Positive and Negative Freedom" *The Cambridge Dictionary of Philosophy: Second Edition* R. Audi. New York, Cambridge University Press.
- Eckersley, R. (2006). "Is modern Western culture a health hazard?" *International Journal of Epidemiology* 35: 252-258.
- Edelman, G. M. and G. Tononi (2000). *Consciousness: How Matter Becomes Imagination* London, Penguin.
- Ehlert, U., Gaab J., Heinrichs, M. (2001). "Psychoneuroendocrinological contributions to the etiology of depression, posttraumatic stress disorder, and stress-related bodily disorders: the role of the hypothalamus-pituitary-adrenal axis" *Biological Psychology* 57: 141-152.
- Elman, J. L., Bates E. A., Johnson, M.H., Karmiloff-Smith, A., Parisi, D., Plunkett, K. (1998). *Rethinking Innateness: A Connectionist Perspective on Development* London, MIT Press.
- Farmer, M. M. and K. F. Ferraro (2005). "Are racial disparities in health conditional on socio-economic status?" *Social Science and Medicine* 60: 191-204.
- Ferrie, J. E., Shipley M. J., Stansfeld S.A., Marmot M. (2002). "Effects of chronic job insecurity and changes in job security on self reported health, minor psychiatric morbidity, physiological measures, and health related behaviours in British civil servants: the Whitehall II study" *Journal of Epidemiology and Community Health* 56: 450-454.
- Fisher, S. (1984). *Stress and the Perception of Control* London, Lawrence Erlbaum Associates.
- Fodor, J. A. (1981). "The mind-body problem" *Scientific American* 244: 124-132.
- Fodor, J. A. (1987). *Psychosemantics: The Problem of Meaning in the Philosophy of Mind* Cambridge, Mass, MIT Press.
- Franzini, L. and M. E. Fernandez-Esquer (2006). "The association of subjective social status and health in low-income Mexican-origin individuals in Texas" *Social Science and Medicine* 63: 788-804.
- Friedman, M. (1962). *Capitalism and Freedom* Chicago, University of Chicago Press
- Friedman, M. and R. T. Selden (1975). *Capitalism and Freedom: Problems and Prospects: Proceedings of a Conference in Honor of Milton Friedman* Charlottesville, University Press of Virginia.
- Fries, E., Hesse J., Hellhammer, J., Hellhammer, D.H. (2005). "A new view on hypocortisolism" *Psychoneuroendocrinology* 30: 1010-1016.

- Fu, T., Koutstaal W., Fu, C.H.Y., Poon, L., Cleare, A.J (2005). “Depression, confidence and decision: evidence against depressive realism” *Journal of Psychopathology and Behavioral Assessment* 27(4): 243-252.
- Fuchs, E. and G. Flügge (2003). “Chronic social stress: effects on limbic brain structures.” *Physiology and Behavior* 79: 417-427.
- Fuster, J., M. (1987). “Prefrontal cortex” *Encyclopaedia of Neuroscience* G. Adelman. Boston, Birkhauser. 2: 972-975.
- Fuster, J. M. (1989). *The Prefrontal Cortex: Anatomy, Physiology and Neuropsychology of the Frontal Lobe* New York, Raven Press.
- Fuster, J.M., Bodner M., Kroger, J.K. (2000). “Cross-model and cross temporal association of neurons of frontal cortex” *Nature* 405: 347-351.
- Fuster, J., M. (2004). “Upper processing stages of the perception-action cycle” *Trends in Cognitive Sciences* 8(4): 143-145.
- Gallagher, M. and P. C. Holland (1994). “The amygdala complex: multiple roles in associative learning and attention” *Proceedings of the National Academy of Sciences USA* 91: 11771-11776.
- Gallese, V., Keysers C., Rizzolatti, G. (2004). “A unifying view of the basis of social cognition” *Trends in Cognitive Sciences* 8(9): 396-403.
- Gaus, G. F. (1983). *The Modern Liberal Theory of Man* London, Croom Helm.
- George, S. (1999). *A Short History of Neo-Liberalism: Twenty Years of Elite Economics and Emerging Opportunities for Structural Change* Conference on Economic Sovereignty in a Globalising World, Bangkok, www.globalexchange.org.
- Goldberg, E. (2001). *The Executive Brain: Frontal Lobes and the Civilized Mind* New York, Oxford University Press.
- Goldstein, L. E., Rasmusson A. M., Bunney, S.B., Roth, R.H. (1996). “Role of the amygdala in the coordination of behavioral, neuroendocrine, and prefrontal cortical monoamine responses to psychological stress in the rat” *The Journal of Neuroscience* 16(15): 4787-4798.
- Gordon, R. M. (1999). “Simulation theory” *The Cambridge Dictionary of Philosophy: Second Edition* R. Audi. New York, Cambridge University Press.
- Gottfried, J. A., O'Doherty J., Dolan, R.J. (2003). “Encoding predictive reward value in the human amygdala and orbitofrontal cortex” *Science* 301(5636): 1104-1107.

