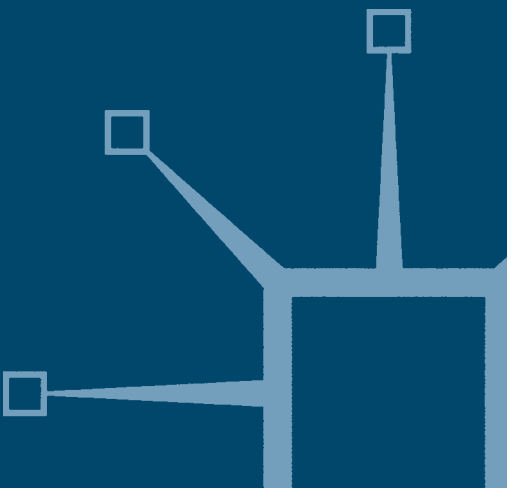
palgrave
macmillan

# Critique of Entrepreneurship

## People and Policy

Peter Armstrong



Critique of Entrepreneurship

*Other books by Peter Armstrong*

WORKERS DIVIDED 1976 (*With Theo Nichols*)

IDEOLOGY AND SHOP FLOOR INDUSTRIAL RELATIONS 1981
(*With Jeff Hyman and John Goodman*)

WHITE COLLAR WORKERS, TRADE UNIONISM AND CLASS 1986
(*With Bob Carter, Chris Smith and Theo Nichols*)

# Critique of Entrepreneurship

## People and Policy

Peter Armstrong
*The Management Centre*
*University of Leicester*

palgrave
macmillan



First published 2005 by
PALGRAVE MACMILLAN
Houndmills, Basingstoke, Hampshire RG21 6XS and
175 Fifth Avenue, New York, N. Y. 10010
Companies and representatives throughout the world

PALGRAVE MACMILLAN is the global academic imprint of the Palgrave Macmillan division of St. Martin's Press, LLC and of Palgrave Macmillan Ltd. Macmillan® is a registered trademark in the United States, United Kingdom and other countries. Palgrave is a registered trademark in the European Union and other countries.

ISBN 978-1-349-52325-2 ISBN 978-0-230-55495-5 (eBook)
DOI 10.1057/9780230554955

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources.

A catalogue record for this book is available from the British Library.

Library of Congress Cataloging-in-Publication Data

p.cm
Includes bibliographical references and index
1.

10 9 8 7 6 5 4 3 2 1
14 13 12 11 10 09 08 07 06 05

# Contents

# List of Abbreviations

| | |
|---|---|
| ATA | Air Transport Auxiliary. The arm of the services which ferried warplanes for the Royal Air Force during the Second World War. |
| BA | British Airways. The UK national air carrier since 1974. |
| BAe | British Aerospace the amalgamated UK aircraft industry. Now BAe systems. |
| Bcal | British Caledonian. The privately-owned UK airline from 1970 until its acquisition by British Airways in 1987. |
| BIA | The BioIndustry Association. |
| BMJ | The British Medical Journal. |
| BOAC | British Overseas Airways Corporation. From 1939 until the formation of British Airways in 1974, BOAC was the UK's national carrier for routes outside Europe. |
| CAA | Civil Aviation Authority. The governing body of British civil aviation. |
| CAB | Civil Aeronautics Board. The governing body of US civil aviation. |
| CPS | Centre for Policy Studies. |
| CRO | Contract Research Organization. A firm funded by successive R&D contracts. |
| CVCP | The Committee of Vice Chancellors and Principals. Now re-badged as Universities UK. |
| DETI | Department of Enterprise, Trade and Investment, Northern Ireland. Formerly the Northern Ireland Department of Commerce. |
| DTI | Department of Trade and Industry. |
| EC | European Community. |
| EDA | Economic Development Administration. |
| EMEA | European Medicines Evaluation Agency. |
| EOL | The Equal Opportunity Loan programme of the SBA. |
| FDA | US Food and Drugs Administration. The US licensing body for medicines. |
| FTSE | Financial Times and the London Stock Exchange index of UK shares. |
| GATT | General Agreement on Tariffs and Trade. |
| GINI | Gross Inequality in National Income. |

| | |
|---|---|
| GPD | General Product Development Services. A Swiss-registered company which received monies paid to Lotus Cars Ltd for the development of the DeLorean sports car. |
| HEROBIC | Higher Education Reach Out to Business, Industry and Commerce. |
| IATA | International Air Transport Association. |
| $IC^2$ | Institute for Constructive Capitalism. |
| IEA | Institute of Economic Affairs. |
| KPMG | Klynveld Peat Marwick Goerdeler. One of the remaining big four firms of accountants. |
| NARD | National Association of Retail Druggists. |
| NASDAQ | National Association of Securities Dealers Automated Quotation. |
| NIDO | Northern Ireland Development Office. |
| NRA | National Recovery Administration. |
| NS Archive | National Security Archive. |
| OPEC | Organization of the Petroleum Exporting Countries. |
| Pan-Am | Pan American World Airways. |
| PAYE | The pay-as-you-earn system used in the UK for collecting income tax from wage-earners. |
| RAF | The Royal Air Force. |
| RFC | Reconstruction Finance Corporation. |
| SBA | Small Business Administration. |
| SBAC | The Society of British Aerospace Companies. Formerly the Society of British Aircraft Constructors. |
| SBIC | Small Business Investment Companies. |
| SBIR | Small Business Innovation Research. |
| SFLG | Small Firm Loan Guarantee. |
| SMART | Small Firms Merit Awards for Research and Technology. |
| SPUR | Support for Products Under Research. |
| SWPC | Smaller War Plants Corporation. |
| TWA | Trans World Airways. |
| WIB | The War Industries Board of World War I. |

# Acknowledgments

The author would like to acknowledge the support of colleagues at the Universities of Keele and Leicester for periods of study leave, without which this work could not have been completed. Particular thanks are due to Karel Williams, Martin Parker, Geoff Lightfoot and Simon Lilley for encouragement and helpful comments on various chapters.

Chapter 3 first appeared in Critical Perspectives on Accounting, Vol. 16, No. 3, 165–183 (2005). Thanks are due to Elsevier B. V. for permission to reproduce it here.

Chapter 6 is a slightly modified version of a paper of same title which appeared in *Economy and Society*, Vol. 30, No. 4, 524–52 (2001). (http://www.tandf.co.uk/journals/titles/03085147.asp). Thanks are due to Taylor and Francis for permission to reproduce it here.

The illustration of The Accountant which appears in Chapter 3 is reproduced with the kind permission of Walter van Tilborg who has had it in his possession for over thirty years and of Aviation Traders Ltd.

Every effort has been made to trace the copyright holders but if any have been inadvertently overlooked the publishers will be pleased to make the necessary arrangement at the first opportunity.

# 1
# The Genesis of Entrepreneurialism

## Enterprise-speak in the UK

In a speech of 26 January 2004, the UK Chancellor of the Exchequer, Gordon Brown announced plans for a National Enterprise Week, a competition for a European City of Enterprise and a joint US-UK Forum on Enterprise. Commenting, Mr Brown said:

> Our proposals on enterprise for this year each add up to something bigger than their individual parts – initiatives that taken together can make a difference, and contribute to a change in culture and attitudes by valuing and celebrating the spirit of enterprise throughout Britain.
>
> Brown, 2004

Mr Brown was not exaggerating. As well as continuing the public subsidies of entrepreneurial activity established under the Thatcher government (Chapter 5), that of Mr Blair has poured resources into the universities. An initial allocation of £44m in 1999 and 2000 under the Science Enterprise Challenge enabled twelve consortia of universities to establish 'Centres of Enterprise.' The 2002 spending review followed up this initiative by committing a total of £362m to the expansion of technology transfer by 2006, most of it through the Higher Education Innovation Fund. The stated intention (for example, CVCP, 1999) was that the universities should make the teaching and practice of entrepreneurship, particularly in science, a priority on the model of such American institutions as the Massachusetts Institute of Technology.

The Vice Chancellors have responded with appropriate gratitude. On 14 May 2002, Universities UK, the re-imaged committee of Vice

Chancellors produced a glossy booklet entitled, *The University Culture of Enterprise: Knowledge Transfer Across the Nation*. Readers were informed of 'Spectacular spinout companies that are pouring millions into Britain's new economy', that 'Glasgow and Surrey Universities have adopted an enterprise culture – with undiluted zeal' and that, 'Novel science and entrepreneurship in the Principality are putting fire back into the Welsh dragon'. As early as April 1999, only two months after the announcement of the Science Enterprise Challenge, there were 14 vacancies for professorships of entrepreneurship at UK universities.[1] The new trend was in the air and those academics who had set out their stalls as teachers and researchers in entrepreneurship sensed they were onto a winner:

> Entrepreneurship is in fashion, everyone is talking about it: politicians, experts, and entrepreneurs themselves. According to them, this phenomenon will be the salvation of our industrial societies so badly in need of redefinition.
>
> (Bechard and Toulouse, 1998)

In the UK's Schools of Business and Management, the extent to which the teaching curriculum and research agenda has been reshaped since the 1980s has been extraordinary. Expanding out of the diplomas in small business taught in a few polytechnics in the 1970s, modules on entrepreneurship are now offered on virtually every undergraduate and masters course in the country. In many universities, there are also post experience programmes designed specifically for the aspirant entrepreneur.

The scholarship of enterprise has expanded to suit. The British Library lists 1414 titles containing 'entrepreneur' or 'entrepreneurship' published between 1980 and 2003. Fortunately there are plenty of occasions for international travel, during which the new professors will be able to keep up with it all. In 2004, Harvard Business School held its 20th Annual Entrepreneurship Conference, Babson College, Massachusetts its 23rd, and the European Association for Advanced Studies in Management its 18th. Other conferences explicitly devoted to entrepreneurship in the same year were held in Amsterdam, Bucharest, Dubai, Hyderabad, Milan, Nairobi, Paris, Philadelphia and Rio de Janeiro.

There is every chance that these gatherings will add to the mass of information. *Frontiers of Entrepreneurship Research*, the collection from the Babson College conference has now appeared every year from 1981 to 2002. On top of that there are the journals. From the appearance of the *Journal of Small Business and Entrepreneurship* in 1983, at least

26 journals on entrepreneurship have appeared worldwide, though four of them have now ceased publication.[2]

As might be expected, this tectonic movement of the continental plates of knowledge has thrown up academic cheer-leaders who can suggest, without discernable irony, that ' … the cultivation of the "entrepreneurial imagination" is the singular most important contribution university business schools can make to the business community.' (Chia, 1996). As filtered down to the level of the student essay, the new celebration of the entrepreneur can be truly toe-curling. This extract is from a prize-winning essay in a 1996 competition sponsored by the US National Federation of Independent Business:

> We believe that entrepreneurs are heroes in every sense, and that they and their accomplishments are worth celebrating. Unfortunately, entrepreneurs are typically either ignored or castigated as 'robber barons' who exploit others to satisfy their insatiable greed. Seldom are entrepreneurs hailed as heroes. Certainly school children today, far from considering entrepreneurs heroes, seldom know who they are or what they do… How can any nation continue to prosper when it sees those who transfer wealth as more heroic than those who create wealth?
>
> Allen and Lee, 1996

The young essayist is over-pessimistic. In the UK at least, considerable efforts are being made to foster the values of enterprise amongst the young. The Technical and Vocational Education Initiative (TVEI) was set up in 1982 with an initial grant of £240m, later increased to £900m. Eventually the scheme covered 90 per cent of Education Authorities, so that by 1989 half a million schoolchildren had received some form of enterprise education (Morris, 1991).

The drive continues under the Blair government. The Department of Trade and Industry's 1998 White Paper on Competitiveness described *Micro Society*, a twelve-week programme adapted from an American original in which primary school pupils created their own entrepreneurial society within the classroom, complete with a government, an economy, businesses, a civil service and a legal system. Visiting speakers addressed the children at various stages, including a personnel manager, a local bank manager, a tax inspector and a politician. The Bank manager reported, 'I was very impressed with the interest of the children in the "society". The questions they asked were very perceptive and already it seemed that they were applying

what I had told them to the next stage of their society's development.' (DTI, 1998, p. 7).

For the more adult audience, there are agencies such as *Speakers for Business* (http://www.sfb.co.uk). SFB offers no less than 20 speakers on entrepreneurship, including Professor Richard 'Future' Scase and David Pearl, Director of that 'other CIA', the Corporate Inspiration Agency. By comparison, *Celebrity Speakers International* (http://www.speakers.co.uk) offers only four, but these include the respected Professor Rosabeth Moss Kanter, whose heavyweight fee band of $$$$ translates as >$20k. As fair warning of what might be expected on the less academic of these occasions, Mr Pearl promises to 'coax involvement from even the most toughened audiences, feeding on the input of delegates to create energetic, extraordinary sessions. Spoken and sung.'

Observing this barrage of persuasion, it is understandable that even those academics without vested interests to declare have been moved to announce that, 'The rhetoric of enterprise has dominated British culture at virtually every level during the 1980s.' (Seldon, 1991). More subtly, or perhaps more insidiously, DuGay (1996, p. 184) has argued that enterprise is a new 'master discourse' which has infiltrated seemingly unrelated aspects of social life in seemingly unrelated ways.

Academics, however, are perhaps too close to the noise for their impressions to be entirely reliable as a guide to its impact on the wider society. More pertinent in this respect are the views sampled in the British Social Attitudes surveys. Though the surveys have included no questions explicitly on enterprise or entrepreneurship, they have tapped into some of the core values of enterprise ideology (or discourse, or culture). These include the belief that profits and high incomes are necessary to induce individuals to exercise initiative and to take risks and that they are a just reward for doing so. Conversely, poverty, except of the 'deserving' kind, is seen as the consequence of a failure of initiative and responsibility. For this reason the promotion of enterprise culture, at least as practiced by the governments of Margaret Thatcher and John Major has involved an attack on the 'politics of compassion' (Corner and Harvey, 1991, p. 62; Heelas and Morris, 1992, p. 7). In the surveys, therefore, a general assimilation of enterprise ideology ought to show up as 1) an optimistic view of the opportunities for individual betterment, 2) a belief that business profits and wide income differentials are forces for the general good, and 3) a belief that (some?) welfare benefits encourage anti-entrepreneurial attitudes of 'dependency' (Dean and Taylor-Gooby, 1992, p. 5; MacDonald, 1996).

On the question of opportunity, 36 per cent of UK respondents in the 1985 survey (Jowell, Witherspoon and Brook, 1989) believed that 'people like me have good chance of improving their standard of living', a figure which failed to increase between the 1985 and 1990 surveys (Jowell, Brook and Dowds, 1993). It could be argued that this pessimism on the part of the British public reflects a modest view of its own capabilities, rather than a belief that opportunities are lacking. To the extent that enterprise ideology implies a 'can-do' attitude, however, this too is evidence against its influence.

If enterprise ideology involves an acceptance of personal responsibility for the economic consequences of one's own actions, this ought to be visible in people's view of poverty. In 1986, 19 per cent of UK respondents believed that the principle cause of poverty was laziness. By 2000, the figure had increased to 23 per cent, but only after declining to 15 per cent in 1994. Even at the later date, the majority of people believed that poverty was due to ill-luck (15%), social injustice (21%) or that it was an 'inevitable part of modern life' (34%) (Hills, 2001).

On the question of social desirability of incentives, just over half of the 1985 sample believed that 'good business profits' were the best way to increase the standard of living, but only a quarter believed that large income differentials were justifiable in similar terms (Jowell, Witherspoon and Brook, 1989). In 1983, 72 per cent of the sample believed that it was the government's responsibility to *reduce* income differentials, a proportion which rose to 87 per cent in 1995 before declining to 80 per cent in 1998. Consistent with this last finding was the considerable and increasing support of the UK public for progressive taxation. Between 1983 and 1998, the proportion believing that levels of taxation for those with high incomes were too low increased from 32 per cent to 53 per cent, though this might be explained by the Thatcher government's reduction of the top rate of income tax from 60 per cent to 40 per cent in 1988 (Jowell, Curtice, Park, Brook, and Ahrendt, 1995; Hills and Lelkes 1999). Neither income inequality nor taxation were discussed in comparable terms in later editions of the series.

The British public appears to be evenly divided on the dependency culture thesis. In 1983 the proportion believing that welfare benefits make people less willing to look after themselves stood at 52 per cent, declining to a low of 33 per cent in 1991 before increasing back to 50 per cent in 1998. At a broader level support for the welfare state remained high throughout the period. Asked to chose between reduced

taxation and increased welfare expenditure, the proportion opting for welfare increased from 32 per cent to 59 per cent between 1983 and 2001, whilst the proportion opting for tax cuts declined from 9 per cent to 3 per cent in the same period (Jowell, Curtice, Park, Brook, and Thomson, 1996; Taylor-Gooby and Hastie, 2002).

Taken individually, the relevance of any one of these findings could be questioned. As a whole, however, they indicate that public attitudes in the UK between 1985 and 2001 were remarkably resistant to the government's attempts to promote a culture of enterprise.

From this brief introductory sketch, it is clear that the development of enterprise culture (or discourse, or ideology) in the UK has not been a spontaneous sea-change in popular sentiment. It has been an initiative of government, beginning with that of Margaret Thatcher. Whilst it has resulted in profound funding-driven changes to the educational system, particular in the universities, it has had much less effect on the public at large. Any adequate sociology of the phenomenon needs to account for these features. How, then, do the conceptual frameworks so far offered by social science measure up?

## Concepts

In rough chronological order of their appearance, the three candidate concepts are enterprise culture, enterprise ideology and enterprise discourse. None of them, it will be argued, offers a satisfactory means of grasping the oil-and-water mix of authoritative enthusiasm and public scepticism around the issue of entrepreneurship and none of them suggests a convincing periodization.

There is, first of all, a problem with 'enterprise'. As has been cogently pointed out by Keat (1991), the elasticity of this term performs important ideological functions and its uncritical use tends to import these into any analysis based upon it. Referring ambiguously to for-profit organizations and the personal quality of initiative, 'enterprise' carries the implication that the one is the institutional product of the other (Fairclough, 1991). Whereas the task of the ideologue is to maintain the fusion of these two senses of enterprise, that of the critic is to prise them apart. The same is true of the tendency to assimilate the quality of enterprise into the figure of the entrepreneur. If such unexamined infiltrations of ideology are to be resisted, it needs to be restated that there are many manifestations of enterprise which have nothing to do with entrepreneurship as this is conventionally understood, just as there are entrepreneurs whose success has owed little to enterprise.

Concerning 'culture', it is quite possible to use the term in the analysis of a government programme of cultural change and the reader 'Enterprise Culture' (Keat and Abercrombie, 1991) does just that. As a description of an existing state of affairs, however, the term implies a degree of consensus and anchorage in everyday routines which simply cannot be demonstrated in the case of entrepreneurship. At the society-wide level, most people, and even most small business owners, are not entrepreneurs as the term has been operationalized in empirical research (Scase and Goffee, 1987; Carland, Hoy, Boulton and Carland, 1984). Thus the talk of entrepreneurship is not an expression of a socially prevalent practice. Nor does it express majority approval of a minority practice, as might be the case with prayer, for example. Apart from the evidence reviewed earlier that enterprise culture has made little impact on the population at large, the texts of enterprise-speak are full of plaints that the entrepreneur is under-appreciated (page 3). Many of them, indeed, are prescriptions and calls for action rather than descriptions of current states of affairs, and they come from government ministers, civil servants, educationalists and corporate managers, none of them conspicuous for the qualities and practices conventionally associated with entrepreneurship. To describe the results of these urgings as a culture carries the unwarranted implication that they have achieved their intended aim.

The discussion thus far might suggest a preference for the term 'ideology'. As a concept, ideology at least offers the potential for linking changes in rhetoric to changes in material circumstance or practice. The problem is that it does so by supposing that socially current ideas tend to distort truth so as to favour certain interests. Under the postmodern interdict against everything except its own conceptual apparatus, both of the core ingredients of ideology (truth and interests) stand accused of passing off personal value judgements as objective fact (Foucault, 1984, p. 60; Benton, 1981). For this reason, or perhaps as a way of adopting the posture of critique whilst refusing its political implications, the prevalent tendency is to conceptualize socially-current ideas as 'discourse'.

In itself, discourse is a relatively inert concept, implying nothing more than a relatively sustained, relatively coherent and relatively widespread set of ideas, expressions and practices. As the currently preferred approach, however, it has accumulated a considerable baggage of tacit assumptions, analytic blind spots and methodological prejudice, which have proved at least as disabling as those associated with ideology. Because discourse as a concept implies nothing about its

anchorage in institutions and social structures, the tendency has been to assume that these can be adequately treated as they appear in discourse itself. The result is a displacement of social science onto an other-worldly plane called 'discursive space', where discourse speaks to discourse through the medium of human subjects. Stated thus baldly, it is an approach from which much is omitted, obviously. It is also one which rests on a characteristic tacit assumption of the discourse approach: that human thought is bounded by the verbal and conceptual apparatus with which it works. In linguistics, this assumption goes by the name of the Sapir Whorf Hypothesis and in its strong form it has been comprehensively discredited (Trudgill, 1983, p. 25 ff.). Our perceptions are *not* limited by the vocabulary with which we describe them, if only because we are capable of using language creatively. Recognizing this, DuGay (1996) has mated the concept of discourse with that of active consumption (De Certeau, 1984) in a manner reminiscent of 'reception theory' in cultural studies (Hall, Hobson, Lowe, and Willis, 1980). The idea is that people are capable of consuming a prevalent discourse (say that of enterprise) in such a way as to twist its vocabularies and concepts to their own ends. It is not difficult to find instances in which this process actually occurs. DuGay, however, invokes the concept of active consumption retrospectively, as a means of reconciling his thesis of the dominance of enterprise discourse with empirical evidence which shows no trace of it (Armstrong, 2001). Misuse of this kind apart, it is not easy to see how the idea of active consumption can be kept clear of some notion of interests.

A final problem with the discourse approach is the methodologies which have come to be associated with it. It would seem to be elementary that if discourse is to explain something, it needs to be established that it exists, that it consists of the ideas and propositions that it is supposed to and that it is prevalent in the appropriate social location. Evidence on all these points, as Jaworski and Coupland (1999) point out, can only be obtained by large scale social survey methods. Yet discourse as an analytic tool has come to be associated almost exclusively with qualitative and predominantly ethnographic methods. The consequence of this unfortunate elective affinity between concepts and methods is that the presence and content of a discourse tends all too often to be simply assumed with the result that a confirmation of 'what everyone knows' is passed off as the outcome of empirical research.

So far, so unsatisfactory. In an attempt to jettison the conceptual baggage associated with 'enterprise', 'ideology' and 'discourse', this book will use the rather ugly term 'entrepreneurialism.' Previously used

by Gladstone and Lee (1995) and Yergin and Stanislaw (1998) to refer to the activities of entrepreneurs, it will be used here to signify that the promotion of entrepreneurship is, above all, a *policy*.

As such, of course, entrepreneurialism does intersect the other concepts discussed here. Thus entrepreneurialism aims to encourage entrepreneurship through the propagation of enterprise discourse, as well as through concrete incentives and assistance. Likewise, it was a policy which emerged from a particular version of capitalist ideology embraced by a small caucus within the Conservative party prior to the 1979 election. What is gained by the emphasis on policy is empirical openness on the nature of these intersections. Whilst policy may be ideological, for example, in the sense that it emerges from interested interpretations of material circumstance, these interpretations cannot be simply read off the circumstances themselves. Likewise the promulgation of enterprise discourse may result in something other than enterprise culture, just as some of the UK government's tax incentives for entrepreneur became opportunities for something other than entrepreneurship (Chapter 5).

Conceiving of entrepreneurialism as a policy does, however, structure enquiry to the extent that it raises the question of its origins. In the UK and USA, this leads back through first governments of Margaret Thatcher and Ronald Reagan to their inspiration in the grand simplicities of Milton Friedman's monetarist economics and Freidrich Hayek's neo-liberal ideas on minimal government. That in turn raises the question of why these ideas ever gained a foothold at a time when Keynesian economics and industry level planning underpinned the most successful system of production and consumption the world had ever known, and that in a society which considered itself the bastion of democratic freedom. What tradition of dissent in such a society was receptive to the idea that it was headed for economic collapse and totalitarianism? Phrasing the question in such a manner suggests a starting-point for enquiry, for if any society was founded on distrust of anything which might be called an economic order, it was the USA.

## Anti-monopoly and American liberalism

A true child of the enlightenment, Thomas Jefferson inherited from Locke a conception of the free society as one in which individuals possessed a sufficiency of property to satisfy their natural wants. From this 'political theory of possessive individualism' (MacPherson, 1962) it followed that such individuals would be free in the sense that the

associations between them would be uncoerced. Like most Utopian liberals, Jefferson constructed his image of the ideal society around an *axis of opposition* derived from the politics of the day. On the one hand there was the clear and present danger to individual freedom, in Jefferson's case the militarized wealth of a colonial power. On the other side there were the institutions which were to guarantee against these threats. For Jefferson, these were a dispersed ownership of property such that the self-sufficient individual need only enter into contracts of their own volition, and a comprehensive direct democracy in which the franchise extended to all property owners.

A draft passage which was omitted from the final version of the American Constitution, neatly exemplifies the contradictions lurking within this doctrine of rights. It reads, '… a right to property is founded in our natural wants, in the means with which we are endowed to satisfy those wants, and the right to what we acquire by those means without violating the rights of other sensible beings.' (Koch, 174). As MacPherson has pointed out (1962, pp. 194–257), the two rights referred to in this passage by no means coincide, since what is acquired through the employment of property in capitalist society will, if the capitalists have their way, far exceed any possible return to individual labour or engrossment of their personal wants (MacPherson, 1962, p. 269). Jefferson, to give him his due, was aware of the problem, and thought to resolve the contradiction with one of his own. Though the possession of property was fundamental to his ideas on freedom and democracy, he was also violently opposed to massive concentrations of it, since he saw in Old Europe a dispossessed majority preyed upon by an 'immoral aristocracy of capital' (Koch, 1957, p. 171). Big business, big finance and 'the navigation interests' were all different faces of the threat to liberty, and only a democracy of property could enable the individual to remain independent of them all, 'since a nation of freeholders, living in peace under the protection of a friendly government, is the genuine alternative to pauperism and exploitation on a large scale.' (ibid, p. 175).

Jefferson was a farmer; at one time he owned thirteen of them, plus the slave labour to work them. With this background he naturally thought of property as land and perceived the Native American hunting-grounds as an empty wilderness, as indeed it became once Jefferson had seen to it that the Indians were driven west of the Mississippi (Commager, 1973, p. 49). 'The West, with its enormous quantity of uninhabited land was fundamental to Jefferson's thinking on political economy. It was the West which made it possible, as he

later put it, for America to become an "Empire of Liberty"' (Ellis, 1973, p. 85). Characteristically, Jefferson attempted to put his vision into practice. Although his draft constitution for the state of Virginia limited the franchise to property holders, it also proposed that each adult male should receive 50 acres as of right. In the event, only the first provision was adopted (Ellis, 1973, p. 83).

That was in 1776. A little over a century later, in America's Midwest and South, Jefferson's belief in the countervailing power of property was being severely put to the test. By then the farmers had abandoned self-sufficiency for the production of cash crops. Their entry into commodity markets and their consequent dependence on manufactured supplies had opened up entrepreneurial possibilities for the merchants and financiers which Jefferson so much distrusted. On the supply side there were price rings or cornered markets in harvesters, ploughs, fertilizer, jute bagging, binding twine – and even ice for the preservation of perishable crops. On the demand side the markets to which the farmers delivered their livestock and crops were stitched up by monopsonistic trusts. Those who depended on credit to buy household supplies from the 'furnishing merchants' were forced to mortgage future crops, livestock and their land to those same merchants at usurious rates of interest and in return for undertakings that they would purchase future supplies from the same source. As a chronicler of The Wheel and Alliance, one of the farmers' resistance organizations put it, 'Trusts, syndicates and combinations demand extortion on everything we buy; and transport companies, pools and middlemen levy tribute on everything we sell.' (Piott, 1985, p. 14, 19).

Against these oppressions, defined primarily by bigness and geographical remoteness, the local shopkeepers and artisans had as much at stake, albeit for different reasons, as the farmers themselves. The Beef Trust, for example, had reinforced its position as monopoly purchaser and supplier by blacklisting any farmer and local butcher who dealt directly with each other (Piott, 1985, p. 9, 74). The effect was to draw local trades people into the 'Granges' organized by the farmers:

> The struggle against the Beef Trust drew upon a tradition that stressed the need to preserve the economic independence of an individual in a democratic society. Farmers knew the reason for disappearing local butchers. Butchers also realized why they were being forced out of business, and consumers recognized who dictated the price of their goods.'
>
> Piott, 1985, p. 87

In the process of drawing on the Jeffersonian ideal of the independent producer-consumer, these 'Granges' of farmers, trades people and small shopkeepers broadened and redefined it. In place of the yeoman farmer, it was now the more generalized figure of the small businessman which personified economic independence. The nature of the opposition had changed too: though government remained an object of suspicion, the immediate threat came from the large concentrations of capital amassed by the entrepreneurs of the day. Faced with this one-sided choice of evils, rural communities demanded that their state legislatures take action against the 'Rockefellers and other kinds of buzzards' (Piott, 1985, p. 113). In this manner, the practicalities of organizing against the trusts redrew the axis of opposition which defined American liberalism. Before the passage of the 1890 Sherman Act, popular agitation against the monopolies had achieved anti-trust legislation in at least 13 states, whilst another 8 had some form of anti-trust provision in their constitutions (Piott, 1985, pp. 21–31).

As a means of breaking up the combines, however, anti-trust legislation proved a blunt instrument and the 18 suits launched before 1901 achieved little (Faulkner, 1959, p. 439). This was partly because of the possibilities of legalistic delay, partly because of the courts' reluctance to interfere with the rights of private property, but partly too because the interests of much of the electorate were becoming entangled with the trusts. Though rather later than the period in question, the aftermath of the 1908 Ouster of Standard Oil from the state of Missouri illustrates. Still operating in the state in 1913 because of legal delays, Mr. Rockefeller threatened to close his Sugar Creek refinery if the order was implemented, pointing out the economic consequences for the state as a whole as well as the loss of employment in Sugar Creek itself. If he were allowed to stay, on the other hand, a major expansion of the plant might be in order. This early trial run of the tactics of hegemonic despotism (Burawoy, 1985) proved effective. The citizens of Sugar Creek pressured the state legislature into an annulment of the ouster and Standard Oil stayed put, subject to the supervision of Missouri Supreme Court. Given the court's incapacity as an administrative agency, this condition was not very onerous (Piott, 1985, pp. 144–8).

In microcosm, this was the fate of anti-trust at the level of political action. In 1906 Theodore Roosevelt had tapped into the public mood, authorizing his attorney general to file suit against a number of trusts. As a practical politician, however, he was also aware that the interests of the electorate were bound up with business confidence. Prompted by the sharp fall in the stock exchange which followed a $29m fine

against Standard Oil for violations of the Sherman Act in 1906, he discovered that the question of whether or not the Trusts were operating in the public interest was an empirical one, not one of principle. On this more considered view, the solution was to increase federal control over the combinations 'rather than relying on foolish anti-trust law'. In this sense, anti-trust became a 'movement co-opted', its energies diverted into the regulation rather than the prohibition of monopoly (Piott, 1985, pp. 113–48).

The co-optation of a political movement, however, has a way of leaving behind a residuum of the faithful. For this reason the evolution of American economic liberalism begins to diverge at this point. On the one hand there was a development of the institutions of regulation driven by a parallel development of those of cartelization and monopoly. On the other hand, there was a persistence sense, particularly amongst certain populist Congressmen, that American economic democracy, the opportunity to achieve independence through the ownership of a small business, remained under threat from the 'unfair' competitive practices of large companies. As it became clearer that large corporations were not going to be broken up to any meaningful extent, this sense of injustice was diverted into a demand for government action to 'level the playing field' between small and large business.

First, a sketch of the evolution of American corporatism.

## Monopoly and regulation: the rise of corporate America

The company-level strategic processes which created America's giant multidivisional corporations are now familiar from the work of Chandler (for example, 1962, 1977). Less familiar, possibly because less reputable, are their antecedent experiments in inter-company collusion and market control. As companies were taken over, merged and grew, some of these techniques were taken into the boundary of the corporation in the form of management controls whilst others developed into the institutions of industry self-regulation.

Monopoly, and the attempts to curb its excesses were fundamental to the growth of corporate America. On the industry side there developed an apparatus of self-regulation designed to secure, administer and exploit monopolized markets. As this occurred, governments at the city, state and federal levels found themselves in an ambiguous position. On the one hand there was public pressure to curb the most blatant abuses of monopoly power. On the other hand there was the prospect of turning the machinery of self-regulation into an

instrument of government policy. For a while at least, the apparatus of monopoly and the administrative machinery designed to suppress it developed in a dialectic of invention and counter-invention. Over the succeeding half century, the two gradually evolved into the intermeshed institutions of antagonistic co-operation which typified the Fordist regime of accumulation in its mature form (Reich, 1984).

An early example of the internalization of monopoly tactics occurred with the 'pools' or revenue-sharing agreements operated by the railway companies from about 1870 onwards as a means of eliminating 'ruinous' competition. When pools were outlawed by the Supreme Court in 1897, the companies responded with a series of mergers so that by 1906 two thirds of the nation's mileage was in hands of just seven groups controlling 85 per cent of the industry's revenues (Faulkner, 1959, p. 426, 493–4). In effect, the pools had been preserved by taking them inside the legal boundary of the company.

Largely unhindered by the 1890 Act, industrial consolidation of this kind occurred rapidly around the turn of the century. During the great merger wave of 1895–1904, the great majority of consolidations were horizontal rather than vertical, with monopoly the evident aim (Nelson, 1959). By the time the USA entered the First World War in March 1917, all of the major industries were dominated by large holding companies (Faulkner, 1959, p. 429).

Even where companies remained legally distinct, the institutions of supra-company management were developing rapidly. From 1890 onwards trade associations were holding regular meetings and maintained permanent offices staffed by elected officials (National Industrial Conference Board, 1925, p. 12). Piott's snapshot of the Beef Trust as it operated in the last two decades of the 19$^{th}$ century is indicative of what went on at these meetings.

Based on the technology of refrigerated storage and transport, Gustavus Swift had formed the first national meat packing company in the late 1880s. Other packing houses quickly followed suit and they soon formed a system based on mutuality of interest. Using the threat of boycotts, they prevented farmers from dealing directly with local butchers. Having established themselves as monopoly purchasers from the one and monopoly suppliers to the other, they set about regulating their shipments of meat to the markets. To this end, the general managers of the 'Big Six' packing houses met on weekly basis to set prices, divide marketing territory and allocated the quantities to be sold based on shared statistical reports. These quotas were enforced by a system of fines and there were also fines on any agent, salesman or company

which sold below the pool price. A group of auditors monitored the system. A uniform method of calculating cost of fresh meat was adopted so as to equalize profits (Piott, 1985, p. 74, 91). This sophisticated system of supra-company management operated undisturbed in the face of popular protests and consumer boycotts until 1903 when the Missouri Supreme Court found against the combine (ibid, p. 87).

The institutions of regulation, meanwhile, were struggling to keep up. The first were established in the 1870s in response to the Granger agitation against the extortions of the railway companies. In appearance at least, the politicians had to respond, because most of the protesters were property owners and therefore voters. By the 1870s the states of Illinois, Minnesota, Wisconsin and Iowa had established Boards of Railroad Commissioners to restrict maximum haulage rates and prevent discriminatory pricing for short hauls (Piott, 1985, p. 15). In contrast to this 'strong' form of control, the legislators of the Eastern states, perhaps over-estimating the power of public opprobrium, opted for regulation by disclosure – the so-called 'sunshine commission' (McCraw, 1984, p. 10 ff.). In the event neither strategy was particularly effective, partly because the railway companies discovered that state governors and legislators were available for purchase (Perrow, 2002, p. 147) and partly because it was not clear that state law applied to commerce which began and ended outside its jurisdiction. In 1886, the Supreme Court decided it did not (McCraw, 1984, p. 61), thereby setting off a fresh round of public agitation which only ended with the establishment of the Interstate Commerce Commission in 1877. This too was partially hamstrung by a subsequent Supreme Court decision allowing discriminatory charges provided they could be justified on the grounds of competitive conditions (Piott, 1985, pp. 13–19; Perrow, 2002, pp. 147, 192–3). It was becoming clear that the Court was not going to endorse any form of regulation which disallowed what had become normal commercial practice.

The rapprochement between the law and the prevailing tactics of monopolistic competition – and with it the creation of a system of regulation which the courts would uphold – came about through the Standard Oil judgement of 1911.[3] To a lay reading, the language of the Sherman Act seemed absolute: it appeared to prohibit industrial combination of any kind (National Industrial Conference Board, 1925, p. 45). In the 1911 judgement, however, the Supreme Court decided that this should be interpreted according to the 'rule of reason'. On this new reading, 'The Sherman Act was construed to be directed neither against "Big Business" as such, nor against corporate consolidations as such,

nor against joint action as such amongst competitors, but against arrangements which were designed or calculated to suppress the competitive principle.'[4] (National Industrial Conference Board, 1925, p. 47). This behavioural (as opposed to structural) interpretation of monopoly was taken into the Clayton Anti-Trust Act of 1914 in the form of explicit prohibitions of price discrimination and 'tying' contracts, in addition to less well defined forms of 'unfair competition' (McCraw, 1984, p. 125).

The act was policed by a Federal Trade Commission created in the same year, and on the basis of information supplied by the Commission, the Department of Justice brought 168 cases over the fifteen year period 1915–1929, winning about 80 per cent of them. The contrast with the poor success rate under the Sherman Act was stark, and it demonstrated that the courts were more inclined to insist that the trusts conform to some minimum standard of competitive behaviour than that they should be broken up. For the small business interest, however, these results were less gratifying than might have been expected. Most of the successes were against loose associations of small peripheral firms, where anti-competitive practices were at their most visible. Able to achieve the same results by managerial fiat, the large core companies continued to grow unchecked (McCraw, 1984, p. 115). By 1930, the 200 largest corporations controlled nearly half of all non-banking corporate wealth, received 43.2 per cent of non-banking income and were controlled by approximately 200 individuals (Berle and Means, 1933, p. 28). Struggling to keep up, the Federal Trade Commission grew from 25 lawyers in the 1920s to about 400 in the 1980s (McCraw, 146).

## War, recession and government

Superficially, the mobilization of industry for the First World War seemed to involve a major extension of government control. The War Industries Board (WIB) was empowered to determine production priorities, fix the price of the goods it purchased and commandeer manufacturing plants. The impression was misleading, however, since many of the Board's personnel were recruited from the world of big business. Its chairman, Bernard M. Baruch had been a 'Wall Street Speculator' whilst its original membership included the chairman of the Union Pacific Railroad and a Cleveland manufacturer, alongside two representatives of the military and one of the labour unions. Given this background, the Board preferred to direct through the suasion of 'shared

values' rather than on the basis of formal authority, though this did not preclude some hard bargaining over price levels and even occasional threats of a government takeover (Cuff, 1973, p. 1, 5, 267. See also Faulkner, 1959, pp. 588–9). In an unguarded moment, one member of the WIB remarked that it 'was really the town meeting of American Industry' (Weibe, 1967, pp. 298–9). Although it was disbanded as a creature of big government only two days after the armistice, the enduring legacy of the WIB was a greatly strengthened network of industry trade associations, not an embryonic civil service (National Industrial Conference Board, 1925, p. 26; Cuff, 1973, p. 274).

The depression which followed the stock market crash of 1929 demonstrated that Congress, normally a vociferous advocate of small business, would act to preserve the large corporations when faced with the real possibility of their collapse. As an emergency measure, the Reconstruction Finance Corporation (RFC) was created in 1932, with initial capital of $500m (later $1800m) and the authority to lend 3 times this amount so as to keep the large companies afloat. The National Recovery Administration (NRA) of 1933 was a more measured attempt to plan for sustained recovery. On the model of the government-sponsored industry self-regulation of the First World War, an expanded state bureaucracy worked with the trade associations to draw up industry codes on production, prices, working conditions and trade union rights (Faulkner, 1959, pp. 650–67). The basic aim was to regulate production so as to hold up prices, to raise wages so as to increase demand and to shorten working hours so as to reduce unemployment. When the NRA was disbanded by the Supreme Court on the grounds that its powers were unconstitutional, the strategy of demand-led recovery was pursued by other means. Mandating employer recognition of trade unions on a majority vote, the Wagner Act of 1935 massively boosted union membership, then at a low ebb as a result of the depression. Another policy which aimed to increase spending power – and to temper a weak labour market with common humanity – was the Social Security Act of the same year which introduced America's first schemes of unemployment insurance and contributory old age pensions.

