1. Introduction

There is no Sin except stupidity.
Oscar Wilde

What has economics got to do with sin or indeed vice versa? These are the questions typically asked in connection with the present endeavour. A bold initial step could be taken, from a religious point of view, by saying that economics, as defined, endorses sin by dint of its stress on individual selfishness. In the formative days of professional economics much energy was expended fending off just such criticism from humanist critics such as Charles Dickens, John Ruskin and Thomas Carlyle. The battle may ultimately have led to the formulation of the optimality conditions of welfare economics, in the early part of the twentieth century, although the answers were to be found in seminal form in Adam Smith’s monumental Wealth of Nations in 1776 when economics (or political economy as it was known) was still viewed as very much a branch of moral philosophy. The defences against this crude attack on the virtue of economics have grown in recent times, but many of them may have slipped from the view of the workaday economist besieged by the flood of research materials available and narrowed by the inevitable specialization attendant on ordering the discipline as a progressive positivistic enterprise with intensively cultivated sub-fields.

A more pragmatic response is that there are many activities, which significant segments of the population consider to be sinful, generating large amounts of revenue. For those who consider this activity to be the source of negative externalities it would be possible to go on to argue that standard measures of national income might well be adjusted to give a truer measure of the wealth of the nation. I do not propose to do this in the present work, which will sit firmly on the fence in the matter of quantitatively based advocacy with regard to sin. There are no cost–benefit analyses of sin, in toto, backed up with simulations and regressions, to be found in this book. Looking at the national wealth measure issue from the other side, it is possible that some would argue that attaching the sin label to essentially harmless activities is a severe drag on output and efficiency. For a start, in anticipation of Chapter 6, it is tempting to ask the reader by what percentage they would expect the national output to shrink if no one ever told a lie. A more concrete recent example of production
barriers from ideas of sinning is the case of Sunday trading in the UK. Only comparatively recently has this become widespread. There were many intermittent moves to instate it, but these were met by constant objections that Sunday, being the Sabbath, was a day of rest and therefore should be ‘kept sacred’. A very brutal economic logic was battering against this convention, viz. if the country bans trading on a seventh of the available time then it may be foregoing large economic gains, albeit individuals might simply choose to reallocate their time out of the previously condoned time zones.

A related link of sin to revenue generation is through the taxation of activity deemed to be sinful. This idea of sumptuary taxation can be linked to the notion of preventing excess and waste in a developing economy by taxing areas that may be detrimental to development potential. This is a straightforward efficiency argument derived from the belief that externalities are generated in the areas marked down for extra taxation. For example, the wealthy may expend their income in ‘frivolous’ consumption as opposed to savings that could be channelled into investment. The specifically sinful feature in this situation is the notion of waste, which is considered in Chapter 4. The more direct sumptuary tax argument is clearly stated in the 1892 textbook by Irish public finance economist, C.F. Bastable (p. 455): ‘The last important influence that affects the selection of the objects of indirect taxation is the desire to discourage certain forms of outlay that are regarded as pernicious, or to take the mildest view, not promotive of economic or other virtues. This idea which lies at the root of all sumptuary taxes, is represented in modern Finance by the treatment of intoxicating drinks and tobacco.’

Although alcohol and tobacco have been taxed in almost all places, at some time or other, sumptuary taxes have extended to other less obvious items: for example in the reign of Catherine II in Russia, there was a tax on playing cards [Ryan (1999, p. 328)]. The sumptuary tax is justified partly on grounds of revenue transfer, but also in the hope of deterrence of sinning. In addition, it may signify a transfer of the concept of penance, from the expression of emotional energy into an economic form where the discharge of failure is through the medium of money.

This line of thinking is prone to heat up considerably, beyond a mild view, if we extend it to such things as prostitution, pornography and cocaine (see Chapters 8 and 10). Does it still seem quite reasonable to use a ‘virtuous sin tax’, i.e. imposing taxation to transfer income from the less virtuous to the more deserving when we bring those activities into the discussion?