- Gratz, K. L., Tull M. T., Gunderson, J.G. (2008). "Preliminary data on the relationship between anxiety sensitivity and borderline personality disorder: the role of experiential avoidance" *Journal of Psychiatric Research* 42: 550-559.
- Green, T. H. (1885). "Liberal Legislation and Freedom of Contract" *Works of Thomas Hill Green* R. L. Nettleship. London, Longmans, Green and Co. 3.
- Green, T. H. and A. C. Bradley (1906). *Prolegomena to Ethics* Oxford, Clarendon Press.
- Green, T. H. (1937). *Lectures on the Principles of Political Obligation* London, Longmans, Green and Co.
- Green, D. G. (1987). *The New Right: The Counter-Revolution in Political, Economic and Social Thought* Brighton, Wheatsheaf.
- Greenfield, S. (2000). *The Private Life of the Brain: Emotions, Consciousness, and the Secret of the Self* New York, Wiley.
- Griffiths, P. E. (1997). *What Emotions Really Are: The Problem of Psychological Categories* Chicago, Ill., University of Chicago Press.
- Gutmann, A. (1980). *Liberal Equality* Cambridge; New York, Cambridge University Press.
- Hajszan, T., Dow A., Warner-Schmidt, J.L., Szigeti-Buck, K., Sallam, N.L., Parducz, A., Leranth, C., Duman, R.S (2009). "Remodelling of hippocampal spine synapses in the rat learned helplessness model of depression" *Biological Psychiatry* 65: 392-400.
- Halpern, D. (1995). *Mental Health and the Built Environment: More Than Bricks and Mortar?* London; Bristol, PA, Taylor & Francis.
- Hamilton, C. (2002). "Social Democracy Under Consumer Capitalism" *Online Opinion* www.onlineopinion.com.au.
- Harvey, D. (2005). *A Brief History of Neoliberalism* Oxford; New York, Oxford University Press.
- Haxby, J. V., E. A. Hoffman, et al. (2000). "The distributed human neural system for face perception" *Trends in Cognitive Sciences* 6(6): 223-233.
- Hayek, F. A. v. (1952). *The Sensory Order: An Inquiry into the Foundations of Theoretical Psychology* London, Routledge & Paul.
- Hayek, F. A. v. (1960). *The Constitution of Liberty* Chicago, University of Chicago Press.
- Hayek, F. A. v. (1973). *Law, Legislation and Liberty* London, Routledge & Kegan Paul.
- Hayes, S. C., Strosahl, K., et al. (2004). "Measuring experiential avoidance: a preliminary test of a working model" *The Psychological Record* 54: 553-578.