The RFC, meanwhile, continued in being. In June 1940, as the US prepared to enter the Second World War, the corporation was authorized to finance war production through subsidiary agencies. Through the Defense Plants Corporation about $7bn was eventually spent on new plant built under contract by the large corporations. Nominally owned by the government, this plant was leased back to the companies which built it at nominal rents, then sold to them at knock-down

prices on the cessation of hostilities (McQuaid, 1982, p. 84). Over 90 per cent of the wartime facilities for manufacturing aircraft, ships, magnesium and synthetic rubber were financed in this manner and lesser, but still substantial proportions of the nation's capacity in aluminium and machine tools (Faulkner, 1959, p. 700).

The actual terms under which America's large companies agreed to produce for the war effort were hammered out in not-very-visible negotiations with the Roosevelt administration. The two basic elements were renegotiable cost-plus contracts and tax allowances for accelerated depreciation. The first guaranteed profits whatever fluctuation might occur in costs whilst the second was effectively a subsidy on capital investment. Once this agreement was in place, 'American capitalists, who, like entrepreneurs everywhere, know a good thing when they see one, responded marvellously' (McQuaid, 1982, p. 85). In this regime of guaranteed profits and subsidized investment, the large corporations prospered mightily. Favoured as known and capable sources by hard-pressed military procurement officers, the hundred largest manufacturing companies' expanded their share of national output from 30 per cent to 70 per cent between 1940 and 1943 (Blum, 1976, quoted in McQuaid, 1982, p. 94).

Organized Labour too prospered during the war on the basis of full employment and the bargaining rights of the Wagner Act. Union membership increased from 3m to 15m between 1933 and 1945, so that the end of the wage controls imposed under the Economic Stabilization Act of 1942 saw an explosion of industrial unrest, with 116m days lost in strikes during 1946, with 4.5m workers involved. The business lobby reacted with a draconian series of proposals which were eventually watered down in protracted negotiations with the Truman administration. Amongst other restrictions, the Taft-Hartley Act of 1947 outlawed the closed shop and subjected the union shop to regular ballots. Jurisdictional strikes and secondary boycotts were banned, whilst managerial and supervisory unions were excluded altogether from the bargaining rights of the Wagner Act. Reflecting the Cold War paranoia of the era, such federal protection as survived this bonfire of controls was withdrawn from any unions whose officials refused to sign an anti-communist loyalty oath. Under these conditions, big business found that it could live with business unionism (McQuaid, 1982, pp. 135–48).

Most of the 165 or so emergency war agencies were disbanded when the war ended, though the RFC itself staggered on for some years, a massive bureaucracy still committed to the increasingly unnecessary

support of 'ailing' industries. Increasingly out of key with the times, it too was abolished in 1953 (Faulkner, 1959, pp. 700–13; Parris, 1968, p. 11) (See Chapter 5).

In the broader sense, however, government-industry co-operation persisted through the short period between the end of the Second World War and the beginning of the Korean War. Since the time of the New Deal, federal intervention had become a fact and if industry wished to influence the form of that intervention, the machinery of negotiation had to be in place. The occasion was not long in coming. Seeking to avoid the unemployment which had followed the First World War, Wagner and a number of other New Dealers proposed a National Production and Employment Budget which would take up any slack in the labour market by providing work for the unemployed. The Business Council and other employer organizations moved quickly to snuff out this assault on capitalist freedoms. It was through their agency that the Employment and Production Act of 1946 produced nothing more than the purely advisory Council of Economic Advisors (McQuaid, 1982, pp. 130–1).

When communist North Korea invaded the South in 1950, US industry returned to what was becoming its normal war footing. As before, military procurement became a major means of industry regulation. In 1952, the Pentagon purchased 11.6 per cent of US GDP and the proportion never fell below 6 per cent in next two decades, prompting no less an authority than President Eisenhower, the wartime Supreme Commander of Operation Overlord, to warn of the growing power of the 'Military-Industrial Complex'. After the Korean War, the Commerce Department established the Business and Defense Services Administration as a permanent means of ensuring that the material means of US military policy would be in place. As by now had become traditional, this was organized along industry lines, with each division staffed and dominated by the major firms. By the mid 1970s, the Pentagon was funding 30 per cent of the nation's research and development and the cost-no-object stress on quality and reliability in defence applications had enabled the US to become a world leader in such spin-off industries as semiconductors, commercial aircraft, computers, hard plastics, synthetic rubbers, lasers, fibre-optics, nuclear power, telecommunications and optical and scientific instruments (Reich, 1984, pp. 101–3).

The apogee of the Fordist regime of accumulation occurred in the mid 1960s. In 1965 the US economy had grown continuously for 55 months and this prosperity, as redistributed through President

Johnson's 'Great Society' welfare programme was raising the living standards of most Americans. When asked why the corporate CEOs on the Business Council were co-operating with a Democrat president, one anonymous member gave this reply, 'What the hell, business is business. We've solved every damned problem except unemployment. We've got a president who listens to us, and one of our own men is Secretary of Commerce. It's no wonder you see people smiling.' (McQuaid, 1982, p. 236).

## City government as an institution of regulation

Trusts and the attempts of government to regulate them were not the only forerunners of the 'superstructures of management', as Reich calls them. Reich himself traces them back to a transformation of city government which took place in the first two decades of the 20th century (Reich, 1984, pp. 77–8).

Nineteenth century municipal government in America derived from the Jeffersonian tradition of direct democracy. With the growth of urban populations and the increasing complexity of municipal administration, however, the electoral process had become cumbersome in the extreme and the personal acquaintance on which informed choice depended had been severed. On 7 November 1911, the voters in Cleveland Ohio were confronted by 7 separate ballot papers, one containing 74 candidates for city offices, one with 12 candidates for board of education, one with 14 candidates for municipal court judges, and so on (Beard, 1912, p. 100).

In the larger cities 'representative bureaucracy' of this kind had turned into a breeding-ground of machine politics. Where a Jeffersonian community of property-owning farmers wanted little of government except that it leave them alone, the impoverished immigrants crowding into America's larger cities looked to the municipality for support and a living. With the achievement of universal male suffrage in the 1820s (Mohl, 1985, p. 84), machine politics provided both. In return for the bloc vote of the Irish and German catholic communities of New York City, William Marcy Tweed ('Boss Tweed') dispensed taxpayers' money to a variety of ethnically-based good causes including schools, hospitals, orphanages and churches (Allswang, 1977, pp. 52–3). Largesse of this kind did not come cheap. In 1870 a company controlled by the Tweed Ring was paid $3m for a few ink bottles, six reams of paper and several boxes of rubber bands supplied to the city government. By such means, it was estimated that the

Tweed Ring trousered up to $200m between 1868 and 1871 (Mohl, 1985, pp. 93–4). Reviewing a life lived in the same tradition, George Washington Plunkitt, a later Grand Sachem of Tammany Hall, gave the world as succinct a statement of the entrepreneurial creed as one could wish, 'I seen my opportunities and I took 'em.' (Allswang, 1977, p. 21).

The model for an alternative form of government originated in Galveston, a city which had been devastated by a hurricane and tidal wave in 1900. Observing the paralysis of the existing administration, a committee of citizens formulated a new charter which vested the whole of government in a mayor and four commissioners appointed at large. Probably influenced by the functional form of organization pioneered on the American railways not long previously (Chandler, 1977, p. 108), these four commissioners took charge of the departments of police and fire, streets and public property, water works and sewage, and finance and revenue (Beard, 1912, p. 93). By 1904 Galveston had been rebuilt (Reich, 1984, p. 77).

To 'the civic and business interests of the American city', the Galveston experience suggested a means of putting an end to the 'waste, extravagance and sometimes corruption which had characterized "politician" government of the last century'. By 1927, there were 373 city managers at work, nearly half of whom were engineers by profession, probably reflecting the demand for persons capable of managing large civil engineering contracts (White, 1928, p. 126, 130, 265). Though the average tenure was only two years or so, the appointments were on merit and permanent in principle (Beard, 1912, pp. 93–4, 109–13; White, 1928, p. 133). City management, in other words, had become an occupation. With the expansion of university-level courses in public administration from about 1910 onwards, it also began to become a profession (Williams, 2003).

Even in 1912, the year in which Beard's study was published, the provision of public services involved franchising on a large scale. The gas and electricity plants of New York City alone employed over 10,000 people. Left to themselves, the companies involved had established a track record of corruption, stock watering, and labour exploitation, practices which could only be kept in check by a growing apparatus of law, regulation and audit (Beard, 1912, pp. 190–217). Like the farming communities before them, the city managers were also confronted with a growing problem of monopoly. Between 1915 and 1925, the share of electricity generating capacity controlled by the 16 largest groups grew from about 28 per cent to 53 per cent as a result of merger and acquisition amongst holding companies. Since the

problem was common to many cities, the trend eventually provoked legislation at the Federal level and many of the groups were broken up by Public Utility Holding Co Act of 1935 (Faulkner, 1959, p. 610).

By 1974 the New York Public Utilities Commission had evolved into a bureaucracy of 650 persons with annual budget of over $12m. By then the problem was one of managing the repercussions of the oil price shock of 1973. Headed by the economist Alfred E. Kahn, the Commission organized an agreement between the city's large suppliers and consumers of electricity to introduce variable time-of-day charges so as to increase capacity utilization and thereby reduce the need for new capital investment (McCraw, 1984, pp. 244–56). The case illustrates the manner in which city government had evolved into yet another form of supra-company management.

## Preserving the small business way of life

As the institutions of corporate America took shape, majority public opinion made its accommodations, probably in recognition of the source of the pay cheques. Galambos' (1975) longitudinal study of the magazines aimed at the American middle classes revealed an increasingly benign view of big business, an interpretation corroborated by a number of more impressionistic commentators (for example, Hofstader, 1965; Weibe, 1976). By the early 1950s, a former manager with the Tennessee Valley Authority could declare that 'today small business, while it is an integral, essential part of our society, is certainly not the norm. The driving force of our economic life is now large business: no amount of nostalgia for the good old days can change that fact.' Lilienthal (1952, p. 6). In this climate of opinion, C. Wright Mills could write an epitaph for small business in terms which would nowadays provoke outrage:

> The broad linkage of enterprise and property, the cradle conditions of classic democracy, no longer exist in America. This is no society of small entrepreneurs – now they are one stratum among others: above them is the big money; below them the alienated employee; before them the fate of politically dependent relics; behind them, their world.
>
> Mills, 1951, p. 59

A broad trend of public opinion, however, is not the same thing as consensus. Although a 1951 survey by the Institute of Social Research

at the University of Michigan confirmed the generally favourable image of big business, about 10 per cent of the sample still felt that the bad outweighed the good (Hofstader, 1965, p. 212). Even in the early 1950s, there was sufficient hostility towards the corporations for the professors of Harvard University to produce a useful handbook of counter-arguments for the busy executive (Glover, 1954).

Throughout the decades in which most Americans were becoming habituated to the corporate economy, it is important to appreciate the continuing thread of dissent and political activism on behalf of small business. In the public arena, this was at its most flamboyant in the rage of Louis D. Brandeis against the 'curse of bigness', and there was no doubt that Brandeis had his audience. His credo, *Other people's money and how the bankers use it* was serialized by Harper's Weekly in 1913 and the book itself subsequently sold out a number of editions (McCraw, 1984, pp. 108–113). Though small business lacked anything like coherent representation as an interest group until the 1990s, it has consistently enjoyed the support of Congress. There are two basic reasons, one material and one ideological.

On the first point, a considerable number of votes are involved (Bunzle, 1979, p. 120). Even after a century of decline, the proportion of self-employment amongst the economically active stood at 8–14 per cent in 1980, depending on definitions, plus a further 17 per cent who had been self-employed at some previous time (Steinmetz and Wright, 1989). Secondly, there is a sense in which the preservation of small business has served to stabilize the *corporate* economy. Chinoy's (1955) auto workers could endure the production lines year after year because they believed in the possibility of escape to an American dream of economic self-sufficiency. More generally, the small business, modest as it may be, functions as a visible confirmation of the possibility of social mobility in a society marked by pronounced economic inequalities.

In this respect, there has been much to legitimize. The conventional measure of income inequality is the GINI coefficient, an index which ranges from 0 (perfect equality) to 1 (an entire nation's income going to one person).[5] Between 1947 and 1968, the GINI coefficient for the USA decreased from 0.375 to 0.35, then increased rapidly to about 0.46 in 1999. By way of comparison, the highest European figure for 1977 was 0.28 (Netherlands) and for 1999 0.34 (UK)[6] (Danziger and Gottschalk, 1993, p. 7; Smeeding, 2001). Unfortunately for the Horatio Alger myth of the USA as an open society, there is no evidence that its exceptional degree of inequality might be the outcome of exceptional social mobility (Erikson and Goldthorpe, 1992, pp. 318–21). Yet even

at the height of the 1930s depression, the Lynds' working-class Middletowners could believe that, 'In no other country in the world are there so many opportunities open to the little fellow as in the United States.' (Lynd and Lynd, 1937, p. 408). The small business is not the only symbol of opportunity which helps to create this impression, but it is an important one. Thus, 'The small entrepreneur tenders his ideological gifts to big business in return for a feudal-like protection.' (Mills, 1951, p. 39).

Acting out of whatever combination of the foregoing motives, Congressman Wright Patman and Senator Joseph T. Robinson set out in the mid 1930s to defend the small retailer against the chain stores and mail order houses. In doing so, they ran straight into the contradictions involved in legislating for independence.

The problem for the independent storekeepers was that they could be consistently undercut by larger operators who could negotiate quantity discounts from the manufacturers. Their first response was to use their prominence in local politics to impose taxes and development restrictions on the chain stores and to require certain goods which were supposedly safety-critical (such as sewing-machines) to be distributed only through licensed dealers. The effectiveness of such methods, however, was limited by the difficulty of discriminating specifically against the big retailers through the medium of rules applicable to all.

Like the Grangers before them, the storekeepers then found that their distaste for big government could be swallowed in the greater cause of curbing big retail. In 1935 the United States Wholesale Grocer's Association prepared a bill which attacked the problem of quantity discounts at its root. Whilst protecting the 'functional' discounts granted by dealers such as themselves, the bill required manufacturers to cost-justify any discounts to the multiples. In 1937, this bill was signed into law as the Robinson-Patman Act, 'the Magna Charter (sic) of small business' (Bean, 1996, pp. 17–35). Emphasizing the ideological continuities at work in this apparently particular issue, the Chair of the House Committee on the Judiciary spoke of the aims of the bill during its discussion stage in terms which harked straight back to Thomas Jefferson:

> There are a great many people who feel that if we are to preserve democracy in America, we have got to preserve a democracy in business operation. We must make some effort to maintain *the yeomanry in business*.
>
> Hofstader (1965, p. 221). Italics in Hofstader's original

Generally speaking, the supporters of the Robinson-Patman Act preferred to justify it in terms of 'fairness' rather than the preservation of a particular way of life, if only because the latter suggested that the consumer interest was being sacrificed to that of small business. For the same reason retail price maintenance (RPM) in the USA has generally gone by the name of 'fair trade'.

After the Second World War, Fair Trade ran into troubled waters. During the inflation and recession of 1949, politicians opposed to 'fair trade' found that public opinion could be mobilized in the cause of greater competition. The points of entry were the clauses in fair trade agreements which obliged parties who were not signatories to abide by their terms. In 1951 the Supreme Court ruled that these 'non-signer clauses' did not apply to any goods in interstate commerce. In 1952 the McGuire Act, sponsored by the National Association of Retail Druggists (NARD), restored the legality of non-signer clauses. By then, however, fair trade legislation was coming under additional pressure from the discount houses. During the early 1950s, the Sheaffer pen company found itself setting aside 4 per cent of its sales revenue for legal expenses as state courts moved to strike out the non-signer clauses in its RPM agreements. By 1962 manufacturers were unable to enforce RPM in 24 states. Sensing the drift of events, academic researchers belatedly discovered that fair trade was costing the buying public several $billions per annum and eventually, in 1975, the Consumer Goods Pricing Act banned retail price maintenance (Bean, 1996, pp. 77–84).

Manufacturing too had its counterpart to the Robinson-Patman Act. The first substantial intervention came during World War II, a period in which large companies were profiting disproportionately from defence procurement (page 19). In 1942 Congress unanimously passed a law creating the Smaller War Plants Corporation (SWPC) in response to the complaints of small businessmen. The Corporation was empowered to negotiate contracts to be set aside for small companies, to make loans to small firms for essential war production and to undertake prime contracts from government procurement agencies so as to subcontract to small firms. Between 1942 and 1945 when the corporation was disbanded, small plants received $5.7bn of prime contracts through its agency and £30.6m. of subcontracts (Parris, 1968, p. 5). Again the justification was moral rather than economic. Near the end of the war, the Small Business Committee of the Senate opined that:

> [the pursuit of opportunity by the small business owner] has been a great motive force among our people. It stimulates the fundamental

> virtues of thrift industry, intelligence, schooling, home ties and family pride – in short those fireside virtues which have counted for so much in developing our strength and character.
>
> Quoted in Bunzle, 1979, p. 84

Briefly resurrected during the Korean war, the SWPC was reborn in 1953 as a scheme of support which would enable small business to start up and survive in civilian markets. The operation of the Small Business Administration (SBA) is considered in some detail in Chapter 5. For now it will suffice to note that its rationale throughout has remained moral rather than economic. As Congressman Philip J. Philbin enthused at the time of its creation, a small business agency would help to defend independent enterprise from 'the Pinkos, and the Marxist Reds' who threatened the American Way of Life (Bean, 2001, p. 10).

Though they share a common valorization of individual enterprise and suspicion of the corporate economy, there is a considerable gap between these policies aimed at the preservation of small business and entrepreneurialism as the basis of economic policy. At least until the late 1960s, the independent small business was idealized as a moral proving-ground, as a means of developing the qualities of self-reliance, initiative and enterprise, rather than a means of self-enrichment. Its emblematic representation in American politics – the 'Mom and Pop store' – is a 'lifestyle' enterprise, not a growth-oriented entrepreneurial business. The distinction is one widely recognized in the literature of entrepreneurship (for example, Scase and Goffee, 1987; Dale, 1991; Gray, 1992).

To the mindset which would later attract the label 'neo conservative', in contrast, the only real way of creating a free and competitive economy is to restore incentives by cutting taxes and get the government out of business altogether. From this point of view, the SBA was merely another arm of big government and its assistance to small business, far from stimulating the spirit of enterprise, would do nothing but encourage a company-level version of dependency culture (Parris, 1968, p. 99).

During the 1980s, the SBA came under this kind of attack from the National Federation of Independent Business, by then one of the most powerful lobbies in Washington and a vociferous advocate of deregulation (Bean, 2001, pp. 106–7). Against this background it was no paradox that President Reagan, that friend of the entrepreneur, almost halved the SBA loan programme from $3.5bn to $1.8bn whilst the NFIB made no protest at all (Solomon, 1986, p. 249; Bean, 2001, p. 111).

## Prophets of entrepreneurialism

The axis of opposition defining the free society against the forces which menaced it was sharply redrawn in the work of Freidrich von Hayek. First published in 1944, *The Road to Serfdom* was an extended warning against the totalitarian tendencies supposedly lurking in the corporate drift of the Western economies. For Hayek, as for Locke and Jefferson, the basis of the free society was individually-held property and the proper function of government was the protection of the rights attaching to it. From this, it followed that capitalism was the only system which possessed even the potential for freedom. The realization of that potential, however, depended on reining in the encroachments of the state.

Prosperity, as well as freedom was at stake, a theme not absent from small business ideology but one which was secondary for the most part. Like many conservative intellectuals, Hayek was sceptical of the capacity of individuals to understand and control their destiny. From this, it followed that the dispersed intelligence of an entire society, refined and tested against experience, would always produce results superior to those of centralized planning. The enterprise of individual property owners, he believed, was just such a system of distributed intelligence with the act of entrepreneurship a kind of experiment on which society as a whole pronounced judgement through the marketplace. Because the planned economy stifled this process it constituted a threat to human progress as well as freedom.

The belief that basic economic liberties were under attack, of course, was one of long standing in America. In 1908, Assistant Attorney General Jewel P. Lightfoot, official trust-buster to the state of Texas, declared that, 'Our entire business world is on an illegal basis. Americans are becoming cogs in a great national organization of commerce. In Texas we prefer to be free – to be independent, even if we have to go back to the sickle and the hoe.' (Piott, 1985, p. 148). Though *The Road to Serfdom* was written in the UK, Hayek had visited America during 1931 and must have encountered thinking of this kind. Whether or not this was Hayek's source, it was possible for the American small business interest to find its own concerns reflected in his work.

There were, however, significant differences. If liberty is to be at all widespread and if entrepreneurship is to be truly a form of dispersed intelligence, it follows that there must be a wide distribution of capital, to put the matter at it lowest. On this point the American ideology of

small business was crystal clear: the axis of opposition defining the free society against that which threatened it lay between small and large capital. In this struggle, the state had repeatedly been enlisted as an *ally*, albeit one to be held at arm's length. What, then, did Hayek have to say about monopoly, certainly a greater threat to small business in 1944 than in 1918, though in fairness, the same might be said of the state?

The answer, remarkably enough, is remarkably little. Though his inaugural address to the Mont Pérelin Society in 1947 had mentioned the possibility of designing corporate law so as to limit the growth of companies (Hayek, 1949), Hayek did not state his position on monopoly until 1979, a full 37 years after the first publication of *The Road to Serfdom*.[7] He began by making it clear that he did not share the 'popular prejudice against bigness'. For him, economic concentration was to be judged solely on its consequences for competition. On these grounds, he opposed anti-trust because it deterred large firms from competing in certain markets (Barry, 1979, p. 51). Monopoly which followed from the possession of unique capabilities or resources was not only allowable but desirable, since it was the outcome of fair competition. Market domination was an evil only insofar as its powers were used to stifle competition, for example by the artificial manipulation of prices.[8] Because legislation to prevent this would have involved an unacceptable extension of government powers, however, Hayek thought that it could be dealt with by allowing actions for damages by potential competitors. Price-fixing by oligopolistic corporations, he believed, could be prevented by making all agreements in restraint of trade unenforceable at law. As for legislation designed to protect the small entrepreneur against the power of large corporations, this was an anti-liberal conclusion argued from liberal premises. It could be achieved only by the greater evil of conferring unchecked powers on an arbitrary authority (Hayek, 1979, pp. 77–86).

As practical measures against anti-competitive practices, first of all, it is worth observing that Hayek's prescriptions had already proved ineffective in the late 19th century. More important, in concentrating on the issue of competition, Hayek glossed over the implications of monopoly for the core tenets of his social philosophy. For if property rights are the cornerstone of individual liberty, how much freedom can there be in a society dominated by big capital? And how is the dispersed intelligence of an entire society to emerge in spontaneous acts of enterprise if capital is in the hands of a few monopolies? On Hayek's own premises, monopoly capitalism is a society in which there is little

freedom and little creativity – just as is argued in the small business ideology. By definition, too, it is a society in which most people are employees, a state of being which Hayek regarded with something close to compassion, since the employee was cut off from the freedoms and character-forming pressures of the market-place (Gamble, 1996, p. 73). Thus Hayek's revision of liberal capitalism replaced one paradox with another; that of state-protected free enterprise, with that of a free society in which there was little freedom. A paradox of this kind, however, was no problem at all for the political arm of big business. In fact a freedom for big capital which spoke of freedom for all was very congenial indeed.

Hayek's thinking also appealed to old money in its promise that economic freedom could be achieved without disturbing the existing distribution of power and property. In the thought of Jefferson, economic freedom implied a redistribution of property in a case where there were citizens who possessed insufficient to satisfy their natural wants. As has already been described, he even tried to put this into practice, though the distribution was to be of land confiscated from the Native Americans. Hayek would have none of this. He despised Jefferson and the whole project of what he called 'constructivist' liberalism. To Hayek the notion that a government could legislate freedom was self-contradictory, since freedom in his mind was freedom *from* government. It followed that the institutions of liberty could emerge only as the organic product of the dispersed intelligence of a whole society (Gamble, 1996, p. 140). This subsumption of a liberal vision of society within a conservative theory of institutional evolution guaranteed that Hayek's version of freedom would never pose a threat to an 'organically evolved' distribution of power and property. In the opinion of (Smith, 1991, p. 171) Hayek's appeal to America's conservatives lay in its irrationalism. More likely it was his talk of freedom combined with a promise to do nothing about it.

Hayek's sombre warnings of 1944 also tapped into the thinking of the future cold warriors, those whose minds were already turning from the present war against Nazism to a future war against Soviet communism. The parting envoi of *The Road to Serfdom* was directed against ideas from 'the East' as enacted in Germany, it being impolitic to name Russia openly whilst that nation was still an ally in the war against Nazism (Cockett, 1994, p. 86). Leaving aside the contemptible implication that the Russian communists were somehow responsible for Nazism, Hayek's message was that government intervention in the affairs of private capital was a slippery slope that could only end in a tyranny

indistinguishable from both. It followed that the moral guardians of Western capitalism ('individualism' in Hayek's terminology) needed to be clear about what was at stake in the coming confrontation.

To the commonsense thinker of the 1950s, this was a matter of democratic process versus the Gulag, however flawed and limited the democracy. Hayek, however, as befits a man who thought of the state primarily in terms of oppression, was not very interested in democracy as a principle. As far as he was concerned it was preferable to authoritarian government only insofar as it led to a liberal economic order (Gamble, 1996, p. 91). What mattered, once more, was economic freedom. On this point, the convergence theorists of the 1950s (Kerr, 1960) were coming to the conclusion that corporate America and the command economies of the Soviet Bloc were indeed converging towards a common logic of industrialization, albeit without Hayek's negative imputations. If this were indeed the case, it was hard to see (hard for the readers of Hayek, that is) what principle demanded the arsenals of annihilation accumulating on both sides of the Iron Curtain. Having manufactured a similarity between the West and the Soviet Bloc, Hayek's vision of liberal capitalism then offered a way of defining the difference, and of calling one side of it 'freedom'. The proviso was that the West needed to reverse the tendency of the state to accumulate powers which enabled it to interfere with the rights of private capital. In this sense, Hayek provided a rationale for the unceasing patrols of the US Navy and Strategic Air Command, both of which institutions, ironically enough, depended on a highly-co-ordinated industrial structure which differed radically from his version of capitalist virtue.

What is most obvious about Hayek is that he redrew the axis of opposition defining liberalism as one in which the freedoms of capitalism as a whole were threatened by an authoritarian state. Less obvious but politically crucial, there were silences and inconsistencies within his manner of doing so which enabled his thought to appeal to a number of otherwise disparate constituencies: to the advocates of small business in its sense of threat against dispersed entrepreneurship, to existing wealth and power in its tolerance of monopoly and promise of political quietism and to the cold warriors in its rationalization of the arms race. On the core values and vested interests of all, it conferred the name of freedom, in the name of which they could unite in calling for a roll-back of the frontiers of the state.

According to Gamble, Hayek was regarded as the peddler of an antique reactionary creed until the mid 1960s (Gamble, 1996, pp. 2–3).

This may have been so amongst professional economists, but Hayek's ideas appealed strongly to a significant minority. *The Road to Serfdom* sold out two editions in short order (Hartwell, 1995, p. 23) and was featured as the condensed book of the month in the *Reader's Digest* of March 1945. In the UK, a number of liberal conservatives wrote to Winston Churchill urging him to halt 'the race down the road to the totalitarian state' and the party devoted $1^1/_2$ tons of its precious paper ration for the 1945 general election to a printing of 12,000 abridged copies of *The Road to Serfdom* (Cockett, 1994, pp. 91–3).

## The abstention of Joseph Schumpeter

It will seem curious to some that the name of Joseph Schumpeter has not yet figured in this narrative. After all it is he, and not Hayek who is routinely quoted in the present-day literature of entrepreneurship and certainly he had more to say about the economic functions of entrepreneurship.[9] Despite this, it was in the name of Hayek and freedom, not Schumpeter and the entrepreneurial economy that entrepreneurialism became the subject of a highly organized project of ideological manufacture. Though *Capitalism, Socialism, and Democracy* became an international best-seller with the publication of the third edition in 1950, the year of Schumpeter's death, his thought exhibited two features which were inconvenient in a source for entrepreneurialism: clarity and pessimism.

To Schumpeter the essence of capitalism lay not in the mechanics of steady-state (Fordist) accumulation, but in the discontinuities of 'creative destruction' through which quasi-monopoly profits accrued to the act of entrepreneurship. In the process consumption patterns were remade around new products whilst whole industries and communities were swallowed up in the disappearance of traditional markets.

Schumpeter regarded this core dynamic of the capitalist economy as the distinctive contribution of the bourgeoisie. Entrepreneurship, to Schumpeter, in other words, was the creation of new ventures funded by private capital. Understood in this sense, both entrepreneurship and the bourgeoisie itself were under threat from the large oligopolistic corporation, partly because the corporations were driving independent companies out of business and partly because they were taking over the social function of innovation in a form detached from the personal ownership of capital. Deprived of its economic function, bourgeois property was tending towards the passivity of rentiér capital. The result was a fatal weakening of the political anchorage of the idea of private

property and with it the moral basis of capitalist society. Socialism, he believed, would follow, since ' the bourgeoisie depends upon the entrepreneur and, as a class, lives and dies with him [sic]' (Schumpeter, 1976, pp. 134, 140–1).

Where Hayek's fixation on the roll-back of governmental powers and fudge on the issue of monopoly could appeal to capitalists of all stripe, there was no comfort for the small business owner in Schumpeter's prophecy of extinction, none for the corporate manager in the assigned of harbinger of socialism and none for the intellectual activist in Schumpeter's conviction that the socialist future was inevitable. For these reasons, Schumpeter had little influence on the neo-liberal think tanks to be discussed presently. Nor would he have wanted any. Writing in 1949, the year before his death, he was quite rude about the prospects for arresting the onward march of socialism by debating economic ideas on 'a mountain in Switzerland' (Schumpeter, 1950, pp. 415–25).

## Think tanks

Hayek's belief in the organic evolution of social institutions did not preclude a vigorous campaign at the level of ideas. Encouraged by his reception at the invitation lectures which followed the publication of *The Road to Serfdom*, he organized the inaugural meeting of an international liberal society on 1 April 1947. The venue was the Hotel du Parc on the slopes of Mont Pérelin overlooking Lac Leman (Cockett, 1994, p. 108). With Hayek as President, the core programme of the Mont Pérelin Society was the promotion of market liberalism, though the group also seemed to tap into a more generalized sense that the times were out of joint. Wilhelm Röpke, one of Hayek's co-founders, thought that 'mass civilization and materialism', had already led to the 'collapse of the intellectual and moral foundations of the Occident' (Hartwell, 1995, p. 29). Lionel Robbins, at that time a noted liberal economist, stated the group's aims in terms only a little less apocalyptic:

> The central values of civilization are in danger … The position of the individual and the voluntary group are progressively undermined by extensions of arbitrary power. Even the most precious possession of Western Man, freedom of thought and expression is threatened by the spread of creeds which, claiming the privilege of tolerance when in the position of a minority, seek only to establish a position of power in which they can suppress and obliterate all views but their own.

> The group holds that these developments have been fostered by the growth of a view of history which denies all absolute moral standards and the growth of theories which question the desirability of the rule of law. It holds further that they have been fostered by a decline of belief in private property and the competitive market; for without the diffused power and initiative associated with these institutions it is difficult to imagine a society in which freedom may be effectively preserved.
>
> Hartwell, 1995, p. 40

Amongst the receptive minds who attended to these intimations of approaching doom were those of Milton Friedman and a young British businessman called Anthony Fisher.[10]

A restless and enterprising character, Fisher had by turns been an engineering student, an RAF pilot, a merchant banker and a chicken farmer. His encounter with the *Reader's Digest* Condensation of Hayek's *The Road to Serfdom* proved a life-changing experience. In 1947 he went to the London School of Economics to meet Hayek, who advised him to work on the propagation of liberal ideas rather than enter politics as a career.

The advice proved of benefit to Fisher's business interests as well as his political project. During a visit to the Foundation for Economic Education, an American neo-conservative think tank, Fisher met one 'Baldy' Harper, a fellow Hayekian who introduced him to the then-new technology of the broiler house. In a few years, the incarcerated fowl of Buxted Chickens Ltd had generated sufficient profit for Fisher to think of propagating Hayek's ideas on human freedom through a think tank of his own. In 1955 he founded the Institute of Economic Affairs (IEA) with a like-thinking chartered accountant, Oliver Smedley (Denham and Garnett, 2001, p. 180; Cockett, 1994, pp. 123–30).

A decade later, the market for new policies which might be attached to the brand name of the British Conservative party received a major boost from the electoral defeat of 1964. Amongst a number of Conservative politicians who were looking for a fresh direction was Keith Joseph, the ex-Minister for Housing, and it was at the IEA that he first encountered the ideas of Hayek and Milton Friedman. Fired with the enthusiasm of the neophyte, Joseph did as much as any other single person around the world to promote the new liberalism (Yergin and Stanislaw, 1998, p. 75). Prominent on his distribution list, and amongst those he introduced to the IEA, was the Conservative ex minister for education, Mrs Margaret Thatcher (Cockett, 1994, pp. 162–8).

Conforming to Hayek's belief that new ideas needed to be nurtured at one remove from the compromises of practical politics, the IEA conceived of its mission in intellectual terms. That, as the world was soon to discover, was not Mrs Thatcher's style. Working (again) with Keith Joseph, she set up the Centre for Policy Studies under the directorship of Alfred Sherman to develop ways of putting the IEA's ideas into practice. This move effectively sidelined the Conservative Party's existing research department, as indeed was the intention. One of the Conservative Research Department's officers vividly recalls her one-and-only visit in 1975, shortly after she had been elected leader of the party. At the time, a colleague was delivering a paper advocating the then-traditional 'middle way' of British Conservatism. Cockett's account of Mrs Thatcher's manner of debate is irresistible: 'Before he had finished speaking to his paper, the new party leader reached into her briefcase and took out a book. It was Freidrich von Hayek's *The Constitution of Liberty*. Interrupting our pragmatist, she held up the book for all of us to see. "This," she said sternly, "is what we believe", and banged Hayek down on the table.' (Cockett, 1994, p. 174). Following Mrs Thatcher's electoral victory in 1979, that was more-or-less how the UK experienced Hayek for the next 11 years.

In the USA, the right-wing think tank was a living tradition well before the Mont Pérelin Society. The Hoover Institution on War, Revolution and Peace (1990 budget $17m) had been founded as long ago as 1919 in order to promote the ideas of market liberalism, a programme into which the publication of works by Friedman and Hayek slotted with no problem at all. Others seem to have been influenced by Hayek from the beginning. The American Enterprise Institute for Public Policy Research (founded 1943, 1990 budget $8m) was dedicated to 'preserving and improving the institutions of a free society' in reaction to the 'heresy of the New Deal' whilst the Heritage Foundation (founded 1973, 1990 budget $18m) boasted Hayek as scholar-in-residence at various times (Smith, 1991, pp. 270–81). From this heavily-funded intellectual ferment there emerged figures such as Martin Anderson, a seasoned political operator who cut his teeth on Barry Goldwater's unsuccessful campaign of 1964. Listing Hayek as one of his formative influences, along with other icons of the New Right, such as Milton Freidman and Ayn Rand, Anderson became Ronald Reagan's policy co-ordinator in both the 1976 and 1980 presidential campaigns (Smith, 1991, p. 7).

Before all this effort could bear fruit, however, it had to become clear that the corporate economy on both sides of the Atlantic was no longer delivering the goods.

## Crisis

In its mature form, Fordism was far more than a system of production. As described by Bowles, Gordon and Weisskopf (1990, pp. 47–8) it was the productive heart of a whole social structure of accumulation. There were four basic and interdependent elements, all of which began to unravel in the late 1970s.

First there was a working accord between government and the large corporations, whereby the institutions of industry self-government had become enmeshed with those of government regulation. The result was a system in which the corporations co-operated with policies which they themselves had helped to devise, and in which domestic competition was suppressed. In the militarized sectors, these anti-competitive tendencies were reinforced by the use of defence procurement so as to preserve the capabilities of the large defence contractors.

Second, there was a relatively peaceful accommodation between the corporations and their relatively privileged 'primary sector' employees. Either professionals or skilled workers, these had achieved some degree of job security and some capacity to secure a share of the rising national income, either because their skills were in demand or because they had developed effective trade union organizations on the legal foundation of the Wagner Act. Outside this zone of comparative comfort there was a 'secondary sector' of unorganized, unskilled, insecure, sometimes female and sometimes immigrant labour. Hires and fires in this politically impotent and economically vulnerable sector of the workforce served to both to subsidize the primary sector accord and to protect it from economic fluctuations (Gordon, Edwards and Reich, 1982).

The third element was a limited capital-citizen accord dating from the old age and unemployment benefits introduced by the Social Security Act of 1935 and the welfare benefits provided by certain large companies such as Dupont as part of a strategy for containing or excluding trade unionism (Weber, 1959; Rezler, 1963). So long as the costs of these welfare programmes could be absorbed by rising productivity, they served to legitimized corporate capitalism as a socially

responsible system (Bowles, Gordon and Weisskopf, 1990, pp. 57–61; Harvey, 1990, pp. 129–36).

Fourth, and underlying all the others, were the terms of trade under which the US exported its manufactures and imported its raw materials in the years following the Second World War. In the early part of the period, the shattered industries of Continental Europe and Japan were in no position to compete with American productive capacity, boosted as it was by several years of state-subsidized investment. As for raw materials, the Bretton Woods agreement of 1944 had established the dollar as the only currency redeemable against gold at a fixed rate, thereby making it the world's effective reserve currency. This meant that the developing nations were forced to sell raw materials for dollars in order to trade on international markets. Assisted by military intervention in certain countries which showed signs of resisting the new economic order, the real costs of imported raw materials fell continuously relative to US manufactured exports until mid 1960s (Bowles et al, 1990, pp. 49–53). By that time too, foreign manufacturing industries had recovered from the war whilst many American companies, protected by industry-wide systems of regulation, had become technologically stagnant and ill-equipped to compete either on technology or price (Reich, 1984, pp. 174–5).

Most of the other elements began to unravel with Lyndon Johnson's 1967 decision to escalate the war in Vietnam. The resulting budget deficits, modest as they were by the standards of the second President Bush, forced Johnson to cut the Great Society welfare programme as quid pro quo for business acceptance of tax increases. Inflation increased to 5 per cent fuelling compensatory wage demands from the trade unions and labour unrest when these demands encountered employer resistance. After a brief and unsatisfying flirtation with the ideas of Milton Friedman, it fell to President Nixon to announce a whole series of crisis measures which, with hindsight, signalled the beginning of the end for the Fordist accommodation. These included a 10 per cent import tax, a 10 per cent cut in foreign aid and a $5bn cut in federal spending. In an attempt to stimulate investment there were accelerated depreciation allowances for the corporations and a 10 per cent investment tax credit for the purchase of American-made machinery. To control inflation head-on, there was an immediate 90-day freeze on incomes and prices, to be followed up by a Cost of Living Council. Most important, the 'dollar overhang', that is the excess of the dollars in circulation over the value of the gold held in Fort Knox, had reached such proportions that the dollar was taken off the gold standard (McQuaid, 1982, pp. 247–71).

With that announcement, there was an end to the trading regime under which America could depend on low and stable prices of imported raw materials. In 1973, the problem was compounded by a fourfold increase in the price of oil imposed by the Organization of Petroleum Exporting Countries (OPEC) on America and its allies in retaliation for their support of Israel in the Yom Kippur war against Egypt. Between November 1973 and June 1975, the Dow Jones Index declined 45 per cent from 1051 to 577 (Trumbore, 2002).

The crisis was now systemic, showing up on every major economic indicator. Labour productivity in the non-financial sector, which had increased at an average annual rate of 3.2 per cent between 1948 and 1965 and by 2.4 per cent between 1965 and 1973, now increased at only 1.1 per cent per annum between 1973 and 1978. During the 1980s it actually declined. Amongst the competitor nations, by contrast, Japanese productivity increased at an annual rate of 7.1 per cent between 1976 and 1981, French by 3.9 per cent and West German by 3.4 per cent. Under these circumstances the GATT agreement of 1947, under which tariffs had been lowered to the benefit of US firms, now began to work in reverse. By 1981, the US was importing 26 per cent of its cars, 25 per cent of its steel, 60 per cent of its television sets, 43 per cent of its calculators, 27 per cent of its metal-forming machinery, 35 per cent of its textile machinery and 53 per cent of its numerically-controlled machine tools. Twenty years earlier, imports in all these categories had accounted for less than 10 per cent of sales (Reich, 1984, pp. 117–21).

The cumulative effect of these trends was an end to the conditions under which rising living standards could be reconciled with rising profitability. Real spendable hourly earnings, which had grown by about 2 per cent per annum between 1948 and 1966, grew by only 1 per cent per annum between 1966 and 1973, then *decreased* by 1 per cent per annum between 1973 and 1979. Unemployment, meanwhile, increased from an average of 4.7 per cent between 1948 and 1969 to 7.5 per cent in 1980. Labour unions in the core corporations fighting to maintain living standards and job security now found themselves facing employers just as determined to restore profitability through concession bargaining or outright confrontation. The result was that the incidence of strikes increased from about 1967 onwards with the employers responding with anti-union campaigns and the relocation of plants to greenfield sites. Inflation increased from about 2 per cent in the 1950s and 1960s to 10 per cent in 1974 and again to 15 per cent in 1980 whilst the federal budget deficit steadily increased

from a low base in the 1960s to almost $100m in 1980 (Bowles and Edwards, 1985, pp. 348–9; McQuaid, 1982, p. 304; Gordon, Edwards and Reich, 1982, p. 168; Aglietta, 1979, p. 220).