Another reason for economists to be interested in sin is that its presence may overthrow some of the conventional wisdom on policy measures. Specifically, if sin is a public ‘bad’ then one might come to the conclusion that it would be best supplied under conditions of monopoly rather than the usually favoured market structure of perfect competition. This line of reasoning was
hinted at by Schelling (1971) and taken to its limit by Buchanan (1973) in the context of organized crime. The key proposition is the very elementary one that profit-maximizing monopolists will seek to optimize by providing lower quantities at higher prices than their competitive equivalents. There are, of course, many caveats that could be made around this sweeping conclusion. Waiving those for the moment, one faces the conclusion, which Buchanan himself found rather unpalatable, that maybe the state should actively encourage monopolistic structures in sin industries rather than just tolerate them passively. Active promotion could of course be combined with a sumptuary tax policy or even state provision of the monopoly with potentially consequent redistribution of some of the profits to less sinful individuals. This policy package does resemble the way in which gambling has been treated in many places, where publicly owned or franchised bodies have usurped market provision generally in the form of a lottery.

Turning to perhaps the most obvious answer to our opening question, one derived from the empire building geist of the Becker/Chicago school in economics, we might say that economics analyses human choices under scarcity regardless of whether explicit movement of money or operation of markets is involved. Therefore, as engaging in anything seen to be sin is an act of choice, it can be subject to the logic of choice in the economic model. Movements of money and the machinations of markets simply represent the formation of institutions which are collective goods that enhance individual welfare. Churches, families, charities and so on are simply alternative means of doing this. They are not a species of supra-rational emanation which must be taken as given or delegated to some expert from another discipline for inspection. Thus economics becomes an analysis of how institutions form from the collective attempt to maximize utility. A useful definition of an institution from the viewpoint of conventional economics (rather than the largely marginalized American tradition of the ‘old’ ‘Institutional Economics’) is provided by Gifford (1999):

\[\ldots\text{ shared intentionality, shared expectations and belief systems that they entail represent a mental public good. One of the interesting aspects of this good is that it does not wear out with use in fact, it is strengthened by use, and it wears out, that is, is diminished or destroyed, with misuse or nonuse. Private or public individuals that misuse or exploit the system by behaving opportunistically impose two sorts of externalities on others. The first externality is imposed on an individual directly when another reneges on an obligation to her, the second is that the institution as a whole is weakened by individual misuse.}\]

Whilst sin is not an institution \textit{per se}, it is a feature which many institutions may seek to regulate due to an ontological belief in its existence, and/or use as a rhetorical ploy to manipulate behaviour. Chapters 2 and 3 will deal with the
formation of overt institutions in the form of organizations and the associated matter of the evolution of norms and conventions. Before this, we need to explore more fully the notion of individual rational choice: this takes up the early part of Chapter 2, but first some preliminaries on the kind of territory we are entering.

One may consider that, of the list of goods and services in the economy, some fall into the category of sinful and others do not, with it being a straightforward process to analyse the choice between them in terms of relative prices. This is the ‘sin as an implicit tax approach’, presuming that the individual feels a sensation of negative utility flowing from guilt. A more complex version is to treat sin as an abstract factor in the individual’s production of satisfaction, as opposed to a mere influence on the preference ordering of other goods. Thus it becomes part of the human capital stock along with the various types posited in Becker & Murphy’s (1988) model of rational addiction. In technical terms the sin is separable from the goods rather than being embodied in them, although we could have both types present simultaneously. I shall call the abstract type ‘generalized sin’ to distinguish it from the more obvious particularized sin case of an example such as the following: a young sport-loving, and unwaveringly religious, boy grows up in a religious faith that strictly denies the playing of sport on Saturday, yet he lives in a community where the total utility of sport participation is greater on Saturday than any other day. Thus, he is strongly incentivized to play on the ‘wrong’ day of the week. Whether or not he does so comes down to a straightforward cost–benefit calculation, trading off the gain from the sin versus the loss in terms of internal guilt or anguish plus specific punishment costs (such as denial of other goods) if detected. In this example there is a sinful commodity, albeit one composed of an otherwise sin-free commodity, and an inappropriate time zone. There is no satisfaction from sin per se in this case: the sin is simply a negative consequence of a positive act no different from the hangover felt by an areligious drunkard with no regrets for any negative effects of his/her actions on others. The sin inheres in the goods or commodities. The obvious case of abstract sin can be found in a strict religion with a pessimistic world view, for example, where the individual feels a personal sense of guilt that is invariant with respect to economic activities. Say they felt that their particular sinful weakness was greed, such that they felt a sense of ‘being greedy’ attendant on the desire for even the most frugal consumption level, then their utility function would be shifted down compared with other people.