- Herba, C. and M. Phillips (2004). "Annotation: development of facial expression recognition from childhood to adolescence: behavioural and neurological perspectives" *Journal of Child Psychology and Psychiatry* 45(7): 1185-1198.
- Heywood, A. (1998). *Political Ideologies: An Introduction* Basingstoke, Macmillan.
- Hill, L. (1999). "Homo economicus, 'different voices,' and the liberal psyche" *International Journal of Applied Psychology* 13(1): 21-45.
- Hobhouse, L. T. (1911). *Liberalism* London, Williams and Norgate.
- Hobhouse, L. T. (1926). *Mind in Evolution* London, Macmillan.
- Hospers, J. (1974). "What libertarianism is" *The Libertarian Alternative: Essays in Social and Political Philosophy* T. R. Machan. Chicago, Nelson-Hall Co.: 3-20.
- Howard, J. (2008). "Our proud record" *The Australian* 7/03/08 Sydney.
- Huesmann, L. R., Moise-Titus J., Podolski, C., Eron, L.D. (2003). "Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood, 1977-1992" *Developmental Psychology* 39(2): 201-221.
- Joëls, M., Karst H., Krugers, H.J., Lucassen, P.J. (2007). "Chronic stress: implications for neuronal morphology, function and neurogenesis" *Frontiers in Neuroendocrinology* 28: 72-96.
- Johnson-Laird, P. N. (1988). *The Computer and the Mind: An Introduction to Cognitive Science* London, Fontana.
- Johnson-Laird, P. N. and E. Shafir (1993). "The interaction between reasoning and decision making: an introduction" *Cognition* 49: 1-9.
- Kahneman, D., and A. Tversky (2000). *Choices, Values, and Frames* Cambridge, Cambridge University Press.
- Kast, B. (2001). "Decisions, decisions..." *Nature* 411: 126-128.
- Keller, M. C. and R. M. Nesse (2006). "The evolutionary significance of depressive symptoms: different adverse situations lead to different depressive symptom patterns" *Journal of Personality and Social Psychology* 91(2): 316-330.
- Kerns, J. G., J. D. Cohen, et al. (2004). "Anterior cingulate conflict monitoring and adjustments in control" *Science* 303: 1023-1026.
- Keyes, C. L. M. (2002). "The mental health continuum: from languishing to flourishing in life" *Journal of Health and Social Research* 43: 207-222.
- Kiernan, J. A. (1987). *Introduction to Human Neuroscience* Philadelphia, Lippincott.

- Kim, J. J. and M. S. Fanselow (1992). "Modality-specific retrograde amnesia of fear" *Science* (256): 675-677.
- Kim, J. (1999). "Making sense of emergence" *Philosophical Studies* (95): 3-36.
- Kim, S.E., Kim J.W., et al. (2006). "The neural mechanism of imagining facial expression" *Brain Research* 1145: 128-137.
- Kirschbaum, C., Prussner J. C., et al. (1995). "Persistent high cortisol responses to repeated psychological stress in a subpopulation of healthy men" *Psychosomatic Medicine* 57(5): 468-474.
- Klosko, G. (1993). *History of Political Theory: An Introduction* Fort Worth, Harcourt Brace College Publishers.
- Koechlin, E. and C. Summerfield (2007). "An information theoretical approach to prefrontal executive function" *Trends in Cognitive Sciences* 11(6): 229-235.
- Kringlebach, M. L. (2005). "The human orbitofrontal cortex: linking reward to hedonic experience" *Nature Reviews Neuroscience* 6: 691-702.
- Kunz-Ebrecht, S. R., Kirschbaum C., Marmot, M., Steptoe, A. (2004). "Differences in cortisol awakening response on workdays and weekends in women and men from the Whitehall II cohort" *Psychoneuroendocrinology* 29: 516-528.
- Kurtz, P. D., Gaudin J. M., Howing, P.T., Wodarski, J.S. (1993). "The consequences of physical abuse and neglect on the school age child: mediating factors" *Children and Youth Services Review* 15: 85-104.
- Kymlicka, W. (1990). *Contemporary Political Philosophy: An Introduction* Oxford Clarendon Press; Oxford University Press.
- Lakoff, G. and M. Johnson (1999) *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* New York, Basic Books.
- Lazarus, R. S. (1993). "From psychological stress to the emotions: a history of changing outlooks" *Annual Review of Psychology* 44: 1-21.
- LeBar, K. S., Gatenby J. C., Gore, J.C., Ledoux, J.E., Phelps, E.A. (1998). "Human amygdala activation during conditioned fear acquisition and extinction: a mixed train fMRI study" *Neuron* 20: 937-945.
- Ledoux, J. E. (1996). *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* New York, Simon & Schuster.