Notwithstanding his instinctive distaste for controls, Carter's reaction was firmly in the corporatist tradition. Since 1972, the CEOs of America's largest corporations had organized themselves on a pan-industry basis, though with little publicity, as the Business Round Table. In exchange for co-operating with the voluntary wage-price controls proposed by Carter, the Round Table negotiated concessions on corporation tax, de-regulation and cuts in non-defense federal spending. By now, however, any kind of business support for government controls was beginning to attract catcalls from the neo-conservatives (McQuaid, 1982, pp. 302–4). They needn't have worried. At the level of public relations at least, Carter's controls turned out to be the dying twitch of American corporatism and in 1980, the neo-cons got what they wanted in the amiable form of President Reagan.

Developments in the UK followed a remarkably similar course, with the difference that trade unions were then a major force both at the industrial and political levels. For this reason the 1970s crisis in the UK took on the superficial appearance of one in industrial relations.

As British manufactured exports became less competitive relative to imports, profits declined and levels of investment with them. In such circumstances, wage bargaining tended to become a zero-sum game. As inflation increased, peaking at 25 per cent in the mid 1970s, the unions were forced to demand compensatory wage increases which employers promptly passed on as price increases. The resulting wage-price spiral fuelled further inflation, further declines in competitiveness, and so it went on.

In an attempt to break out of this vicious circle, successive Labour governments had attempted to impose incomes policies, sometimes accompanied by cosmetic price controls. Because wage determination in the UK's large public sector was more centralized and visible than the fragmented system in private industry, controls of this kind had opened up marked wage differentials between the public and private sectors. The issue came to a head in the winter of 1978 when a number of public sector employers 'decided' to resist demands for a new round of compensatory wage increases. Thousands of public sector workers went on strike and the British media, unsympathetic towards trade unionism at the best of times, fixed on instances of uncollected rubbish and unburied corpses to whip up public anger against a trade union movement which had become 'too powerful'. The slender

majority of the Callaghan government was overturned in a vote of confidence on a unrelated issue, and the Conservative Party under its new leader Margaret Thatcher ran away with the ensuing general election on a promise to 'do something' about the unions. Underlying this immediate issue the result probably reflected a deeper and more rational sense that the UK's version of corporatism, the tripartite bargaining between government, employers and the trade unions, could no longer function in a stagnating economy.

Hayek and the Mont Pérelin set were bathing in asses' milk. Having prophesied the failure of the planned economy throughout the long years of its success, they had finally been proved right. The system of taxation and welfare benefits which had underpinned the capital-citizen accord (Bowles et al 1990, pp. 57–61) had at last demonstrated its enervating consequences, whilst the trade unions had revealed themselves as the collectivist wreckers they were.[11] Now, to add to the joy, the UK had a Prime Minister prepared to put their theories into practice.

Hayek had also been vindicated in his disagreements with Keynesian deficit financing. Writing from the inflation-racked UK of 1974, he stated that, ' the responsibility for current world-wide inflation, I am sorry to say, rests wholly and squarely with the economists, or at least with that great majority of my fellow economists who have embraced the teachings of Lord Keynes.' It was a pity Hayek could not actually say 'I told you so' because he had neglected to go public on his disagreement with Keynes before the event, but those in the know were aware that he could have done so, and this was nearly as good. (Gamble, 1996, pp. 154–5). As Gamble puts it, '[Hayek] was the inspiration for many of the ideas that fed the ideological critique of Keynesianism and social democracy in the 1970s. He became a magnet for the mushrooming think tanks and groups on the New Right which were seeking explanations as to why capitalism after two decades of unprecedented success seemed to be falling apart'. (ibid, p. 166).

## Entrepreneurialism ascendant

Writing in the New Statesman of 16 May 1999, Charles Leadbeater, one of the prominent thinkers of New Labour paid his dues to Sir Keith Joseph. Though Sir Keith had died in 1994 'unmourned and … hardly remembered even by his own party' (so says Leadbeater), he nevertheless deserved much credit for his realization that by the mid 1970s the Keynesian post-war settlement was 'grinding into a dead end.' In

particular, Sir Keith had become convinced that the capitalist economy depended not on self-equilibrating markets, but on the active agency of entrepreneurship. On this point, Leadbeater quoted Sir Keith's *Conditions for Fuller Employment* (1978): 'The market creates the framework: but it is people who act within it. The endless adaptation of production to consumption, of supply to demand, is not achieved automatically. Resources do not allocate themselves: they have to be organized by people, above all the entrepreneur.'

Leadbeater's acknowledgment of the intellectual antecedents of New Labour was generous – perhaps excessively so. Keith Joseph (as he then was) was by no means a lone voice in the Great Britain of the 1970s. Rather he was one of a number of people involved in the chain of influence which led from Freidman and Hayek to Margaret Thatcher, thence to Tony Blair and Charlie Leadbeater himself.

Amplified by the well-endowed think tanks of the New Right, the same vectors of influence were at work in the USA. In 1986, Ronald Reagan, fifteen months into his second term, paid homage to Hayek in an address to the Hoover Institute, a think tank of which both men were Distinguished Fellows. Reagan's tribute was more than the pleasantry of a genial man. Around 30 scholars, trustees and former fellows of the Hoover Institute had found their way into his first administration along with about 20 fellows of The American Enterprise Institute (Smith, 1991, pp. 6–7, 19–20, 189). Of all the think tanks, however, it was probably the Heritage Foundation which exerted the greatest influence. Following Reagan's election, its president, Edwin J Feulner, determined to 'Move in there and make some drastic changes.' A 1,000-page volume entitled *Mandate for Leadership* thumped onto the desks of the White House transition team. One reporter described it as 'a blueprint for grabbing the government by its frayed New Deal lapels and shaking out 48 years of liberal policies.' (Smith, 1991, p. 194). By the late 1980s, Heritage was building for the future, nurturing a 'third generation' of conservative leaders by the sponsorship of college interns and young policy aides. By then, smart students had cottoned onto the fact than the conservative policy network was a much quicker route to a political career than labouring in academe. Putting its slogan 'people are policy' into practice, the Heritage Foundation delivered no less than 2,500 résumés' to George Bush Senior's transition team in 1989. (Smith, 1991, pp. 194, 203, 207, 270–1).

In a sense it is misleading to discuss the vectors of influence in the USA and UK as if they were distinct. The degree of networking between

neo-conservative think tanks in the two countries was extraordinary and probably accounted for much of the political chemistry which so enlivened the meetings between Mr Reagan and Mrs Thatcher. During the 1970s, Madsen Pirie, Eamonn Butler and Stuart Butler, the founders of the UK Adam Smith Institute, worked at Feulner's Republican Study Committee whilst Feulner for his part worked part-time at the British Institute of Economic Affairs in 1965. In 1981 Stuart Butler became a policy analyst at the Feulner's Heritage Foundation. The 1985 *Omega File*, a blueprint for Margaret Thatcher's second term produced by the Adam Smith Institute was modelled on the Heritage Institute's *Mandate for Leadership* – and so it went on (Cockett, pp. 281–2).

As with Margaret Thatcher in the UK, the outcome of all this behind-the-scenes effort was President Reagan's programme of tax cuts, de-regulation and sound money, aimed at the promotion of entrepreneurship both as a manifestation of freedom and an engine of economic growth:

> At the heart of our efforts is one idea vindicated by 25 straight months of economic growth: Freedom and incentives unleash the drive and entrepreneurial genius that are the core of human progress. We have begun to increase the rewards for work, savings, and investment; reduce the increase in the cost and size of government and its interference in people's lives… The time has come for a new American emancipation – a great national drive to tear down economic barriers and liberate the spirit of enterprise in the most distressed areas of our country. My friends, together we can do this, and do it we must, so help me God.
>
> Second Inaugural Address Monday 21 January, 1985

In this ringing if somewhat imprecise call to action, the axis of opposition defining the new liberalism is clearly evident. On the side of freedom and prosperity are the qualities of enterprise, initiative, self-reliance and their outward manifestation, entrepreneurship. Ranged against them, but about to be swept aside, are the evils of progressive taxation, government controls and welfarism (translation: 'interfering in people's lives'). In the still heavily unionized UK of the early 1980s, Margaret Thatcher's agenda differed mainly in its greater emphasis on the Hayekian opposition between individualism and 'class thinking' As policy, this translated into a settling of accounts with the trade unions, the rock against which the Heath Government had self-destructed in 1974. In the USA, by contrast, the trade unions were in full retreat by

the mid 1970s and Mrs Thatcher's signature bon mot, 'there's no such thing as society' went without saying.

True to its belief that enterprise was a natural quality, albeit one presently suppressed by excessive government, the Reagan administration relied mainly on de-regulation, tax cuts and reduced federal expenditure. Always the pragmatist at heart, Margaret Thatcher hedged her bets by spending over £1m of government money on enterprise 'education' in the shape of the Technical and Vocational Education Initiative (TVEI).

Determined to drag enterprise out of the British people at whatever cost to the British taxpayer, the Thatcher government also disbursed at least £1bn between 1980 and 1985 on supporting small firms through a system of tax breaks and subsidies, some of the latter modelled on the US Small Business Administration (Chapter 5). That the SBA had never been aimed at entrepreneurship as such, and that Reagan himself had attempted to cut the programme in response to neo-liberal criticism seemed to escape the notice of the British Prime Minister. Riddled with inconsistencies but backed by powerful interests, entrepreneurialism, as a policy, had arrived.

With some exceptions, notably the work collected in Burrows (1991) and Keat and Abercrombie (1991), the general response of academia can fairly be characterized as one of supine collusion. In a little over 20 years a whole field of knowledge has been created within the intellectual boundaries set by the right-wing think tanks. Much of it has been confined to the technical questions involved in the implementation of policy. Such issues as how to spot potential entrepreneurs (for example, Kassicieh, Radosevich, and Banbury, 1997), how they might be produced by education (for example, Sexton, Upton, Wacholtz, and McDougall, 1997), how to administer science parks (for example, Bower, 1992; Grayson, 1993) and the problems of accessing finance (for example, Zider, 1998; Mason and Harrison, 1992) have all proved to be enduring favourites with the funding councils. Though the wider repercussion of these policies have not been entirely neglected (such as the compatibility of third mission activity with the culture of research and teaching in higher education) these have been a minority concerns (for example, Sadlak, 1992; Streharsky, 1993).

A second genre of research appears to have set itself the task of confirming the mythos of the entrepreneur and the entrepreneurial firm around which these policies are based. A great deal of effort has been expended on largely fruitless attempts to confirm that the entrepreneur is a self-starter (for example, Chen, Greene and Crick, 1998), an innovator (for example, Mueller and Thomas, 2001), a risk-taker (for

example, Brockhaus, 1980), and a person possessed of a need to achieve (for example, Begley and Boyd, 1987). Now notorious as 'hunting the heffalump' (Hull, Bosley and Udell, 1980) this search for the entrepreneurial personality seems to continue because it knows no other questions and will not take 'No' for an answer (Gartner, 1989; Chell, Haworth and Brearly, 1991).

There are similar stories at the level of the firm. A whole series of papers and books by Audretsch and co-workers (for example, Audretsch, 2002, Acs and Audretsch, 1990) has argued the entrepreneurialist line that the small firm is a source of technological dynamism. The argument rests on what appear to be reasonable data (though see Harrison, 1997, pp. 56–8) showing that small firms in the USA produce more patents per 1,000 employees than do larger companies. The interpretation, however, neglects the fact that many of these small 'firms' are actually contract research organizations (CROs) supported by the Small Business Innovation Research programme (SBIR). Mandated by Congress in 1982, each federal agency allocates approximately 4 per cent of its annual budget under SBIR to fund applied research in small firms to help restore American international competitiveness (Audretsch, Weigand and Weigand, 2002). Over $6bn was disbursed under the SBIR programme between 1983 and 1998. Whilst some of the CROs have expanded into commercial companies (for example, the biotechnology company Cortecs discussed in Chapter 7), many of them subsist on a succession of grants, carrying out what is, in effect, a subcontracted Federal research programme (Wallsten, 1998). Whatever the value of this research, it is *not*, needless to say, evidence of a spontaneous propensity to innovate amongst small firms.

There is, of course, much else. Twenty or so years of twenty or so journals have deposed a huge slowly composting mass of relevance picked over only by the occasional disconsolate review article.

Rather more challenge has been evident in research on the small firm as an engine of job creation and cultural change. On the question of employment, the widely cited optimism of Birch (1987) has been comprehensively pulled to pieces by Harrison (1997, p. 19) whilst glib claims by the likes of Lord Young of Graffham (1990) that the 1980s rise in self-employment in the UK signified triumph of the entrepreneurial spirit have been powerfully challenged by MacDonald (1996) and Storey and Strange (1992) who did the ethnography and found a grinding struggle to make ends meet. Also researched against the prevailing wind, as it were, was Massey, Quintas and Weild's (1992) sceptical look at UK science parks.

As matters stand, however, this criticism of the detail has yet to be aggregated into a critique of the whole. Given the intellectual momentum and weight of self-interest behind the 'entrepreneurship story', this is not a task for a single individual and nor is it claimed that this book is anything more than a contribution. Basically it is organized around two questions: in urging the British people in general and science students in particular to become entrepreneurs, what kind of people are we being asked to become, and what are the consequences of placing entrepreneurship at the centre of economic policy?

On the first question, chapters 2, 3 and 4 examine the careers of the pre-eminent British entrepreneurs of three generations: for the 1960s John Bloom, the washing machine tycoon, for the 1980s Freddie Laker, pioneer of the cut-price airline and for the 1990s and beyond, the ubiquitous Sir Richard Branson. Considered as a sample of course, three, is a ridiculous number. The importance of these individuals, however, is that they were – and are – icons: personifications for their generations of what it means to be an entrepreneur. In the careers of all three, there were critical points when their control of their ventures, or the survival of the enterprise itself was at stake. The chapters attempt to identify the abilities and behaviours which enabled these individuals to negotiate these crises on the supposition that of all the things which these individuals were and did, these were the ones which made the difference.

On policy, Chapter 5 explores the consequences of subsidizing entrepreneurship with public money, a policy which turns out to have a considerable ancestry. Chapter 6 examines the logic behind the Blair government's reliance on entrepreneurship to drive technology transfer whilst Chapter 7 draws out the implication for this policy of a number of recent debacles in the UK biotechnology industry.

# 2

# Entrepreneurial Competition in the Pure Case: John Bloom and Jim Elkins

## Capitalism, trust and the entrepreneur

For over a century, theorists in a variety of social scientific traditions have argued that trust is fundamental to the market economy. The original insight was due to Durkheim: 'A contract is not sufficient unto itself but is possible only thanks to a regulation of the contract which is essentially social.' (Durkheim, 1964, p. 203 ff.). This is so simply because a contract guarantees nothing without some wider normative pressure to honour contracts in general. The idea has since been resurrected within the idiom of functionalist sociology (Parsons and Smelser, 1956), economics (Arrow, 1975, McKean, 1975) and critical accounting (Noreen, 1988, Neu, 1991).

Entrepreneurship is just as fundamental. Or it is just as fundamental if we forget Chandler (1977) on the supercession of entrepreneurial by managerial capitalism. The classic justification of the profit which accrues to capital (Mill, 1848) is the entrepreneurial risk to which that capital is exposed. And Schumpeter's equally classic justification of capitalism itself (1976, p. 84) is the 'creative destruction' left bobbing in the wake of entrepreneurial profit.

If both trust and entrepreneurship are as fundamental as this, it is not unreasonable to expect some overlap between the two. That is, we would expect our entrepreneurs to be trustworthy, or if that is too much, to find trust somewhere in their vicinity. And one or two empirically-minded business researchers have found just that. In response to business scenarios which pose ethical questions (Hood and Young, 1993; Teal and Carroll, 1999), entrepreneurs have duly provided the ethical answers, thereby proving the point – in the eyes of the researchers at least. For the rest of us, the problem with asking people whether or not

they would behave ethically in hypothetical situations is that the unethical amongst them might go so far as prevarication.

As long ago as 1964, Collins, Moore and Unwalla posed a powerful challenge to simple-minded notions of the ethical entrepreneur. Though their work is heavily cited in the literature of entrepreneurship research, what they had to say has not much influenced its direction. In a biographical study of the careers of 150 top executives of entrepreneurial firms, they found that trust had indeed been central to the advancement of these individuals, though this had been in the form of a learned ability to create trust in others whilst remaining uncommitted to it themselves, a syndrome which the authors rather clumsily labelled the 'transactional model of social relationships.'[1] The ability to elicit trust so that it can be broken at the strategic moment gives the 'enterprising man' (sic.) a decided advantage over those with whom he deals. Most of Collins' et al's interviewees, for example, had undergone what the authors call a 'course in protégéship.' At some stage, that is, they had been adopted by mentors whom they had convinced of their loyalty. Their advancement beyond this relationship of subordination depended on betraying these mentors at the strategic moment, learning to 'bite the hand that feeds' as Collins et al put it.

Behaviour of this kind raises a number of questions. If all, or most entrepreneurs behave in this fashion – and Collins et al made a convincing argument that the transactional model *is* entrepreneurship[2] – the result, if Durkheim and his followers are to be believed, will be a corrosion of the moral foundations of the market economy. Relationships of trust and contract would become meaningless. Contrary to Mill and Schumpeter, then, there may be a tendential *incompatibility* between entrepreneurship and capitalism, in that the institutions of market exchange can only stand so much of it. That is a first question. A second originates in that prurient *frisson* which attracts (some) people to cock-fights and bare knuckle boxing: what happens when circumstance finds two such vipers of betrayal face to face? If entrepreneurship is about the creation and betrayal of trust, how can either trust or betrayal work when it is practised by more than one party to a transaction? Although this chapter centres on this second question, there is, nevertheless, a continuity with the first. The spectacle of entrepreneurs doing business with one another gives us a glimpse of what capitalism would look like without the moral order theorized by Durkheim. Perhaps it is a glimpse of reality.

The raw material used here is the autobiography of John Bloom, the 1960s washing-machine tycoon who was by some margin the highest

profile entrepreneur of his generation (Bloom, 1971). Against such a source it could be argued that the entrepreneurial apologia is even more a vehicle of self-presentation than responses to interviewers' questions or business scenarios. Whilst this is true, it is also true that many of the incidents on which the autobiographer will wish to set the record straight will also be matters of public record, particularly in the case of figures as well-known as Bloom. With care (and with hermeneutics), this need to engage with public understandings should allow what is spun to be discerned through the process of spinning. The rhetoric of self-justification should reveal something of what is being justified.

But why Bloom and what is the significance of a single case? On the first point, Bloom seems to have crossed paths with a great many people rather like himself. His story, in other words, is a lived answer to the question of what happens when an entrepreneur must deal with other entrepreneurs. On the second point, John Bloom occupied a niche in the public imagination similar to that of Sir Freddie Laker in the 1970s and Sir Richard Branson in the 1990s. That is, he was representative of entrepreneurship in the iconic, if not the statistical sense.

Against this, there will be those who would like to believe that John Bloom is representative of nothing but himself, and it is true that as a practitioner of upstart tycoonery he was in a class of his own. His apogee of bad taste, perhaps, was the issue of 'Supa Golden' trading stamps bearing his own likeness haloed by an effulgent sun.[3] Or it may have been his entanglement in the case which became known as the Blue Gardenia Club Murder. Harvey Holford, the owner of the club, managed to avoid a murder conviction for the killing of his wife on the grounds of provocation. Prominent amongst the supposed provocations was Bloom's alleged enticement of Patricia Holford. Bloom, it goes without saying, scarcely knew the woman, and it is true that his deposition gives off the authentic gamey whiff of one-handed fiction; 'I first met her when she was sitting in Reader-Harris'[4] Bentley Convertible one fine evening in Juan-les-Pins.' (Bloom, 1971, p. 103).

But Bloom's singular notoriety does not mean that his way of doing entrepreneurship was also singular. If he is claimed to be unrepresentative on the grounds of his eventual insolvency, Sir Richard Branson, that iconic entrepreneur of our own time, is on record as admitting – boasting even – that he has frequently come close to insolvency himself (Branson, 1998). If it is on the grounds that Bloom financed his early operation by tax evasion, that is also on Branson's record. Both of them have spent their night in jail, Bloom at the end of

his public career, accused of deception and false accounting, and Sir Richard at the beginning of his, for the aforesaid evasion of purchase tax. It is true that Bloom was prosecuted, found guilty and fined, but, on Bower's account at least, the only reason that Branson escaped a similar fate was that his parents guaranteed to repay the tax and because the tax authorities' priority was to recover the money, not to punish (Bower, 2001, pp. 9–10). The two are alike, moreover, in their approximation to the pure economic motivation conventionally attributed to the true entrepreneur. Seemingly indifferent to the actual products through which he sought to make his profits, Bloom variously dabbled in sun-tan lotions, portable electric radiators, Bulgarian package holidays and night clubs as well as washing machines and the juvenilia to be described presently. Admittedly this is a far cry from the jumble-sale variety of the Virgin empire, but it is still an impressive list for a tycoon whose time in the limelight spanned only four years.

The similarities go further. Bloom makes little secret of his preference for impression management and publicity stunts over the delivery of substance, but Branson has been accused of that too (for example, Bower, 2001, pp. 47–9). Both of them regard personal publicity as integral to the promotion of their brands, symptomizing which their autobiographies include numerous photographs of themselves in the company of celebrities. The two of them even grew their beards at similar stages of their lives. Bloom's appeared during the Jewish period of mourning for his mother, and was retained because he thought it made him look older. We so far lack an explanation of Sir Richard's.

There are differences of course. Amongst them is the self-deprecatory humour which frequently enlivens Bloom's autobiography, a quality largely missing from Branson's (1999). But perhaps this is because Bloom was looking back on a public career which had crashed to the ground, whereas Branson, as he frequently points out, must think of himself as the custodian of the Virgin brand.

## Intimations of entrepreneurship

Our recall, says Peter Berger (1966) is edited in the light of our present. Like many entrepreneur autobiographers, John Bloom remembers his childhood as a period of business experimentation.

> While I was at the local primary school I used to sell marbles, which helped to eke out my pocket money, but after I started going to

> Hackney Downs Grammar School I hit on one or two rather more profitable schemes.
>
> The first was selling fireworks – which at that time, the end of the war, were very scarce. When Guy Fawkes day came round, only a few shops had them, and you had to queue for hours after school to get any. Most boys were not prepared to do this, but I was – if I was going to get money out of it. So I stood in the cold, bought the fireworks for 1d[5] each and sold them next day for 3d.

(This and the subsequent unattributed quotes in this chapter are from Bloom's 1971 autobiography).

A more substantial opportunity came Bloom's way when he was a National Serviceman in the Royal Air Force. His mother (to whom he was very close) became ill with disseminated sclerosis. Sympathetic to Bloom's plight, the Soldiers, Sailors and Air Force Association arranged a posting for which enabled him to live at home. Besides the 'fantastic' out-of-camp allowance, this left his evenings and weekends free (apart from the need to attend to his mother, obviously). On one of the weekends he made a trip to Ireland.

> … where I found there were lots of English people buying second-hand vans and lorries, taking them over to England and selling them. I investigated this operation and found that there was a tremendous shortage of commercial vehicles in England. There was also a regulation which said that provided a vehicle had been made in England in the first place it could be re-imported without having to pay Purchase Tax or duty. There was obviously a big profit to be made on such vehicles – and Ireland was full of them.

The shortage of vehicles in England was due to the post-war Labour Government's export drive. In order to earn much-needed foreign currency most of the UK's vehicle production was earmarked for export. The result was an artificial shortage in the home market so that for some years second-hand vehicles fetched well over the new price. Bloom's enterprise, and that of his fellow entrepreneurs, consisted of finding loopholes in this administratively distorted market. In this respect it set the pattern for the future: the later success of his washing machine business depended on finding ways round the cartelized production and distribution of white goods in Great Britain.

The used-lorry business set the pattern in another respect too: Bloom was short of capital.

> I persuaded a second cousin of mine Julius Granatt, to put up £1000, and we started importing second-hand 5 cwt, 10 cwt and 12 cwt vans. I was still in the RAF but I went over to Ireland most weekends to buy the vans, ship them to Liverpool and drive them to London

Bloom was making about £50 profit on each van. Demobilized, and fired up by this 'sudden wealth', he 'went into the van business in a big way.' After nine months of unremitting capital accumulation he had 'a couple of Austins and three Bedfords, each worth about £500 [which] comprised our total profits on the whole enterprise.'

> Then came a shattering blow. Overnight, Australia and New Zealand stopped importing British vehicles and all the new models which should have gone there flooded the home market instead. Second-hand prices slumped by about 60% which meant that the total value of our five vans was now only £1,000. We sold them off and Julius just about got his money back. I was back where I started.

The next try was at selling paraffin door-to-door in partnership with a friend, Mick Cosgrave. The operation was market-researched with some care:

> We concentrated on the areas of London where there was a big West Indian population. The West Indians feel the cold in England and as several families were often sharing a house, many of them were living in rooms without fireplaces and were relying on paraffin stoves for their heat.

Although they were making £20–£25 per week, much of the profit, (and much of the paraffin) was absorbed in the two entrepreneurs' clothing. Getting rid of the persistent odour was expensive.

Mick's way out, and one which decisively shaped the rest of Bloom's public career, was into washing-machines. A friend of Mick's, Jim Elvins, was buying them from Holland at £29 and making 'huge profits' selling them door-to-door for £50. By today's highly automated standards, these washing machines were primitive affairs. They had to be filled from the top with clothing and hot water. The clothing then

had to be wrung through a mangle fixed to the top and the dirty water emptied from a drain in the bottom.

The pair bought two of Elvins' machines and managed to sell one of them on a credit sale financed by Belmont Finance, the company used by Elvins. Legislation at the time permitted credit sales at a lower initial deposit than hire purchase. The disadvantage was that the balance had to be paid off in nine months as against the three years allowed for hire purchase.

Encouraged by their dry run, Bloom and Elvins were soon set up as The North London Advertising and Distribution Company, running a couple of commission-only salesmen from a small office over a shop. After a few weeks sales had reached about 30 per week. Then the notices from Belmont Finance started to arrive, demanding reimbursement for the payments which the credit sale customers had failed to keep up. The partners realized that they would have to abandon credit sales and go into hire purchase, so that smaller monthly repayments could be spread over a longer period. The problem was that the minimum deposit of $33^1/_3$ per cent might put off their customers. They needed cheaper machines.

## Bloom cuts out Elvins

Getting at them involved tracing back along the supply chain. Bloom's account of this is as interesting for what it does not say as what it does. At no point does he mention the possibility of a partnership or some other collaborative arrangement with his suppliers. As far as we can tell, his intention almost from the outset, was to deal both Jim Elvins and his supplier out of the game:

> I had discovered that Jim Elvins was not importing his machines direct but was getting them through a fellow called Danny Ginsberg who was running Universal Distributors in Charlotte Street. The drawback was that Ginsberg's twin-tubs did not seem to me to carry a good enough profit margin and I asked him if he could offer any cheaper models.

A fellow spirit, evidently, Ginsberg read Bloom's intentions at once and tried to head him off:

> He said: 'No, I've nothing cheaper. And there's no point in your going over to Holland. I've got the Dutch manufacturers completely tied up.'

We see deceit, perhaps, where we ourselves deceive. Ginsberg's attempt to put Bloom off the scent served only to alert his antennae:

> … the more I thought about it, the less I believed that Ginsberg could possibly be the sole importer of Dutch machines. So I rang up the Anglo-Dutch Chamber of Commerce and they sent me a list of every washing machine manufacturer in Holland. There were well over a hundred. Surely one of them would do business? I decided to call Ginsberg's bluff.

Bloom rang up the Anglo-Dutch Chamber of Commerce, and they sent him a list of every washing-machine manufacturer in Holland. There were over a hundred, most of them around Utrecht. Though the first manufacturers he approached were not interested in dealing with him, he discovered that Ginsberg had *not* got them tied up. Encouraged, he eventually found Klean, a company which manufactured a twin-tub at £52. Bloom arranged to have the machines flown to the UK by Channel Air Bridge, a small airline operated by a young entrepreneur called Freddie Laker.

It was these machines which provided the initial momentum from which Bloom was able to build his fortune. In that sense, the attitudes and abilities which enabled him to get his hands on them were fundamental to his success as an entrepreneur. Tenacity, to be sure, but also a readiness to ditch business associates the moment they ceased to be of use to him. This is exactly the transactional model of social relationships as described by Collins et al (1964).

Meanwhile Bloom had to find a way of putting his cheap machines to work. Reasoning that the problem of payment defaults stemmed from the tendency of door-to-door salesmen to sign up the easy marks, he sought out a more pro-active class of buyer by placing press adverts which included a phone number which they could ring for a demonstration. Through this medium, the Klean was offered at £108, with an allowance of up to £35 for an old boiler or washing machine. The allowance was Bloom's solution to the problem of the deposit. The customer who received the full allowance only had to find another £5 to make up the £40 deposit, and there would still be a profit of £21. Soon Bloom, now operating as the Continental Washing Machine Co., was selling about 20 machines per week, and allowing £35 against the deposit on all of them.

Then an inspector called, one from the Board of Trade in this avowedly non-allegorical tale. False allowances against hire purchase deposits were illegal.

> … there was nothing for it. I would have to abandon my £35 offer. Instead, if I wanted to keep up our level of sales, I would have to find a machine so cheap that the customer could afford the real deposit.
>
> I estimated that people could possibly put down £15 to £20 which meant that I would have to advertise a machine for between £40 and £50 – less than half the price of most washing machines then on the market. And to make a decent profit I, in turn, would have to buy the twin-tub for about £30.

Bloom went back to the Klean factory but they refuse point blank to make a cheaper machine just for him. Then he had a stroke of luck.

> I was standing round waiting to meet one of their executives when I overheard somebody talking about a firm which had brought out a very cheap machine which might provide stiff competition for the Klean. I caught the name Schrouten and as soon as I had finished lunch I drove to Utrecht to try and trace a washing machine manufacturers by that name.

Driving 'a Chevrolet which I had hired to give the impression that I was a man of some substance,'[6] Bloom then embarked on what seemed a forlorn chase around the manufacturing suburbs of Utrecht. The quest recalls the schoolboy who once queued for fireworks in the rain. On the point of giving up, he called at a small washing machine shop and was given directions which led him to 'a sort of prefabricated building, hardly more than a shed, down by the side of a canal.' There, the Schrouten brothers, Tom, Anton and Martin showed him a twin-tub which they were selling for £23. They even offered Bloom a list of names which they could put on the machine. Bloom chose 'Electromatic'.

Borrowing £1,000 from an uncle, he decided to stake almost half of it on a single advertisement on the back page of the *Daily Mirror*. In whatever respects he might fall short of the idealized portrait of the entrepreneur, Bloom was always a risk-taker. This one paid off better than any before or since. Readers were ringing in all day, and next morning there were three sacks of mail – over 8,000 enquiries in all:

> With one advert I had started two revolutions – the first in the kitchen: the second in my method of selling directly to the public on a large scale and eliminating the shopkeepers.
>
> I had found the formula for making a fortune.

The problem was that he didn't have enough machines. After some arm-twisting Schroutens agreed to supply 100 per week but demanded half-payment on delivery, and the rest a fortnight later. This merely displaced Bloom's problem. Now he didn't have enough working capital. Then he discovered some in the three to four weeks his cheques to Channel Air Bridge were taking time to clear.

> I therefore calculated that I could keep afloat by selling the Electromatics quickly and using the money from the hire purchase companies to pay back the Schroutens – provided I could stave off the air freight bills for a few weeks until the business got going.

For a few weeks it worked. Then Freddie Laker and his accountant knocked on his door with a bill for £11,300. Whilst Cosgrave panicked, Bloom began talking. The business was just beginning to take off. If Laker demanded his money immediately it would fold and he would get nothing. If, on the other hand, he would accept £1,000 a fortnight he would (probably) be repaid in full. Perhaps recalling the gamble taken by a wealthy employer who had set him up in business fifteen years earlier, Laker agreed (Eglin and Ritchie, 1980, p. 9). Cosgrave's nerve was gone, however, and he agreed to take a payoff of £2,000. On his own now, Bloom still needed credit. This time he found it in the purchase tax regulations:

> … if the washing machines were assembled, or even part-assembled in England I would only have to pay purchase tax on them every four months, instead of paying it as soon as I received them from Holland.

Purchase tax at £10 per machine on 200 machines per week, he calculated, would free up over £30,000 over four months with which to pay for Schroutens' machines. The easiest way to qualify, he decided, was to buy motors from Hoover and install them in otherwise complete machines. In this oblique manner, Bloom became a manufacturer.

It was at this stage that Elvins, having given up door-to-door selling, knocked on Bloom's door, asking for a job. Needing someone with experience to take over the general sales administration, Bloom tells us, he took on Elvins as managing director (probably a slip of the pen for 'sales director').

## Elvins cuts out Bloom

Possibly Bloom was distracted by the process of going public. He had received a phone call from a Teddy Smith 'who was chairman of a lot of public companies.' Smith explained the tax advantages of going public and offered to take Bloom's company over, making him rich in the process. Impressed by the prospect, but determined to maintain control, Bloom placed an advertisement in the *Financial Times*, asking for backers 'with public company connections.' This attracted a financier called Louis Jackson. Jackson suggested that Bloom could best develop his manufacturing capability by merging with an old-established public company which was short of money and/or looking for new products. He came up with the name of Rolls Razor, a company which in Bloom's words, 'had fallen on stubbly times.' Although Rolls actually made a kind of everlasting razor, not cars, Bloom was dazzled at the prospect of being able to pin the word 'Rolls' onto his machines. Rolls Razor bought the Electromatic name in exchange for a majority shareholding for Bloom. Bloom became managing director.

Although Rolls had not paid a dividend for years, the company was certainly capable of manufacturing parts for washing machines. Indeed it had already made a complete machine, but its 'revolutionary' vibrating technology had doomed it to failure. Bloom's manufacturing ambitions now extended considerably beyond the tax dodge of installing motors in otherwise complete machines. The intention now was for Rolls to assemble the machines, mainly from parts supplied by Schroutens, but using some made by themselves 'at a considerable saving.' Bloom's account makes it quite clear that the parts to be manufactured by Rolls would be direct copies of those in the Schrouten machines. Schroutens' reaction was a clandestine approach to Elvins, inviting him to take charge of an operation to sell their machines direct to the public in the UK, under the name Duomatic. This would be in direct competition with Rolls Razor.

Bloom's first intimation of Elvins' 'coup' was a phone call at 2 a.m. one Saturday. George Brown, one of his lorry drivers, had heard rumours that Elvins was planning to form a rival company on the following Monday, taking many of Bloom's salesmen and lorry drivers with him. Bloom must have been nursing suppressed doubts about the wisdom of trusting Elvins in a position of responsibility, because this rumour of rumours was enough to connect with a hair-trigger paranoia: 'I was stunned for I instinctively felt that George's story was true.

And fragments of conversation came to mind, a word here and a word there, to confirm this feeling.' Unaware at this point of Schroutens' role in the affair, Bloom and Brown spent the weekend patching together a sales and transport organization from staff they thought would remain loyal. Although about half of the sales staff and transport deserted to Elvins, enough remained to keep the operation going. Amongst those who stayed, 'there was a colossal amount of promotion'. Brown, for example became an area sales manager immediately, and, two years later, a director of the company.

Two days after Elvins' defection, the Schroutens brothers informed Bloom that they had decided to supply another company with their machines. Bloom insisted that they were under contract to supply him as the sole UK concessionaire. Schroutens' reply was that the contract did not specify the number of machines they were to supply, and that the number would now be two per week. As for Bloom's monopoly of the UK distribution rights, their new buyer was a Swiss firm to whom this did not apply. Sometime later, Bloom hired private detectives who traced the machines from Schroutens' factory, via Channel Air Bridge, to the Duomatic warehouse, accompanied by fake invoices from the Swiss firm in question. The discovery confirmed Bloom's belief that the Schroutens' deviousness lay at the root of the whole chain of events, enabling him to draw the moral that he had been too open about what he was planning, 'one of my bad assessments.' as he puts it. Similarly the lesson of Elvins' defection was that the decision to appoint him as sales manager 'did not prove to be the wisest of choices.

Bloom simply does not see, or affects not to see, that the deceptions of both Elvins and the Schrouten brothers were more-or-less exact reflections of his own dealings. In cutting him out of their marketing strategy, Schroutens' were acting exactly as Bloom had earlier done in cutting Elvins out of the supply chain. And so was Elvins. Like Collins et al's 'enterprising men' (1964, p. 116 ff.), Bloom is adept at finding a morality in his own behaviour which is entirely lacking in the similar behaviour of others.

With supplies of the Schroutens machines cut off, Bloom was faced with the problem of producing enough machines at his newly-acquired factory to cope with the flood of hire purchase deposits. The first attempts produced only forty or so machines per week, and those of inferior quality. Soon there were complaints of late delivery to the newspapers which carried Bloom's adverts, prompting a visit to the factory by their advertising managers. Bloom describes with evident

pride the characteristic mixture of window-dressing and braggadocio with which he survived this inspection.

The development work continued. Attempts to introduce the safety feature of a brake which would stop the spinning tub when the lid was opened only produced a machine which 'used to wobble all over the place in a very dangerous-looking way.' Following the introduction of a pump to empty the dirty water into the kitchen sink, the company was 'inundated' with complaints. Like the British government faced with the public relations disasters of Calder Hall nuclear power station and the Long Kesh internment camp, Bloom decided to put his problems behind him with a change of name. 'Electromatic' became 'Starmatic'. Unfortunately for this exercise in image-laundering, the first Starmatics used imported motors with a wiring defect, so that 'they were quite literally blowing up in kitchens, giving the housewives hysterics, frightening the cat and filling the whole room with swathes of smoke.' (Bloom, 1971, p. 57).

By June 1960, machines were leaving the Rolls factory at the rate of 500 per week. Unfortunately many of them were coming straight back in again, sometimes more than one from the same customer. Bloom's way of dealing with this was to replace any machine which broke down and to compensate for any damaged clothing. This, he believed 'established a confidence that spread throughout the country and was one of the main reasons for our colossal build-up of sales later on.'

By October 1960, however, most of Rolls' quality problems were on the way to solution. Mick Cosgrave, reduced once more to selling machines door-to-door, introduced Bloom to his new employers, the Jacobs brothers. Irving Jacobs turned out to be 'born technician' and it was he who designed the Rolls 66, Rolls' first successful model.[7]

Meanwhile Elvins' company continued to offer significant competition. In Autumn 1962, when Rolls were selling 2,500 machines per week, Duomatic were selling 700 – still imported from Holland. Early in 1964, when Rolls was badly lagging the competition for lack of an automatic, Bloom attempted to negotiate supplies of the one marketed by Duomatic. For reasons which he does not go into, but which we can guess, the talks dragged on but were broken off shortly before the Rolls collapse. Duomatic itself folded shortly afterwards.[8]

## Market structure and the ecology of mistrust

As an answer to our initial question of what happens when entrepreneurs deal with each other, the antics of Bloom, Elvins, and to a

lesser extent the Schroutens brothers remind one of nothing so much as an ineptitude of pantomime villains, tripping over their own feet in their anxiety to trip up each other.[9] What is impossible to disentangle is how far the breaches of trust on the part of Bloom's associates were provoked by his own earlier defalcations, how far they originated in their own notions about how business is done, or indeed how far Bloom's original moves were prompted by thoughts of getting his retaliation in first. In a sense it doesn't matter. The point is that once breach of trust is endemic in a network of economic exchange, one can see how Collins et al's 'transactional model of social relationships' might generalize in a kind of chain reaction. If the response to betrayal is more betrayal, the end result is a breakdown of trust in trust.

At this point we begin to suspect that the deception, the paranoia and the double-dealing were not incidental aberrations, but integral to these entrepreneurs' way of doing business. And there seems to be a reason. Concentrating on Bloom and Elvins for the moment; neither of them possesses anything in the way of distinctive knowledge, ability or expertise which might make them indispensable or even valuable to those with whom they do business. They are dealers pure and simple, and as such they are permanently vulnerable to substitution by the dealers with whom they deal. Once Bloom locates Elvins' source of supply, for example, he has no reason to go on doing business through him. From Bloom's point of view, Elvins is adding nothing to the goods he supplies and is subtracting profit – profit which Bloom, as a red-blooded entrepreneur, has sniffed and is keen to get at. And the view from Elvins' side of the deal is exactly the same. At stake are the rents to be drawn by interposing oneself between a source of cheap supplies and a market in which prices are higher, whether through government regulation or the operation of a cartel. The paradigmatic case, familiar in the immediate post-war period (Bloom's formative years), is that of a black market created by rationing. In those days the word for an entrepreneur who took advantage of black markets was 'spiv'. In the vocabulary of the time, Bloom's early venture into the re-importation of lorries from Ireland was precisely a case of spivvery.