Generalized and specific sin can, of course, therefore have the unusual feature of being a ‘negative’ form of capital. That is, it will have the capital-like property of being a stock at a point in time, which may have a rate of depreciation, but it will yield a flow of disutility over time, in that individuals will be worse off than they would have been if they could have chosen to have
a sin-free preference set. In more prosaic terms, the case just cited refers to the individual who has acquired a stock of sin through investment in them by those of a religious disposition assuming that they are not simply manifesting some kind of neurosis of low self-esteem arising from other sources. One should caution that this depends heavily on the type of religion, a point we will return to in Chapter 3.

Further reflection shows that generalized sin is not unambiguously defined as a source of utility. That is, working within the confines of a given taste pattern, an individual may actually enjoy abstract sinning at certain times, even though suffering also ensues from the specific individual acts of sinful consumption. If we pursue the capital analogy (or metaphor) in conjunction with the assumption of rational choice, it follows that individuals may make investments which accelerate or reduce the depreciation rate of sin capital. If the sin capital has a simple direct relationship with adherence to religion then the investment decision involves deliberately manipulating one’s own beliefs. Sin capital might also be subject to exogenous unplanned stochastic shocks: for example someone who moves to a new area because of a job may find an unanticipated increase in the cost of maintaining their sin capital from religious observance.

Whilst specific versus generalized sin is a fine distinction that can be made to do some work in terms of theoretical model-making, it is not capable of being deduced from revealed preference. In terms of the bread and butter economics of the demand curve, the presence of either form of sin is unlikely to alter the direction of its expected price and income relationship. What may well occur at the individual level are instabilities and irregularities such as ‘binge’ consumption where demand peaks radically and then falls near to zero. The likelihood of such things may differ depending on the precise specification of how sin enters the utility function. As the generalized sin notion is driving us in the direction of considering individuals to be in conflict with themselves rather than the owners of a unified set of preferences, we take up the attempts to extend choice into the area of ‘meta-preferences’ and self-command in Chapter 2.

Beyond the question of individual choice analysed in isolation, there is a growing literature on the economic analysis of group behaviour in terms of adherence to conventions, customs, norms or the manifestation of faddish, or fashion following, behaviour which may prove to be useful in analysing the emergence of ‘sin’ as a generally accepted term for certain activities. If the person is choosing a good or activity from the sin basket then it will have the implicit tax, mentioned above, in terms of their own feelings of guilt plus any feelings of shame or stigma from the disapproval of others [cp. Drago (1995)] which has to be added on as a reinforcing socialized dimension of sin.

A significant feature of modern economic life which has an intimate
connection with sin is advertising. In the elementary microeconomics of choice there is no scope for advertising as we live in a world of perfect information with known preferences. Broadening the model to allow costs of acquiring necessary information opens the door for advertising to serve a socially efficient function of letting consumers know about price cuts, product improvements and new products. The idea that advertising determines preferences is not particularly welcome within the confines of orthodox economics, but leads a healthy life amongst Marxist economists such as Cowling (1982), neo-liberal dissenters inspired by Galbraith (1958) and ecologically minded critics of economic growth. The precise nature of the role of advertising will be taken up fully in Chapters 4 and 5. For now, let us note that, if advertising does change tastes it may serve to break down the specific sin barrier causing resistance to consumption of certain goods. Generalized sin might be used as a way of adding value to goods by conferring status to them as special events in the chronology of consumption where the user ‘gives in’ to temptation. One does not need to embark on a full-scale semiotic decoding of the messages in television commercials for chocolate products to be aware of this phenomenon.

Having said all of the above, it needs to be emphasized that the specific word or concept ‘sin’ leads a somewhat fugitive existence in economics compared with its currency in the wider world. Even in largely secular Western societies, the language and culture abound in expressions involving sin, and works of art and entertainment in which it is a prominent leitmotif. Such is the pervasiveness of the idea of sin in popular song, movies, television, novels and so forth that it might be claimed that it has escaped from being a symbol of religious thought into becoming a significant independent element in how the individual decision-maker visualizes their position in the social world and its networks. Many works of art and entertainment, in modern times, have been centred on the ‘seven deadly sins’, such as the major Hollywood movie *Seven* in which detectives are tracking down a serial killer who is killing a victim for each of the sins. In their last collaboration together Kurt Weill and Bertold Brecht produced a sung ballet called *The Seven Deadly Sins* where the sinner Anna was played by two different people. The piece consisted of a prologue and an epilogue between which were sandwiched movements entitled: Sloth, Pride, Anger, Gluttony, Lust, Avarice and Envy. Despite the unlikely setting, this was devised as a stern attack on the impact of capitalism in degrading humanity, although this is not immediately apparent from the libretto.