- LeDoux, J. E. and J. Muller (1997). "Emotional memory and psychopathology" *Philosophical Transactions of the Royal Society of London* 352: 1719-1726.
- Lewis, F. L. (1992). *Applied Optimal Control and Estimation* Sydney, Prentice-Hall.
- Lewis, G. and R. G. Wilkinson (1993). "Another British disease? A recent increase in the prevalence of psychiatric morbidity" *Journal of Epidemiology and Community Health* 47: 358-361.
- Lewis, G., Bebbington P., Brugha, T., Farrell, M., Gill, B., Jenkins, R.L., Meltzer, H. (1998). "Socioeconomic status, standard of living, and neurotic disorder" *The Lancet* 352: 605-609.
- Link, B. G., Lennon M. C., Dohrenwend, B.P. (1993). "Socioeconomic status and depression: the role of occupations involving direction, control and planning" *American Journal of Sociology* 98(6): 1351-1387.
- Locke, J. (1953). *Two Treatises of Civil Government* London, Dent.
- Lundberg, O. (1991). "Causal explanations for class inequality in health - an empirical analysis." *Social Science and Medicine* 32(4): 385-393.
- Lycan, W. G. (1999). *Mind and Cognition: An Anthology* Malden, Mass., Blackwell Publishers.
- Lycan, W. G. (1999a). "Introduction" *Mind and Cognition: An Anthology* W. G. Lycan. Oxford, Blackwell publishers: 3-13.
- MacCallum, G. (1967). "Negative and positive freedom" *The Philosophical Review* 76(3): 312-334.
- MacLeod, A. K., Tata P., Kentish, J., Carroll, F., Hunter, E. (1997). "Anxiety, depression, and explanation-based pessimism for future positive and negative events" *Clinical Psychology and Psychotherapy* 4(1): 15-24.
- Magarinos, A. M., Verdugo J. M. G., McEwen, B.S. (1997). "Chronic stress alters synaptic terminal structure in hippocampus" *Proceedings of the National Academy of Sciences USA* 94: 14002-14008.
- Mahner, M. and M. A. Bunge (1997). *Foundations of Biophilosophy* Berlin; New York, Springer.
- Mahner, M. and M. Bunge (2001). "Function and functionalism: a synthetic perspective" *Philosophy of Science* 68: 75-94.

- Maner, J. K., Richey J. A., Cromer, K., Mallott, M., Lejuez, C.W., Joiner, T. E., Schmidt, N.B. (2007). “Dispositional anxiety and risk-avoidant decision-making” *Personality and Individual Differences* 42: 665-675.
- Manne, R. (2006). “Warrior for the future” *The Age* 12/12/06 Melbourne.
- Manning, C. and A. Gregoire (2006). “Effects of parental mental illness on children” *Psychiatry* 5(1): 10-12.
- Marmot, M., Bosma H., Hemingway, H., Brunner, E., Stansfeld, S.A. (1997). “Contribution of job control and other risk factors to social variation in coronary heart disease incidence” *The Lancet* 350: 235-239.
- Marmot, M. and R. G. Wilkinson (1999). *Social Determinants of Health* Oxford; New York, Oxford University Press.
- Marmot, M. (2004). *Status Syndrome: How Your Social Standing Directly Affects Your Health and Life Expectancy* London, Bloomsbury.
- Martikainen, P., Adda J., Ferrie, J.E., Smith, G. D., Marmot, M. (2003). “Effects of income and wealth on GHQ depression and poor self rated health in white collar women and men in the Whitehall II study” *Journal of Epidemiology and Community Health* 57: 718-723.
- Mayr, U. (2004). “Conflict, consciousness and control” *Trends in Cognitive Sciences* 8(4): 145-148.
- McDowell, J. (2004). “Naturalism in the philosophy of mind” *Naturalism in Question* M. De Caro and D. Macarthur. Cambridge, MA, Harvard University Press: 91-105.
- McEwen, B. (1998). “Protective and damaging effects of stress mediators” *Seminars in Medicine of the Beth Israel Deaconess Medical Centre* 338(3): 171-179.
- McEwen, B. and E. N. Lasley (2002). *The End of Stress as We Know It* Washington DC, Joseph Henry Press.
- McEwen, B. and J. C. Wingfield (2003). “The concept of allostasis in biology and biomedicine” *Hormones and Behavior* 43: 2-15.
- McKnight, D. (2005). *Beyond Right and Left: New Politics and the Culture Wars* Crows Nest, N.S.W., Allen & Unwin.
- Mele, A. R. and P. Rawling (2004). “Introduction: aspects of rationality” *The Oxford Handbook of Rationality* A. R. Mele and P. Rawling. Oxford, Oxford University Press: 1-13.