Far from thriving on open competition, entrepreneurship in these distorted markets takes the form of locating cheap supplies, in preventing others from doing so, in trying to monopolize them (perhaps by writing contracts) and in breaking into the monopolies (and contracts) of others. The honouring of trust or contract in this Hobbesian struggle of all against all is not only irrelevant to the entrepreneurial impulse; it is incompatible with it. Where then, does

this leave the theory that trust and contract are fundamental to the market economy?

A little to one side, in the first instance. Whilst they may be basic to the routine exchange of value for value, this is not what entrepreneurship, in Bloom's world, is about. Rather it is about the commission-taker's insertion of himself between the maker and the user of goods. Contrary to the hard work put in by the ideologue, entrepreneurship in this mode has little to do with enterprise. It regresses to its original etymology: the between-taker.

Interestingly, Bloom seems to have encountered a number of fellow spirits in his dealings with the city, suggesting that the commission-taker has also evolved to fill certain niches within the financial services. The financier Louis Jackson was a case in point. In return for financial advice and the various introductions which led to his take-over of Rolls Razor, Bloom tells us that Jackson induced him to sign a contract which guaranteed Jackson a percentage of any shares and future earnings which Bloom might receive. Whatever the truth of this, Bloom's personal balance sheet as of Dec 31st 1963 shows a liability of £375,346 to the Jackson's estate. A more spectacular example, perhaps, was Henry Oppenheim. Oppenheim had helped to arrange that Kleinworts would underwrite the 1962 flotation of Rolls Razor, with Price Waterhouse as auditors. Two days before the prospectus was due, Bloom was told that Oppenheim intended to resign, publicly and disastrously. His complaint was that he felt 'insufficiently involved' with the affairs of the company. It took a face-to-face meeting to clarify what Oppenheim meant by sufficient involvement. In return for the various introductions he had made on Rolls' behalf, he understood that he was to have been allowed to purchase 100,000 shares at an old chums price, but had received only 50,000. The shares duly changed hands but Oppenheim never attended a meeting of the Rolls Board, even though he was director of finance. He resigned the following January.

Yet Durkheim has to be right inasmuch as co-operative activity (of which economic exchange is an example) is impossible in the complete absence of trust. In the matter of Elvins' defection, for example, Bloom has to decide whether to trust George Brown's report of it or assume Elvins' good faith. Even if he decides to trust neither and investigate for himself, he can only do so by questioning other people. What he cannot do is trust no-one. This means that the entrepreneur cannot help but search for solid ground even as he churns up the quagmire himself. This is why trust is so handsomely rewarded when it is

encountered – the lorry-driver George Brown, remember, became area sales manager. The problem for the entrepreneur is that the possibility of such rewards may attract the entrepreneur protegé as well as the genuinely trustworthy. But then George Brown was not, so far as we know, an entrepreneur.

## Conclusions: theoretical and personal

### Theoretical

In John Bloom we encounter the economic motivation of the entrepreneur in its pure state. By analogy with Marx's abstract labour, it is a form of abstract entrepreneurship, virtually indifferent to the medium through which its profits are made and which operates simply by buying cheap and selling dear. The terrain in which entrepreneurship of this kind can operate follows from its definition. It is characterized by markets in which prices are artificially high (selling dear) and there are potential sources of cheap supply (buying cheap). The entrepreneurship consist in locating the supply and interposing oneself as a commission-taker between it and the demand. Possessing no specialized skills or knowledge which they might bring to economic exchange, these entrepreneurs are intensely vulnerable to competition from others of their kind. Hence their need to camouflage their markets and supplies from these others, or to tie them up them with contracts. But hence too, their need to penetrate these deceptions and induce breaches of contract in order to secure access to the markets and supplies in the first place. The result is a micro-ecology of deception and double-dealing decidedly at odds with the Durkheimian notion that trust is fundamental to systems of market exchange.

Though they are constantly generated by cartelization on the market side and technological advances (or globalization) on the supply side, each such micro-ecology is temporary. There is an analogy with bodies of stagnant water which, so the geographers tell us, are always temporary features of the landscape. The life which they sustain eventually chokes them, dries them up and kills itself. Similarly, entrepreneurial activity such as Bloom's has the long-run effect of eradicating the market imperfections on which it feeds. As with pond life, so it was with Bloom.

### Personal

Contrary to Bloom's own analysis, the Rolls Razor crash of 1964 probably had more to do with price cuts by competitors than the 'crises of

confidence' caused by delayed deliveries, the gyrations of the Rolls share price or even the Blue Gardenia Trial. As early as Autumn 1962, Rolls' best-selling machine, the Rapide de Luxe at 59gns,[10] faced competition from a basic Hoover at 65gns, an English Electric twin-tub at 42gns and the ACME challenge at 57gns, mail order from Great Universal Stores. Worse still, Rolls never succeeded in producing a front-loading automatic whereas English Electric's Liberator was available, even in 1962, at £96.12s. In April 1964, a Consumers' Association report on Rolls' new 'Concorde' (still a twin-tub) failed to list it as a best-buy, principally because of the very high rate of interest on the hire purchase.

Bloom's response was a series of lurid give-aways and package deals. For example, an 8 cu ft Prestcold refrigerator and a Rolls Rapide de Luxe was offered for £103. At these prices, he was loosing £5 on each deal even before advertising expenses. Sticking with what he knew, these remained inordinately heavy, and they increased as a proportion of costs as sales declined. In February 1962, sales were 19,238 units and advertising accounted for £8 18s 5d per unit. By March sales had fallen to 16,104 and the unit cost of advertising had risen to £14 9s 6d.

Rolls Razor went into voluntary liquidation on 17 July 1964. In 1969 Bloom was fined £20,000 for his part in falsifying the Rolls Razor accounts for 1963, and £10,000 for publishing misleading information on a subsidiary in the prospectus for a rights issue.

In 1970, when his autobiography appeared, Bloom had surfaced once more, as the owner of a number of night-clubs. One of them, the '1520 AD' in St Martins Lane, featured 'an eight course banquet served by wenches in the style of the court of Henry VIII, with entertainment by wrestlers, minstrels and tumblers.' For patrons who wearied of instruction in 16th century English history, an upper floor offered a 'Roman Room, where diners can sit on Roman-style couches and watch gladiatorial contests.' Ever the optimist, Bloom leaves us with a final thought, 'This, I feel is where people's increasingly sophisticated leisure tastes are leading.'

Apart from his long out-of-print autobiography, John Bloom seems to be erased from the records. I have so far been unable to trace his subsequent career or the manner of his demise. Easily the best-known entrepreneur of his day, he has no entry in the Dictionary of Business Biography.

# 3

# The Flight of the *Accountant*: a Romance of Air and Credit


*When the first flight of the Aviation Traders Accountant became imminent we were very pleased to be able to go along to Southend Airport and take part in the occasion, for such it certainly was with many of the company's workpeople out on the airfield to see their very first design take the air. Indeed a number of these found convenient extempore aeronautical grandstands on the dozens of ex-R.A.F. Prentices dotted about the airfield prior to their refurbishing as civil aeroplanes.*

*Although the weather was unsettled, the plans went ahead smoothly and after the chief test pilot, Mr L.P. Stuart-Smith and the chief of flight tests, Mr D. Turner B.Sc. (Hons), had climbed aboard,*

*the two Rolls-Royce Darts were started up with a shrill whine and the square-tipped Rotol propellers bit the air purposefully.*

*The Accountant then taxied sedately to the end of the runway and turned into the wind, tension in the watching crowd mounting awhile. For several long moments the plump, silver partridge sat glistening and tranquil before the engines were opened up with a roar and the wheel brakes released.*

*Trundling along at first, the Accountant rapidly gained speed and soon lifted well clear, retracting its wheels almost as soon as it was properly airborne. Flying smoothly and steadily, it climbed away with the Darts in full song and in no time was a small shape in the distance. This was just before 3.45 p.m. on Tuesday, July 9, a time and date to be remembered by all at Aviation Traders (Engineering) Ltd.*

*After several wide circuits and a pass over the airfield, Mr Stuart-Smith lowered the double-slotted flaps fully and dropped the Accountant swiftly to the runway in a smoothly executed landing after about 25 minutes in the air.*

*No sooner had the prototype turned off the runway and parked than everyone was running wildly to the spot and gathered expectantly round the door. Hurrying from the control tower, Mr F.A. Laker, the driving force behind the whole undertaking was soon on the spot and boarded the aeroplane. Then, the door opened and to great applause the test pilot and flight observer emerged beaming with well-warranted satisfaction.*

*The Aeroplane* 19 July 1957, p. 78

The small figure scurrying across the tarmac in this remote vignette is none other than the Freddie Laker whom we last met in John Bloom's office pondering whether to let Bloom run with his debts. At this slightly earlier point in his career, he is an amply-proportioned young man of 35. He is the managing director of Aviation Traders, the company which built the Accountant, and of a small but growing airline, Air Charter. Skytrain, the no-frills economy airline aimed at the common man, with its fleet of fourteen wide-bodied jets is still 16 years in the future, as is Laker's iconic status as Mrs Margaret Thatcher's favourite capitalist.

## Aviation traders

Laker's lifelong affair with aircraft began, so he says, whilst he was eating fish and chips with his pals at fourteen years of age. Looking up,

he saw the great German airship Hindenberg and a four-engined Handley-Page 42 biplane airliner of Imperial Airways passing over Canterbury Cathedral at the same time. 'You couldn't think of two more dissimilar aerial objects than these two.' he recalled, many years later, 'A magnificent sight. And I said to my mates, I said, "that's for me. I'm going into aeroplanes."' (NS archive, Laker 1)

Leaving school at 16, Laker began work at the Short Bros. Flying-Boat factory at Rochester. In 1941, he joined the Air Transport Auxiliary (ATA), becoming flight engineer to the ATA's chief test pilot, James 'Molotov' Watson. Watson later claimed that the young Laker was the only pupil he had taught to fly on four-engined aircraft. During his service with the ATA, Laker also learnt how to patch and mend most of the World War II aircraft which were to become the bread-and-butter of Aviation Traders.

Demobilized, he became one of the first employees of British European Airways. 'But I only stayed three months, it was rather boring.' (NS archive, Laker 1). He then moved to London Aero and Motor Services (LAMS), a company whose business was the conversion of Halifax bombers for use as transport aircraft. The conversion was primitive, consisting of the removal of gun turrets and bombing equipment, the addition of a crude cargo-carrying pod under the fuselage and a change of name from Halifax to Halton. These aircraft were flown by an air charter company called Payloads which was associated with LAMS. Laker left LAMS in 1947 to set up Aviation Traders, but his company struggled for lack of capital and he also continued to fill in as Payloads' chief engineer. Realizing that Payloads was close to bankruptcy (Eglin and Ritchie, 1980, p. 9, 12), Laker advised the owner, Bobby Sanderson, to sell out, and helped by finding a buyer for the company's Haltons. In return for this favour, so runs Eglin and Ritchie's account, Sanderson lent Laker £38,000 with which to buy twelve second-hand Haltons from the British Overseas Airways Corporation (BOAC). It was these aircraft, plus the spares which came with them, plus the opportunity to put both to profitable use, which set Aviation Traders on its feet.

Clearly there are pieces missing from this account. What could Laker see about the operation of Payloads that Sanderson could not? What was his motive for passing on the information and why was it worth over £900,000 in today's money?

Ironically for a devotee of free-market competition, Laker's opportunity to set his Haltons to work was presented by the Russian army of occupation in East Germany. In June 1948, they blockaded all traffic

into West Berlin. The response of the Western allies was the Berlin Airlift, and it was decided, partly for propaganda reasons, that the main military effort would be supplemented by civilian carriers. For the many struggling airlines which had been set up after the war by ex-RAF aircrew, the generous charter rates and the huge number of flying hours on offer were a lifeline. One of them was Bond Air Services, a company run by the brother of one of Laker's ATA friends. Initially Aviation Traders provided Bond with six aircraft and contracted to service them in return for half of the freight fees. At the peak of the airlift, Laker was maintaining Bond's aircraft, supplying spares and service for many of the other 90 or so planes involved in the airlift and flying the remaining six Haltons on his own account. He had nearly four hundred people working for him in the UK plus over thirty in Hamburg. As he put it later, 'Well, from my point of view there is no doubt about it that it made me into a relatively wealthy person … I was able to get enough capital together to stay in the business.' (NS Archive, Laker 3).

When the airlift ended in 1949 many of the airlines which had prospered from it promptly collapsed, Bond amongst them. A quick learner, in this respect at least, Laker turned his skilled engineers to the business of scrapping warplanes. Huge quantities of all types were on offer at prices as low as £50 each, at which price a profit could be made simply by reclaiming the metals from the airframes and engines. At one sale Laker bought no less than 99 Halifax bombers and six thousand Rolls-Royce Merlin engines.

The success of this business seems to have encouraged Laker in the belief that there was always profit found in second-hand aircraft which no-one else wanted. In the early 1950s the most obviously unwanted aircraft was the four-engined Avro Tudor transport. The Tudor was a beast. On take-off, the massive torque from its four Merlin engines had to be counteracted by differential throttling of the port and starboard engines. Taxiing, and consequently the early part of the take-off, was largely guesswork because the long nose and tail-down attitude obscured the forward view. Even from its days as a prototype, the Tudor had killed people. One of the worst accidents occurred in 1950 when one of two operated by the Fairflight charter company of Air Vice Marshall 'Pathfinder' Bennett, crashed on attempting to land at Llandow airport in South Wales. Seventy-five rugby supporters and five aircrew lost their lives in this accident and a few months later BOAC withdrew its three Tudors from passenger service. In 1951 the Minister of Civil Aviation decided there would be no more passenger-carrying

certificates for the type (Merton-Jones, 1985). Big, fast and dangerous, the Tudor was a challenge to any red-blooded entrepreneur. And they were going cheap.

In the early 1950s, meanwhile, the War Office had discovered that it was cheaper, as well as quicker, to fly British troops to the remote trouble-spots of the empire instead of shipping them. It was the availability of these lucrative trooping contracts which drew Laker back into the business of flying. In 1951, he acquired Air Charter, a moribund company with useful tax losses and Fairflight, Bennet's company, whose principal assets were its surviving Tudor and a contract to carry freight between Berlin and Hamburg when the Russians blockaded Berlin once more in 1951. Having also acquired BOAC's three Tudors, Air Charter rapidly became the dominant airline on the 'little Berlin airlift', running 70 flights per week.

In the longer term, however, Laker's eye was on the trooping contracts, a task for which the Tudor, with its large capacity and long range seemed ideal, provided it could be modified so as to convince the civil servants it was safe. In 1953 he bought the entire stock of 13 aircraft held by the Ministry of Civil Aviation, a deal which included 88 new Rolls-Royce Merlin engines, the importance of which will appear later. Laker was now the owner of the world's entire stock of Tudor aircraft. They had been bought at prices rumoured to be in the region of £10,000 per aircraft, as against the new cost of around £100,000 (Merton-Jones, 1985).

It remained to modify the aircraft so as to satisfy the Air Ministry and the War Office that they were safe for trooping. The man Laker recruited to carry out this work was Lionel 'Toby' Heal, a young designer frustrated at Hunting-Percival because a senior engineer, 'Johnny' Johnson, had blocked his attempts to introduce a new method of aircraft construction. As far as the Tudor was concerned, Heal's efforts were unsuccessful. Although the systems suspected of causing the Tudor accidents were either removed (pressurization) or redesigned (hydraulics), the ministries remained unconvinced. After further modifications to improve cargo access, also by Heal, Laker's Tudors were mainly used as freighters. Two more fatal crashes in 1959, with the loss of fourteen lives ended Laker's adventure with the type. Despite the failure to adapt the aircraft for trooping, it was not an unprofitable one. The low initial costs of the aircraft were rapidly written off and Eglin and Ritchie estimate that the aircraft produced a cash flow of about £1m per year during their six years of service (1980, p. 41).

What finally cured Laker of the habit of buying up surplus aircraft at knock-down prices was his 1956 acquisition of the RAF's entire stock of 252 Hunting-Percival Prentice trainers. The intention was to refurbish them for the civilian light aircraft market. Littered around Southampton airport, these were the 'extempore aeronautical grandstands' from which the workers of Aviation Traders were later to witness the first flight of the *Accountant*. Stable, but over-sized, clumsy and thirsty, the Prentice was caught out by the relaxation of import controls on light aircraft. Even at Aviation Traders' bargain prices, the Prentice was no match for the sophisticated and economical Cessna and Piper types which were becoming available from the USA. Only 20 or so of them were sold. The rest quietly mouldered until they were broken up for scrap.

Laker's eventual entry into the trooping business came about through another fatal accident and the aircraft involved were Avro Yorks, not Tudors. When a Skyways York carrying the wives and children of servicemen was lost over the Caribbean, safety inspections assumed a much greater role in the award of contracts, bringing to an end the ministry's practice of favouring the lowest tender regardless. Basically the wing and tail of a Lancaster bomber carrying a slab-sided fuselage, the York was an aircraft which Aviation Traders had been breaking and building for years. As a result, the company's Yorks were converted and maintained to higher standards than those of its competitors. Through buying-up war surplus, moreover, Aviation Traders possessed vast stocks of Lancaster and Merlin engine spares which could be placed along the charter routes in case of breakdowns. Under the new inspection regime, Air Charter quickly obtained their trooping contracts and by February 1953 the fleet had expanded to include seven Yorks, four Tudors, a Dakota and a Bristol 170 Freighter. Later in the year, thirteen more Tudors were added, as already recounted.

In the course of renovating and modifying these and other aircraft, Aviation Traders was developing a manufacturing capability, and in 1951 the company won a contract for making the wing centre sections for Bristol's inelegant but capacious 170 Freighter. In part the unimpressive aerodynamics and lumbering performance of this aircraft were due to the large bulbous nose which hinged at either side to allow for the loading and unloading of bulky cargo. As long ago as 1948, Silver City Airways had spotted the potential of this feature and was using the Freighter as a cross-channel car ferry. Laker went into competition. In 1953, he set up Channel Air Bridge as a subsidiary of Air Charter and was soon flying four Freighters between Southend and Calais.

Meanwhile, the Accountant was taking shape.

## The flight of the Accountant

When we last encountered Toby Heal, he was designing the pressurization system out of the Avro Tudor, re-routing its suspect hydraulics and enlarging the doors so they could be operated as freighters. In poaching this ingenious young designer from Hunting Percival, however, Laker was taking in something of an obsession.

In 1954, Heal had taken out a patent on what he called the 'tensioned skin' system of construction. In earlier wood-and-fabric aircraft, much of the stiffness of the airframe was provided by the fabric covering which was tightened by doping. Heal's idea was to achieve the same effect with a metal skin. The patent describes a dual-curved fuselage assembled from frames which were temporarily pulled flat during the attachment of the outer skin. When the frames were released, they would spring back into their natural curvature thereby pulling the metal skin into tension, both round the fuselage and along its length. Because of the skin's contribution to the strength of the structure, it could then be considerably lightened, so increasing the aircraft's payload. Hence the name Accountant.

For the method to work as envisaged in Heal's 1954 patent, the aircraft's fuselage had to be designed so that its outer skin curved in two directions at once, both round its circumference and along its length – of which more in a moment. In a later patent of 1956 – too late to influence the design of the Accountant – Heal extended his concept to singly-curved and even flat panels. Flat frames, for example, could be pulled into a dual curvature and the skin attached to the concave side so that it would be tensioned when the frames were released.

Laker was enthralled by Heal's ideas. The young designer was installed in a small office at Aviation Traders and given the go-ahead to recruit a team to design an aircraft around his tension skin system. As originally conceived, the ATL 90 Accountant was going to be a short-range transport seating around thirty passengers. In other words, it was to be a DC3 replacement.

For the aircraft designers of the 1950s, and for some years thereafter, the question of how to break the stranglehold of Douglas' DC3 on the market for short-range passenger aircraft was the equivalent of the alchemists' search for transmutation. One of the greatest achievements of 20th century design, the DC3 first flew in 1935. At a time when most of the world's frontline fighter aircraft were 150 mph biplanes, it was a streamlined twin-engined monoplane capable of carrying up to 35 passengers for ranges up to 1,500 miles at cruising speeds of just under

200 mph. In service, the type proved to be tough, reliable, adaptable and endlessly patchable. By the end of the Second World War, well over 20,000 had been built. They were in service all over the world, and so were the spares and the competence to install them. Above all, as war surplus, they were cheap. The problem for the designers and manufacturers of the Post World War II era was that a credible replacement would have to show major advantages over the DC3 to justify the extra cost, for example in comfort, economy or speed.

In the increased payload promised by the Accountant's tension skin construction, Heal and Laker believed they had part of the answer. The other part lay in the Rolls-Royce Dart turboprop. For all its virtues, the DC3 was a piston-engined aircraft, noisy and, by modern standards, a boneshaker. The turboprop by contrast has only rotating parts; nothing reciprocates. To achieve advantages in comfort over the DC3, Laker's Accountant needed turboprops, and the obvious choice was the Rolls-Royce Dart. By 1953, the Dart was already a proven design, having seen over two years' domestic service with the highly successful four-engined Vickers Viscount. Darts, however, were in demand, partly because of the success of the Viscount. The story of how Laker obtained two for his prototype tells us much about the man – and something about the tactful approach of his biographers.

As the holder of the largest UK stock of new and used Merlin engines and spares, Laker had been useful to Rolls-Royce over the years as a supplier of both. Because it would have damaged the Rolls-Royce image to be seen buying second-hand, the relationship was discrete, taking the form of exchanges in kind. Laker was fond of boasting that he had never paid for an engine overhaul at Rolls. In consequence, he felt confident enough to ask Lord Hives, the company's chairman, for the free and indefinite loan of two Dart engines. Knowing nothing of his company's clandestine dealings, Hives 'let it be known that Laker would find it easier to get the shirt off his back' and, at a later meeting, pointed out that Laker already owed tens of thousands of pounds for unpaid service work. According to Eglin and Ritchie (1980, p. 50), Laker's reply was, 'I didn't think you were worried about sums like that. I never usually bother. As a matter of fact you owe me considerably more.' The two Darts, our biographers tell us, were on the next train to Southend.

Is it fanciful to imagine that there might have been more to the exchange than Eglin and Ritchie tell us – or than Laker told them? At all events, he had his two Darts.

The next step was to build his prototype. Needing a project manager, Laker once again raided the design offices of Hunting-Percival, this

time coming back with none other than 'Johnny' Johnson, the man who had originally turned down Heal's tension skin project. Johnson, apparently, took up his new post before discovering that the aircraft he was to build was designed around a method of construction which he distrusted. Was Laker aware of the friction between Johnson and Heal? The evidence suggests that he fully expected Johnson to build the Accountant around Heal's tension skin fuselage, since he did his bit to promote the design by denigrating the 'aloominium toobs' of conventional aircraft to all who would listen (that is, cylindrical fuselages whose skins curve in only one direction for most of their length).

In all likelihood, the technology was doomed from the moment Johnson was recruited. Laker's wrecking crews had seen a lot of battered aircraft and they, like Johnson, were worried that the highly loaded skin and light supports of Heal's system would fail catastrophically if anything punched a hole in it. The tension skin concept was dropped in favour of an unstressed skin conventionally riveted to the aircraft's bulkheads and stringers. Heal seems to have walked off the project in disgust. In the 1956 edition of *Jane's All the World's Aircraft*, the name of the Accountant's chief designer was given as Heal (p. 49). In the 1957 edition it was A. C. Leftley (p. 54). By then, however, the Accountant, had been decisively shaped by Heal's tension skin system, thus ensuring that the aircraft had all the disadvantages of the system and none of the advantages.

In order to maintain the dual curvature of the skin called for in Heal's 1954 patent, the fuselage was shaped like an elongated teardrop. Excellent as an aerodynamic form, the taper towards the nose and tail severely limited the passenger-carrying capacity of these sections of the fuselage. Of lesser importance, though still significant, the sharp taper at the rear shortened the fuselage so that a large, swept-back fin was required to ensure directional stability (*The Aeroplane*, 12 July 1957, p. 57). Thus the economy promised by the core feature of the Accountant, even if it had been realized, would have been compromised by the loss of interior space and the extra weight and drag of the fin. The portly fuselage of 'the plump, silver partridge' moreover, together with the 'rather ugly hump' behind the cockpit occasioned by the teardrop profile of the fuselage also contributed to what a Flight journalist described as 'a certain ungainliness from some angles (more particularly upon the ground)' Although unlikely to have been decisive, this may have contributed to the aircraft's ultimate lack of appeal (*Flight*, Vol. 73, 31 Jan 1958, p. 131).

On the day appointed for its maiden flight, unfortunately, the Accountant disgraced itself. Laker had assembled the press, photographers and various aeronautical notables to witness the event. In the rush to get the plane into the air, the flight itself was to be preceded by a test of the automatic fire extinguishers which were designed to release foam into the engines when activated by crash-pads on the underside of the wings and fuselage. In order to test the electrical circuits, the extinguishers had been isolated by removing the fuses and replaced by a bell circuit. The idea was that the bell would ring when the crash pads were struck, thus proving the integrity of the system. Unfortunately a safety-conscious mechanic was under the impression that the test had already taken place. Quite properly, given his view of the situation, he removed the bell and re-installed the extinguisher fuses so that when the crash pads were struck, both engines were flooded with foam in an aeronautical equivalent of the human orgasm. Extinguisher oozing from every orifice, the Accountant stood immobilized for a week (Eglin and Ritchie, 1980, p. 52). Laker, as was his tendency, fired everyone within earshot – except that he also expected them to report back for work when he had cooled down – except, that is, for the ones he intended to stay fired.

In many respects, the Accountant was forward-looking, if not actually innovative. The aluminium skin was flush-riveted (as against the goose-pimple aesthetic of the DC3); the structure featured multiple load-paths to prevent the propagation of fatigue cracks and the entire fuel supply was carried outboard of the engines for safety. Not surprisingly, given the background of Aviation Traders, the aircraft was designed with the maintenance crew in mind. *The Aeroplane's* 'Ventral View' of the Accountant shows easily accessible servicing hatches underneath the forward fuselage and inboard wing leading-edges (*The Aeroplane*, July 12 1957, p. 50).

More visible was the unusual design of the engine nacelles. A turboprop produces jet thrust as well as the traction of the propeller and this is most efficiently used if the exhaust path is straight. The Accountant achieved this by mounting the engines above the wing, so that the airflow through them did not have to be routed clear of the wing spars. This arrangement also lifted the propellers high above the ground, so that the undercarriage could be shortened (and therefore lightened). The downside was that this too probably looked ungainly to those accustomed to the aesthetics of the piston engined transport. To an unsympathetic eye, the engines nacelles could look like stunted

forearms reaching forward for some means of levering the ample belly of the Accountant into a flying attitude.

In flight, the visual impression of too much weight south of the equator proved to be very much an illusion. Contrary to *The Aeroplane*'s report of a trouble-free first flight, the centre of gravity turned out to be too far forward, so much so that full up-elevator was insufficient to hold up the nose at landing speeds. As a result it was only possible for the pilot to land the Accountant by despatching the observer to add his weight to the extreme rear end. In the light of this, the aplomb with which the two emerged from the test flight appears even more praiseworthy than reported by *The Aeroplane*.

Laker's sales pitch for the Accountant varied according to his audience. Although its original specification was that of a 28-seat DC3 replacement cruising at 256 knots over a range of 1,000 miles, he soon began to hedge his bets by also promoting it as a long-range executive transport capable of covering stage lengths of nearly 2,500 miles with two three-seat settees and eight passenger seats (*The Aeroplane*, 12 July 1957, p. 48; *Air Pictorial*, Vol. 19, No. 9, September 1957, p. 291). A later passenger version, the ATL91, was projected, with a (cylindrically) stretched fuselage carrying forty passengers.

Manufacturing was problematic as well as markets. Although over 1,000 people were employed at the height of the development work, the resources of Aviation Traders still fell far short of what would have been required to manufacture the Accountant in quantity. Laker's hope was that he could interest buyers in placing orders for the aircraft and established manufacturers in producing it under licence. Given the painful contractions faced by the British aircraft industry in the mid 1950s, it is perhaps understandable that the expressions of interest from various companies in the USA and UK were reported in the aviation press with a very positive spin. An exception were the Delphic mutterings of 'Roving Spotter,' 'One of the big question marks in British aviation affairs at this time is the Aviation Traders Accountant. As I do not wish to be controversial, I shall express no opinion …' (*Air Pictorial*, 1957, Vol. 19, p. 193).

In *The Aeroplane*'s report of the Society of British Air Constructors' show of 1957, the unease is spelt out; 'The problem, so far as Aviation Traders is concerned, is to convince prospective customers that the aircraft can be built, for the company is a complete newcomer to aircraft production and many operators – business or airline – might feel this is a disadvantage in placing an order with the company.' The report goes

on to mention Lear in the USA and Gloster Aircraft and Hunting Percival in the UK as possible licensees (*The Aeroplane*, 6 September 1957, p. 374). Hunting Percival, however, was busy promoting its own idea of the executive transport at the same show. A much smaller aircraft than the Accountant, the President was a six-seat version of the RAF's twin piston engined Pembroke staff transport and reconnaissance aircraft. Gloster Aviation, on the other hand, expressed some interest in producing the Accountant, not least because production of their Javelin delta-winged fighter for the RAF was running down. Unfortunately for Laker, the company had recently been taken into the Hawker-Siddeley Group as part of the government's rationalization of the UK aircraft industry, and it was not represented on the main board. Gloster's proposal to manufacture the Accountant was turned down, almost certainly because Avro, also part of the Hawker Siddeley Group, was by then committed to the Avro 748, an aircraft in the same class.

Still flying as the workhorse of UK domestic aviation under the inflated pseudonym of ATP ('Advanced Turboprop'), the 748 first flew in 1960, as against to the 1958 of its major UK competitor, Handley-Page's Dart-Herald (1955 for the original Herald with four small piston engines) and 1957 for the Accountant. In one of its design features, the raised thrust-line of its engine nacelles, the Avro 748 bore a striking resemblance to the earlier Accountant, so much so that Laker contemplated suing Hawker-Siddeley. Always thereafter he insisted on referring to the aircraft as 'The Avro Accountant' and never dealt with Hawker again (Eglin and Ritchie, 1980, p. 53).

The 748, in the opinion of some, was the beneficiary of the politics of industrial rationalization rather than its own merits as a design. In competition with the Herald, in particular, the 748 benefited from the refusal of Sir Frederick Handley-Page to join one of the government-sponsored aircraft consortia, as a result of which his company was starved of government business (Banks, 1982, p. 31). The 748, in contrast was ordered for the RAF as the Andover, a move which probably also enabled the aircraft to survive competition with the Dutch Fokker F27 Friendship.

The F27 ultimately proved to be the nearest thing to a truly successful DC3 replacement. First flying in 1955 (with Rolls-Royce Darts), the Friendship sold 581 units built by Fokker, plus 205 built under licence in the USA by Fairchild. Total sales of the Avro 748 (subsequently HS 748, and BAe 748) were 382 up to 1988 when production ceased. Only 50 Heralds were ever produced – and only one Accountant.

The 1957 SBAC show turned out to be the Accountant's swansong. *Flight* magazine of 31 January 1958 carried the following report:

> Au revoir Accountant
> On January 10, the Aviation Traders (Engineering) Accountant took off on what may have been its last flight – at least for some considerable time. On that day, after some 50 hours flying since the first flight on July 9 1957, this brave project virtually came to an end. The Accountant has been mothballed at Southend, Aviation Traders having given up a valiant struggle to find a manufacturer to take over the project and bring it to fruition. The company have not the resources to continue the work alone; and with no hope of Government backing if things went wrong, there were no industry takers. Aviation Traders had asked only to cover their development costs (plus, they hoped, a small profit) after 200 or 300 production aircraft had been sold.
>
> Many will say 'I told you so' about the failure to obtain industry backing; the difficulties of a small company competing in the DC3 replacement market; and the impossibility of selling an aircraft with no delivery date. Yet others will sorrow that the enterprise has not succeeded, for the Accountant was well timed and attracted a great deal of airline and executive interest. Rolls-Royce provided the Dart, and the airframe showed promise of exceptional life.
>
> *Flight*, Vol. 73, 31 Jan 1958, p. 131

The two Dart engines were taken out and shipped back to Rolls-Royce. Most of the workforce who had cheered the first flight less than a year earlier were laid off. An aeronautical memento mori, 'The gutted ghost of the Accountant stood forlornly on the edge of Southampton airport for four years before it was finally dismantled for scrap' (Eglin and Ritchie, 1980, p. 54). Laker had spent £650,000 in developing the aircraft and shortly afterwards, he sold out both his companies, Aviation Traders and Air Charter, to Airwork. Under government pressure, Airwork, merged with Hunting Clan in 1960 to form British United Airways, with Laker emerging from the scrimmage as managing director.

Aviation Traders, meanwhile, retained its identity long enough to make a final foray into aircraft conversion. The Bristol Freighters flown by Channel Air Bridge were running out of steam. The repeated landings necessitated by the short ferry flights were causing metal fatigue in the wing spars and British cars had grown too big for the aircraft (by an average of 10 inches between 1950 and 1959). Eglin and Ritchie (1980,

p. 77) present us with a picture of Laker leaping from his bathtub one evening, like Archimedes before him, with the solution fully formed in his mind. It was a 'chop' of the Douglas DC4. Like the DC3 before it, the four-engined DC4 had been produced in huge quantities and heavily-used examples were available for as little as £50,000. Laker's plan was to re-locate the cockpit above the fuselage, raise the load platform inside the aircraft in order to make it wide enough for cars and hinge the nose at one side, in order to allow them to be loaded and unloaded from the front. These modifications called for a re-routing of the controls and an enlargement of the tailfin. In this form, the ATL98 Carvair (Car-via-air) would take five cars and 23 passengers. In all, 21 of these strange-looking aircraft were built between 1961 and 1968. No longer used as car ferries, but still useful for carrying awkward and bulky objects, three of them are still flying (Carvair).

## Flight to insolvency

Laker had done with the Accountant, but accountancy had not done with Laker.

Following a dispute with the chairman of British United Airways, Sir Miles Wyatt, over the dismissal of an employee, Laker left the company late in 1965. Still independently wealthy from the sale of his companies eight years earlier, he set up Laker Airways in Jersey so as to avoid UK taxes and the then-current labour legislation through which his employees might have been able to obtain the same wages and conditions as the state-owned carriers. Low wages were a habit with Laker, and they were essential to his future plans. At the same time, he set up Laker Leasing as a UK company in order to obtain the licence needed to run a UK-based airline.

With the lease of two Boeing 707s from the receiver of the bankrupt British Eagle company, Laker first entered the Atlantic market in 1969, as a charter operator. At this time, the International Air Transport Association (IATA) allowed low fare charter flights only for pre-existing groups of passengers who could establish 'sufficient affinity.' This was interpreted to mean membership of at least six months' standing in a group of less than 20,000 people defined so as to set it clearly apart from the general public. Since transatlantic charter fares were typically about £80 return, as against £240 for a scheduled flight, imaginative readings of the affinity rules were typical of all charter operators. Laker, however, seemed to be caught out more often than most. In 1971, Independent Television News broadcast the affecting sight of weeping

grandmothers who had been travelling as members of 'The Left-Hand Club' being herded gently out of one of Laker's 707s (Eglin and Ritchie, 1980, pp. 139–40). Incidents of this kind gave Laker the reputation of a shady operator with the US authorities. Later this image was to work both for and against him.

In 1973, Laker was granted a 10-year licence for Skytrain by the British Civil Aviation Authority (CAA), who accepted his argument 'that there is a substantial demand for cheap, no-frills, short-notice, mass travel which is not presently adequately catered for.' (Banks, 1982, p. 39). Under the reciprocity provisions of the Bermuda Treaty which regulated air traffic between the UK and the USA, American approval of a carrier designated by the British government, should have been automatic. Instead the American Civil Aeronautics Board (CAB) objected, citing Laker's breaches of the charter affinity rules, though the real motive was probably to protect the US airlines North Atlantic and Pan-Am, both of which were losing money at the time. Unfortunately for Laker, the delay ran into the OPEC oil crisis of 1974. In that year, oil prices quadrupled and air traffic across the Atlantic declined by 8.5 per cent. Meanwhile capacity had actually increased due to the airlines' herd-like rush into Boeing 747s and other wide-bodied jets. In September, there were talks between Trans World Airways (TWA), Pan American World Airways (Pan-Am), the state-owned British Airways (BA) and the independent British Caledonian (BCal). The talks were held at the CAB's offices, with observers from the CAA in attendance. The Americans made it clear that any agreement on an orderly reduction in capacity was conditional on the continued exclusion of Skytrain. Learning of this deal during a television interview, Laker exploded at the 'bums and gangsters' of the British civil service who had connived at the American demands. Through his American Lawyer, Bob Beckman, he filed suit against the airlines, claiming damages of £7m (£17,000 a day for five months) for the delays to Skytrain. It turned out to be a dry run for the future.

Meanwhile there were changes in UK civil aviation policy which seemed at first to threaten even Laker's existing position. Peter Shore, Secretary of State for Aviation in the incoming 1974 Labour Government, produced a White Paper which set out a plan to carve up Britain's overseas airlanes between BA and BCal. BCal's sphere of influence was to be South America, West and Central Africa and the Southern USA whilst BA was to be the sole carrier between the UK and the Northern USA, including New York. Laker's Skytrain had no place in this rationalized vision of the future, and his license was to be

revoked. Unfortunately for Shore, his plan was derailed by the House of Lords. Whilst the spheres of influence marked out for the major UK carriers were agreed by their Lordships, the plan to revoke Laker's licence was thrown out, and the government's attempts to persist with it were rejected in a succession of appeal court judgements. Meanwhile Shore's successor at Aviation, Edmund Dell, had become concerned that the balance of revenues between American and UK carriers on the North Atlantic route had drifted out to more than 2:1 in the Americans' favour. Dell's strategy for rectifying this imbalance was to demand 'single designation' in a renegotiation of the Bermuda Treaty, meaning that only one airline from each country would be allowed to fly on each route. Already a fait accompli on the UK side, as a result of confining the two major carriers to their respective spheres of influence, single designation was impossible for the Americans to accept, since it would have meant either Pan-Am or TWA giving up New York – London. At this point, Lakers' licence for Skytrain, and his murky image with the Americans, suddenly appeared to the British as a negotiating asset. If the Americans were going to insist on double designation on the London routes, the British would threaten to nominate Skytrain, indeed *could* only nominate Skytrain, as the second British carrier. If it was intended as a bluff, it didn't work. Double destination was too important to the Americans to be abandoned, even at the cost of admitting the morally suspect Laker to US airspace. Suddenly, after six years of trying, Laker had his US permit. The first Skytrain flew from Gatwick to New York on 26 September 1977 with a full load of passengers. They had paid only $102 one-way or $236 for the round-trip, as compared with $626 for a normal economy ticket from the established carriers (Hellary, 2005).

Well before this flight took off, Laker had been buying aircraft, and buying with his usual eye for a bargain. In the early 1970s, the world's airlines were offered a choice of two three-engined, wide-bodied airliners, the McDonnell-Douglas DC10 and Lockheed's Tristar. To the casual observer, the major difference between these aircraft is that the central engine of the Lockheed is situated in the rear of the fuselage, whereas that of the Douglas is mounted in the fin. It was the inner difference which was the more important: the Tristar used British-made Roll-Royce RB211 turbofans against the American General Electrics of the DC10. Crucially the development of the RB211 had been delayed by its pioneering use of carbon composites, a delay which brought about the demise of Rolls-Royce Engines as it had hitherto been known, and its re-emergence as Rolls-Royce (1971). Around the

campfires of accountants, the story of the Rolls-Royce collapse is still told to this day, illustrating as it does the perils of allowing engineers to make any decision whatsoever, without the approval of accountants. Of this fundamental error, the Tristar was a casualty, and a very large one. It meant that in any competition with McDonnell-Douglas, Lockheed were always coming from behind. A case in point was the All-Nippon contract.

Having obtained a favourable deal from McDonnell-Douglas, Japan's domestic airline, All-Nippon, had placed an order for six short-range DC10's through its parent company, Mitsui Trading. Desperate to sell the delayed Tristar, Lockheed bribed various Japanese officials and politicians into threatening All-Nippon with the loss of its licence unless it cancelled the DC10s in favour of Tristar. All-Nippon caved in and bought the Tristar, but Mitsui found itself unable to cancel the order with McDonnell-Douglas because the Japanese government of the day was highly sensitive to the issue of trade imbalances with the West. As a result, Mitsui had become the owner of six unwanted DC10s at a cost of nearly $150m. In 1971, the company managed to unload three of them onto Turkish Airlines, one of which later crashed in Paris with the loss of 346 lives. Enter Laker, who had calculated that the substitution of fuel tanks for some of the cargo space and careful operating procedures would enable even the short-range variant of the DC10 to cross the Atlantic. Anticipating that American approval for Skytrain would quickly follow from his UK licence, he bought his first two DC10s from Mitsui in 1972 and the third in 1974. The terms were favourable indeed. He claimed the 10 per cent commission on the sale for his airline and used it as a down payment. The rest of the purchase price was to be repaid at 6 per cent over ten years. As the negotiations were drawing to a close, Laker sounded out a number of travel agents on the prospects of filling an aircraft as large as the DC10 (up to 380 seats on short runs, as against the Boeing 707's 180). Finding that the agents were distinctly worried, he insisted on inserting a clause in the contract which meant that he would only be paying for the planes as flying revenues were earned.