A rare exception to the omission of sin in economics titles, albeit quite an old one, is a short paper by Rendig Fels (1971) entitled ‘The Price of Sin’, which turns out to be an account of how the US military became involved in the supply of prostitutes to soldiers due to the need to maintain efficiency in
soldiering. A recent paper by Posner & Rasmussen (1999) skirts round the issue in an analysis of social norms which distinguishes between guilt, a self-inflicted anguish cost from failing to keep to a social norm, and shame, where the failure is known to others. A pioneering work on sin, in an economic context, was written in 1907 by the maverick American sociologist E.A. Ross. He argued that business culture, combined with the doubt cast by science on older notions of spirituality, thrived on what were once deemed to be sins and thus sought to promote them. He was the first social scientist to look at the issue of the formation of social groups from individual action; this led to the notion of ‘social control’ in sociology. Much of his thinking on the dynamics of social groups is extremely compatible with what we term the CORN model of right and wrong (in the latter part of Chapter 2). One major difference is his perception that the group-imposed control, or punishment, is an outgrowth of intuitively sought individual controls rather than a purely instrumental value which brings benefits due to the action of the social group. This contrasts with the guilt/shame costs enumerated by Posner & Rasmussen (1999), although there is no intrinsic reason why Ross-style self-control should not be incorporated in a formal economic model. Further, it has some resemblance to the meta-preferential discourses in economics dealt with in Chapter 2.

A good proxy for assessing the cutting edge or vogueish ideas in economics is to search the titles of one of the enormous economics working paper databases on the internet. In January 2001, I visited IDEAS (http://ideas.uqam.ca) which had 115,000+ paper titles logged and not one featured sin in the title. Searching on some cognate terms, particularly envy, did produce a flurry of titles. Perhaps not without significance is the fact that many of the papers that did turn up with envy in the title were heavyweight exercises in game theory. Titles of papers do not tell the whole story, but there is no speedy way to appraise large amounts of text content. Perusal of economics texts in a number of areas is unlikely to reveal the word sin in the index. Not surprisingly some of the perceived categories of sin do make frequent appearances in some specialized areas of economics. Lying and deception (see Chapter 6) are often analysed in models of negotiations and collusion as it is blatantly obvious that the rational strategist, in a situation of wage bargaining or price fixing, may attempt to increase their utility by sending a false message to those with whom they are dealing. One arena that affords scope for strategic misrepresentation is the search for a marital or relationship partner. Although economists have carried out a considerable volume of research on family formation and dissolution, it features surprisingly little emphasis on manipulative signalling to attract a partner [but see Cameron & Collins (2000a)].

As we shall see, economists do think and write about sin without naming the name. There are seemingly good reasons for the lack of explicit economic
attention to sin. For one thing, the tradition of professional economics post-war world was to endorse a clean break in the code of how an economist should go about their work. The break, derived from the philosophical work of Karl Popper (1935) was reduced to digestible form by Milton Friedman (1953). From this came the simplistic opposition of positive economics which deals with things as they are, thus confining itself to the isolation of cause and effect with the intent of generating accurate predictions: the holy grail of properly scientific research and normative economics where the researcher now considers issues of right and wrong but may well feel inclined to delegate some of this responsibility to philosophers or the ultimate clients of ideas in the form of policy makers. A full analysis of the compartmentalization of these strategies can be found in Machlup (1969). It should, of course, be borne in mind that the above discussion relates to Western economics: as we shall consider in Chapter 3, the body of thought known as ‘Islamic Economics’ does place heavy emphasis on sin and its avoidance.