- Meller, W. H. and C. M. Borchardt (1996). "Comorbidity of major depression and conduct disorder" *Journal of Affective Disorders* 39: 123-126.
- Mill, J. S. and J. Gray (1991). *On Liberty and Other Essays* Oxford; New York, Oxford University Press.
- Miller, E. K. (2000). "The prefrontal cortex and cognitive control" *Nature Reviews Neuroscience* 1: 59-65.
- Mirowsky, J. and C. Ross (2002). "Measurement for a human science" *Journal of Health and Social Behavior* 43: 152-170.
- Mirowsky, J. and C. E. Ross (2003). *Social Causes of Psychological Distress* New York, Aldine de Gruyter.
- Montgomery, S. M., Cook D.G., Bartley M., Wadsworth, M.E. J. (1999). "Unemployment pre-dates symptoms of depression and anxiety resulting in medical consultation in young men" *International Journal of Epidemiology* 28: 95-100.
- Muntaner, C., W. Eaton W., Diala, C., Kessler, R.C., Sorlie, P.D. (1998). "Social class, assets, organizational control and the prevalence of common groups of psychiatric disorders" *Social Science and Medicine* 47(12): 2043-2053.
- Murphy, F. C., Sahakian B. J., Rubinsztein, J.S., Michael, A., Rogers, R.D., Robbins, T.W., Paykel, E.S. (1999). "Emotional bias and inhibitory control processes in mania and depression" *Psychological Medicine* 29: 1307-1321.
- Must, A., Szabo Z., Bodi, N., Szasz, A., Janka, Z., Keri, S. (2006). "Sensitivity to reward and punishment and the prefrontal cortex in major depression" *Journal of Affective Disorders* 90: 209-215.
- National Institute of Mental Health (2008). *The Numbers Count: Mental Disorders in America* Washington DC, U.S. Department of Health and Human Services
- Nisbett, R. E. and T. D. Wilson (1977). "Telling more than we can know: verbal reports on mental processes" *Psychological Review* 84(3): 231-259.
- Nozick, R. (1975). *Anarchy, State, and Utopia* Oxford, Blackwell.
- Nozick, R. (1984). *Philosophical Explanations* London, Oxford University Press.
- Nozick, R. (1993). *The Nature of Rationality* Princeton, N.J, Princeton University Press.
- Nursey-Bray, P. F. and C. L. Bacchi (2001). *Left Directions: Is There a Third Way?* Crawley, W.A., University of Western Australia Press.

- Nussbaum, M. C. and A. K. Sen (1993). *The Quality of Life* Oxford; New York, Clarendon Press; Oxford University Press.
- O'Brien, G. and J. Opie (1997). "Cognitive science and phenomenal consciousness: a dilemma, and how to avoid it" *Philosophical Psychology* 10: 269-286.
- O'Leary, D. D. M. (1996). "Areal specialization of the developing neocortex: differentiation, developmental plasticity and genetic specification" *The Lifespan Development of Individuals: Behavioral, Neurobiological, and Psychosocial Perspectives* D. Magnusson. Cambridge, Cambridge University Press: 23-37.
- O'Reilly, R. C. and Y. Munakata (2000). *Computational Explorations in Cognitive Neuroscience* MIT Press.
- Ochsner, K. N., Ray R. D., Cooper, J.C., Robertson, E.R., Chopra, S., Gabrieli, J.D.E., Gross, J.J. (2004). "For better or worse: neural systems supporting the cognitive down- and up-regulation of negative emotion" *Neuroimage* 23: 483-499.
- Owen, A. M., Evans A. C., Petrides, M. (1996). "Evidence for a two-stage model of spatial working memory processing within the lateral frontal cortex" *Cerebral Cortex* 6: 31-38.
- Packer, S. (2000). "Stress and religion" *Encyclopaedia of Stress* G. Fink. San Diego, CA, Academic Press. 3: 348-355.
- Panic, M. (2007). "Does Europe need neoliberal reforms?" *Cambridge Journal of Economics* 31: 145-169.
- Panksepp, J. (1998). *Affective Neuroscience: The Foundations of Human and Animal Emotions* New York, Oxford University Press.
- Pennock, J. R. and J. W. Chapman (1977). *Human Nature in Politics* New York, New York University Press.
- Perner, J. and B. Lang (1999). "Development of theory of mind and executive control" *Trends in Cognitive Sciences* 3(9): 337-344.
- Perry, M. J. (1996). "The relationship between social class and mental disorder" *The Journal of Primary Prevention* 17(1): 17-30.
- Phillips, A. G., Ahn S., Howland, J.G. (2003). "Amygdalar control of the mesocorticolimbic dopamine system: parallel pathways to motivated behaviour." *Neuroscience and Biobehavioral Reviews* 27: 543-554.