Still a year before the inaugural flight of Skytrain, he purchased a fourth DC10 direct from McDonnell-Douglas. This was actually the second prototype and the knock-down price reflected the considerable wear-and-tear of McDonnell-Douglas' flight test and certification programme. Finance for this aircraft was arranged through the Clydesdale bank.

Early in 1979, Laker ordered two more short-range DC10s from Mitsui. This time the Japanese conglomerate had bought the aircraft

under the 'Samurai Loan' programme. Still exercised by Japan's trade imbalance with the West, the government advanced these loans to Japanese corporations so that they could buy Western manufactures which they were then free to lease or sell to anyone who could find a use for them. This time Laker obtained his two DC10s for $59m, repayable at 8.25 per cent interest over 20 years, again with no down payment.

Later in the same year he contracted to buy five more DC10s direct from McDonnell-Douglas, the long-range version this time. This purchase was financed by loans totalling $228.3m at rates varying from 6 per cent to 9 per cent over nine years. $86.8m of the money was advanced by the Export-Import Bank (Exim) an agency of the US government whose mission is to assist American exports by lending money to people who might want to buy them. Exim also guaranteed $74.5m raised by the Private Export Funding Corporation, an organization which exists to raise private finance for government-approved export deals. Most of the risk of lending money to Laker Airways was therefore borne by the US taxpayer. As the manufacturer of the airframes, McDonnell-Douglas advanced $14m whilst General Electric, who supplied the engines, supplied $7m. The remaining $46m was raised by a consortium of banks. As is customary in the world of aircraft finance, the two manufacturers, also agreed to cover 25 per cent of any loss on Laker's first sale of the aircraft (the so-called 'first-loss guarantee').

In September 1978, Laker ordered ten Airbus A300-B4s, another wide-bodied jet capable of carrying over three hundred passengers. This time, he was able to take advantage of the complex politics of directing employment in the European Community through the purchases of airlines and the assignments of work in collaborative manufacture. As these stood in the late 1970s, British Aerospace (BAe) manufactured the wings of the Airbus, but did so as a contractor to Airbus Industrie, rather than as a full member of the consortium because some years earlier the UK government had refused to fund the required injection of capital. The euro-politics of the Labour government of the day now dictated that BAe should buy back into the consortium, and part of the French price was that British Airways should order the A300, sales of which had been slow to pick up. BA, however, wanted the rival Boeing 757, a preference which presented the UK government with a dilemma. Boeing, unlike Airbus, offered the engine option of British-built Rolls-Royce RB211 turbofans, and work at Derby on the RB211 would safeguard more UK jobs than BAe's Airbus wings

at Chester. An order for Airbus from Laker offered a potential way out of this no-win situation – provided the French could be persuaded to accept it as a substitute for an order from BA. Knowing that both Airbus and the British government were anxious for the deal to go ahead, Laker played his hand for all it was worth. Although he agreed the normal base price of $42m each for his first three Airbuses, the price was stretched to include training for three crews per aircraft, instead of the normal $1^1/_2$, and it also included letters of credit from Airbus for spare parts and ground equipment from outside vendors. All told, these concessions were worth £7m, an amount roughly equal to the down-payment. Once again Laker's purchase was effectively cash-free. The workers of Rolls-Royce Derby knuckled down to the manufacture of RB211s, BA flew them in their Boeing 757s, and BAe duly re-entered the Airbus consortium.

'Under discrete pressure from the British Government' (Banks, 1982, p. 101), the purchase of these three aircraft was financed to the tune of $131m by a consortium of thirteen banks, led by the Midland. Though the loan was at market rates as far as the consortium was concerned, the UK government, by now that of Margaret Thatcher, did its bit by subsidizing Laker's interest payments down to a constant 10.2 per cent, stoutly denying the while that public money was involved. Since the Bank of England Base Rate was then 16 per cent, the annual amount not involved would be about $10.5m.

The Midland's corporate director of finance expressed his misgivings. 'Sir Freddie Laker … now has ten or eleven DC10s, all of which he has purchased in the last three or four years. Now he has purchased three A300s. The amount of money involved there is vast. His capital resources are not vast.' Indeed they were not. Laker Airways' 1980 balance sheet showed long-term debt and hire purchase balances of £111.4m against only £504,000 of fully paid-up share capital, though the Chairman's report contained a proposal to increase this by capitalizing £4.5m of reserves.

By 1981, therefore, Laker had purchased, almost entirely on credit, and at interest rates variously subsidized by manufacturers and governments, a total of fourteen wide-bodied jets, each capable of carrying well over three hundred passengers. How had his ability to make money from these aircraft progressed during the same period?

Following Skytrain's 1977 inaugural flight from London to New York, Laker obtained a licence for London-Los Angeles in 1978. Business on this route was slow to pick up at first, partly because the short-range DC10s which he was using at the time, could only make

the trip by stopping off at Bangor, Maine, and partly because the lure of Laker's cheap fares was offset in the Californian mind by the prospect of travelling with unwashed students who also found the fares attractive. For much of 1978, Laker's average load factor on this route (seats occupied as a percentage of seats offered) was only 32 per cent, more than wiping out the profits made on the New York flights. Adding to these woes, an American Airlines DC10 crashed in May 1979, killing all 274 people on board, with the result that the aircraft was grounded world-wide for 6 weeks. Laker had no choice but to suspend Skytrain, reducing group profits for the year to March 1980 to £236,080 on turnover of £111.4m as compared with the 1979 figures of £2.5m on revenues of £91.7m.

By 1981, however, Laker's new long-range DC10s were able to make the Los Angeles trip non-stop and his share of the traffic on this route, like that on London – New York, was broadly in line with the capacity offered. Although this was an improvement, the stabilization of Skytrain's load factors at levels similar to those of the established airlines was disappointing. The low fares should have translated into higher load factors than his competitors, not parity. Probably they would have done so if the established airlines had not responded with low fare packages of their own.

Even before Skytrain got off the ground, BA had introduced Super-Apex, a cheap advance-booking fare. TWA's solution was standby flights, whilst Pan-Am produced a mixture of the two (advance booking, but with the airline deciding the actual date of travel) (Banks, 1982, p. 141). The fares for all three were only slightly above Skytrain's, prompting accusations from Laker of collusion and predatory pricing. Laker Airways, he claimed, could make profits at Skytrain fares whereas the established airlines could not.

There was, of course, something in this. As well as paying lower salaries, a cut-price operator like Laker always has the advantage of skimming the bottom end of the market, effectively transferring the costs of sales and promotion onto the bargain hunters themselves. In Skytrain's first year of operation, these costs were only 4.7 per cent of total operating expenses, compared to an average of 15 per cent for IATA members (Banks, 1982, p. 75). Although such a fervent advocate of free markets could scarcely have expected his competitors to do nothing. The conviction had lodged in Laker's mind that Skytrain was the victim of a conspiracy by the international air transport oligopoly to drive it out of business.

In Banks' opinion, however, Laker Airways' main problem was not competition from the established carriers on prime routes, but the

impossibility of opening up enough new routes to fill the fat fuselages of its rapidly growing fleet of DC10s and A300s (Banks, 1982, pp. 127–34).

By 1979, the airline had obtained licences from London, Manchester and Prestwick in the UK to Los Angeles, Honolulu, Tokyo and Sharja (United Arab Emirates). If he could add London – Hong-Kong, Laker reasoned, he could link up these routes so as to offer services to most of the world's major destinations without abandoning his passengers to whatever fares other airlines might charge them to complete their journeys. Hong-Kong, however, was a Crown colony at the time, subject to the unilateral decision of the CAA and with no provision for appeal. Laker's application was turned down on the grounds that there was no reservoir of charter passengers on this route from which the clientele for a walk-on service might be drawn. Similarly, he was kept out of Australia, by a government determined to maintain the BA-Quantas duopoly on the UK-Australia route.

There remained Europe. In purchasing the Airbus, Laker had it in mind to fly scheduled services within the EC, which was then (and is now) organized through the IATA so that the routes between any two countries are divided between the national carriers of those countries, with the revenues equalized irrespective of the number of passengers actually carried. Laker attempted to challenge the exclusion of third-country carriers by applying for no less than 630 routes connecting 37 major destinations within the EC. Despite his attempt to get a high court ruling that the Treaty of Rome implies free competition in air transport, the application was vetoed. The only European route Laker ever obtained was London-Zurich, and Switzerland, of course, is not a member of the EC.

The remaining possibility was a return to the holiday market, and here he spotted an opportunity in Florida, a part of the world which is abandoned by discerning Americans during the sticky heat of high summer, leaving the hotels half-empty. Great Britain, however, is a nation ravaged by seasonal affective disorder and its natives have proved themselves willing to suffer almost any discomfort for the strike of sun on their pallid flesh, the more so if this can be achieved by the swimming-pool of a cut-price hotel. Aided by a favourable dollar-pound exchange rate, Laker did well out of this market for a time, both as charter operator and as a scheduled carrier on the London – Tampa route. In 1981, however, the pound deteriorated against the dollar and the sun worshippers drifted back to the parched littorals of Spain.

None of it was enough. Laker Airways entered the 1981 recession with three fatal weaknesses: over-capacity, under-capitalization and a portfolio of loans denominated in dollars. The annual growth of passenger traffic across the Atlantic, which had averaged 12–15 per cent during the late 1970s, slowed to 1.5 per cent and the world's airlines were losing money – $600m on the North Atlantic routes alone. Laker Airways was not alone in this respect. What set it apart was its lack of cash reserves, which meant that its ability to repay the outstanding £111.4m in loans and hire purchase balances depended entirely on the generation of revenue. Viewed from this angle, the accounts for the year to March 1980 made an exciting read. Current assets were £19.7m of which only £4.8m was cash or near-cash. Current liabilities were £31.5m. As for the ability to generate revenue, group profit, as already noted, had declined to a mere £236,080 on turnover of £111.4m.

In a characteristic note of good cheer, Laker insisted that profits would have been at least £5m higher but for the grounding of the DC10s. The claim may have backfired, since it drew attention to another problematic feature of the balance-sheet. Laker's aircraft and spare engines were valued at cost – £136.4m – as against the £111.4m in long-term debt which had financed their purchase. Though Laker claimed that his at-cost valuations were conservative, probably because of his successes in beating down the asking prices, the reality was that the Paris crash of 1974, followed by that of the American Airlines aircraft in 1979, had virtually wiped out the market for DC10s, new as well as used. There was therefore little prospect of paying off the loans through a fire-sale of DC10s. That left the three Airbuses. Unfortunately for Laker, the loan for these aircraft contained a clause that the interest rate subsidy would cease if any of them were sold.

These difficulties were compounded by a deterioration of the pound against the dollar. Whereas all of Laker's $400m or so in loans were denominated in dollars, about two thirds of his revenue was in pounds. When the loans were first negotiated, the average exchange rate was $2.24. At the time of his insolvency, it had dropped to $1.80, meaning that the burden of his loan repayments had effectively increased by about 16 per cent.

In August 1981 it was revealed that Laker was attempting to reschedule payments on the Exim loan with which he had purchased his last five DC10s. The CAA were quickly on the case. They concluded that Laker Airways was in urgent need of at least £5m in capital and alerted the Treasury, the Department of Enterprise and the Bank of England. Concerned at Laker Airways' lack of financial management,

the Bank of England prompted the Midland to provide some. As it became clear that Laker would also be unable meet the payment on the Airbus loan, the Midland Bank convened a meeting in November 1981 between Laker, his newly installed financial advisors and all of the banks and manufacturers involved in both syndicates.

There was little room for manoeuvre. Either the airline could be forced into insolvency at once or the repayments would have to be postponed long enough for it to benefit from the peak booking period in June and July of 1982. A deal was hammered out. Airbus Industrie would help Laker to find a buyer for the three A300s after the 1982 peak booking period, and fund the 25 per cent first-loss guarantee. The Midland syndicate would forego the $13m a year interest payments on the loan until the sale and fund the rest of the loss. McDonnell-Douglas and General Electric, who were looking at a bill for about $55m for their first-loss guarantee should Laker go under, agreed to a conversion of $55m of the Exim loan into preference shares in return for a termination of the guarantee. As well as this reduction in Laker Airways' burden of loan repayments, the American manufacturers agreed to inject £4m and £1m of share capital respectively into Laker Airways, thus meeting the CAA's investment requirements.

The deal never had a chance. Pan-Am had suffered mounting losses throughout 1981, to the point where its major creditor, Chase Manhattan led a campaign which ousted the company's chairman in favour of one Ed Acker, a man who Laker-like had built up Air Florida on the basis of cut-price fares. Sticking with what he knew, Acker promptly slashed Pan-Am's fares on the North Atlantic route by almost 60 per cent, prompting BA and TWA to follow suite. At these fares, all three airline were losing money even with their aircraft full, but unlike Laker, they had the reserves of capital or the state backing to stand it. Laker's customers deserted him in droves. January is traditionally a slack season, but the load factors on Laker's aircraft dropped to 40 per cent, as compared to the anticipated 55 per cent. The airline's overdraft edged towards its limit of £9m and the CAA upped its estimate of the capital requirement from £5m to £10m.

The American manufacturers, meanwhile were waking up to the fact that their investment in Laker Airways would have made them the majority owners of an airline which was in competition with their other customers. General Electric withdrew from the deal altogether, whilst McDonnell-Douglas, anxious to avoid the return of its DC10s given the state of the market for them, left the money on the table, but

as a loan rather than equity. This, of course, was no good. The Midland Bank insisted that Laker would have to find his £5m in equity from some other source and that, apart from a number of frantic phone calls, was that.

On the 5 February 1982, Laker Airways was declared insolvent and all of its aircraft were immediately grounded. One flight on its way to Tenerife with 300 passengers on board was turned back as it passed over the Bay of Biscay. In all, about 6,000 holiday makers were stranded abroad by the collapse, and other airlines were able to gain valuable publicity by organizing rescue schemes. A 'Save Freddie Laker' fund was set up with the help of Lloyd's bank, eventually attracting about £3.5m. Donations included £1,000 left at Laker's offices by a 76-year-old woman (Hellary, 2005).

## Conclusion 1

Banks' account of the collapse was published in 1982, the year in which it occurred. In that year, Laker was 60. He lost his horse-stud, his 1,000 acre farm, his Tudor home, his luxury yacht, and his cars, a Rolls-Royce and a Jaguar. He was stripped of membership of Lloyd's and lost the free travel pass traditionally given to the presidents of the world's airlines. Banks offered the opinion that he was unlikely to bounce back (Banks, 1982, pp. 153–4).

Later in 1982, the liquidators of Laker Airways sued twelve airlines for conspiracy to bring the company down. Under the Freedom of Information Act, Laker's American lawyer, Bob Beckman obtained the minutes of the IATA meetings of 1977 at which the airlines had negotiated their cut fare deals in response to Skytrain. The collusion was obvious, and in 1985 the case was settled. According to one report the amount was $300m, enough to pay off creditors, staff and the pension fund (Huettel, 2001). In a separate deal, British Airways offered Laker a personal settlement of £8m to drop his case. At the last minute, he trousered the cash leaving his ex-employees to fight on alone (Hellary, 2005).

Also in 1982, shortly after the Skytrain collapse, an American lawyer called Randolf Fields recruited two of Laker's key executives and applied to the CAB to take over his Atlantic licence. Short of capital, Fields approached one Richard Branson, who immediately sought advice from Laker. Eventually Branson succeeded in dealing Fields out of his airline (ambiguity intended) and it became part of the Virgin empire. The case is discussed in more detail in Chapter 4. Later, when

Virgin Atlantic became locked in a dispute with BA over alleged 'dirty tricks' to poach passengers, it was Laker who advised Branson to 'sue the bastards.' Branson duly did so: for libel in the UK, settling for £610,000, and, borrowing Laker's lawyer, Bob Beckman, in an anti-trust suit in the USA which failed (Bower, 2001, p. 156, 335).

Baroness Margaret Thatcher, the former UK Prime Minister, who had adopted Laker as her symbol of the enterprise culture whilst the going was good, once described him, with a characteristic lapse into innuendo,[1] as 'My knight in a shining fuselage.' The Baroness, sad to say, has tarnished in her knight's memory. This is Laker speaking in an interview of 2001, 'Margaret Thatcher … used to say, "Competition works. Look at Freddie Laker." That was her by-line. But when the chips were down, whether she was going to allow competition or not, she went with British Airways and dropped me like a hot potato.' (Huettel, 2001).

Laker remained active in air passenger transport into his early 80s. Laker Airways (Bahamas) Ltd. began operating in 1992, flying tourists to the Royal Oasis Resort in the Bahamas in two 175-seat Boeing 727s (Huettel, 2001). In 2003 Laker, then aged 81, was voted off the Board in a 'major shake-up.' In January 2004, the resort announced that it was terminating its charter contract with the airline due to 'financial constraints.' Since this accounted for the bulk of Laker Airways' business about 70 Bahamians lost their jobs (Williams, 2004). In October 2004 hurricanes Frances and Jeane damaged Laker's bases causing a suspension of flights. A spokesperson added that the airline was also suffering from 'circumstances created by a third party.' (Airliners.net, 2004).

## Conclusion 2

For an icon of the enterprise culture, Laker's career exhibits a remarkable dependence on state expenditures, subsidies and cartelized markets. He started out by recycling war surplus aircraft and engines and grew his air transport business through various government contracts. His later ventures into air passenger transport were almost wholly financed by aircraft manufacturers and governments eager to offload what they regarded as surplus aircraft. His opportunity to put these to use came about as an accidental by-product of the bilateral US-UK negotiations on the allocation of transatlantic routes in conjunction with a consolidation of the nationalized airlines in the UK. The American insistence that two of their airlines should fly New York –

London left Laker Airways as the only UK airline which could fill the second British slot. That left Laker free to run low-cost scheduled flights across the Atlantic on the basis of a license previously issued by the UK Civil Aviation Authority. His downfall came about as a result of that same breakthrough. When the established airlines undercut him with low-cost flights of their own, Laker was quick to call predatory pricing, but given his own record of subsidies received, who is to judge?

His one self-financed venture into genuinely competitive markets – the Accountant – was doomed to failure from the start. Firstly, the concept – a DC3 replacement – was unoriginal to the point of cliché. Secondly, once the unique method of construction had been abandoned, the design offered nothing that was not on the drawing boards of a half a dozen established aircraft manufacturers. Thirdly Laker seems not to have thought about manufacture until his prototype was in the air. At that point, it became evident that the only real possibility was licensing the design to firms which already had projects and design teams of their own.

Laker holds honorary doctorates of science at the University of Manchester, the City University and the Cranfield Institute of Technology, plus an honorary doctorate of law from Manchester (Lakerbio, 2001). The spirit of Skytrain lives on in the annual 'Freddie' awards for the airline with the best frequent flyer deal, sponsored by InsideFlyer and other in-flight magazines (Webflyer, 2001).

# 4

# Entrepreneurship and the Tactics of Empathy: Meditation on a Text by Sir Richard Branson

Following the 1980s advent of entrepreneurialism, the assumption that entrepreneurship is an unequivocal good has seemed to pass amongst academics and politicians with very little debate. Reflecting this consensus-by-default, the UK's universities are now engaged in a large-scale social experiment in which entrepreneurial attitudes are to be produced amongst the current generation of students, particularly those of science and technology. Whether the students will respond to this initiative as they have responded to other aspects of their education will not become clear for some years. Meanwhile it is pertinent, and certainly overdue, to ask how they will behave if the programme works as intended.

As a contribution to this inquiry, this chapter is a study of certain episodes in the career of the iconic entrepreneur of our time, Sir Richard Branson. It relies on three published sources, Branson's autobiography and two unauthorized biographies, both of which have been contested by their subject. Though Branson assisted in the early stages of Jackson's *Virgin King* (Jackson, 1994), he eventually came to regard the book as 'unfairly biased against him,' reinforcing the point on the occasion of the book's publication by sending the author over a dozen pages of objections (Jackson, 1994, p. 386). His comments on Tom Bower's *Branson* (2001) are reproduced on the back cover of the book as a kind of blurb-in-the-negative, 'What I have read, has offended me on every single level… It is a foul, foul piece of work from the first words to the last – really rotten, nasty stuff.' Though Bower's book appears to be meticulously sourced on points of fact, there is substance in Branson's complaint in that Bower's dislike of his subject comes across in a tendency to describe imagined scenes in prejudicial language ('"The record shops can't fix prices any more." *gurgled* Branson …' Bower, 2001, p. 1,

italics added). Though the biography itself has not been the subject of legal action, Bower has been sued by Branson over an article in the London *Evening News* concerning the latter's bid for the National Lottery. An initial ruling in Bower's favour was reversed on appeal, only to be reinstated by the High Court on 15 June 2001, on the grounds that Bower's article was fair comment on a high-profile public figure. For these reasons the use of Bower's account in this chapter, has been sparing. The general approach to each episode has been to start with Branson's autobiography *Losing My Virginity* (1999), to fill it out, or present alternative readings, using Jackson's account and to rely on Bower only for direct quotations from the people he interviewed. Following this procedure, the chapter's point of departure is an episode from Branson's autobiography. This, presumably, is not in dispute.

## Prologue

Branson's first enterprise, started with a school friend, Johnny Gems, when he was fifteen years old, was a magazine for Sixth Formers called *Student*. Though the magazine itself never made money and ultimately foundered, the loosely-defined group which gathered around it proved to be a crucial resource in Branson's take-off into entrepreneurship. The group itself served as the nucleus and prototype of a workforce willing to work for low wages in exchange for a lifestyle centred on sexual freedom, drugs and music. And it was the culture of this group which generated the ideas for new businesses on which Branson was able to capitalize. The idea for the mail-order record business which became Virgin Records, came from John Varnom and Tony Mellor, not Branson himself (Bower, 2001, p. 1, 19). Similarly, the idea of extending the involvement in music by opening a recording studio came from rock musician Tom Newman (Jackson, 1994, p. 28). And it was Simon Draper's rapport with 'alternative' tastes in music, not Branson's which enabled him to pick up on the potential of Mike Oldfield's interminable *Tubular Bells* (Branson, 1999, p. 105; Bower, 2001, p. 1). And from 1973 to 1981, *Tubular Bells* generated virtually the whole of Virgin Music's income (Jackson, 1994, p. 37; Bower, 2001, p. 45). Thus Branson's launch as an entrepreneur can be said to have depended crucially on his ability to retain control of what appeared to be an unstructured community of liberated souls.

This ability was first tested by Nik Powell. Powell had been a friend of Branson's from the age of four, and was an early recruit to the *Student* circle. In 1966, when the magazine was started, the two boys

were at different schools, but Powell agreed to help with distribution and finding interviewees. When the magazine's co-founder, Johnny Gems left to take his A-levels in 1968, Branson found that 'There was too much for me to do, and nobody else whom I could really trust to help me out. After a few weeks I asked Nik to come and help.' So Powell delayed going to university and joined the community around *Student*.

Two years later, in 1970, Branson chanced upon a memo by Powell addressed to the group. It was a proposal that Branson should be relieved of his positions as editor and publisher and that the magazine should become a collective enterprise. This leads to the text which is the subject of this chapter. In it, Branson tells the story of Powell's *putsch*:

> I was shocked. I felt that Nik – my closest friend – was betraying me. After all, Student had been my and Johnny's idea. We had started it at Stowe and against all the odds we had managed to publish it. I knew what I wanted to do with Student, and it seemed to me that everyone was happy working there. We all drew equal salaries, but ultimately I was the editor and publisher and it was up to me to make the decisions.
>
> I looked around at everyone working. They all had their heads down studiously over their desks. I wondered how many were part of this. I put the memo back in my pocket. When Nik came back I stood up.
>
> 'Nik,' I said 'Will you come outside for a quick chat?'
>
> I decided to bluff my way through the crisis. If Nik had already whipped up support from the ten other people, it would be difficult for me to stop them. But, if they were undecided, I could drive a wedge between Nik and the rest of them and cut Nik out. I had to put our friendship aside and get rid of this challenge.
>
> 'Nik,' I said, as we walked down the street, 'a number of people have come up to me and said that they're unhappy with what you're planning. They don't like the idea, but they're too scared to tell you to your face.'
>
> Nik looked horrified.
>
> 'I don't think that it's a good idea for you to stay here,' I went on. 'You're trying to undermine me and the whole of Student. I think that we should remain friends, but I don't think you should stay here any more.'
>
> I still don't know how I managed to say those words without blushing or my voice cracking. Nik looked down at his feet.

> 'I'm sorry, Ricky,' he said. 'It just seemed a better way to organize ourselves …' he trailed off.
>
> 'I'm sorry too, Nik' I folded my arms and looked straight at him. 'Let's see each other down at Shamley Green, but Student is my life.'
>
> Nik left that day. I told everyone that Nik and I had disagreed over how to run Student, and they were all free to leave or to carry on, whatever they wished. They all decided to stay with me, and life at the crypt went on without Nik.
>
> Branson, 1999, pp. 74–5

## The tactics of emotional sensitivity

Branson describes his manoeuvre as a bluff. There is more to the incident, however, than the ethical flexibility of a determined entrepreneur under pressure.

Common at the time,[1] the description of the *Student* group as a 'commune', is Branson's own (Branson, 1999, p. 67). Taken seriously, of course, the idea of a commune, *does* imply collective ownership, and the likelihood is that Powell *was* taking it seriously. Jackson (1994, p. 21) recounts how Steve Lewis, another early recruit to the group who formed an unfavourable first impression of Powell later 'came to appreciate his idealism'. The point of Branson's bluff was that it skilfully turned the ideal of the commune against itself. If it was in the name of the commune that Powell wished to oust Branson, then Powell himself was also bound to respect its wishes. And if he could be convinced that the commune was against the transfer of power from Branson to itself, then the moral conviction behind his action would collapse.

There is much else in Branson's tactics: the fierce desire which lay behind it ('*Student* is my whole life'), the ready-made vocabulary of justification ('*Student* had been my and Johnny's idea'[2]) and the snap decision to take the risk that the bluff would be detected. Here, however, the issue is his ability to sense and manipulate the drives and constraints to which other people are subject. It is a peculiar ability, and perhaps a rare one, for the sensing implies a species of empathy whilst the manipulation implies emotional detachment. Accurately gauging the moral force of the collectivity for Powell, Branson's ability to misrepresent its wishes depended on his own immunity to that moral force. That the stratagem was conceived and executed in the space of a few moments, and under pressure, speaks of the quasi-instinctive nature of this ability. For want of an established term, I will call it 'Tactical Empathy.'

## Generalizing: tactical empathy in the career of Sir Richard Branson

Until its sale to Thorn EMI, in 1992, the music company was the main generator of profit within the Virgin group. Its success came from finding, signing-up and promoting recording artists whose work resonated with a 'counter-culture' which was rapidly being transformed into a consumer market – partly through the activities of companies like Virgin. In this field, Virgin Music's competitive advantage lay in Branson's ability to attract and retain people who understood this music. He did so by fashioning his company in the image of the anti-materialist, quasi-egalitarian, blissed-out lifestyles of the counter-culture.

> With the best music playing in the shops and the warehouse all day, both the staff and the customers lying around smoking dope and talking about how to get hold of the highly-prized American recording of Aerosol Machine by Van Der Graf Generator, there was no better place for any self-respecting 21 year old to be.
>
> Branson, 1999, p. 108

This atmosphere, atmosphere in the literal sense of spliff-fumes and joss-sticks, also enabled Branson to get his artistic talent – and indeed all Virgin employees – to work for comparatively low wages. There were no 'awkward salary negotiations' when Simon Draper joined Virgin in 1971 for £20 per week, 'since everyone at Virgin was paid the same.'[3] (Branson, 1999, pp. 105–6).

The exploitative reality which underlay the image of employment at Virgin Music was brutally revealed when the company was sold to Thorn-EMI in 1992. Steve Lewis, by then Managing Director of the international music publishing company, summed up his 19 years with Virgin as follows:

> We've been duped. We thought we were special. He made us believe that Virgin Music was our business. We should never have believed all his talk of 'we' and the 'family'. He got us like we're the Moonies.
>
> Bower, 2001, p. 143

Responsible for signing Culture Club (Bower, 2001, p. 51), the group which was said to have 'paid for Branson's airline' (Jackson, 1994, p. 77), Lewis had turned down offers of more money to work with other companies (ibid, p. 296). Although he had been given shares in

recognition of his contribution, these turned out to be worthless when put to the test, because they were in the Virgin company which managed the recording artists, not in the main holding company, Virgin Music. Since the artists in this case were signed directly to Virgin Music, there was no commission to be made by negotiating lucrative deals on their behalf. Consequently the management company in which Lewis held his shares never made significant profits and was defunct by the time Virgin Music was sold (Jackson, 1994, p. 45).[4]

Amongst many similar stories (Jackson, 1994, pp. 292–303 and Bower, 2001, pp. 142–146 for further examples), Jackson recounts that one of the more senior women employees overheard her husband telling a friend how she'd worked long hours and weekends despite suffering stomach cramps 'because she believed in Richard Branson, and because she thought that Virgin was in some indefinable sense a co-operative in which everyone would benefit. 'I've never told her this,' her husband continued, 'but all that co-operative stuff is just a load of crap.' Jackson's account continues, 'On reflection, she concluded, her husband was right. She had been misled. In the end the company belonged not to the people who worked for it but to Branson, Draper and Berry. And it was they who had benefited when it was sold.' (Jackson, 1994, p. 297).

Thus Virgin Music's competitive advantage, and so the growth of Branson's business empire, rested on his ability to infuse his business activities with the atmosphere of the 1960s counter-culture, an atmosphere to which his employees responded with an idealism and anti-materialism which was highly convenient from the commercial point of view. Crucially, his capacity for tactical empathy enabled him to achieve this without actually sharing those values. At a time when all Virgin employees were supposedly earning an egalitarian £12 per week, Bower tells us that John Varnom discovered a Building Society passbook with £15,000 deposited in the name of Richard Charles Nicholas, Branson's three forenames (Bower, 2001, p. 24). In Simon Draper's retrospective opinion, the Virgin employees themselves bore part of the responsibility, 'People were naive that they allowed themselves to be seduced by the informality and no suits. It was always about money.' (Bower, 2001, p. 145). But then Draper had wised up early. Anxious that his original 20 per cent shareholding in the record company was vulnerable to transfers of profit within the complex Virgin empire, he had succeeded in exchanging it for a 15 per cent stake in Virgin Music, this holding to be valued by independent auditors in the event of

a sale (Jackson, 1994, p. 43, 78). Thanks to this foresight he could say of the 1992 sale of the music company, 'I'm sad, but I have also become very rich.' (Bower, 2001, p. 142).

Tactical empathy, then, was not just a feature of Branson's dealings with individuals, it was the foundation of Virgin Music's corporate culture, and this, in turn, was the foundation of his success as an entrepreneur. Jackson offers a very positive reading of this facet of Branson's abilities:

> From Steve Lewis downwards, the staff were unanimously agreed that Branson had made them feel that they were all working together in a co-operative enterprise from whose progress they would all benefit in the long term. In doing this, he had imbued them with a positive spirit, transmitting as if by telepathy his blind faith that every problem could be surmounted. Behind the jeans and T-shirts, Virgin Music had a very clear corporate culture: it could be summed up in the view that it was idle to ask whether something could be done. Virgin people would assume that it could, and confine themselves to asking how. Branson had not only commanded great loyalty; by promoting quickly and from inside, he had given many of the Virgin Music staff – particularly women – opportunities that they would never otherwise have had. And his confidence, his breezy sureness that they could do something even if he had no experience to back him up, had spread to them. Meeting for the many reunions that they called, many of Branson's ex-employees would muse that he had made them achieve things of which they had never imagined themselves capable.
>
> Never, they had to admit, had Richard Branson made any promises about how the profits of any future sale would be divided. If there was anything they could accuse Branson of, it was only of allowing them to have dreams and forget the underlying commercial realities. Richard Branson was a brilliant leader, and an instinctive motivator of people, But the aftermath of the sale of Virgin music proved that he could be too good a motivator of others for his own good.
>
> Jackson, 1994, p. 302

As a piece of advocacy, this spins so far that it flashes wide of the crease for four runs. We are told that Branson 'commanded' loyalty, as if it was a gift from him to his staff, not one from they to him, that he gave them 'opportunities to achieve' rather than made demands upon them

and that, far from profiting from their naivety, he 'allowed them to have dreams'. To cap it all, he was too much of an expert at all this for his own good.

## Tactical empathy and the transactional model of interpersonal relations

Collins, Moore and Unwalla's 1964 study *The Enterprising Man* is a classic of the entrepreneurship literature. Based on biographical interviews with 150 successful American entrepreneurs, supplemented by thematic apperception tests, it offers a dark-toned portrait of the tactics through which its subjects clawed their way to positions of business leadership. At the centre of the analysis is a mindset which the authors describe as follows:

> The apparently aimless early years of these entrepreneurs was in fact extremely important in broadening and deepening their grasp of what may be called the 'transactional model of interpersonal relations.' They were learning at a deeper level than they had previously known that no interpersonal relationship need carry with it a continuing commitment on the part of those involved. They were learning to believe that such relationships are to be entered only as long as they are of mutual benefit to the parties involved. Typically the character formation of the entrepreneur is such that he has no qualms about breaking such relationships… .
>
> Full-fledged entrepreneurship involves mastery of the positive modes of the transactional model. In fact the positive mode of the transactional model of interpersonal relationship IS entrepreneurship. The act of entrepreneurship is that of bringing ideas, skills, money, equipment and markets together into a profitable combination … He sees always the bringing together of people into a new arrangement. This is because he must move through people. He sees these people interrelated in terms of the transactional model. If for one moment he lets his eye stray away from this model and gets involved emotionally, he is lost.
>
> Collins, Moore and Unwalla, 1964, pp. 127, 129

It may already be clear from this passage that the transactional model is a particular case of what is described here as tactical empathy, the particularity lying in the application to relationships of trust or contract. This can be seen by zooming-in on its mechanics. Since it

amounts to a betrayal of trust, there must be a prior creation of trust. In the absence of sincerity, this involves sensing the psychological triggers which convince the other that our entrepreneur is to be trusted. It depends, in other words, on a capacity for tactical empathy. In this vein, Jackson relates a story from early in Branson's career which might be regarded as a dry-run for his later approach to such relationships:

> On one occasion, a man telephoned to offer the nascent mail-order firm a load of bootlegged, or illegally copied, Jimi Hendrix records. The caller was told to come around to the Virgin offices in South Wharf Road where Mr Zimmerman would discuss the transaction with him. At ten o'clock the following morning a shifty-looking character appeared and duly asked for Mr Zimmerman. Branson explained that Mr Zimmerman was just around the corner, and would arrive in a minute.

In fact there was no Mr Zimmerman.[5] After the bootlegger had been kept waiting for two hours, Branson asked him what he wanted to see Mr Zimmerman about.

> The man opened the boot of his car, and replied that he was going to sell him some records.
>
> Branson looked inside doubtfully. 'How much did you agree to sell them for?'
>
> The man replied that he wanted £1 each for them
>
> 'I'll give you 50p apiece,' said Branson. Within half an hour, the records had been stacked on the shelves in South Wharf Road; within another few days, they had been sold by mail-order at £3 apiece to fans of Jimi Hendrix.
>
> Jackson, 1994, pp. 30–1

To Jackson this triumph of the entrepreneurial spirit illustrates Branson's 'skill in negotiation.' However this may be, it is clear that Branson's ability to play on the weakness of the other party's position depended on his willingness to disregard the moral force of a verbal agreement. Conduct of this kind is inherently asymmetrical, in that it only confers advantages when other parties have entered the relationship in good faith. Despite Jackson's prejudicial description of the bootlegger as 'a shifty-looking character,' this appears to have been the case. He would not have made his journey at all if he had not believed that Zimmerman-Branson intended to pay £1 for the records as agreed.

Whilst the extra profits from beating down the price of bootlegged records may have been welcome, they were probably not all that significant in the larger history of Virgin Music. Fourteen years later, however, Branson was to play out a similar tactic on a wider stage and with larger consequences. If Virgin Music was stage one of the Branson rocket, Virgin Atlantic took over as stage two.

## Virgin on ownership: tactical empathy and the acquisition of an airline

> Therefore a Wise Lord cannot, nor ought he to, keep faith when such observance may be turned against him, and when the reasons that caused him to pledge it exist no longer.
>
> Nicolo Machiavelli, 1513

The airline which became Virgin Atlantic was the brainchild, not of Branson, but of an American lawyer called Randolf Fields. The insolvency of Mrs Thatcher's favourite capitalist's airline, Sir Freddie Laker's Skytrain, had left the Atlantic route from Gatwick to Newark vacant. Before Branson ever became involved, Fields was preparing to bid for Laker's licence. He had identified a number of aircrew who were prepared to work at low salaries, having prematurely retired from British Airways and British Caledonian. He had recruited former Laker executives who could hire and train cabin crew, ticketing and service staff, notably James Tait, who had run Laker's USA sales operation and Roy Gardner, formerly Laker's technical director. Additionally he had also opened negotiations with Boeing for a one-year lease on a second-hand Jumbo Jet, the aircraft to be returned at no cost if the airline failed (Bower, 2001, p. 57).[6] What he was short of was cash. The Civil Aviation Authority (CAA) requires evidence of financial solidarity before granting a license to operate, so as to prevent passengers from being stranded as had occurred with Skytrain. Fields explored a number of possibilities before approaching Branson.

The first negotiation seems to have been relatively unproblematic. Branson and Fields shook hands on a deal which gave both parties 45 per cent of the share capital, with the balance held by the ex-Laker managers. On Branson's instance, the new airline would be called Virgin Atlantic, although at that stage the name in no way implied membership of the Virgin Group. Each party would have the right to appoint two directors to the board of the company, and its day-to-day management was to be in the hands of Fields. None of this, however,

had been put in writing at the time of the first meeting between the two men and the CAA. At this meeting the application was approved subject to evidence of 'financial fitness to fly,' this evidence to be delivered at a second meeting in a month's time.

The written agreement was only delivered by Branson's lawyers and signed by the two parties on the morning of this second meeting with the CAA. The accounts differ on the financing requirements which emerged from the meeting. According to Branson and Bower (Branson, 1999, p. 222; Bower, 2001, p. 58) the stipulation was that Virgin had to provide £3m working capital. According to Jackson, however, the CAA also offered the alternative of a guarantee that Virgin would cover any losses, and it was this option which Branson actually chose (Jackson, 1994, p. 116). The discrepancy in the accounts, as will appear in a moment, is important.

The accounts concur on Branson's reaction to the financial conditions imposed by the CAA: he wanted to tear up the agreement he had signed only that morning. His argument was 'that since the Virgin Group was being asked to guarantee the entire finances of Virgin Atlantic, Coutts Bank would only countenance extending credit to us if we had control of Virgin Atlantic. They would not lend us money if we controlled only half the airline' (Branson, 1999, p. 223). But if, as Jackson maintains, Branson offered to cover any losses made by Virgin Atlantic as an *alternative* to the injection of £3m working capital (Jackson, 1994, p. 116), the argument makes no sense, since there was no injection of cash and hence no requirement for a bank loan.

According to Branson, Fields 'saw the sense of [his position] and reluctantly agreed that Virgin should have a controlling share of the airline' (Branson, 1999, p. 223). According to Jackson, in contrast, Fields believed that 'Branson's demands were quite unreasonable, since he had known at the outset the risks that would have to be taken on.' (Jackson, 1994, pp. 91–2). On this account, Fields agreed to sign away his share in the control of the company only after Branson's repeated threats to withdraw from the deal, and under the pressure of the approaching deadline for formal approval of the financial arrangements. The new deal split the equity of Virgin Atlantic 75:25 in favour of Branson, with the employees' shareholdings bought out. It also gave Virgin the right to appoint a fifth director, and so take control of the board of the airline, 'if it had reason to be concerned about the management of the company or its finances.' (Jackson, 1994, pp. 93–4). Fields' position as managing director, however, remained unaltered.

The manoeuvres were far from over. At the same time as he was pressurizing Fields to re-negotiate their original agreement, Branson had made an independent approach to the CAA in order to sound out the possibility of running the airline without Fields as a partner. The reaction was discouraging: such an application would have to start from scratch and negotiate the whole cumbersome procedure once more, with the risk that new applicants would enter the bidding and new objections made.