In this schema, the proper process for the professional economist is to work in a neutral vein with an analytical model which has had all values purged from it. Sin as a highly charged emotive term was quite wisely to be avoided. Indeed, Fels’s rare usage of it in an economics title was inclined to the ironic and provocative, as his paper conveys no sense of disapproval of the military regulation of paid sex to its recruits. Since the decks have been cleared of positive/normative fusion, even highly morally charged economists are unlikely to say ‘Mass unemployment (or huge income inequality or crime or whatever)’ is a sin, but rather inclined to say ‘the theoretical model allied with the simulations and or statistical analysis in my paper suggests that the externalities are such that policy measure X is needed’. The positive/normative distinction does not rule out analysing the choice behaviour of individuals with respect to their own normative preferences, which is indeed the way in which we begin addressing the subject of sin in the present work in the next chapter.

Before going on to the plan of this book (and finally getting down fully to the definition of sin) it might be instructive to ask whether economists have been symmetrical in their (non?) stance towards sin. That is, how has the opposite of sin fared? I will assume that we can call this virtue or goodness. Probably on balance this has acquired more attention in the abstract and almost certainly more attention in the concrete. Back in 1759, when economics and philosophy were freely intermingled, Adam Smith, in his *Theory of Moral Sentiments*, roamed widely over human actions, sentiments and the judgements passed on them. Although he contributed some incisive chapters (to which we return in Part II) probing the possible desirability of the sides of human nature more generally frowned upon, at least three-quarters of the book is exclusively devoted to debating virtue and goodness. General discussions of virtue take place in the minority field of social economics and might be
considered by many mainstream economists to be not really economics at all.
Notwithstanding my experience of this work is that, whilst focusing on advo-
cacy, it has stuck very much to the issue of promoting virtue or good and paid
little attention to downsizing the sin economy. Turning to the concrete mani-
festations of virtue, altruism might be seen as the mirror state of malice, jeal-
ousy or envy as particular facets of the sinful life. This received a full-length
book treatment in terms of theory, policy and evidence over 20 years ago
[Collard (1978)]. It continues to get attention in the leading mainstream
economic journals, most usually in the case of analysing intra-familial altru-
ism inspired by the air of paradox in Gary Becker’s ‘rotten kid theorem’
[Becker, (1991a)] and more widely in research on charitable donations.

The opposite of altruism, via philanthropic income transfer, is theft which
may be broadly construed to include fraud. There is a massive literature on
this, again inspired by Becker, stemming from his 1968 article in the Journal
of Political Economy. In true positivist vein, this literature neither condemns
nor condones acts of theft. Theft (and other related categories like burglary)
and crime in general become crimes because of the externalities they generate
not because of any intrinsic immorality implicit in a forced income transfer.
Indeed, the economic model of crime may predict that some thefts are benefi-
cial through improving the distribution of income or otherwise being correc-
tives to the problem of the ‘second best’, in which optimality conditions are
not being met due to some barriers in certain sectors of the economy [see
Boadway & Bruce (1984)]. The amorality of all this is seen at its most trans-
parent in a general equilibrium model of crime due to Usher (1986), where
individuals make a rational utility-maximizing choice over whether to be fully
specialized as a criminal, producer or law enforcer.

As economists have not been partial to devoting explicit attention to sin as
a subject in itself, we might, to a degree, be involved in the making of the defi-
nition of the word for economic purposes. In colloquial usage, sin seems to
connot simply doing something one shouldn’t do, but there is usually a sense
of rank ordering of the amount of wrong involved in terms of what precisely
constituted the sin performance. In the Oxford Companion to Philosophy
edited by Ted Honderich (1995), the definition of sin (p. 827) is given as:

moral wrongdoing, or in some cases the omission of what one ought to do. It is
usually thought of as the violation of natural law or the commands of a deity . . .
From medieval times the Church has distinguished mortal sins from venial or less
serious sins. . . . Some religious traditions allow for the possibility of the forgive-
ness of sin.

The price of sin in religious symbolism will ultimately be a trip to hell, but
things are not that simple mainly due to this possibility of forgiveness. In
Milton’s Paradise Lost, Sin is a (female) keeper of the gates of hell who
sprang from the head of Satan. Sinners have been promised a stay in purgatory waiting until their sins are purged if they are not to go to hell. Purgatory was sanctioned by a decree from the Council of Florence, rejected by the Church of England in 1562. In some traditions, there has been the notion that special sites could be visited to do penitence and thus gain absolution during one’s lifetime; for example, there is a legend that Christ revealed to St Patrick that a cave on Station Island in Lough Derg in County Clare in the Republic of Ireland was reserved for this purpose. Another method of avoiding purgatory, in Britain, was to have ‘sin eaters’ hired to eat beside the corpse at funerals, so that they would take on the sins of the deceased in some cases via bizarre rituals involving salt and bread. This has the neat mathematical property of ensuring that no one goes to purgatory so long as the balance of population is sufficient that it can always be passed on to someone who passes it on to someone else when they die. In popular usage, the word purgatory seems to have become detached from sin as it now seems to mean any form of unbearable suffering inflicted on one, regardless of it being a payback for sin, even applying to things like sitting through a very boring play, sports event or economics lecture.