- Pietromonaco, P. R. and K. S. Rook (1987). "Decision style in depression: the contribution of perceived risks versus benefits" *Journal of Personality and Social Psychology* 52(2): 399-408.
- Pinker, S. (2004). "Why nature & nurture won't go away" *Daedalus Fall* 5-17.
- Pojman, L., P (2006). *Ethics: Discovering Right and Wrong* Belmont CA, Thomson Wadsworth.
- Posner, J., Russell, A. J., Petersen, B.S. (2005). "The circumplex model of affect: an integrative approach to affective neuroscience, cognitive development, and psychopathology" *Development and Psychopathology* 17: 715-734.
- Power, C. and O. Manor (1992). "Explaining social class differences in psychological health among young adults: a longitudinal perspective" *Social Psychiatry and Psychiatric Epidemiology* 27: 284-291.
- Power, M. J. and T. Dalgleish (1999). *Handbook of Cognition and Emotion* Chichester, England; New York, Wiley.
- Putnam, H. (1999). "The nature of mental states" *Mind and Cognition: An Anthology* W. G. Lycan. Oxford, Blackwell publishers: 27-34.
- Quartz, S. R. and T. J. Sejnowski (1997). "The neural basis of cognitive development: a constructivist manifesto" *Behavioral and Brain Sciences* 20: 537-596.
- Quartz, S. R. (1999). "The constructivist brain" *Trends in Cognitive Sciences* 3(2).
- Quartz, S. R. (2003). "Innateness and the brain" *Biology and Philosophy* 18: 13-40.
- Quayle, E., Vaughan M., Taylor, M. (2006). "Sex offenders, internet child abuse images and emotional avoidance: the importance of values" *Aggression and Violent Behaviour* 11: 1-11.
- Rahe, P. A. (2005). "The political needs of a toolmaking animal: Madison, Hamilton, Locke, and the question of property" *Social Philosophy and Policy* 22(1): 1-26.
- Rand Health (2004). *The Societal Promise of Improving Care for Depression* Santa Monica, Rand Corporation.
- Rawls, J. (1971). *A Theory of Justice* Cambridge, Mass, Belknap Press of Harvard University Press.
- Rawls, J. and E. Kelly (2001). *Justice as Fairness: A Restatement* Cambridge, Mass., Harvard University Press.

- Reynolds, M., Mezey G., Chapman, M., Wheeler, M., Drummond, C., Baldacchino, A. (2005). "Co-morbid post-traumatic stress disorder in a substance misusing clinical population" *Drug and Alcohol Dependence* 77: 251-258.
- Roberts, A. C. (2006). "Primate orbitofrontal cortex and adaptive behaviour" *Trends in Cognitive Sciences* 10(2): 83-90.
- Rogler, L. H. (1996). "Increasing socioeconomic inequalities and the mental health of the poor" *The Journal of Nervous and Mental Disease* 184(12): 719-722.
- Rolls, E. T. (2000). "The orbitofrontal cortex and reward" *Cerebral Cortex* 10: 284-294.
- Rowe, J. B., I. Toni, et al. (2000). "The prefrontal cortex: response selection or maintenance within working memory?" *Science* 288(1656).
- Rudd, K. (2006). "Child of Hayek" *The Australian* 20/12/06 Sydney
- Russell, B. (1948). *History of Western Philosophy* London, Allen and Unwin.
- Russell, J. A. (2003). "Core affect and the psychological construction of emotion" *Psychological Review* 110(1): 145-172.
- Ryan, A. and I. Berlin (1979) *The Idea of Freedom: Essays in Honour of Isaiah Berlin* Oxford, Oxford University Press.
- Sabioncello, A., Kocjan-Hercigonja D., et al. (2000). "Immune, endocrine, and psychological responses in civilians displaced by war" *Psychosomatic Medicine* 62: 502-508.
- Salters-Pedneault, K., M. Tull T., Roemer, L. (2004). "The role of avoidance of emotional material in the anxiety disorders" *Applied and Preventative Psychology* 11: 95-114.
- Sapolsky, R. (2005). "Sick of poverty" *Scientific American* 293(6): 92-99.
- Saunders, P. (2003). "Examining recent changes in income distribution in Australia" *SPRC Discussion Papers* Social Policy and Research Centre Sydney, University of NSW.
- Schaefer, S. M., Jackson D. C., Davidson, R.J., Aguirre, G.K., Kimberg, D.Y., Thomson-Schill, S.L. (2002). "Modulation of amygdalar activity by the conscious regulation of negative emotion" *Journal of Cognitive Neuroscience* 16(6): 913-921.
- Schilling, E. A., Aseltine R. H., Gore, S. (2008). "The impacts of cumulative childhood diversity on young adult mental health: measures, models and interpretations" *Social Science and Medicine* 66: 1140-1151.