The exclusion of Fields, however, remained on the agenda. When Branson learnt from David Tait that there had been a row between himself and Fields concerning the arrangements for booking tickets (a vital matter for an airline), this was his reaction:

> I realized that Randolf was not the right person to run the new airline. I promised David Tait that, if he stayed, he would soon have no more trouble from Randolf.
>
> 'He won't be here much longer,' I said, 'You can deal with me directly.'
>
> As we worked through April and May, more and more of the airline staff dealt with me directly, Randolf was cut out of the operation. He became increasingly difficult to cope with. Eventually my lawyers advised me to change the locks on the ticketing office to keep him out.
>
> Branson, 1999, p. 226

In Branson's account, his moves to undermine Fields stemmed from a determination to rescue the new airline from Fields' shortcomings as a manager. Whilst Fields retrospectively admitted that he 'could be difficult to deal with' (Jackson, 1994, p. 119), this can, at best, be only part of the truth. Branson's approach to the CAA to sound out the possibility of running the airline without Fields had been made *before* there was anything for Fields to manage. And the fact that this approach was made was not contested by Branson when he was questioned about it by Jackson (Jackson, 1994, p. 122).

Jackson's account of the moves against Fields offers rather more detail than either Branson's or Bower's, and it differs in important respects. Well before the changing of the locks, Fields had complained that his position as managing director of Virgin Atlantic was being undermined. Despite the formal independence of Virgin Atlantic from the Virgin Group, he complained that cash was being skimmed on a daily basis from the airline's bank account and disappearing into the

network of Virgin companies. He also alleged that Virgin employees were entering into contracts on behalf of Virgin Atlantic.

In respect of the removal of cash, Branson's reply to Fields claimed justification on the grounds that the Virgin Group was having to act as a banker for the airline, since the usual bank would not allow the airline an overdraft. The argument, as Jackson points out, does not hold water. Airline tickets, particularly economy class, are normally booked and paid for weeks or months in advance, whereas consumables are normally supplied on credit. The result is that a new airline can be expected to generate abnormal positive cash flows for the first few months of its operation. Using Branson's own claim that 25,000 tickets had been sold at the time of the inaugural flight, Jackson estimates that Virgin Atlantic had generated a positive cash flow of over £3m at that time (Jackson, 1994, p. 117). Consequently there was no requirement for an overdraft and none for the Virgin Group to act as banker.

Virgin's response to Fields' complaints was a formal letter invoking the provision for appointing a fifth director to the board of the airline, the director in this instance to be Branson himself. Fields' countermove was to obtain an injunction restraining Virgin from interfering with the agreement governing his terms of service as chairman. A fortnight later, he returned to the court complaining that the injunction was not being observed. This time there was a written judgement, in which Mr Justice Orton said that 'he was left with a bad taste in my mouth arising out of the conduct of the Defendants [the Virgin Group, Branson et al], in particular the second Defendant [Branson himself].' (Jackson, 1994, p. 121).

According to Jackson, the changing of locks mentioned by Branson occurred *after* this second legal judgement, but the locks in question were those of Virgin Atlantic's offices, not the ticketing office as claimed by Branson (Jackson, 1994, p. 121). If this was the case, Fields was locked out of his own office. Eventually he resigned as managing director of Virgin Atlantic, later claiming that the struggle had brought him to the verge of a nervous breakdown and nearly ruined his legal practice (Jackson, 1994, p. 123). In 1985, a little over a year after he had first brought his plans to Branson, he sold his 25 per cent stake in the company to his partner for £1m. Branson at last had his airline, and Virgin Atlantic became part of the Virgin group.

Branson's own assessment of his role in this sequence of events was, 'I believe we dealt very fairly with Randolf, and put up with quite a lot over those three or four months.' (Jackson, 1994, p. 122). Bower's is that, 'In Branson's world, signed contracts were only valid if they could

be enforced.' (Bower, 2001, p. 58), as succinct a formulation as one could wish of the transactional approach to business relationships. What does not seem to be in dispute is that Branson was prepared to break any agreement he had made with Fields at points when he felt under pressure to do so.

The first occasion was when he approached the CAA behind Fields' back with a view to acquiring the North Atlantic route for himself. Branson's comment on this move was 'He was negotiating extremely hard, and we negotiated hard back. If you're negotiating, you've got to find out where your strengths and weaknesses are.' (Jackson, 1994, p. 122). Recall that Branson, at this point, had learnt about the route for which he and Fields were applying, had made contact with the staff which Fields had hired and knew about the negotiations with Boeing for the lease of a Jumbo-Jet. What were the strengths and weaknesses still to be explored, other than the question of whether he still needed Fields at all? In the event, he found that he did.

There remained the option of retaining Fields but re-working the ownership agreement in his own favour, and this, as we have seen, was exactly Branson's approach. But why did it work? Why was it Fields and not Branson who blinked as the deadline for CAA approval of the airline's financial arrangements approached? Jackson's assessment is that Fields signed because he realized that Branson had him in a stranglehold. Whereas the airline could not proceed without Virgin backing, Fields' only asset was a licence application nearing regulatory approval (Jackson, 1994, pp. 92–3). But, as we have just seen, this application *was* a real asset, since Branson would have had to begin all over again without it. The answer must lie in the psychological interplay between the two men, and there are some indications of how this went in Jackson's account. This is his description of Fields' initial reaction to Branson's demand that the contract should be renegotiated, 'Fields was crushed. He had come so close to realising his dream; it would be cruel indeed if the prize were to elude him at the last minute.' (Jackson, 1994, p. 91). Jackson credits Fields in his list of interviewees, so the intensity of the reaction is unlikely to be a literary invention. Branson would have observed this at first-hand. From it, he would have realized, if he had not realized it before, just how much Fields wanted the airline. That, in the context, was a weakness. Jackson goes on to describe Branson's subsequent probing of that weakness. First he claimed that he was unable to go ahead with the deal 'because my bankers won't let me do it.' This was followed by an apology and a withdrawal of the threat. Then it was renewed once more, along with a

reminder that the deadline was approaching and that 'tomorrow morning will be make or break day for the airline.' (Jackson, 1994, pp. 91–2). Whilst these twists and turns may have been expressions of emotional torment, as Branson claimed, they also served to explore both the contours of Fields' desire for the airline and the means by which he could be convinced that Branson was genuinely willing, or genuinely under compulsion, to withdraw from the deal. Calculated or not, this is tactical empathy in action, the exploration of the world of the other with manipulatory intent.

As for the final phase, that in which Fields was harried out of his position as managing director, Branson openly states that he had no intention of respecting the contract which guaranteed Fields' position, citing his concern for the future of the airline as justification. Finding that the law would protect Fields' broad terms of employment, he discovered, in the row between Fields and Tait, a means of undermining his managing director's position from below. Fields' volatility ensured a steady supply of complaints, and the message Tait's reception conveyed back to the staff of Virgin Atlantic was that Branson, now a director of the company, would listen to them, and quite probably back the complainant against the managing director. Thus encouraged 'More and more of the airline staff dealt with me directly,' so that 'Randolf was cut out of the operation.' (Branson, 1999, p. 226). As a lawyer, Fields was well-equipped to deal with frontal assaults on his contractual rights. What was he found impossible to cope with was the piece-by-piece erosion of his authority as a manager.

## Conclusions: feel, tick and the entrepreneur

In her review of Bower's biography, Jenny Dinski (2001) described Branson as 'an emotional con-artist', perhaps as good a description as the term 'tactical empathy' which is offered here. However it is described, we see the same capacity at work in all of the foregoing episodes in Branson's career. Sometimes it takes the particular form of a 'transactional' attitude to relationships or contracts which others have entered in good faith. Sometimes it takes the more general form of an imaginative reconstruction of the psychological world of others, in order to find ways of co-opting or subverting their energies.

What emerges from the episodes recounted here is that tactical empathy has been crucial to the career of Sir Richard Branson. Retaining control of the group gathered first around *Student* magazine and later around Virgin Music was the foundation of his first fortune, just as the

appropriation of Virgin Atlantic was his step into the wider world of international tycoonery. Notice too that this particular ability had nothing to do with *creating* those enterprises. It was entirely a matter of gaining or retaining *control* of them. This is not to deny that Branson's energy and relentless pursuit of publicity played a part in their subsequent growth. Without this, it might be argued, the quasi-hippies of Virgin Music and Randolf Fields' management of Virgin Atlantic would have achieved very little – and in support of this interpretation Jackson tells us that a subsequent attempt by Fields to run an airline ended in insolvency (Jackson, 1994, pp. 122–3). Against this, a number of ex-Virgin Music employees have subsequently made successful careers in the music business (Bower, 2001, p. 239) and without the sale of Virgin Music, Virgin Atlantic too would have become insolvent (Branson, 1999, pp. 461–4).

By the standards of what can publicly be endorsed as ethical behaviour, the distillation of entrepreneurial behaviour which emerges from these episodes is not all that pleasant. It should not, however, come as a surprise. In fact the popular phrase 'a feel for what makes people tick' captures much of it. The 'feel' indicates the element of empathy required to enter and understand the world of the other, whilst the 'tick' signifies that, once understood, this other is to be regarded as nothing more than a machine, with levers to be pulled and buttons to be pressed so as to produce a desired output. Whilst none of us are innocent of manipulatory intent, it may be a hypertrophy of the 'feel-tick' couplet which defines a certain type of entrepreneur.

Obviously there is a reckoning. As is copiously documented in both Jackson's and Bower's biographies, the typical recollection of Branson's passing is saturated by a sense of betrayal, and insofar as this is typical of the entrepreneurial career in general, it might be more damaging to the capitalist social order than the mere count of casualties might suggest. For contract, as Parsons and Smelser (1956) pointed out, is fundamental to the market economy and can only function when embedded in non-contractual relationships of trust between those who count as business persons (as opposed to the mass of exploitable human material). The transactional model of social relationships is both parasitic on this trust and corrosive of it, as can easily be seen by imagining a market economy in which relationships of trust and contract are routinely dishonoured. It follows that the mode of entrepreneurship outlined here, is not the Schumpeterian engine of innovation at the heart of the capitalist economy, but a social and economic pathology to which that economy is chronically vulnerable.

Finally the psychological costs. It may be that the habit of tactical empathy erodes a more general capacity for feeling. Alternatively, perhaps, it is a specific instance of that broader incapacity. Whichever, one senses a terrible emptiness (as well as a startling bathos) in Branson's own account of the music that built his fortune:

> There was tremendous excitement about music: it was political; it was anarchic, it summed up the young generation's dream of changing the world. And I also noticed that the people who would never dream of spending as much as 40 shillings on a meal wouldn't hesitate to spend 40 shillings on the latest Bob Dylan Album.
>
> Branson, 1999, p. 76

# 5
# Subsidizing Entrepreneurship

## Nineteenth century experiments: financing the construction of railways in the USA

### Corruption

> One traveller in Illinois came upon a locomotive, alone and rusting, on a few yards of track set in the midst of a prairie – all else had departed, the rails and ties appropriated by squatters, the promoters of the line gone with last year's snows
>
> Holbrook, 1947, p. 99

This Ozymandias in boilerplate was most likely a relic of the Illinois Internal Improvements Bill of 1836 (Goodrich, 1974, pp. 139–43). A product of the exaggerated hopes of prosperity vested in the railroads by isolated rural communities and the 'noble lobbying' of politicians who owned land in the region, the bill envisaged the creation of over 13,000 miles of railroad at cost of $10.25m, despite the fact that there were no cities in the state at the time and the population numbered only a few thousand. Only a few miles of track were laid before the panic of 1837 wiped the project out, but by then large amounts had been paid into the pockets of 'swindling officials' who had made jobs for themselves as 'surveyors', 'land-buyers' and 'estimators'. The state was left crippled by debt and the consequent high taxes discouraged immigration and left it underdeveloped for many years (Holbrook, 1947, pp. 45–6).

Illinois was an extreme case, but not untypical in outline. From the second quarter of the 19th century onwards, American cities and states conducted a large-scale experiment on the public subsidy of entrepreneurship. Taking the view that it was their proper function to

further the prosperity of the communities they represented, state and local governments contributed to the construction of railways which would connect them with their markets (Piott, 1985, p. 12). Dobbin (1994, p. 41) uses the case of the Baltimore and Ohio railroad to illustrate the scale of public investment which resulted from what he calls 'rivalistic state mercantilism'. Between 1827 and 1853 when the railway reached its Western terminus, Wheeling Ohio, private investment of $4.5m in the line was supplemented by $1.5m in cash and $1.5m in deferred taxation from the City of Baltimore, $0.5m from the State of Maryland, and $0.5m from the City of Wheeling. Subsequently, between 1861 and 1890, state aid to this railroad amounted to $95m in total and local aid to over $175m.

The early railways were also funded by Federal land grants, a source of finance intended to benefit the railroads at no current cost to federal government. The theory was that the land would appreciate in value through the presence of the railroad itself, so that its lease or sale could finance further construction. The sheer scale of this assistance was astonishing. One fourth of the states of Minnesota and Washington, one fifth of Wisconsin, Iowa, Kansas, North Dakota and Montana, one seventh of Nebraska, one eighth of California and one ninth of Louisiana were given over to the railroads. In total, the area involved was larger than Germany or France (Faulkner, 1959, pp. 481–3).

The prospect of public funding on such a scale 'sparked the imagination of every itinerant snake oil salesman and con-man in the country.' (Dobbin, 1994, p. 44). Promoters would obtain public funds on the basis of forged private subscriptions, then simply disappear. State-guaranteed bond issues intended to finance the construction of railroads would be over-sold, with the extra costs falling onto the state. The costs of construction would be overstated, with the difference finding its way into the pockets of state and company officials. Then there was the watering of stock. Named for the practice of salting the feed of cattle prior to sale so that the thirst-maddened beasts would gain as much weight in water as possible, stock-watering refers to the issue of shares to favoured persons without troubling them for any payment in return. The effect was to dilute the value of any public investment in the railroads. In 1885 Henry Poor's Railroad Annual estimated that about one third of all US railway stock was water.

These primary corruptions, to coin a phrase, were protected from public view by a whole series of secondary adjustments. There were free travel passes for usefully influential persons and employment as counsel to the railway companies for strategically-placed legislators

(Faulkner, 1959, p. 485). If all else failed, there was naked bribery. Indicative perhaps of the high price of integrity in a rapidly industrializing nation, the amounts involved even in routine cases were startling. In 1858 it emerged that Byron Kilbourne, the Mayor of Milwaukee, had bribed officials so as to obtain land grants for his La Crosse and Milwaukee railroad. More than $800,00 in rail bonds had been paid to state officials in Madison. Governor Coles Bashford alone received $500,000 (Stover, 1970, p. 33). In the case of the Erie Railroad (the 'scarlet woman of Wall St.'), expenses of this kind were sufficiently routine be carried in a special 'India Rubber Account' (Faulkner, 1959, p. 485).

## Discriminatory pricing

Though outright corruption was the most notorious outcome of this American experiment in the public subsidy of the entrepreneur, the communities which placed their trust in railway promoters were often disappointed in other ways. Free with promises of branch-line connections when collecting subscriptions, the railroad companies were less concerned to fulfil those expectations once the line was under construction. For many local communities the result was a burden of debt but no railway connection (Stover, 1970, p. 33).

Even when the lines were built as planned, the communities which had paid for them often found that they had created a local monopoly which was quite prepared to hit them with discriminatory freight charges. Quite rationally from their point of view, the railroads would set prices lower where there was competition and hike them up to compensate wherever there was none. As a result, many Midwestern farmers found themselves paying more for their short haul to market than would their competitors for a longer haul (Stover, 1970, pp. 89–90). This form of price discrimination, indeed, was one of the main issues, which provoked the 'Granger' agitation and led ultimately to the 1887 Interstate Commerce Act (Chapter 1). Here it is more relevant that the legislation did little to curb the railroads' pricing practices: it was always more cost-effective for the companies to purchase the legislators than to comply with the law (Perrow, 2002, p. 147).

Probably the most blatant form of price discrimination, however, and the one which provoked the greatest public outrage, was the railroad's practice of granting rebates on freight charges in order to attract and retain the business of large customers. As with so many of the tactics of monopoly, it was the Standard Oil Company which

showed the way, negotiating its first rebate in 1867. Following this precedent, rebates rapidly became the norm for large companies. Though widely condemned, the legality of the practice was not tested in the courts until 1884. The occasion was a breach of an agreement on production quotas made between Standard Oil and a company called Scofield, Shurmer and Teagle. Once they were competing with Rockefeller rather than co-operating, SS&T found that the Lake Shore Railroad, by which most of their shipments were made, was charging them between 15 and 35 cents per barrel more than the rates charged to Standard Oil. After three years of attempting to compete under these conditions, the company took the Lake Shore Railroad to court. In 1886, the Supreme Court in an expression of anti-monopoly sentiment characteristic of the period ruled that the rebate to Standard Oil was 'a discrimination in favour of capital', that it would 'build up and foster monopolies, add largely to the accumulated power of capital and money, and drive out all enterprise not backed by overshadowing wealth.' (Tarbell, 1913, p. 98). In its preoccupation with curbing monopoly power, the court failed to point out that this discrimination in favour of Standard Oil, was effectively a subsidy paid to the company by railroads which had mostly been constructed with the aid of public funds.

A court case of 1885 revealed a further refinement of the tactics of monopolistic competition, this time one exclusive to Standard Oil: that of demanding rebates on the higher rates charged to the firm's *competitors*. The case concerned the Cincinnati and Marietta Railroad, at that time in the hands of a receiver. From this company, Standard Oil demanded a freight charge of 10 cents per barrel for carrying its own oil, that 35 cents per barrel was to be charged to all its competitors, with the extra 25 cents to be passed on to Standard Oil as a 'drawback' payment. Rockefeller's logic, one presumes, was that the railroad should not benefit from carrying his competitors' oil rather than his own. Unless this was agreed, his financial enforcers explained, Standard Oil would have no option but to bypass the railroad with one of its pipelines. The receiver, 'a fussy old gentleman' called Phineas Pease agreed to these terms after assurances by his attorney that it was all perfectly legal. It wasn't, and in 1885 Judge Baxter of the United States Circuit Court said so in paint-stripping terms (Tarbell, 1913, pp. 101–4). In all Standard Oil was forced to return about $1,600 which it had received in drawbacks. This was peanuts. According to Stover (1970, p. 87) Standard Oil collected over $10m in drawbacks from only four railroads in only a year and a half.

## The Crédit Mobilier of America

Built between 1865 and 1869, the Union Pacific – Central Pacific Railroad was one of the great engineering achievements of 19th century America, completing a coast-to-coast connection across the Rocky Mountains and the Sierra Nevada. The Chinese labourers of the Central Pacific built east from Sacramento whilst the Irish and Civil War veterans of the Union Pacific built west from Omaha. The meeting-point was to be decided by a race between the two companies, encouraged by mileage-based subsidies. They met in the region of the Salt Lake Flats then continued past one another, to the accompaniment of low-intensity skirmishing wherever the tracks ran in parallel. Finally it was agreed that the tracks would join at Promontory Point, Utah, with the Central Pacific to pay $2.7m to the Union Pacific for the portion of track taken over from that company. Over the five years of their construction, the two railroads cost the lives of hundreds of labourers, lost in industrial accidents and from Indian attacks.

The financial arrangements were almost as spectacular. To concentrate only on the eastern portion, the organization of the Union Pacific was initially provided for in a Congressional Act of 1862. Federal aid was to consist of a land grant of ten sections per mile and the proceeds of Government Bonds secured on the railroad itself to the value of $16,000 per mile in flat country and $48,000 per mile in the mountains. These bonds were to be issued in instalments as each section of the track was certified as complete. On this basis about $2m of private capital was subscribed, about 10 per cent of which was in cash. At the costs of construction then current, the cash was enough to build only 7 miles or so of track. Accordingly, an act of 1864 increased the Federal subsidies and the rewards to venture capital on the basis that the government should 'do enough, and only enough, to induce capitalists to build the Pacific railway.' The land grant was doubled to 20 sections (= 12,800 acres) per mile, amounting to 11 million acres in all, and the company was authorized to issue first mortgage bonds secured on the railroad to the same value and under the same conditions as the government bonds. This meant that government's security was downgraded to a second mortgage. The company was to have a paid-up share capital of $100m, this to be paid in cash, with books held open until that amount had been subscribed. In the event, very little private capital was ever obtained. In violation of the 1864 Act, most of the Union Pacific stock was issued in part-payment for contracts to a company formed for the specific purpose of financing the construction: the Crédit Mobilier of America.

In its legitimate aspect, the device of a construction company was intended to make it possible for the actual build of a railroad to yield a profit. As practiced by the Credit Mobilier, it also enabled the directors to recoup their initial investment in short order through commissions on the various bond issues,[1] to assign construction contracts to themselves at inflated prices, and to pay for these contracts with money received from the bondholders (Ripley, 1915, p. 18). When the dust eventually cleared, the equity investment in Crédit Mobilier had amounted to only $3.9m or so, as compared to about $63.5m received from the sale of bonds (Goodrich, 1974, p. 187, 355; White, 1913, p. 126). In effect, the contribution of private investors was limited to working capital, sufficient only to tide the company over between the tranches of government money received during the early stages of construction. Well before the railroad was complete the directors of Crédit Mobilier had recouped their cash investment and paid themselves three or four times this amount in Union Pacific stock, depending on the value placed upon it (Goodrich, 1974, p. 186).

Primarily because of this uncertainty concerning the value of the securities in which they paid themselves, estimates of the profit on the $3.9m advanced by the promoters have varied over the years between $8.1m and $23.4m. The currently authoritative figures are those of Fogel (1960, pp. 66–71) who calculated upper and lower limits of $16.5m and $13m. Whatever the precise figure, the 1873 Congressional investigation into the affair concluded that the promoters 'differed from other capitalists not in taking a risk but in having discovered that the road could be built at vast profit without risk' (Goodrich, 1974, p. 188).

Fogel disputed this conclusion in that it assumed that the eventual realisation value of the securities in which the promoters paid themselves was assured from the outset. In fact testimony to the Congressional committee which investigated the affair suggested that an upper limit on the initial market value of the First Mortgage Bonds was about 40 cents on the dollar. On this basis Fogel calculated a market perception of the likelihood that the railroad would fail at 72 per cent, implying a 'justifiable' profit on the $3.9m invested of $11m[2] (Fogel, 1960, p. 85). Even if the promoters had limited themselves to this justifiable profit, Fogel continued, the Union Pacific would still have become insolvent in 1893 (or thereabouts) in consequence of its large bonded debt. On this basis, he concluded that the enterprise had been premature in the sense that the costs of attracting equity into it (largely in the form of that same debt) had been more than its subsequent earnings could bear (Fogel, 1960, p. 87, 89).

This analysis bears importantly on the general question of involving entrepreneurs in public projects since it suggests that it is legitimate for them to take their ab initio costs of risk out of a project as a condition of becoming involved. If this is the case, there is no reduction of the costs of risk as far as the public is concerned since any transfer of risk to the entrepreneur occurs at cost. Where the initial risk is great – as with the Union Pacific – that cost may be sufficient to sink a project even when it turns out to be otherwise successful.[3]

Meanwhile the feeding frenzy at the Union Pacific was attracting scavengers lower down the food chain. One Cornelius Wendell, a government commissioner appointed to inspect a section of the railroad and certify it for payment, received a bribe of $25,000 for performing this routine task (Goodrich, 1974, p. 191; White, 1913, p. 124). The five Government directors charged with overseeing the affairs of the Union Pacific did little to help. Despite a prohibition on their doing so, they turned out to be quite willing to take ownership of company stock (Dobbin, 1994, p. 55). So it went on. In retrospect the president of Crédit Mobilier could complain, without apparent irony, that 'We were plundered all along the line by everybody, who seemed to think that we were fair game.' (Goodrich, 1974, p. 189).

What turned sleaze into scandal was an indiscretion of on the part of Congressman Oakes Ames. Ames was a wealthy Massachusetts financier who had been largely responsible for creating and capitalizing the Crédit Mobilier at a time when it was proving difficult to attract investment into the Union Pacific. He was also the nominal contractor for about 700 miles of the railroad, though this was a device for funnelling (most of) the bond-financed payments from the Union Pacific back into Crédit Mobilier. Having intimated to his fellow directors that the company's financial arrangements might fall foul of new railroad legislation, Ames was given 343 shares in Crédit Mobilier to distribute 'where they would do most good.' Amongst fifteen others, Ames targeted the House Speaker, James G. Blaine and General Ulysses S. Grant's two vice presidents, Schuyler Colfax and Henry Wilson (Faulkner, 1959, p. 484; Dobbin, 1994, p. 55).

These doings came to light when a letter from Ames boasting of this purchase of influence fell into the hands of a New York newspaper. The House found Ames guilty of bribery but limited its punishment to a censure, probably because too many others were implicated. Colfax and a number of others retired from public life but no one was prosecuted.

Concerning the returns to enterprise, Goodrich's conclusion is equivocal. On the one hand he suggests that large land grants to the two companies (Union Pacific and Central Pacific) and the payment of some $600m in bonds might have been a reasonable price in the light of the benefits ultimately obtained. On other hand it was not clear that such a high price need have been paid:

> Small groups of insiders venturing very little capital of their own were able to build the roads with the money of the bondholders and the government and to pay themselves quick and extraordinary returns out of the profits of construction. In the case of the Union Pacific, they were able to take out large gains even before construction was completed. In the case of the Central Pacific, a group of four men who had put up even less of their money remained in sole control of a great railroad. As a result, both companies were left with greatly inflated capitalizations which reduced their ability to provide efficient services at reasonable rates.
>
> Nor can a judgment rest on economic factors alone without taking account of the effect on the national life of the notorious evasions of the law in the financing of construction and the flagrant use of financial means to secure influence in Congress.
>
> Goodrich, 1974, p. 199

In fact the bond subscriptions alone would have paid for the railroad at cost, quite apart from the huge grants of land. Ironically the public funding option had been considered in the debate on the 1862 Act, but rejected in the light of the experiences discussed earlier. All that the public received in return for the 6 per cent of the capital contributed by the Union Pacific shareholders was the privilege of paying profits conservatively estimated at $14m–$15m into the pockets of those same investors and of handing over control of the railroad into the bargain (Goodrich, 1974, pp. 187–8).

The 1864 Act was the last to commit a financial subsidy to a railroad, though the grants of land continued (ibid, p. 193). Well before then, state legislatures had begun to abandon the policy as more well-publicized railway scandals exposed their inability and unwillingness to institute effective systems of control. On the one hand there was a scarcity of public transport engineers and administrators capable of monitoring the railroad companies. On the other hand, proper oversight was inhibited by a neo-Jeffersonian reluctance to interfere with the affairs of private companies (Dobbin, 1994,

pp. 46–7). Given that a retreat from outright public ownership was in progress at the time, the only remaining course was to remove the temptations of public subsidy from the railway entrepreneurs. New York prohibited state aid to railroads in 1846 and by 1860 at least 15 other states had followed suit (Dobbin, 1994, p. 48).

## Subsidizing small business in the USA

As was pointed out in Chapter 1, the debate which led to the creation of the Small Business Administration (SBA) placed more emphasis on the preservation of the small business as a way of life than on entrepreneurship as a driver of economic growth. Over time, however, the distinction has become blurred, with many supporters and spokespersons of the SBA buying into the entrepreneurialist line that the two are indivisible. A prominent example was the collection published to mark the agency's 20th anniversary: *The Vital Majority: Small Business in the American Economy* (Carson, 1973). For the SBA the result has been an unfortunate double-bind in which it can be accused of failing to support those who most need it, or of wasting money on unviable firms, however it distributes its assistance. Because of this ambiguity, it is not inappropriate to discuss the SBA in a discussion of the subsidy of entrepreneurship.

The paradox lurking within a programme of state support for the entrepreneur was written into the SBA from the beginning: it was born of a deal in which 'doing something for small business' was the quid pro quo for 'getting government out of business.' One of the many ways which the government had got itself into business in the first place was through the Reconstruction Finance Corporation (RFC). Created by President Hoover in 1932, loans from the RFC had kept some of America's largest companies afloat during the depression. By the end of World War 2, the RFC had accumulated 15,000 employees and considerable institutional inertia. Still programmed to fight recession, it continued to expand its programme of loans to industry at a time when the post-war shortage of consumer goods was driving up prices and the control of inflation had become the political priority.

As a result of these activities the RFC became a prime target for the Republican opposition in the 1952 election campaign. When the party took power in 1953, however, its slender majority in the House of Representatives meant that it needed to compromise with the tradition of Congressional support for small business. A precedent existed in the form of the Smaller War Plants corporation which had been created in

1942 as a means of ensuring that small firms received a share of military contracts. Thus the SBA was created as the price exacted by Congress for the abolition of the RFC and its initial budget of £275m included $100m to help small firms to secure government contracts on the model of the SWPC (Bean, 2001, p. 9; Parris, 1968, pp. 9–14).

### Loans for business

As stated in the Small Business Act of 1953, the reasons for supporting small business were as much moral as economic:

> The essence of the American economic system of free enterprise is free competition. Only through full and free competition can free markets, free entry into business, and opportunities for the expression and growth of personal initiative and individual judgment be assured. The preservation and expansion of such competition is basic not only to the economic well-being but also to the security of the Nation. Such security and well-being cannot be realized unless the actual and potential capacity of small business is encouraged and developed.
>
> Parris, 1968, p. 244

The linkage between the preservation of small business and national security was more explicit in The White House Committee Report on Small Business of 1962. In that report, SBA administrator John Horne expressed the view that 'the Great American Dream' of owning a business was 'a devastating concept to the promoters of Communism' (Bean, 2001, p. 34). Between 1953 and 1988, the SBA's budget for this mission of ideological purification expanded from the £275m of 1953 to $3.5bn, largely on the basis of Congressional support and the need of successive presidential candidates for some concrete demonstration of their commitment to small business (Bean, 2001, pp. 10, 121–3).

In the SBA's main business loan programme about 25 per cent of the assistance is given in the form of direct loans and about 75 per cent in the form of guarantees on the loans made by commercial banks. Problems have occurred with both.

Those of the direct loan programme have arisen from the attempt to adjust the rates of interest so as to 'level the playing-field' between small and large business. It is normal for commercial banks to charge higher interest rates for loans to the smaller company because experience has shown that the rates of delinquency and loss are also higher. For this reason, the maximum rates on SBA direct

loans have been set by statute at lower rates than could be obtained from commercial lenders (Wollard, 1973). Obviously this makes them attractive. If only to counter the banks' complaints of 'unfair competition', these loans are supposed to go only to those companies which have been unable to obtain capital elsewhere. Astute applicants, however, have been able to ensure that this is the case by approaching commercial lenders with business plans calculated to ensure a refusal, thereby earning themselves a federal subsidy on loan capital. In 1965, SBA Administrator Eugene P. Foley testified to Senate Small Business Committee that 'about one third of our loans are made to people who privately concede that they could have obtained loans in the marketplace. In other words, our loans aren't reaching the risky type of business that really needs it so badly.' Addison Parris (a former SBA administrator) comments: 'Surely the intent of the Small Business Act was not to provide the small business borrower with a subsidy in the form of below-market rates. It was to ensure that a small businessman could get his loan if it was not available from private lenders at reasonable terms.' (Parris, 1968, pp. 97–109). The problem for this counsel of perfection is that distinction between 'below-market' and 'reasonable' interest rates is fine to the point of invisibility.

The loan guarantee programme has been criticized on precisely the opposite grounds: that it subsidizes commercial lenders by encouraging them to steer normally creditworthy applicants onto the programme, thereby displacing the risk onto the government (Wollard, 1973).

Both programmes have also suffered from mission-drift as a result of pressure to minimize the cost to taxpayers in conjunction with the SBA's very broad definition of a 'small' company. In manufacturing, companies with less than 500 employees qualified for assistance; in wholesale, those with an annual turnover of less than $5m and in retail those turning over less than $1m. In 1966, about 4.75m out of 5.09m enterprises in the USA (93%) met these criteria. Within all of them, the SBA's costs were higher for the smaller companies within the ranges. Administration costs were greater as a proportion of the capital advanced and defaults were more frequent, occasioning the costs of bad debts or guarantee payments to the lenders (Bean, 2001, p. 6). For this reason, the pressure to minimize costs tended to direct assistance towards the larger and more established companies within all of the qualifying ranges. The result has been a corresponding neglect of entrepreneurial start-ups and small 'lifestyle enterprises epitomized in America by the 'mom and pop' store.

The problem of assisting these smallest and most vulnerable of companies has also been exacerbated by persistent accusations from conservative politicians that the SBA tends to waste money on prolonging the existence of 'marginal inefficient firms' which have little potential for the creation of employment (Parris, 1968, p. 92). Figures produced by Dunn and Bradstreet suggests that only 0.3 per cent of the companies started in 1985 were responsible for 75 per cent of the employment growth over the succeeding three years, and that most of this 0.3 per cent had over 100 employees *at creation* (Harrison, 1997, p. 19; see Storey, 1994, p. 113, 165 for corresponding data on the UK). What makes the SBA vulnerable to this kind of attack is its tendency to justify its mission by reciting more or less the whole of 'the small business story' (Harrison, 1997, p. 12 ff.). The result is a lack of clarity in which it becomes relevant that many of the assisted businesses fail, that they fail to create jobs, but in which it is also relevant that the agency fails to support the very businesses of which these things are likely to be true.

## Loans for equal opportunity

In 1964, as part of President Johnson's 'War on Poverty', the social engineering element of the SBA's work became more explicit (Chase, 1973, p. 19). Under the Economic Opportunity Act the loan programme was extended to help those 'living in poverty' to set up in business. 'A hand up not a hand out' was to be extended to capable business owners 'often hidden under layers of poverty, racial prejudice and undeveloped talent' as administrator Eugene Foley put it. Because such individuals usually lacked collateral, loan officers were to make their assessments on the basis of 'honesty, morality, family stability and personal habits' although a criminal record was not, in itself, to be regarded as a disqualification. In contrast to the main loan programme, over 90 per cent of Equal Opportunity Loans (EOLs) were made directly from SBA funds, probably because commercial lenders were reluctant to get involved. Not surprisingly: the default ratio on EOLs turned out to lie in the range 30 per cent–60 per cent as compared to 3 per cent for the main business loan programme (Parris, 1968, pp. 62, 116; Bean, 2001, pp. 47, 90).

During the tenure of administrator Hilary Sandoval, it became evident that the lure of EOL money had begun to attract organized crime. During the 1960s, a loan officer had approved loans of nearly $500m to a company partly owned by the teenage son of notorious loan shark. In 1966 the FBI informed the SBA of the 'hoodlum domina-

tion' of this company. Sandoval instituted procedures to screen out loan applicants with mafia connections and two dozen cases were referred to the Department of Justice. In one of them it turned out that the New Orleans office had made loans to mob businesses in return for bribes to SBA loan officers

The scandal soon engulfed Sandoval's own office. Albert Fuentes, Sandoval's special assistant had secured large loan for an El Paso company, in payment for which Fuentes and his partner demanded company stock. Fuentes was dismissed and 6 months later was convicted by jury for conspiracy (Bean, 2001, pp. 72–4).

## Subsidizing venture capital

Set up under the Small Business Investment Act of 1958, Small Business Investment Companies (SBICs) are privately-owned companies licensed by SBA as a means of filling the 'equity gap' between start-up finance and a stock exchange flotation. In addition to the tax advantages conferred on their investors, these companies could call on the SBA to contribute debenture capital up to the amount of the paid-up share capital and loans up to same amount. They were thus able to invest $2 of government money in small companies for every $1 of private capital subscribed. The intention, of course, was that this investment would take the form of equity capital, which would participate in the risk rather than burden start-up company with yet more debt.

In the event, this particular expectation was disappointed: in 1966 only 17 per cent of the $1bn thus far invested was in form of equity. Given the choice, the investors in SBICs turned out to prefer the lower-risk option of profiting from the spread of interest rates between their borrowings from the SBA and their loans to their client companies (Parris, 1968, pp. 74–7, 157–61). In fact there were even simpler and less risky ways of profiting from the SBA's low interest rates. Instead of investing the money in companies of any kind, some of it was simply placed it in interest-bearing accounts (Bean, 2001, p. 84).

A 1966 investigation revealed that no less than 638 of the 686 SBICs licensed at the time had violated one or another of the SBA regulations. There had been money-laundering for the Mafia, 'sweetheart' deals whereby SBIC money had been invested in companies owned by the SBIC directors and the use of SBIC stock as collateral for loans to purchase more stock. In addition, 232 of the 700 SBICs were in serious financial difficulty and the government appeared likely to lose about $50m of the $275m invested in the programme (Parris, 1968, pp. 157–62).

The Small Business Investment Act amendments of 1966 and 1967 gave the SBA additional powers to issue cease and desist orders against violators and to revoke licences of delinquent SBICs. Borrowing against SBIC stock to purchase more was made a criminal offence. The problem of bad debt was tackled by increasing the minimum capitalisation of SBICs and by raising ceiling on the loans they could make. Once again, commercial and social objectives were in collision. Larger funds making larger loans tended to squeeze out the smallest and weakest companies from the SBIC portfolios thereby running counter to the objective of widening the opportunity for small business ownership (Parris, 1968, pp. 160–5; Bean, 2001, p. 56).

### Minority set-aside

During the Second World War, the Small War Plants Corporation had been created to assist small firms in obtaining a 'fair share' of government contracts. One of the ways in which it did so was to act as a main contractor with the actual work subcontracted to the small companies. In the 1958 revision to the Small Business Act this mechanism had been incorporated into the functions of the SBA. Largely dormant until the 1967 riots in Los Angeles and other American cities, the provisions of section 8(a) as it became known, were resurrected as a means of directing government contracts towards minority-owned small businesses. Certain main contracts negotiated by the SBA were to be 'set-aside' so that the subcontracts could be allocated to minority-owned companies (Parris, 1968, p. 66; Bean, 2001, p. 66).

With lucrative contracts at stake, much hinged on what counted as minority-owned and, within that, on the politics of the allocation process. In 1977 the Government Affairs Subcommittee exposed widespread corruption and incompetence. Monitored against rising quotas, some SBA officers were encouraging white-owned firms to 'get yourself a Black and get on board,' whilst companies which were genuinely minority-owned received contracts without regard to developing their ability to compete. The result was a kind of entrepreneur's version of dependency culture. The intention of 8(a) had been that firms should 'graduate' to normal competitiveness within 3 years. Few did so. Of 15,000 firms which had participated in 8(a) by 1977, only 70 had succeeded in obtaining contracts in open competition. Even successful companies discovered that it paid to conceal their progress so as to go on benefiting from set-aside (Bean, 2001, p. 90, 100).

## Wedtech

The open invitation to corruption inherent in minority set-aside was spectacularly exposed by a South Bronx metal fabrication company called Welbilt (later Wedtech). Welbilt was jointly owned by John Mariotta and Fred Neuberger. Mariotta, it so happened, was of Puerto Rican origin and the Small Business Administration (SBA) accepted the company into 8a on the basis of a fictitious re-allocation of shares which represented him as the majority owner. By 1978 Welbilt had grown to 50 employees and $1.5m sales, almost entirely through contracts obtained under 8a (Thompson, 1990, p. 20).

From the beginning, Welbilt exploited a number of channels of influence, using a slush fund named for Neuberger's deceased first wife. In the tradition of New York machine politics, the company retained the law firm of Mario Biaggi, a popular Bronx Congressman with past reputation as 'hero cop'. Biaggi & Ehrlich paid off successive New York Regional Officers of the SBA, Ivan Izzary and Peter Neglia, thereby enabling Welbilt to obtain an Economic Development Administration (EDA) loan. Biaggi also helped the company to obtain a $5.5 army contract for personnel carrier cooling-kits, whereupon Welbilt promptly purchased the co-operation of Gordon Osgood, the contracting officer assigned to monitor the firm's performance (Thompson, 1990, pp. 30–1).

Welbilt also exploited the Reagan administration's susceptibility to the minority business lobby. Steve Denlinger, Director of the Latin American Manufacturers' Association received $2,000 per month in 'consultancy fees' from Welbilt, for which he induced two advisors on minority affairs in Reagan's Office of Public Liaison to suggest both to the Army and the SBA that Welbilt would be a suitable recipient of an army contract for 13,000 6hp gasoline engines.

It was also the Office of Public Liaison which was responsible for inviting the Welbilt officers to a conference on the Urban Enterprise Zone Bill as presidential guests. Impressed by the slogan 'Off Welfare, On Welbilt' scripted by the company's PR consultant, Reagan chose Mariotta to be one of the minority persons with whom he would converse over dinner. The occasion, or rather the publicity photographs of it, prompted Lyn Nofziger, recently head of Reagan's Office of Political Affairs and now retained as yet another consultant by Welbilt, to send a memo to the Attorney General, Edwin Meese 111. The memo read 'Ed, I really think it would be a blunder not to award that contract to Welbilt. The symbolism either way is very great here.' (Thompson, 1990, p. 64).