In many cases, activities deemed to be sins might also be described as the breaking of a taboo, that is, something that by convention one ‘simply does not do’ and any violation of which brings anguish costs to the individual. To a degree, taboo is a term more favoured by anthropologists and not much by philosophers. A word is perhaps needed on the terminology employed in this book and the relationship of the economic approach to sin with that in the mainstream of philosophy. Generally, I have tried to use economic terms in the way in which they are normally used by economists, but have made no attempt to ensure that philosophical concepts are rigorously employed or introduced. This has been done to avoid cluttering the text with excessive numbers of detours or footnotes. Hence broadly philosophical terms that appear are to be read in the way which they would be taken in everyday discourse, unless some further elaboration is provided. Having said that, the economic approach to sin corresponds broadly to what is termed ‘modernist’ philosophy. The axioms of rational choice are taken as self-evident and largely not open to doubt. Ethical relativism is applied rather than any attempt to deduce notions of the good from tenets beyond individual welfare maximization. By its very nature, economics tends to come down quite heavily on the side of individuals having free will, albeit in the presence of strong forces determining their choices, without engaging in the voluminous debate on the conflict between the two things which has long gone on in philosophy [for example, Moore (1912), Smart (1961), Baier (1966)]. The relativism of modern economics is fairly reflective of the society which hosts it: for example in 1981 an opinion poll question asked in Great Britain, France, West Germany, Italy and Spain showed around 60 per cent in each saying that the proposition:
There can never be clear and absolute guidelines about what is good and evil. What is good and evil depends entirely upon the circumstances of the time was closer to their own point of view than an absolutist statement given for reference [Webb & Whybrow (1982)].

A number of schemata suggest themselves for a book like this. One such is to divide the chapters as per the seven deadly sins or the ten commandments of the Bible. The widespread usage of the ‘seven deadly sins’ concept emerged from monastic philosophy early in the sixth century, and there were originally eight according to Sidgwick (1919, p. 129). Opinions differed on what was in the list: the sins featuring in all lists were Pride, Avarice, Anger, Gluttony and Unchastity, with the remainder coming from Envy, Vainglory and the somewhat unlikely Gloominess and Languid Indifference (presumably this became Sloth). They were termed deadly sins as their perpetrator required absolution from them if the soul was not to be doomed. This quality was reinforced in religious iconography such as the engravings in the work of the eighteenth century German priest Romedius Knoll, which portrays seven sinners, in chains, being led to their doom by seven devils holding up cards illustrative of the sin the victims had been guilty of [de Givry (1971), p. 39].

The list does not include many things that would be universally considered to be so extremely sinful that no possibility exists for redemption of the soul before it departs the earth. Invariably all of the items in these lists are dealt with at some point in the text. There are disadvantages of following any well-established sin listings. For one thing it might be seen as endorsing or confronting a specific viewpoint of a particular religion. It would also produce an imbalance in the amount of meaningful discussion that could be allocated to each, from an economic point of view.

The plan of the book is as follows. Part I is essentially the background in terms of economic analysis, with particular reference to the economics of religion which is now a substantial sub-field within the discipline. Part II delves into some of the seven deadly sins grouped into three chapters. The final Part III descends into more concrete issues with reference to particular acts of consumption that have attracted universal concern, on account of their inherent sinfulness, at some points in history. Not unreasonably, the final chapter reviews the journey we have been on and speculates on the future of sin, particularly the cultural formation of post-modern sins, most notably the expanding role of the notion of addiction in social discourse. The approach taken is eclectic. I start by riding the neo-classical economics horse, but whenever the fences in front of it look too formidable I resort to excursions into other disciplines. Inevitably some of this branching out will succeed as an integrated synthesis, whilst other parts will languish before the reader like ill-disciplined oil and water.