- Schoenbaum, G., Setlow B., Saddoris, M.P., Gallagher, M. (2003). "Encoding predicted outcome and acquired value in orbitofrontal cortex during cue sampling depends upon input from basolateral amygdala" *Neuron* 39: 855-867.
- Schoenbaum, G., Roesch M. R., Stalnaker, T.A. (2006). "Orbitofrontal cortex, decision-making and drug addiction" *Trends in Neurosciences* 29(2): 116-124.
- Schommer, N. C., Hellhammer D. H., Kirschbaum, C. (2003). "Disassociation between the reactivity of the hypothalamus-pituitary-adrenal axis and the sympathetic-adrenal-medullary system to repeated psychosocial stress" *Psychosomatic Medicine* 65: 450-460.
- Schore, A. N. (1994). *Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development* Hillsdale, N.J., L. Erlbaum Associates.
- Schulkin, J., McEwen B. S., Gold, P.W. (1993). "Allostasis, amygdala, and anticipatory angst" *Neuroscience and Biobehavioral Review* 18(3): 385-396.
- Schultz, W., Dayan P., Montague, P.R. (1997). "A Neural Substrate of Prediction and Reward" *Science* 275(5306): 1593-99.
- Schultz, W. (2002). "Getting formal with dopamine and reward" *Neuron* 36: 241-263.
- Schumacher, J. A., Feldbau-Kohn S., Smith, A.M., Heyman, R.E (2001). "Risk factors for male-to-female partner abuse" *Aggression and Violent Behavior* 6: 281-352.
- Searle, J. R. (1983). *Intentionality, an Essay in the Philosophy of Mind* Cambridge; New York, Cambridge University Press.
- Searle, J. R. (1984). *Minds, Brains and Science* London, British Broadcasting Corporation.
- Semler, R. (1994). *Maverick* Sydney, Random House.
- Sen, A. K. (1992). *Inequality Reexamined* New York; Oxford Russell Sage Foundation; Clarendon Press.
- Sen, A. K. (1993). "Capability and well-being" *The Quality of Life* M. C. Nussbaum and A. K. Sen Oxford; New York, Clarendon Press; Oxford University Press: 31-53.
- Shekhar, A., Truitt W., Rainnie, D., Sajdyk, T. (2005). "Role of stress, corticotrophin releasing factor (CRF) and amygdala plasticity in chronic anxiety" *Stress* 8(4): 209-219.
- Sheridan, G. (2005). "Test of ideological will" *The Weekend Australian* 16/07/05 Sydney
- Singer, T. (2004). "Empathy for pain involves the affective but not the sensory components of pain" *Science* 303: 1157-1162.
- Smith, R. M. (1994). "Unfinished liberalism" *Social Research* 61(3): 631-640.