Another route to the Attorney General was through e. robert wallach, as he modernistically styled himself. Another Welbilt consultant, wallach's principal stock-in-trade was his lifelong friendship with Meese, and he duly bombarded Reagan's Attorney General with numerous memos on the engine contract. Though careful to read none of them, as he later made clear, Meese nevertheless instructed his assistant, James Jenkins, to ensure that Welbilt got 'fair hearing'. This Jenkins duly did, becoming first a consultant to Welbilt then a marketing manager, on leaving office.

Thomas Keenan, the army's Director of Procurement, had two problems with Welbilt. Firstly, he doubted that the company was capable of producing the engines. On his visit to the Bronx premises, he had found a dilapidated building, largely empty except for two cutting machines purchased with the EDA loan. Secondly there was the problem of price. Possibly reflecting a disinclination to assign the work under 8a, the army estimators had put a fair market price on the contract of $19m as against Welbilt's initial quote of $99.9m. Later Welbilt reduced the quote to $38m, though given the company's unprepared state, it was clear from the outset that this would barely cover the costs of start-up and equipment.

A possible solution to the equipment problem was a Business Development Expenses grant from the SBA – $3m would do the trick. An obstacle here was SBA Director Michael Cardenas who objected that this was half of his entire annual budget under the head. On the specific order of Meese, Cardenas was removed from his post and replaced by the more amenable James Sanders.

The army, meanwhile, had held firm under pressure from Jenkins, until a meeting at the White House, one of many which later escaped Meese's recollection. The obdurate Keenan was absent, but his superior officer, Assistant Army Secretary, Jay Raymond Scully was said to have entered the room, 'like he had been dragged in like a little dog on a leash' (Thompson, 1990, p. 70). As a result of the meeting, the army adjusted its fair market price to $27.8m so as to accommodate a third bid by Welbilt.

Like Cardenas, army procurement officer Keenan was later removed from his post. In other respects the aftermath must have given him some satisfaction. Financially strapped at the outset, Welbilt proved unable to pay its creditors within 3 months. The first engines were delivered a year late. By presenting falsified invoices and bribing officers of the Defense Contract Auditing Agency to accept them, Welbilt eventually collected $22m of the £27.8m due under the contract, though only 4892 of the 13,000 engines were ever delivered.

By now, Welbilt was ready to go public, but this required an unqualified report from its chosen auditors, KMG Main Hurdman. Audit manager Tony Guariglia and his supervisor Richard Bluestine soon discovered both the invoice fraud and the slush fund. In return for positions with Welbilt, these two agreed that Main Hurdman would be presented with evidence that the outgoings from the fund were really loans to company officers and with proof that the government had accepted remedial action by the company on the matter of the falsified invoices. The proof would be furnished by the friendly SBA regional administrator, Peter Neglia. On that basis Main Hurdman issued a clean audit and the company went public as Wedtech in 1983. Included in the prospectus was a warning that it might no longer be able to obtain contracts under the 8a programme.

The warning proved overly pessimistic, even though the company had now grown far beyond the stipulated limits and had plants in Michigan and Israel as well as several in the Bronx. The numbers problem was contained by hiring many of the workers temporarily, through agencies. More intractable was that of maintaining Wedtech's minority-owned status. As a stop-gap measure, the minority in question John Mariotta, was 'sold' large tranches of shares by other company officers in return for promissory notes which include a clause that the shares would revert to their original owners in case of default. The owners in question accepted Mariotta's promise that he would, indeed, default. These stratagems held together long enough for Wedtech to obtain a $24m contract under 8a for naval pontoons intended for amphibious landings. Included in the deal were options on future contracts in 1985 and 1986. The tactics used to obtain the pontoon contract were similar to those described above, and employed some of the same personnel.

It is significant that the pontoon contract was obtained before the army had received a single engine. In effect Wedtech was being kept afloat by advance payments from fresh contracts whilst piling up obligations under existing contracts which it was unable to fulfil. In the case of the pontoons, the company proved itself incapable even of welding two sheets of steel together at a right angle. The problem was eventually traced to the employment of a plumb-line in conjunction with a sloping floor. In order to paint the pontoons, $1m was spent on a spray machine and another $1m on its installation, before it was discovered that it could not be used because of Federal pollution standards.

By the time of the 1985 option, the United States Navy had still not received a single pontoon, and was complaining that its capacity to

invade other countries was being severely compromised. Despite this, Wedtech received a second pontoon contract, this time for $51.5m.

Clearly it couldn't go on. The issue of minority ownership came to a head when Mariotta was ousted by his fellow directors who had become concerned at his increasingly erratic behaviour. In order to forestall its forcible ejection from minority set-aside into fully competitive markets, the company voluntarily exited from the programme. Since 8a accounted for about 95 per cent of Wedtech's business, the company's officers scrambled to unload about $6.6m worth of shares before the investing public caught on to the implications. Despite a new issue of junk bonds, the company continued to burn cash and fall further behind on its deliveries whilst the officers set about moving their personal fortunes offshore.

All the while, Wedtech had been piling up enemies. Despite retaining influence-peddlers of their own, there were more and more minority competitors and other businessmen who had lost out, unfairly as they saw it, through the activities of Biaggi, Denlinger and wallach. They were beginning to talk to reporters and criminal investigators. Though the sources were scarcely untainted, the consistency with which they pointed towards Wedtech led ultimately to a number of prosecutions. Realizing that the game was up, Neuberger, Guariglia and two other company officers agreed to co-operate.

For some months the mood-music emanating from the White House inclined the investigators to steer clear of the Attorney General's office, particularly since Meese had failed to recuse (that is, isolate) himself from the investigation. Eventually, it became clear that wallach was 'in deep yoghurt' (Thompson, 1990, p. 276) and Meese was eventually moved to sign a recusal. Though he was never prosecuted, he did not escape scot-free.

Meese' public humiliation occurred as a consequence of an interesting gambit offered by a defence attorney in the Wedtech racketeering trial. Since the prosecutors were ultimately working for the Attorney General, argued James LaRossa, their attempt to prove the guilt of the defendants was actually motivated by a desire to cover up for Meese. The prosecution was having none of it. In the words of prosecutor Little, all it amounted to was, 'Meese was a sleaze, too. Also. In addition to these people.' The jury duly convicted six of the seven defendants and the delighted newspapers found themselves free to print the headline 'Meese is a Sleaze.'

Wedtech became bankrupt in December 1986, bringing down with it a number of supplier companies and throwing over 1,000 people out of

work in an area where there were few other prospects. Amongst over 20 convictions, John Mariotta received eight years in prison and was fined £290,000. In recognition of his co-operation with the prosecution, Fred Neuberger went to prison for only two years, though this was augmented by three months for a perjury committed in an attempt to conceal a secret bank account (Sternberg and Harrison, 1989, p. 299).

The accounts on which this brief and partial summary is based were written by reporters, not social scientists. Their primary concern was to record the facts, as they saw them, not to reflect on their implications for economic activity in general and entrepreneurship in particular. Nevertheless their observations deserve respect as the product of a level of 'thick description' notably absent from academic studies of entrepreneurship.

For Sternberger and Harrison (1989, p. 307) as for Traub (1990, p. 366), Mariotta and Neuberger were criminals – albeit out of necessity in Traub's view: 'The company would not have survived its early years if the men who ran it had not been prepared to break the law'. The Wedtech debacle occurred because these criminals 'tried to apply the South Bronx rules to Capitol Hill and Wall Street' (Traub), and 'co-opted some of the most prestigious members of the United States' financial and legal communities.' (Sternberger and Harrison). Yet both authors partially contradict this picture of a unidirectional flow of criminality from the South Bronx into the mainstream culture of the United States. Traub credits the Wedtech officers with 'dop[ing] out the rules, or perhaps the atmosphere surrounding the rules, of their new milieu' whilst Sternberger and Harrison note that their tactics depended on the complicity of lawyers, accountants, bureaucrats and politicians '[who] had no criminal intent; they simply didn't do their jobs very well' (Traub, 1990, p. 307). If this last was truly the case, a great injustice has been done, not only to those who were convicted in courts of law, but also to those, like Ed Meese, who were publicly described as having 'probably' broken the law, without ever being brought to trial (Thompson, 1990, p. 300). The reasonable implication surely is that the notion of a sharp dividing line between corruption and the ethics of mainstream economic life is unsustainable. Indeed both Sternberger and Harrison and Traub tacitly fall back to this position in ascribing Wedtech to the loose business morals of the Reagan era. In the Twenty-First century, we, in the knowledge of Enron, WorldCom and their auditors, are denied even this comfort.

## The UK experience

### The DeLorean Motor Company Ltd.

The nearest UK equivalent to the abuses of the mid 19th century American railway promoters and the Wedtech conspirators of the 1980s was John Zachary DeLorean's exploitation of the British Government's attempt to alleviate the conflict in Northern Ireland by creating employment. The case has been the subject of two full-length studies by investigative journalists (Fallon and Srodes, 1983; Levin, 1983) and an autobiographical memoir by DeLorean's former Vice President (Haddad, 1985). The following is a drastically abridged and simplified version of the chain of events reported in these sources, with an element of hindsight added from the report of Northern Ireland's Department of Enterprise, Trade and Investment into the attempts to recover misappropriated public funds (DETI, 2004).

By all accounts John Z. DeLorean started out as a brilliant automotive engineer. It was he who designed the overhead camshaft in the 225hp engine of the Pontiac Tempest saloon, a vehicle which enabled middle-aged American males to compete on level terms with Detroit's teenage dragsters. The word-of-mouth reputation of this car began the process of turning round one of General Motors' more lacklustre divisions. Building on his close contact with the street-racing scene – so he later claimed – DeLorean then developed the Tempest into the Pontiac GTO, a best-selling hot-rod which owed much of its success to the hit song 'Little GTO' by Ronnie and the Daytonas.

Perhaps as a result of the element of non-conformity in this early success, the mid-life crisis seems to have taken DeLorean with unusual force. After a prolonged absence from work, he re-appeared with his lower jaw remodelled in an approximation of the craggy look. His hair darkened, he lost a great deal of weight, and he took to wearing Nehru Jackets and turtleneck sweaters at work in a conspicuous display of what Erving Goffman once called 'role distance' (Goffman, 1972). He became simultaneously the successful corporate executive and its socially conscious critic, an ambivalent persona which became immensely popular at gatherings of the rich, the beautiful and the stylish. He re-styled his name as 'De Lorean', reaching after vague connotations of Old Europe and aristocratic ancestry. In the course of this identity makeover, he divorced his second wife, married a fashion model and conceived the dream of a gull-winged stainless steel sports car 'for the horny bachelor who has made it.' (Fallon and Srodes, 1983, p. 187). He also dreamed of becoming wealthy enough to support his

new life-style. DeLorean left General Motors in 1973, and deposed the materials for a memoir attacking the company's stifling conformity and lack of social responsibility with the journalist Patrick Wright (DeLorean, 1980).

To manufacturer his car, DeLorean needed a factory; preferably one where substantial government assistance was available. After negotiating with Canada, Southern Ireland and Detroit, he was on the point of signing up with Puerto Rico, when the investment bank which was acting for him at the time, Wood-Gundy, reported that massive inducements were on offer in Northern Ireland.

At the time, the province was by far the most depressed of the UK's declining industrial areas, with male unemployment over 50 per cent in some conurbations. Not unconnected with this, or so thought the politicians of the day, the euphemistically-named 'troubles' were also at their height. There were bombs and assassinations from protestant and catholic paramilitaries, internment without trial and a massive army presence on the streets.

Not unreasonably, Roy Mason, then the Labour government's Secretary for Northern Ireland believed that the employment provided by a new car factory, especially employment on a non-sectarian basis, could only contribute to an easing of tension between the warring communities. To the fury of the Puerto Ricans, a deal with DeLorean was concluded in only 45 days, though Mason was later to claim that it had been thoroughly researched. Certainly the Northern Irish negotiators were aware at the time that DeLorean had form. There was his involvement in a miniature race-track business which became insolvent in 1974 and an appealed judgement against him in the Kansas State Court in connection with a failed car dealership. However, as one of the officials later recalled, 'we didn't take these things seriously… I don't think it's unusual for an entrepreneur to have a few companies go bankrupt when he's starting up' (Levin, 1983, pp. 157–8). Interestingly, this same sanguine view of previous business failures on the part of entrepreneurs is one being currently touted around the enterprise industry.[4]

As signed in 1978, the deal gave DeLorean Motor Cars Ltd £17.8m of equity capital from the Northern Ireland Development Office (NIDO), £25.2m in non-repayable grants from the Department of Commerce plus another £10m in loans. For his part, DeLorean committed $1m in equity capital, about £0.6m at the prevailing exchange rate. For this modest investment, he was to receive 73 per cent of the votes on the board of the Northern Ireland Company and an undertaking that his

US company, the DeLorean Motor Company would have sole distribution rights to the new car. The understanding was that DeLorean Motor Cars Ltd would endeavour to employ 2,000 persons within five years, producing 30,000 cars per year (DETI, 2004, p. 7). Work began on a factory at Dunmurry in October 1978.

Deciding he needed a British design team to engineer the new car, preferably one with a racing pedigree, DeLorean approached Sir Colin Chapman, the founder and chairman of Lotus Cars Ltd. The financial arrangements were unusual. Lotus was to be paid for its development work, not directly but through an off-the-shelf Panamanian company re-registered in Switzerland as GPD Services. GPD was originally paid £8.8m for the work, followed by a further £11.5m on a cost-plus basis for 'additional development work'. Subsequently it turned out that Lotus never received the initial £8.8m and for some years its destination remained a mystery. At the time, of course, it was not even known that there *was* a mystery.

By Spring 1980, the project was falling behind schedule and running short of cash, partly because it was covertly paying for DeLorean's multi-penthouse lifestyle. Knowing that the new Conservative government could not contemplate the political consequences of shutting down the plant before a single car had been produced, DeLorean asked for more funds. Using the pretext of a clause in the original agreement which provided for adjustments in case of inflation, his demands escalated rapidly from £2m to over £20m. The Northern Ireland Development Office, meanwhile, had received consultants' reports which confirmed that the prospect of a cash shortfall was only too real. It was agreed that the Department of Commerce would guarantee additional bank loans up to £14m on the understanding that there would be no more assistance.

In December 1980, the month in which the first car rolled off the production line, DeLorean was back for more. In a pattern which was settling into a routine, he claimed that he was owed money by the UK government, that he would sue unless he got it, and that he would close down if he did not. His memo on this occasion read, 'It is squarely up to the NIDO. If you cannot or will not provide the balance of the funding you owe us, we plan to shut down our operation on both sides of the Atlantic'. (Levin, 1983, p. 181).

DeLorean's most blatant exploitation of the pressures on the Northern Ireland administration, however, occurred in May 1981 when Bobby Sands, the MP for Fermanagh and South Tyrone and IRA man, died in the Maze prison after 65 days on hunger strike. In the

ensuing riot, some temporary sheds at the Dunmurry plant were damaged by improvised petrol bombs. On the testimony of DeLorean's Vice President, the damage was minor (Haddad, 1985, p. 153) but DeLorean took the opportunity to extract an extra £7m from the government in 'compensation'. Altogether, through these various episodes, the company received £77m of taxpayer's money.

Meanwhile production of the DMC12 was building up, to the accompaniment of awkward questions from sceptical critics in the House of Commons. The misgivings came to a head in 1981 when DeLorean was planning to float a holding company which would have isolated the profits flowing from the Northern Ireland company from its debt obligations to the British government. The flotation would also have enriched DeLorean to the tune of $160m and rendered his colleagues' stock options in the existing companies worthless. Appalled at this unprincipled manoeuvre and at DeLorean's way with British government money, his former private secretary decided to blow the whistle. With publication imminent in the *News of the World*, the British Prime Minister, Margaret Thatcher, announced that the Attorney General's office would begin a police enquiry.

At that point Rupert Murdoch, the proprietor of the newspaper, and Lord Goodman, the Master of University College Oxford and a feared libel lawyer, became involved, though precisely how is a matter for conjecture. After a decidedly perfunctory investigation, it was decided that there was insufficient evidence of wrong-doing for the investigation to proceed. In one of those subtle changes of stage lighting for which the British establishment has become a by-word, nothing moved yet everything changed. The enquiry, it was pointed out, had been into the *allegations*, not, perish the thought, into DeLorean himself. That enquiry was now concluded. Through the good offices of Murdoch, DeLorean was now able to retain the legal services of Lord Goodman, through whom he announced that he would be suing everyone concerned. The total mentioned was $250m.

Despite Lotus' best efforts, the car, in its production-line form, was plagued with faults. According to the technical director of *Car & Driver*, the initial batch received in the USA fell 'abysmally short of any commercial standard of acceptability' despite a spend of about $2,000 per car on rectification (Fallon and Srodes, 1983, p. 288). Even in its 'mature' form the car suffered from excessive fuel consumption, rapid tyre wear, an under-capacity alternator and malfunctions of the gull-wing doors such that one would-be 'horny bachelor' found himself entombed for several hours in defiance of all attempts to prise him free.

After an initial flurry of interest, sales consistently fell short of the output of the Dunmurry production line. Of the 8,333 cars produced before the receivers were called in, 7,401 had been shipped to the United States and of these only 3,347 had been sold.

At the end, Dunmurry might in a sense be said to have fulfilled its promise of employment. In a last roll of the dice DeLorean had taken on an extra 900 workers in summer 1981, bringing the total to 2,400. The problem was that 800 cars a week were being produced against sales of half that figure. They were piling up on the quaysides of Belfast and in the warehouses of California. After yet another approach from DeLorean, Jim Prior, the new Secretary of State for Northern Ireland called in a receiver.

Eight months later, just as DeLorean was making a last-ditch attempt to finance a rescue plan for the Northern Ireland factory, he was picked up by the FBI in a sting operation and charged with the possession of 60lb of cocaine intended for resale. In 1985, he was acquitted after a five-month trial, only to face the claims of several hundred creditors. Perhaps in order to fortify themselves for the tribulations ahead, DeLorean and his wife became born-again Christians and were baptized in the swimming-pool of their New Jersey Estate.

The financial repercussions ground on for over twenty years. Throughout its four-year career, the DeLorean Motor Company Ltd. had received clean audits from Arthur Anderson, in consequence of which Anderson was excluded from public contracts by a succession of Conservative governments. After an assiduous campaign of ingratiation, however the firm was rehabilitated by Tony Blair's incoming New Labour administration until the larger audit failures at WorldCom and Enron finally sank it for good (Cohen, 2004).

The results of the various attempts to recover the public funds were reported by the Northern Ireland Department of Commerce, by now renamed the Department of Enterprise, Trade and Investment. The DETI report appeared in February 2004, 22 years after the insolvency.

In November 1997, the Department received a payment of £20.72 from Arthur Anderson in a mediated settlement of claims for negligence, primarily based on Anderson's failure to report 'the GPD fraud.' Unfortunately, the Department's disbursements in pursuing these claims had amounted to £20.32m, quite apart from its own administrative expenses, which were described as 'considerable'.

From the Receivers, the Department received £13.8m in cash and the Dunmurry factory, valued at £1.8m, *in specie*. The Receivers, for their part, realized £24.2m from the realization of assets (£12.1m net of

payments) and £13.8m from litigations (£8.2m net of payments). The £13.8 from litigations came from an action relating to the monies which had gone missing from GPD Services. Investigations by the Receivers, the Serious Fraud Office and the police revealed that the missing funds had been diverted for the personal benefit of DeLorean, Sir Colin Chapman and his Finance Director, Mr Fred Bushell (DETI, 2004, p. 52). The amounts recovered included £5m from DeLorean, £4.7m from the estate of Sir Colin and £3m from Bushell.

On the basis of this complex tale – far more so than can be related here – Fallon and Srodes (1983, p. 3) make what may appear to be an excessively modest recommendation, 'The DeLorean story warns us to be more cautious and reluctant to entrust our dreams to others.'

## Government subsidies for small business in the UK

In the UK much of the government financial assistance to the entrepreneur has taken the form of tax concessions. In 1989, Chancellor Norman Lamont revealed that over 80 forms of tax relief had been specifically targeted at small businesses since the 1979 General Election (Lamont, 1989). Since taxes are generally unpopular, the misuse of these schemes as a means of avoiding tax has rarely attracted much public opprobrium. The nearest thing to an exception has been the Business Start-Up Scheme (later renamed the Business Expansion Scheme).

Introduced in 1981 as part of the government's campaign to create a US-style enterprise culture, this scheme allowed individuals to obtain tax relief on investments up to £40,000 in unquoted companies. In fact very little of the qualifying funds ever found its way into high-risk, high-technology ventures as had originally been intended. Soon 'companies' were formed to rent private property, breed racehorses, deal in antiques and antiquarian books and to take custody of the fine wines and works of art laid down by wealthy connoisseurs. In 1984–5 these and other asset-backed 'ventures' accounted for 78 per cent of all the finance raised direct from the public under the scheme (Mason, Harrison and Harrison, 1988, pp. 23–4; Mason and Harrison, 1992). Speaking in 1989 Lamont declared that he was 'not at all embarrassed by the fact that £300 million to £400 million seems to have been invested in private rented accommodation.' As for the wines, one well-connected commentator explained, 'With the advent of the inspirational 1982 vintage in Bordeaux, and Business Expansion Scheme tax shelters, it became acceptable – desirable, even – for consumers to sit like contented hens on their maturing stocks of fine wine.' (Rose, 2002; see also Storey, 1994, p. 224).

An enthusiast for the enterprise culture, New Labour's chancellor, Gordon Brown was nevertheless unimpressed by these sessile interpretations of it. In a radio interview of 1995 he estimated that the Business Expansion Scheme was then costing over £250m per annum in lost revenues, with little in the way of productive investment to show for it (Brown, 1995). In the 1997 budget, a renamed Enterprise Investment Scheme, was redesigned so as to exclude asset-backed investments and those which guaranteed a return to the investors. In 2000, the Paymaster General reported that companies obtaining tax relief under this revised scheme were being used to take ownership of valuable shares, the rights to which were then sold on as tax-exempt assets of the company. And so it continues.

The Venture Capital Trusts set up in 1994 'to help provide more funds where they are most needed, among dynamic, innovative growing businesses' appear to be have followed a similar path. According to Sir David Cooksey, quoted in the Report of the House of Lords select Committee, these trusts 'are now being used to fund asset backed schemes with significant investments in property'. (HL 62, 1997 para 2.27). Insofar as this has been the case, the tax concessions intended to promote the spirit of enterprise have simply been absorbed into passive accumulations of wealth.

Reflecting the thinking of the Thatcher government which introduced it, the UK's equivalent of the Small Business Administration's main loan programme was explicitly aimed at the promotion of entrepreneurship rather than the preservation of small business as a way of life. The Small Firm Loan Guarantee (SFLG) also differs from the American programme in that there is no direct government lending to small business in the UK (though grants and equity funding are available for specific purposes), and in that the interest rates on guaranteed loans, far from being subsidized, are subject to a premium. Both the interest rate premium and the coverage of the loan guaranteed seem to have varied according to the relative priority of assisting the entrepreneur and containing the costs of doing so (Binks, 1985). In its current version, the scheme guarantees 75 per cent of loans of up to £100,000 for businesses with a turnover of less than £3m (£5m for manufacturing).

Although the SFLG was first introduced in pilot form in 1981, there has been little hard information on its performance until quite recently.[5] A 1999 KPMG report for the Department of Trade and Industry on Phase 6 of the programme estimated that over a period of 18 months from receiving their loans, the firms involved had created between 5,400 and 9,500 jobs, net of displacement effects. The total

cost to the taxpayer over the $3^1/_2$ years of Phase 6 was about £90m, most of which was accounted for by defaults. The cost of each job created therefore lay in the rage £9,500 to £16,600, whilst turnover in the firms receiving the loans had increased by an average of £16,000–£29,500 over the 18 months. On this basis the report concluded that economic case for continuing with the scheme was strong.

On closer examination the case is less clear cut. The number of firms receiving additional loans in Phase 6 seems to have been about 16,500 (a derived figure because the data presentation in the report falls well short of normal professional standards). It is also unclear whether the quoted average increase in turnover excluded business taken from competing firms (KPMG, 1999 Para. 1.4.4.3). Assuming that it did, and assuming that 1/3 of the turnover was profit, the £90m loss sustained by the UK taxpayer over the 31/2 years of the programme resulted in an aggregate profit to the entrepreneurs of between £88m and £162 over the 18 months following receipt of the loans. What happened to the additional turnover and employment after the 18 months evaluation period, and what proportion of the loans subsequently defaulted were all questions on which the authors of the report were in no position to comment. What can be concluded, however, is that a substantial portion of the aggregate creation of wealth attributed to the entrepreneurial activity was, in effect, a simple transfer from the public purse.

Not immediately obvious from the KPMG report, but explicitly confronted in the Graham Reviews of the SFLG (Graham, 2004a, 2004b) is the extraordinary rate of default on SFLG loans as compared to similar schemes in other countries. In the SBA main loan programme, for example, the typical rate has been about 3–4 per cent, roughly what would be expected on normal commercial loans to small companies. In contrast, the default rate on SFLG loans currently lies in the range 30–35 per cent and in the late 1980s was an extraordinary 60 per cent. (Graham, 2004b, Para 4.12). It also emerged from the Graham Review that experienced commentators were unaware of these very high default rates (ibid, Para 4.3). The contrast with the blitz of adverse commentary and investigative reporting in the USA which followed revelations of similar default rates on the EOL programme is marked. One possible explanation is the different position occupied by government schemes of support for small business in the New Right thinking of the two countries. In the USA government 'interference' of any kind is an object of suspicion whereas support for the small business in the UK is thought of as integral to the promotion of an enterprise culture. Or it may simply be

that the habit of suppressing the adverse consequences of government policy is more ingrained in the UK than in the USA.

Graham's suggestions as to why the SFLG default rates should be so high have a familiar ring about them. That loans are made disproportionately to vulnerable start-up companies is dismissed as accounting for only a small part of the problem. That they are intended for entrepreneurs who cannot provide collateral is more to the point. The lack of collateral may indicate that the firms receiving the loans are already over-leveraged or that they generate insufficient cash flow to service a loan. There may also be an element of moral hazard in that the lack of collateral may be more apparent than real. There is anecdotal evidence that some entrepreneurs, encouraged by business advisors, have held back their personal assets, preferring the SFLG as a source of 'soft' loan capital. Lenders, for their part, may have been less than scrupulous in determining the ability to repay in the presence of the government guarantee. In cost terms, a 30–35 per cent default rate translates into about 20 per cent of bad debt. With 75 per cent of this guaranteed by government, the outcome for the lenders is an effective bad debt ratio of about 5 per cent, easily compensated by interest rates between 50 to 100 basis points over normal commercial rates (Graham 2004b, Para 4.8; 2004a, p. 28).

In the UK, government support for small business in the form of cash has been as niggardly as its consequences have been depressing. Introduced in 1983, with a budget of £23.2m, the Enterprise Allowance Scheme gave grants of £40 per week for one year in order to assist unemployed persons to become self-employed. In order to receive even this level of assistance, participants had to find £1,000 of their own to invest in the business. Most of the businesses set up with these very slender resources were in services such as motor repair and hairdressing, characterized by low entry costs, and by localized and overcrowded markets (Storey and Johnson, 1987; MacDonald, 1992, 1996). By 1987, the scheme was costing about £200m but the failure rates were high even by small business standards, amounting to 34 per cent over 18 months, and 44 per cent over 3 years. For many of the new 'entrepreneurs', the experience had been a grim struggle of self-exploitation which ended in failure, debt and insolvency. In the aptly-chosen words of Bryson and White (1996), many of the newly self-employed turned out to be passive risk-bearers, not active risk-takers. The conclusion of Corner and Harvey (1991, p. 61) seems excessively restrained: 'it is not at all clear that the considerable expenditure has resulted in the creation of a social climate overwhelmingly favourable to the values of capitalist enterprise.'

If anything, the consequences of more localized initiatives aimed at alleviating unemployment in Great Britain's rust-belts have been even more depressing. Following the shut-down of Great Britain's nationalized deep-mining coal industry, the Thatcher government decided to demonstrate the potential of the entrepreneurial alternative. British Coal Enterprise was a loan scheme set up in 1985 'to assist in the creation of long-term job opportunities in the coalfields of the UK and, hence, to assist in wealth creation for the country as a whole.' Rees and Thomas (1991) interviewed 23 entrepreneurs who had set up in business with assistance from the scheme and 21 redundant miners. Only two of the miners had become self-employed, neither of them with assistance from scheme. One had become a construction subcontractor with his brother and the other ran a small shop from a wooden shed purchased from another redundant miner. The entrepreneurs who had benefited from the scheme had no connection with the coal industry. They tended to be relatively well educated, with family backgrounds in small business, qualifying for assistance only because of their location.

## Conclusion

The cases discussed in this chapter fall into two groups: those in which entrepreneurship has been thought of as a means of achieving some specific public purpose and those in which public funds have been employed as a means of encouraging entrepreneurship in general. In both categories, there have been success stories and the 'enterprise industry' (Storey, 1994, p. 304) can be relied upon to make much of them. The purpose of this chapter is to point out some of the problems.

Where the achievement of public purpose is concerned, the subsidy of entrepreneurship has turned out to be a kind of moral buffer zone in which community aspirations, and even idealism, have encountered certain characteristic features of the entrepreneur: 'economic motivation,' lateral thinking, and an ability to sense what motivates people. The communities which subscribed to the 19th century American railroads, the politically-motivated sponsorship of the small business way of life and of 'black capitalism' as a way of easing racial tensions have all proved highly vulnerable to those who understood these values very well, but as points of vulnerability to exploit rather than a moral commitment to a common mission. Similarly in the UK, the vision of community reconciliation in a fully-employed Northern Ireland and even as little of idealism as there was in the Thatcher

government's promotion of enterprise, have been exploited in ways that have had little to do with 'wealth creation' – except, that is, for the individuals concerned. Charged with the responsibility for achieving some public work through the creation of risk-taking ventures, the record shows that entrepreneurs have been consistent only in enriching themselves. Not always, but often enough to constitute a generic problem, they have proved adept at diverting public funds into their own pockets, at exploiting contractual loopholes so as to reap the rewards of risk whilst taking little of it and at playing on the vulnerability of officials who are held accountable for the outcomes so as to extract further support from the public. On those occasions when enterprises have been created as intended, moreover, the very fact that they have performed vital public functions has made it possible for those controlling them to extract monopoly rents.

Many of the same remarks apply to the public sponsorship of entrepreneurship in general. The US subsidy of venture capital funds and the UK Small Business Expansion scheme are both schemes whose major achievement has been the enrichment of already wealthy individuals at minimal risk to themselves and in ways which have had little to do with genuinely productive investment. In the USA, the attempt to enable small business to compete on level terms by offering loans of public money at preferential rates has attracted borrowers who were perfectly capable of obtaining loans from commercial lenders.

Intended as a means of financing otherwise capable entrepreneurs who lacked the collateral to obtain loans from commercial lenders loans, government-backed loan guarantee schemes both in the UK and the USA have been turned to rather different purposes. In the USA banks have encouraged normally viable borrowers to take out government backed loans as a means of gaining extra security at no cost. In the UK it has recently turned out that the default rates on these loans has been extraordinarily high and two explanations for this have been authoritatively advanced. The first is that banks have been using the guarantee as a means of covering the risks of expanding their business into areas which would not otherwise be viable. The second is that entrepreneurs have taken out the loans with little regard as to how they would be repaid, regarding them as 'soft money'. The line between this last attitude and entrepreneurial risk, however, is fine indeed. It could be argued that the government is getting exactly what the taxpayer has paid for, in which case any evaluation of the programme needs to offset the cost of the write-offs against the benefits.

# 6

# Science, Enterprise and Profit: Ideology in the Knowledge-Driven Economy

## The new economy: ideology, intelligibility, truth

As our notions of Britain's Druidic past are woven around the mute facts of burial mounds and stone circles, so the working model of the future now familiar as 'The New Economy' has been constructed around such totemic sites such as Silicon Valley and the 'Technopolis' of the Austin/San Antonio corridor (Smilor, Kozmetsky and Gibson, 1988). Through authoritative repetition, and because of their real-life settings, the plot and characters of both sets of stories have acquired a patina of facticity which tends to conceal the contestable nature of the interpretations on which they depend. Thus the overt plotline of a recent collection on Silicon Valley (Miller, Lee, Hancock, and Rowen, 2001) is the conventional one indicated in its subtitle, 'A Habitat for Innovation and Entrepreneurship.' Reviewing this collection in the Times Higher Education Supplement, the founder of the Venturefest International Technology Fair in Oxford has pointed out that there is also, 'threaded into the narrative,' a story of heavy and continuing dependence on software, device and communications engineers, many of them imported from China and India (Johnson, 2001). For Johnson, this alternative reading is highly consequential, raising questions about how far the valley phenomenon can be emulated in the UK without active measures to create similar engineering capabilities.

This chapter is about certain episodes in the making of the story of the New Economy. As told here (and this, too, is a representation), it is a story of the erasure of detail and difficulty in a search for simple plot-lines and bold solutions; of a failure of nerve which clings onto the clichés of enterprise rhetoric when faced with unfamiliar problems; and of a reliance on that brand of conventional and consensual

wisdom which is produced by persons of a certain eminence who have developed the habit of listening only to each other. It is, in short, a chapter about ideology as applied to the question of the science-based industry.

In its classic Marxist usage, ideology refers to a representation of reality which is systematically distorted so as to legitimate or obscure the power and material interests of a dominant class. The effectiveness of ideology, understood in these terms, is a function of the conviction of the dominant class that they are acting in the general interest and of the acceptance of this position by subordinate classes. It is a function, in other words, of its hegemony.

Uneasy with the objectivist presumptions involved in the attribution of distortion to social perspectives, and to their anchorage in assumptions of social cleavage, the anthropologist Clifford Geertz (1993) proposed an alternative view of ideology which was recognizably rooted in the functionalist traditions of his discipline. Instead of a distortion of a presumed pre-ideological truth, ideology, he argued, should be seen as a positive construction of meaning through which particular social groups render their world comprehensible and amenable to purposive action. Geertz's essay breaks off at this point. What he did not explore is how the effectiveness of an ideology, understood in such terms, might be conceived.

Depending on whether the primary focus is on culture or social action, there seem to be two immediate possibilities. A first indicator could be the confidence displayed by the group in their grasp of the problems confronting them and their ability to act upon them. A second is the correspondence between their anticipation of the consequences of these actions and the actual outcomes, as perceived by the group. Since it seems unlikely that the effectiveness of an ideology in the first sense could survive persistent failure in the second, it appears that Geertz's schema cannot, in the end, escape the Marxist question of distortion. The problem, for those who cannot afford the patience and detachment of the anthropologist, is that the reckoning may be a long time in coming and expensive when it does so. For this reason the social critic is driven to enquire before the event into the likely consequences of ideologically-driven social action. Inevitably this involves raising the question of the realism of the assumptions behind it, whatever the epistemological difficulties. As Geertz also points out in the same essay, one of the roles of social science in relation to ideologies is to 'To criticize them, to force them to come to terms with reality.' (Geertz, 1993, p. 232)

This chapter is an exploration of the ideology of enterprise in these terms. The specific locale is the technology transfer policy of the Blair government, as articulated in the 1998 Department of Trade and Industry White Paper on Competitiveness (DTI, 1998), and in the first of its policy instruments, the Science Enterprise Challenge. This latter might be seen as a continuation of the project of infusing a culture of enterprise into UK Higher Education, a project initiated by the Thatcher government's 'enterprise in higher education' programme.

The chapter begins by demonstrating that the official diagnosis of the UK's shortcomings in technology transfer is indeed one of enterprise deficit. It is then argued that the infusion of enterprise as a solution relies heavily on certain ill-defined 'entrepreneurial' capacities to achieve the catalysis of science, capital and labour into new products, companies and industries. As an explanation of how this is supposed to happen, entrepreneurship, it will be argued, is no explanation at all. As is asserted within enterprise ideology and amply confirmed by the confusions of research on the point, its internal workings remain a mystery. Often, in fact, the word is used simply as a post-hoc recognition that a new venture has been created. As a policy for the commercial exploitation of science, it follows, the nurture of entrepreneurship is not so much a solution as the expression of a wish than one would appear.

Most of the measures proposed in the White Paper reflect this vacuum at the heart of enterprise thinking. Consistent with the belief that enterprise is a natural human behaviour which will emerge spontaneously once the barriers are removed (Morris, 1991), most of its provisions are of an enabling character. Business incubator facilities, access to capital, and training in business skills are not so much ways of producing enterprise, but of making it welcome should it appear.

The exception, the one supply-side measure in the White Paper and the Science Enterprise Challenge, is enterprise education. Although this is now a large-scale industry, the ontological status of entrepreneurship as a mystery wrapped in ideology ensures that controversy will continue over whether such teaching is possible at all. The thinking in the report of the Committee of Vice-Chancellors and Principals (CVCP, 1999) seems to be that it is possible, but that its credibility and effectiveness depends on the involvement of 'real' entrepreneurs as role models. Whilst it is not certain at the margin what attitudes and behaviours in university scientists are to be encouraged by these means, the language of the White Paper and the CVCP response to it makes it clear that positive attitudes towards risk will be central to the package.

On the point of the supposed connection between risk and entrepreneurship, the Chapter examines three strands of research. Firstly, an association between entrepreneurship and risk-tolerance can only be demonstrated within psychometric research by the manipulation of samples so that it becomes true by definition. Secondly, surveys and case studies of small business owners show that the vast majority of them are not risk-takers. Thirdly, research on the formation of science-based new ventures frequently tells a story of the transfer or avoidance of risk, rather than engagement with it. In contradiction to its portrayal in enterprise ideology, therefore, risk-taking appears to be exceptional as a feature of new venture creation in general, and in science-based enterprise in particular. Arguable, this is a perfectly rational response to the situation in which a science-based start-up finds itself. The biotechnology debacles discussed in Chapter 7 suggest that if risks are taken the recriminations in the case of failure will be swift to follow. Whilst this does not necessarily mean that the encouragement of risk-taking will fail in its objectives, it does mean that it is a policy which is informed more by faith than by evidence and experience.

Considered as a reality test, therefore, the project of the knowledge-driven economy will pose a number of questions for enterprise ideology. Will the spirit of enterprise amongst university scientists be set free by the presence of business incubator facilities, the availability of capital and business training? Will education in enterprise encourage new 'can-do' attitudes towards risk and uncertainty, and, most crucially, will the consequence be a proliferation of new products, companies and industries built on university science? As always when official rationales are at stake, there will be claims of vindication on the basis of ambiguous instances. Somewhere in the messy encounter of ideology and outcome, however, a sort of retrospective truth will emerge.

## '... the UK science base maintains centres of excellence on a par with any in the world'

(HL 62, 1997, para. 6.3)

Despite its racy presentation, the thinking in the White Paper was far from new. In fact it is best approached as the latest manifestation of an official diagnosis which has congealed over a period of years. Its immediate antecedents were the second report of the House of Lords Select Committee on Science and Technology, *The Innovation-Exploitation Barrier* (HL 62, 1997), and the Bank of England report *The Financing of Technology-Based Small Firms* (1996). Earlier intellectual ancestors,

extensively quoted in the 1997 Select Committee Report, include the 1993 report to Parliament by the Chancellor of the Duchy of Lancaster, *Realising our Potential: A Strategy for Science, Engineering and Technology* and the first report of the House of Lords Select Committee, *Innovation in Manufacturing Industry* (HL 18, 1991).