- Stansfeld, S. A., J. Head, Marmot, M. (1998). "Explaining social class differences in depression and well-being" *Social Psychiatry and Psychiatric Epidemiology* 33: 1-9.
- Stansfeld, S. A., Fuhrer R., Shipley, M.J., Marmot M. (1999). "Work characteristics predict psychiatric disorder: prospective results from the Whitehall II study" *Occupational and Environmental Medicine* 56: 302-7.
- Stansfeld, S. A. (1999). "Social support and social cohesion" *Social Determinants of Health* M. G. Marmot and R. G. Wilkinson. Oxford, Oxford University Press.
- Stansfeld, S. A., Head J., Fuhrer, R., Wardle, J., Cattell, V. (2003). "Social inequalities in depressive symptoms and physical functioning in the Whitehall II study: exploring a common cause explanation" *Journal of Epidemiology and Community Health* 57: 361-367.
- Stanton, P. (2001). "Competitive health policies and community health" *Social Science and Medicine* 52: 671-679.
- Stevenson, L. F. and D. L. Haberman (1998). *Ten Theories of Human Nature* New York, Oxford University Press.
- Stich, S. P. (1983). *From Folk Psychology to Cognitive Science: The Case Against Belief* Cambridge, Mass, MIT Press.
- Stilwell, F. and K. Jordan (2007). "Towards a more egalitarian Australia? Making greater equality a principle for public policy" *InSight: Centre for Policy Development* Sept 2007.
- Stroud, B. (2004). "The charm of naturalism" *Naturalism in Question* M. De Caro and D. Macarthur. Cambridge, MA, Harvard University Press: 21-35.
- Tafet, G. E. and R. Bernadini (2003). "Psychoneuroendocrinological links between chronic stress and depression" *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 27: 893-903.
- Tanji, J. and E. Hoshi (2001). "Behavioral planning in the prefrontal cortex" *Current Opinion in Neurobiology* 11: 164-170.
- Tavares, J. V., W. C. Drevets, et al. (2003). "Cognition in mania and depression" *Psychological Medicine* 33: 959-967.
- Taylor, C. (1979). "What's wrong with negative liberty" *The Idea of Freedom: Essays in Honour of Isaiah Berlin* A. Ryan and I. Berlin. Oxford, Oxford University Press: 175-194.
- Thelen, E. and L. B. Smith (1994). *A Dynamic Systems Approach to the Development of Cognition and Action* Cambridge, Mass., MIT Press.

- Tomita, H., Ohbayashi M., Nakahara, K., Hasegawa, I., Miyashita, Y. (1999). "Top-down signal from prefrontal cortex in executive control of memory retrieval" *Nature* 401: 699-703.
- Twenge, J. M. (2000). "The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952-1993" *Journal of Personality and Social Psychology* 79(6): 1007-21.
- United Nations Development Program (2005). *Human Development Report 2005* New York, United Nations.
- United Nations Development Program (2008). *Human Development Report 2007-08* New York, United Nations.
- Varela, F., Thompson E., Rosch, E. (1996). *The Embodied Mind* London, MIT Press.
- Vyas, A., Pillai A.G., Chattarji, S. (2004). "Recovery after chronic stress fails to reverse amygdaloid neuronal hypertrophy and enhanced anxiety-like behavior" *Neuroscience* 128: 667-673.
- Warburton, N. (2001). *Freedom: An Introduction with Readings* London; New York, Routledge.
- Weich, S. and G. Lewis (1998). "Material standard of living, social class, and the prevalence of the common mental disorders in Great Britain" *Journal of Epidemiology and Community Health* 52: 8-14.
- Whalen, P. J. (1998). "Fear, vigilance, and ambiguity: initial neuroimaging studies of the human amygdala" *Current Directions in Psychological Science* 7(6): 177-188.
- White, M. (1991). *Against Unemployment* London, Policy Studies Institute.
- White, I., M. and S. P. Wise (1999). "Rule dependent neuronal activity in the prefrontal cortex" *Experimental Brain Research* 126: 315-335.
- Whittle, S., Allen N. B., Lubman, D.I., Yucel, M. (2006). "The neurobiological basis of temperament: towards a better understanding of psychopathology" *Neuroscience and Behavioral Reviews* 30: 511-525.
- World Health Organisation (2009) *World Health Organisation: Core Health Indicators* http://www.who.int/whosis/database/core/core_select.cfm.
- World Health Organisation (2000). "Cross-national comparisons of mental disorders" *Bulletin of the World Health Organisation* 78(4).
- Wilkinson, R. G. (2005). *The Impact of Inequality: How to Make Sick Societies Healthier* New York, The New Press.

- Williams, D. (1999). *The Enlightenment* Cambridge, Cambridge University Press.
- Wust, S., I. Federenko, Hellhammer, D.H., Kirschbaum, C. (2000). "Genetic factors, perceived chronic stress, and the free cortisol response to awakening" *Psychoneuroendocrinology* 25: 707-720.
- Zimbardo, P. G. (2002). "Mind control: psychological reality or mindless rhetoric" *APA Monitor on Psychology* 33(10): 5.

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