The Bank of England report identified the key question as, 'why not all the potential benefits that might flow from the exploitation of research, much of which is Government funded, can be captured by the private investor'.[1] This framing of the issue was adopted without modification in the 1997 report of the House of Lords Select Committee (HL 62, 1997, para 2.5), presumably because it reflected their Lordships' view of the proper objectives of a science policy. The publicly-financed 'science base' to be thus exploited for private profit was taken to be largely sound, although some reservations were noted. Representatives of the pharmaceutical industry believed that the UK science base was falling behind international standards, both as a source of research and of skilled manpower, as a result of chronic under-investment. Although the Committee argued that the heavy capital investment required for research in pharmaceuticals made it a special case, the same concern was also expressed, this time in general terms, by Sir Gareth Roberts, then Vice Chancellor of the University of Sheffield and a former Director of Research at Thorn-EMI (HL 62, 1997, para. 3.7). Sir Gareth also feared that excessive pressure in the direction of near-market product development might lead to an under-investment in long-term 'blue skies' research (HL 62, 1997, para. 3.8). As matters stood, however, the Committee took the view that relative prominence of the UK as a producer of scientific papers testified to the general excellence of its science base. That this coincided with a below-par record as a holder of patents indicated that the problem lay downstream of the research itself. It was this reasoning which led to the diagnosis of an 'innovation exploitation barrier', a term adopted as the title of the report. The difficulty lay not with the UK's output of research, but with an inability to apply it to the creation of new products and new industries (HL 62, 1997, para. 3.6).[2]

Since much follows from this specification of the problem, it is important to examine the assumptions and the reading of the evidence on which it is based. Firstly, as we have already seen, it discounts reports of corrosion of the research infrastructure due to chronic under-investment, even though such reports are corroborated (anecdotally, but frequently) by the many prominent scientists who have given precisely this reason for joining the brain-drain. Secondly, publication statistics

are a doubtful indicator of the value of research as a source of product application. Especially since the Research Assessment Exercise, the comparatively high publication rates achieved by UK scientists could indicate that much of their effort has been diverted into publicizing rather than carrying out their research. Thirdly, all such quantitative indicators of research output discount qualitative differences. It is possible, for example, that the prestige order of UK science favours the publication of displays of theoretical virtuosity rather than the discovery and description of the kind of applied scientific effects which might lead to product application. A tendency of this kind might be reinforced by a lack of up-to-date facilities and would also be consistent with the UK's comparatively poor record as a holder of patents. Fourthly, the concept of a barrier between innovation and exploitation rests on a sequential conceptualization of new product development in which basic scientific discovery is followed by the development of science-based technologies which are, in turn, adapted to particular products. That the actual sequences of events is often very different to this 'linear model' is well known (for example, Massey, Quintas and Weild, 1992, p. 78). Difficulties in developing a science-based technology, for example, may raise problems with the theoretical structure of the underlying science which may then feed back into basic research. As is noted in the report itself (HL 62, 1997, para. 3.13), the unreality of the linear model was pointed out to the committee by Dr Elizabeth Garnsey but the implication that the problem may *not* lie wholly downstream of the UK's research output was ignored. It is possible, for instance, that part of the problem is a lack of feedback from product application to basic research. The degree of institutional separation between basic research and product development in the UK is unusual amongst advanced industrial nations. Traditionally this was the consequence of a cultural antipathy between industry and the universities, although this was partially compensated for by industry's own involvement in basic research. As the first has eroded, so, in compensation, has the second. The modern university may be more receptive to the industrialist's concerns (and cash), but much of the industrial research effort which might have helped to define university research programmes has disappeared as a consequence of the increasing short-termism of UK companies and the 1980s run-down and closure of publicly-supported non-university research facilities.

Since the Committee showed itself to be aware of at least some of these caveats, its assumption that the science base is fundamentally sound must have been founded in a belief that they could be discounted in the broad picture. The impulse, in other words, was to

reduce complexity in order to achieve clarity of purpose. Drives of this kind, seem to be programmed into the procedures of all official committees of investigation. Their heavy reliance on authoritative testimony, for example, is a form of complexity-reduction in which trust substitutes for substantive evidence (cf. Luhman, 1979). This also means that their output is ideological in Geertz's terms, in that their remit is precisely to construct problems as intelligible and accessible to intervention: intelligible, that is, to the relevant policy-makers and responsive to their preferred instruments of intervention. Requirements of this kind place severe limits on the manner in which problems can be conceptualized and on what counts as a solution. Viewed in this light, the Select Committee's conclusion (assumption?) that the UK science base could largely be taken for granted, may reflect a general inability amongst UK policy-makers to engage with scientific and technological issues, combined with a neo-liberal distaste for the 'enclaves' of professional expertise (and, presumably, self-interest) through which this might be achieved (Rose, 1999, p. 147). The Select Committee's report obviates any need to do either by displacing the problem onto the field of business and commerce. There it can be characterized as a generic failure of exploitation (that is, one not specific to particular sciences or classes of product), and thereby delivered, as we shall see, into the hands of interested bodies of opinion which have ready-made solutions on offer.

For the manner in which the diagnosis of enterprise deficit was translated into policy, it was also important that Committee tended to locate the science base within the universities and the capacity to exploit it in industry. Probably realistic as a picture of the UK situation, the consequence was an assumption that the innovation-exploitation barrier coincides both geographically and culturally with the interface between universities and industry and that it could be broken down, or at least softened up, by fostering closer relationships between the two. In practice, there has been rather more emphasis on encouraging **H**igher **E**ducation to **R**each **O**ut to **B**usiness, **I**ndustry and **C**ommerce than the converse, as with the acronymic HEROBIC programme. Even in pursuit of a neo-liberal agenda, ironically enough, the leverage of public funding has proved a convenient tool of intervention. The expectation that university science will automatically be fertilized by such contacts, however, may run up against the problem that 'industry' cannot always be relied upon as a source of the motivation and ability to exploit research. The classic industrial spin-off story, after all, is one in which a scientist or engineer starts up a company out of sheer

frustration at the unwillingness of the employer to do exactly this (see, for example, Fayolle and Livian's 1995 study of the formation of spin-off companies by French engineers).

As this last observation indicates, the definition of the problem as one of exploiting university science, ignores the fact that university spin-off is not the only model of the science-based start-up. In the USA and Germany, many high-technology companies have originated in industrial research facilities rather than universities (Roberts, 1991; Preston, 1999, Pfirrmann, 1999), and their base technology has been developed, or at least acquired, in industry, not in the science base as defined by the House of Lords Committee. In this connection, it has been found by Siegel, Siegel and Macmillan (1993) and Roberts (1991) that the founder's experience within the relevant industry is the best single predictor of the growth rate of new ventures. The implication is that the creation of new science-based ventures might benefit from policies aimed at revivifying the UKs industrial R&D effort as well as from closer contact between industry and the universities, quite apart from the more obvious benefits of such policies.

## Adding enterprise to science

Allowing for the moment, the Select Committee's conception of an innovation – exploitation barrier, the conclusion that this signified a failure of entrepreneurship was assumed rather than argued. An alternative, and perhaps more charitable reading, might be that 'entrepreneurship' simply served as the report's portmanteau term for whatever processes might connect scientific research and commercial products. Either way it is a word heavy with connotation. At least since the UK government's 1980s project of repositioning acquisitive individualism as the acceptable face of capitalism, a diagnosis of enterprise deficit entails strong assumptions about the shape which science-based product development must necessarily take.

There are two possible reasons for the committee's largely unreflective adoption of entrepreneurialism as a solution to the problems of technology transfer: that it simply reflected a general hegemony of enterprise ideology and that entrepreneurialism has particular attractions for those charged with the making of science policy. The notion that the British public at large now views the social world through the lens of enterprise discourse has already been rejected as inconsistent with the available evidence in Chapter 1. That leaves the second possibility.

What, then, is the appeal of enterprise ideology to those charged with making policy on the industrial application of science? If they are not simply echoing public opinion, are they perhaps people involved in, or who have absorbed the language and presuppositions of, the business of 'wealth creation?' Without questioning the attraction to wealth and power clearly felt by the prime mover of the DTI White Paper, Peter Mandelson, it is suggested here that entrepreneurialism offers the additional comfort of framing the problem in the familiar terms of business activity rather than the unfamiliar ones of applied science or new product development. It achieves this, moreover, whilst offering attractively simple solutions, since the prospect is one of achieving prosperity simply by removing the institutional barriers to enterprise. The appeal of entrepreneurialism to policy-makers, in other words, is grounded in something more than its politics. It renders problems intelligible in terms of their education and background, and represents them as amenable to the institutional means through which they typically attempt to realize their initiatives. The ministers of the Blair government and the senior civil servants with whom they deal are not scientists for the most part; nor do they have experience of new product development. As a framing of the problem of technology transfer and a solution to it, entrepreneurialism obviates the need for any such expertise.

Once a particular vocabulary of motives gains a foothold in the circles of policy-making, there are always academic cheerleaders on hand to join in the celebrations of reality (Berger and Luckman, 1967) through which the powerful and influential convince each other that the world is indeed as they think it to be, and that the policies flowing from this apprehension are indeed working as planned. Thus the House of Lords Select Committee was able to cite one witness to the effect that 'The UK is in the middle of a culture change towards risk taking,'[3] commenting that this is 'perhaps the essential lever to lower the innovation-exploitation barrier.' (HL 62, 1997, para. 2.17). If this is the case, there is evidently much to do, since 'When it comes to the culture of entrepreneurial risk taking there is still quite a gulf between the UK and the US' (HL 62, 1997, para. 2.19).

A considerable role in effecting this cultural transformation was envisaged for the business schools, not only in the provision of conventional business and management skills to those scientists already inclined towards entrepreneurship, but also in the diffusion of the entrepreneurial spirit itself. Noted with approval in this respect were the collaborative 'entrepreneurship projects' already running in some business schools, in which students of science and technology worked

with those from business schools in developing business plans for the commercialization of new technological developments (HL 62, 1997, para. 5.22). Precedents in the USA suggested that the entrepreneurial message of these projects might be reinforced if they were run on a competitive basis, with prizes for the winners in the form of seed capital.

The Committee also endorsed a suggestion in the Bank of England report that 'serial entrepreneurs' might have a key role to play, not just in the financing of new ventures but in 'help[ing] to motivate future generations of entrepreneurs by passing on their expertise and enthusiasm' (HL 62, 1997, para. 2.5). The practice of asking 'Business Angels' of this kind to tutor the aforementioned student entrepreneurship projects was also seen as desirable (HL 62, 1997, para. 5.23).

The Select Committee report is a relatively sober document. Its references to entrepreneurship are comparatively thin on the ground and although they contain ideological elements (such as the claim that entrepreneurship constitutes a distinctive expertise and that it is bound up with risk-taking), the word is largely used in its descriptive, as opposed to its celebratory sense. Broadly speaking, 'entrepreneur' is simply used as a term for someone who has set up a successful (science-based) company, whilst 'entrepreneurship' is a portmanteau term for whatever capacities this might involve.

Though the 1998 White Paper on Competitiveness (DTI, 1998) repeats much of the analysis and conclusions of the Select Committee, its tone is rather different. Produced during the tenure of Peter Mandelson at the Department of Trade and Industry, and heavily influenced by the thinking of 'Tony's brand new guru,' Charlie Leadbeater (Wintour, 1999), the White Paper signifies the uncritical absorption of entrepreneurialism into the project of re-making the UK as a 'Knowledge Driven Economy.' In its 11,761 words, 'enterprise', 'entrepreneurship' and their immediate derivatives occur 80 times, a strike rate of one in 147 (over twice that of the one in 360 of the Select Committee Report). Compared with the muted tone of the Select Committee, moreover, the White Paper's invocations of entrepreneurialism are high-pitched and slightly manic. Some of the phrases in which they occur could have been lifted straight from the speeches of Lord Young.[4] Consider the following:

> ... we will only succeed in building the knowledge driven economy on the back of more dynamic innovation and more vigorous entrepreneurialism.

> … Entrepreneurship and innovation are central to the creative process in the economy and to promoting growth, increasing productivity and creating jobs.
>
> DTI, 1998, p. 5, 6

Notice how these excerpts arrange the central quality of entrepreneurship within a setting of its constituent but lesser virtues, 'dynamism', 'innovation', 'vigour' and 'creativity'. Notice too its representation as the sole source of such incontrovertible goods as increasing productivity and job creation. Such statements place a tremendous weight of expectation on entrepreneurship, and in this respect they are a fair representation of the White Paper's policy emphasis. Like the Report of the Select Committee, this assumes that the UK science base is fundamentally sound and relies heavily on the production and facilitation of entrepreneurship as a means of exploiting it.

## Enterprise as mystery

How, then, is this supposed to happen? What are the actual processes by which entrepreneurship will create new products and the new industries based upon them? Typical of the White Paper are statements such as the following:

> We also need entrepreneurial individuals with the vision to turn new ideas into winning products and processes. Entrepreneurship is the lifeblood of the new British economy …
>
> Entrepreneurs sense opportunities and take risks in the face of uncertainty to open new markets, design products and develop innovative processes.
>
> DTI, 1998, p. 2, 6

At first glance statements of this kind are clear, incisive even. There is, for example, a definite identification of entrepreneurship with risk-taking – of which more in a moment. The other qualities and activities attributed to entrepreneurship, however, seem to possess a deliquescent quality in which the meaning auto-dissolves over time. What does it *mean* to say that entrepreneurs possess 'vision' or 'sense opportunities'? Is there any way *other* than the creation of new products and markets that these qualities might manifest themselves? If there is not – and this is the suspicion – what we are in effect being told is that entrepreneurs are needed to turn new ideas into new products because

entrepreneurs are the kind of people who have the ability to do this kind of thing. In Quine's terms (quoted in Bouveresse, 1999), the attributions of vision and awareness of opportunity are dispositional statements, devoid of explanatory value.

This might not matter if the White Paper could call upon a general understanding of the processes of enterprise. This, however, is not the case. The lack of internal structure within the concept of entrepreneurship is typical of enterprise ideology as a whole. This was exemplified early in the life of the Thatcher Regime, when a BBC interviewer asked Sir Keith Joseph (then Trade and Industry Secretary and plain Keith) how the encouragement of entrepreneurship would arrest the runaway growth of unemployment. Plainly under some pressure, Sir Keith's reply was that it was not for you or I to understand how entrepreneurs create jobs. This was a mysterious process not to be apprehended by people who were not themselves entrepreneurs.

At one level no more than the evasion of a politician who had not yet thought up a plausible answer, this extraordinary statement from one of its chief architects tells us much about entrepreneurialism. At its geometric centre there lies a mysterious potency, personified in the idealized figure of the entrepreneur. An object of awe and wonder at the level of emotion, its function at the level of logic is fill the explanatory gap between the politics of enterprise and its proclaimed benefits – in Sir Keith's case the gap between the various schemes of support for small business and the actual creation of new firms, products and markets.

That the figure of the entrepreneur serves as a deus ex machina within enterprise ideology has been recognized even within its academic arm. As Durham University's newly installed professor of entrepreneurship remarked during his inaugural lecture, 'The entrepreneur has become the god (or goddess) of current political ideology and the leading actor in the theatre of the "new economics".' (Gibb, 1985). One would have thought, however, that the considerable volume of research on the capacities which make for successful entrepreneurship would by now have dispelled some of the murk. Not so. According to a 1991 review by Chell, Haworth and Brearly, the many attempts which had been made by that date suffered from the considerable drawbacks that many entrepreneurs have not possessed the identified qualities, that these seem to vary historically, that many entrepreneurs seem to lose them after their initial success and that the causality of the abilities in question could not be demonstrated.[5] More recently an article in the respected *Journal of Business Venturing* (Begley, 1995) could offer

only the wistful hope that, 'The attempt to profile the entrepreneur, in recent years thought to be futile, may yet prove viable.'

It is here, exactly where it purports to offer a point of entry for purposive intervention, that enterprise thinking dissolves into something akin to mysticism or religious belief. Where most ideologies offer a rhetorical linkage of terms which, from the inside at least, appears to constitute explanation, that of enterprise offers only habituation to a *lack* of explanation. If, in Geertz's terms, it seems to confer intelligibility on the phenomena of new venture creation, successful product launches and so on, this is not because these are in any sense *explained* by the presence of enterprise. Enterprise, rather, is a term of approbation uttered in recognition that these things have occurred. Conferring the important advantage of self-verification onto the ideology of which it is a part (an enterprise can *always* be claimed for enterprise, because both is what both words mean[6]) the words enterprise, entrepreneur and their derivatives circulate endlessly within hospitable speech-communities, taking on a quasi-concrete quality in which the activities of business persons are perceived not in their immediacy but as manifestations of a moving spirit behind them, the spirit, that is, of enterprise. The 'intelligibility' offered by enterprise ideology, in other words, depends on a socially constructed reification of its key terms (cf. Berger and Luckman, 1967). Disarmingly this is what was admitted by Keith Joseph: one cannot probe enterprise since its reality is not that of the world of action but that of a moving spirit presumed to lie behind it. And this is also why the qualities of entrepreneurship have evaded the dogged empiricism of psychometrics. Mysterious forces are not to be pinned down by such methods and it is a misplaced literalism – and possibly a mild form of sacrilege – which seduces the researcher into a futile search for some empirical manifestation of the underlying unity behind the various manifestations of business activity.

But what of Geertz's second function of ideology, that of representing the world as amenable to purposive intervention? The representation of business activity as animated by a mysterious spirit might seem unpromising in this respect. So, in a sense, it has proved. Throughout the 1980s and 1990s Laissez Faire, as the natural policy correlate of enterprise ideology, was a prominent feature of government rhetoric, if not always of its policies. Quietism, however, is not the only behavioural implication which can be drawn from a belief in transcendental forces. As with certain deities, the dynamics of enterprise may be inaccessible to our understanding, but its likes and dislikes are certainly not.

## Prescribing for enterprise

Given that the internal workings of enterprise remain shrouded in mystery, it turns out that its preferred conditions of operation can be specified with surprising precision. This apparent paradox is rooted in another core tenet of enterprise ideology: that enterprise is a natural expression of the human spirit. From this it follows that its absence is always due to its suppression, either by hostile systems of ideas, by regulative restriction or by a denial of the material upon which it can operate. 'Freeing the spirit of enterprise' (Morris, 1991) therefore, begins with an identification of these negative influences, an exercise which can be carried out with far greater precision than that of specifying the positive behaviours which go to make up entrepreneurship. For the Thatcher government the enemies to be exorcised were excessive taxation, legislative 'red tape', the risk aversion of banks and other sources of capital and a whole range of antithetical ideas. These included welfarism, the collectivism of trade unions and the professions and an aristocratic disdain for commerce supposedly put about by the public schools and the elder universities. From this hit-list, the policies followed: there were to be tax concessions for small businesses, de-regulation in the name of reduced 'compliance costs' and a wide range of subsidies, mostly offered through the mechanism of competition so as not to offend the sensibilities of the individualistic self-starter. The supply of enterprise which would pour through these enabling measures was to be unleashed by a massive programme of 'enterprise education' which ranged from the secondary schools to the universities (Morris, 1991).

Though lacking the Thatcher government's sense of engagement in a holy war, the White Paper's programme for stimulating entrepreneurship amongst scientists is remarkably similar in outline. The same conception of the problem as one of removing restrictions leads to the same emphasis on counteracting the influence of antithetical ideas, improving access to finance and de-regulation:

> New entrepreneurs face too many barriers. To spread a spirit of entrepreneurship we have to remove:
> * fiscal and cultural barriers which lead people to avoid or misjudge risk
> * lack of access to the right finance for growth and the business skills to manage it

* regulations which impose excessive or unnecessary burdens on new business.

DTI, 1998, para. 2.6

At the cultural level, the project of 'enterprise education' is to be continued with university departments of science and engineering the priority target (DTI, 1998, para. 2.15).

In two respects, the Knowledge Driven Economy project has gone well beyond its predecessor. Firstly, long-term capital investment in new enterprises has been encouraged by reducing the capital gains tax on such investments according to the period of over which it is made. Secondly, the Enterprise Act of 2004 has reduced the period of disqualification in cases of non-culpable bankruptcy with the intention of creating 'an insolvency regime that supports, rather than stifles, the development and growth of new business.' (Press Association, 2004).

## The universities' response

Finely attuned to the drift of government thinking, the Committee of Vice-Chancellors and Principals (CVCP, since metonymized as Universities UK) was swift to respond. A team of 15 vice chancellors, industrialists and venture capitalists visited eight US universities with strong records in research and technology transfer. Five days of meetings with senior administrators, leading academics and technology transfer officers in these universities, supplemented by a number of encounters with high-technology entrepreneurs yielded the report *Driving Technology Transfer* (CVCP, 1999). Signalling its acceptance of the White Paper diagnosis in its sub-title – *Growing Enterprise in Universities*, this turned out to replicate its thinking in every important respect.

Re-iterating in general terms the need to remove financial and legal inhibitions against entrepreneurial risk-taking, (with the laws of insolvency again singled out for special mention – CVCP, 1999, p. 11), the Vice Chancellors signalled their intention to implement de-regulation in their own backyards, contrasting the facilitative approach of US universities to technology transfer and the 'external engagement' of staff with the 'bureaucratic university committees and controls' to be found, presumably, in some of their own institutions (CVCP, 1999, pp. 8–9). As with the White Paper, the question of funding came in for considerable attention, on which point the report concluded that universities should become 'more open and permeable' to business and that

government, for its part, should create incentives (unspecified) for venture capitalists to move closer to universities (CVCP, 1999, pp. 10–11). Since it concerned the market for higher education services, however, it was the production of entrepreneurial motivation amongst young scientists which appeared to be the first priority. The report's recommended 'responsibilities for university managers' begins:

- sustaining a high quality research culture in their institutions that embraces contributions to wealth creation (e.g. grooming a cohort with entrepreneurial leanings and the aspiration to build business careers; supplying assistance with business plans, customer orientation, incubator facilities; developing courses in entrepreneurship for science and technology students; working with industry, professional bodies and charitable funders to create chairs for technologists in entrepreneurial studies)

(punctuation as in original)

The CVCP report was presented at a conference held in the QE11 Centre, an occasion chosen by Lord Sainsbury of Turville, Minister for Science at the DTI, to unveil the immediate policy consequence of the White Paper. The 'Science Enterprise Challenge' took the form of a competition (again!) in which consortia of universities were invited to bid for an initial fund of £25m (subsequently increased to £44m) in order to establish up to eight 'Centres of Enterprise'. The facilities offered by these centres were to be closely modelled on the 'business incubators' which have appeared on university campuses around the world. Amongst the major sources of experience on their operation are the Institute for Constructive Capitalism in the USA (latterly re-imaged as $IC^2$), UK Business Incubation at Aston Science Park and the report of The Enterprise Panel (1996) set up by HM Treasury in 1995 to examine business incubation in the UK. As described by the Director of $IC^2$ (Smilor, 1986), business incubators are physical and organizational units attached to universities, providing office/laboratory space, administrative services, access to library and computer facilities, consultants, inexpensive labour (impecunious students) and contacts with 'business angels', bankers and venture capitalists.

Useful as the facilities of business incubation might be, they are essentially just that – facilities. Although the fact of their existence might be sufficient at the margin to tempt those already entertaining thoughts of entrepreneurship, they contain, in themselves, no mechanism to ensure a supply of such individuals. For this reason the emergence of the

natural will to enterprise amongst university scientists is to be encouraged by educational means. As has already been pointed out, education in entrepreneurship was the first priority for action identified in the CVCP report and it is to be a key performance indicator for the new Centres of Enterprise.

Given the consensus between the DTI and the CVCP, and the fact that funds flow from the first to the second, dissent or even debate over the provisions of the Science Enterprise Challenge was perhaps not to be expected, especially from those universities which have been successful. There can, however, be competition in conformity. One way of signalling adherence to a new order is by displaying its icons and adopting its preferred forms of language. In this vein, Bristol University's Enterprise Centre was opened by the entrepreneur Alan Sugar. 'The University' added the press release which announced this occasion, 'is committed to developing a vibrant culture of enterprise throughout the institution, as an essential part of its strategy to maintain and enhance its international status.'

In appearance, the consensus is massive; key policy-makers in both houses of parliament, in the DTI and in the universities are agreed on the diagnosis of an enterprise deficit, and the policies which flow from it are already in the course of implementation. It is important to realize, however, that this is a consensus within a relatively narrow social base.[7] The only professor cited in the main text of the report of the House of Lords Select Committee, for example, was Sir Gareth Roberts, then Vice Chancellor of Sheffield University and subsequently Chairman of the CVCP. Sir Gareth, however, was cited no less than eight times. He also led the mission to the technopoles of North America and shared a platform at the subsequent CVCP conference with Lord Sainsbury. Lord Sainsbury chose the occasion to announce the Science Enterprise Challenge and in the presentation which followed, Sir Gareth outlined the bid to be made for this funding by the 'White Rose' Consortium of Yorkshire Universities.[8]

It is also a consensus based on a narrow section of the relevant research. Of the many UK academics who have studied high-technology transfer and start-up companies only Dr Elizabeth Garnsey of Cambridge University was quoted in the Select Committee Report (six times). Whilst Dr Garnsey's work is highly regarded, it is doubtful whether her views, or indeed those of any single academic, can be regarded as representative of the field as a whole. Narrowing the witness base in this fashion may achieve clarity of purpose, but it does so at the cost of ignoring complexity.

Nor does the study conducted by the CVCP itself inspire confidence. It is not clear whether or not the five days spent on it included the transatlantic flights, but even if it did not, it is hard to believe that research conducted on such a time scale and over such a geographically dispersed area could do anything other than tap the impression management of North American university administrators. Since these individuals' attitudes towards science are already known to have shifted during the early 1980s from a veneration of basic research towards a promotion of scientific entrepreneurship (Slaughter, 1993), the encounter was scarcely likely to disturb the enterprise frame of reference with which the question was approached in the first place.

## Infusing enterprise

As befits an expression of enterprise ideology most of the provisions of the Science Enterprise Challenge are of an enabling character. If enterprise is a quality natural to human beings, it should appear spontaneously once the barriers to its exercise are removed (Seldon, 1991). Much of the emphasis, accordingly, is on the provision of incubator facilities and the acquisition of business skills by interested scientists. The exception – and a crucial one should opportunity fail to stimulate the emergence of enterprise – is the teaching of entrepreneurship, supplemented by, or combined with, exposure to the influence of practising entrepreneurs. The question is; what is expected of these supply-side measures?

The formal outlines of the many courses and modules on entrepreneurship currently being taught in UK universities suggests that much of the content will consist of the conventional business disciplines of finance, marketing, accounting and human resource management as applied to the small business. Although it is far from established that instruction of this type has much influence on the success of new ventures, it may, nevertheless help the aspirant scientist-entrepreneur to cope with the language and culture of business (Storey, 1994, p. 133, 304). In this aspect, entrepreneurship education is yet another enabling measure. The same is true of the more recent 'action learning' programmes for new entrepreneurs (Hartshorn and Pavin, 1999). In response to their well-establish distaste for decontextualized formal instruction (Sexton, Upton, Wacholtz and McDougall, 1997), these programmes offer a form of consultancy in which business skills are acquired in the context of the actual problems encountered in start-up businesses. Even more than conventional courses on entrepreneurship,

however, such an approach is about the acquisition of enabling skills. The entrepreneurial impulse itself is taken for granted.

Methodologically akin to this action learning approach, but differing in their objectives, are the 'business plan' exercises offered as an option to final-year science undergraduates in several North American and UK universities. Advocated for adoption in the UK both by the House of Lords Select Committee (HL 62, 1997, para. 5. 22) and the Vice Chancellors (CVCP, 1999, p. 10), these plans are prepared, with faculty assistance, on the basis of the students' own ideas for science-based products. Realism, as well as entrepreneurial motivation, may be injected by offering prizes in the form of seed capital ($10K at Caltech, $50K at the Massachusetts Institute of Technology) for the most convincing plans. As this version of education in entrepreneurship indicates, it is only secondarily about the development of business skills. Its true objective is attitudinal and motivational. To repeat an earlier quote from the CVCP report, the objective is that of '… grooming a cohort with entrepreneurial *leanings* and the *aspiration* to build business careers' (italics added).

What, then, are the attitudes and motivations associated with entrepreneurship?

## Risk and praise

At least in the British variant of enterprise ideology (Chell, Haworth and Brearly, 1991, p. 15) a great deal of logical and emotional weight is born by the concept of risk. In the intellectual architecture of Mill (1848) it appears as the justification of profit, whilst it is profit which reconciles risk with self interest. One hundred and forty years later, the rhetorical bond between risk and enterprise remained indissoluble. Thus Lord Young, in a 1987 speech to the Centre for Policy Studies; 'Risk-taking is at the heart of enterprise…' (Seldon, 1991, p. 67). Taken perhaps, by the privateering self-image on offer, established entrepreneurs are quick to agree. David Potter, the founder of Psion, believes that the 'key equation, is risk = opportunity' (Potter, 1998), whilst Richard Branson, in his 1998 lecture to *London Innovation*[9] positively wallows in his flirtation with disaster:

> Questioner – How do you balance the opportunities for innovation with the risk of financial disaster?
>
> Branson – It's a very good question, and for entrepreneurs who start with nothing and build an empire the chances are that at some

> stage you are likely to go bust, but if you are fortunate you may just avoid it. We have been fortunate.

So it is in the White Paper,

> Entrepreneurs sense opportunities and *take risks* in the face of uncertainty to open new markets, design products and develop innovative processes ... The UK needs more *risk takers* who can rapidly turn ideas into products and businesses.
>
> DTI, 1998, para. 2.3 (italics added)

More restrained in its tone, the CVCP report does not, in so many words, urge the seeking-out of risk. It does, however, lay great stress on the creation of entrepreneurial cultures, which are identified with:

> - can-do and will-do attitudes, determination to succeed (part of a general culture free from stigma of failure).
>
> CVCP, 1999, p. 9

It is clear, then, that one of the major functions of entrepreneurship education will be to encourage the take-up of business incubation facilities through the inculcation of positive attitudes towards risk. In case study exercises young scientists will be led to appreciate the virtues of decisive action in the face of uncertainty,[10] to admire the risk-taking entrepreneur, and to take real-life representatives of the type as role models, where these can be procured at reasonable cost.

But if, as has been argued throughout this chapter, these are policies driven by enterprise ideology, they may be based on quite an unrealistic picture of the formation of new companies, science-based or otherwise. What, then, does research say about the connection between risk and entrepreneurship? A complication here is that the issue lies close to the heart of enterprise ideology, and the research itself is unlikely to have escaped its influence.

## In search of the risk-taking entrepreneur

### North American psychometrics

For convenience, the available research will be considered under three headings; North American psychometric studies of the supposed association between entrepreneurship and risk-taking, qualitative case

studies of self-employment and small business, mainly carried out in the UK, and more specialized studies of small science-based companies.

Sharp questions were posed for enterprise ideology in a pioneering psychometric study by Brockhaus (1980). This compared the risk-taking propensity of approximately 30 entrepreneurs (defined as people who had recently left employment to start their own businesses) with that of two otherwise similar groups of managers, the first of which had recently moved between employers and the second of which had moved only within the same organization. Respondents were asked to give their advice on a number of ambiguous business scenarios. The results showed that the risk-taking propensity of entrepreneurs (as defined) did not differ significantly from either group of managers.

The thicket of qualifications with which Brockhaus hedged about this conclusion testify to the trepidation with which he set it against the expectations of enterprise ideology. That a null finding of this nature became a citation classic in its field (Ratnatunga and Romano, 1997) also testifies to the energies which it released within the community of enterprise research, directed at restoring the connection between risk and entrepreneurship. Between 1980 and 1989, ten studies of the personality differences between entrepreneurs and managers were published, with attitudes towards risk, at five inclusions, the most explored topic (Ginsberg and Buchholtz, 1989.)

Quick off the mark were Sexton and Bowman (1983) with a study which found students of entrepreneurship to be more risk-tolerant than those of management. Economical and accessible though they may be, students of entrepreneurship are not at all the same as the real thing, and these results may tell us more about the values and enthusiasms of the teaching staff than anything else.

An alternative way forward was indicated by Carland, Hoy, Boulton and Carland (1984) in another paper which became a citation classic. Arguing that not all small business owners can be classified as entrepreneurs, these authors suggested that Brockhaus' result may have been due to the inclusion of non-entrepreneurial types within his sample, from which it followed that an association between entrepreneurship and risk-tolerance might be restored by excluding them. Their second suggestion (which rather sells the pass for this aspect of enterprise ideology) was that risk-taking might not be the most appropriate defining characteristic of the entrepreneur. If, following Schumpeter, risk is considered to inhere in the fact of business ownership itself, the entrepreneur needs to be distinguished by other characteristics.

Carland et al's own suggestion was that the entrepreneurial venture should be defined by the principal goals of profit and growth and by 'innovative strategic practices.'[11]

Taking up the first of these suggestions, Begley (1995) found that an association between entrepreneurship and risk-taking could be produced by restricting the term to those who had actually founded companies, especially those who had done so recently. Quite why this should have done the trick is not clear, since Brockhaus' 'entrepreneurs' were also recent founders of businesses. Stewart, Watson, Carland and Carland (1999) succeeded in producing a similar association by combining Carland et al's definition of entrepreneurship with Brockhaus' original hypothesis. Using preferences for innovation and growth as a characteristic with which to distinguish entrepreneurs from other small business owners, they then demonstrated that their entrepreneurs were more risk-tolerant than the rest of the small business owners, as well as more so than a sample of managers. The suspicion here, of course, is that the independent variable (risk-tolerance) is contaminated by the definition of entrepreneurship (preference for innovation and growth).

There is more than a suspicion of this definitional gamesmanship in the work of McGrath, Macmillan and Scheinberg (1992). If small business owners were no more ready to take risks than managers, perhaps they could be compared with a 'contrast sample of non-entrepreneurs deliberately chosen to differ.' This proved possible. Small business owners (restored once more to the status of entrepreneurs-by-definition) turned out to differ in a number of respects from 'career professionals', one of which was their lower degree of 'uncertainty avoidance.' Entrepreneurs, in other words, are more ready to take risks than people who are not.

Palich and Bagby (1995) opened a can of worms by treating risk-taking as a subjective experience. Using ambiguous business scenarios, they found that entrepreneurs were no more predisposed than others to recommend courses of action which they themselves perceived to be risky. Where they did differ was in a more positive evaluation of the possibilities contained within the scenarios. In Palich and Bagby's interpretation, this meant that entrepreneurs are more likely than non-entrepreneurs to perceive ambiguous situations as opportunities. Whilst this reading of the data has the merit of endorsing a favourite formula of enterprise ideology (that risks are also opportunities), the psychological definition of risk raises the question of how positive evaluations of uncertain situations can be whilst still falling short of stupidity.

Quite where this brew of ideology and journeyman enquiry leaves the psychologists' portrait of the entrepreneur is a moot point, especially if Chell et al (1991) were correct in their argument that the trait approach as a whole is obsolete. Much of it, of course, is nothing more than an attempt to programme a risk-taking image of the entrepreneur into the quantitative procedures of North American psychometrics. The hard fact, which has proved remarkably resistant to these games of gerrymandering samples, is that a significant proportion of small business owners are not risk-takers at all, whether they are called entrepreneurs or not. It is a finding amply corroborated in UK small business research.

## Qualitative studies of the UK small business sector

A complication of UK research on the alleged characteristics of the entrepreneur, is a tendency to lump self-employment in with the already conflated categories of small business ownership and entrepreneurship. In part this additional layer of confusion is the legacy of the desire of successive Conservative ministers, abetted by interested academics, to represent the 1980s growth in self-employment as a triumph of 'enterprise regained' (Young, 1992).

Storey and Strange (1992) explicitly set out to test this interpretation against data on small firms in Cleveland. Their method was to compare symptoms of entrepreneurship in the new business start-ups of 1990 with those of 1979. Whilst the period saw a massive increase in rate of new venture formation, most of this was accounted for by older people propelled into business for the first time as a result of redundancy (see also Storey, 1994, p. 44). The start-ups of 1990 were smaller than those of 1979 and tended to be in sectors of limited growth potential (hairdressing and motor-vehicle-related ventures predominated in the survey).

Even the thriving small business, moreover, may have little to do with entrepreneurship. According to Gray (1992) the predominant motive for self-employment is the desire for independence and the freedom to pursue non-business goals. This means that 'entrepreneurial' desires to expand (Carland et al, 1984) are either absent altogether, or limited to the feasible span of personal control. Similarly, Curran, Stanworth, and Watkins (1986) found that small businesses could succeed for decades in satisfying local markets and meeting the personal needs of their owners without ever expanding. This general lack of growth orientation means that job creation in the small business sector is concentrated in a very small proportion of firms. According to

Storey (1994, p. 113), 50 per cent of those employed in small businesses which have survived their first ten years work in only 4 per cent of these survivors. As of 1984, on the other hand, only 2 per cent of the 3 million self-employed provided jobs for more than 25 people. Only one third of them, indeed, employed anyone at all (Gray, 1992). Similar findings were reported in a 1987 survey by Hakim (1989a), who also found that only 10 per cent of firms employing fewer than 50 people had any kind of expansion plan (Hakim, 1989b).

Scase and Goffee (1987) present a human picture behind these figures. Many small businesses are started out of a desire to find an outlet for professional, technical or craft skills rather than out of purely economic motives.[12] Personal independence and the delivery of a quality service are important to these small business owners, and these are objectives which may actually discourage expansion. Taking on staff may be seen as a diminution of personal freedom, since it raises the break-even volume and commits the owner to achieving an increase in turnover. The success of many high technology, creative, personal service and retail businesses, moreover, is heavily dependent on personal commitment, something which the small business owner may feel is difficult to guarantee once they have taken on employees. Similar findings have been reported by Dale (1991).

As was pointed out in Chapter 5, a similar picture has emerged from studies of Business Expansion Scheme and the Venture Capital Trusts. Intended to promote the spirit of enterprise, most of the take-up has shown a pattern of risk-aversion.

### Risk and the science-based start-up

Whilst it is possible to point to individual cases in which science based companies have been started up at considerable personal risk, evidence is accumulating that this may be untypical. The cluster of science-based companies around Cambridge University ('Silicon Fen') is frequently cited as a prototype for technology transfer in the UK. According to the influential report of Segal Quince and Partners (1995, p. 66), however, an important enabling condition of the 'Cambridge Phenomenon' was the possibility of a 'soft' (that is, low-risk) start-up, also observed in the USA (Bullock, 1983; Radosevich, 1995)[13] and, in modified form, in Germany (Pfirrmann, 1999).[14] Essentially the soft start-up involves a progression from scientific consultancy, through the standardization of an analytic or design service (drawing an academic salary the while), to the volume production of a new measuring instrument or software package, at which stage the academic would typically

leave the university in order to create an independent business. The process is a cumulative one, of building relationships with customers and suppliers, developing expertise and gathering market intelligence, quite at odds with the entrepreneurial image of decisive action in conditions of uncertainty.

The research of Autio (1997), also throws doubt on the relevance of the risk taking temperament to small high technology companies, pointing out that the majority of these are not started up with the intention of competing in open markets at all. Rather they are embedded in relatively stable networks within which they receive and supply niche products or services. The possibilities of expansion out of these niches are generally limited, risk levels are low to moderate and most of these companies are actually quite risk-averse. Autio's conclusion is that policies aimed at encouraging high technology firms to expand need to be targeted on those for whom this is possible.

Massey, Quintas and Weild (1992) also question the image of the university spin-off companies as a high-risk venture operating in the open market. Many of these companies are formed to apply existing high technology to new markets. This means that much of the scientific risk has already been borne in the form publicly funded research (see also Segal Quince and Partners, 1985). Additionally, much of their sales may be back to the public sector. Massey et al comment on the example of Laser-Scan – a company which is frequently quoted as the archetypal model for a science park firm:

> Its dependence on state expenditure is total. Its original R&D and product development were done in the Cavendish laboratories at Cambridge University, its original customers were universities, further product development was funded by the Ministry of Defence, it received technical support from the government funded CAD centre and its customers were virtually 100 per cent public sector.'
>
> Massey et al, 1992, p. 233

The more recent example of Bookham Technology was described by its Chief Executive Officer, Andrew Rickman at the 1999 Physics Congress during a day devoted to the topic of 'Science and the Entrepreneur'. Founded in 1988, the company produced nothing for the first nine years of its existence and grew entirely within the Rutherford Laboratories at Cambridge University. A graphical representation of the growth of the company presented by Rickman showed that the

company employed approximately 50 people by the end of this period. Supported by the Department of Trade and Industry, the company was then 'let loose in the commercial world.' Whatever economic and technological goods have followed from the creation of this company, one must seriously doubt whether such a degree of public support and institutional nurture qualifies the case as one of entrepreneurship.

To the committed ideologue, no doubt, such cases might be read as reinforcing, rather than undermining the case for fostering a risk-taking mentality amongst the scientific community. The dependence of UK science-based new ventures on public support, might be seen as a second-best situation, symptomatic of a risk-aversion specific to the UK. Not so. Castells' authoritative international survey of innovations in information technology, concluded that 'the state, not the innovative entrepreneur in his garage, both in America and throughout the world, was the initiator of the information technology revolution.' (Castells, 1996, p. 60). The role of entrepreneurship has been to exploit the technologies already established through state-funded R&D programmes and markets, to use them as a platform from which to develop products and processes adapted to particular market niches.[15] Frequently, moreover, this process of adaptation has been initiated whilst the future entrepreneurs were still employed by the companies within which they accumulated their expertise (Castells, 1996, p. 60; Roberts, 1991). In other words, we are back to the soft start-up.

These remarks are not intended to play down the importance of new product development. It can, of course, be as important economically as scientific discovery or technological innovation. What they do suggest is that there is little basis in past experience for relying on the risk-taking mentality to fill the gap between the base science and the developed technology. Nor, for that matter, is there much evidence that the development of new products on the basis of already developed technologies has depended on the taking of risks.

## Conclusion

From this brief overview of the various strands of relevant research, the belief that self-employment, small business ownership in general and science-based start-ups in particular are all manifestations of risk-taking entrepreneurship emerges as an ideological distortion. Either entrepreneurs are risk-takers and are rare amongst these categories, or they are common and are not, for the most part, risk-takers. If the present processes of science-based company formation are maintained, there

are no grounds for believing that its volume will be expanded through the encouragement of a risk-taking mentality in the course of enterprise education. Indeed it may be inhibited. As Scase and Goffee (1987, Ch. 10) have observed, the heavy stress on the alleged go-getting qualities of the entrepreneur may work to discourage people who feel they lack this quality from starting what might be perfectly viable new businesses. The same could be true of the tendency of certain venture capital companies to deliberately load risk onto the recipients of investment. The approval committee of APAX has been reported to insist that scientists put in £10,000 of their own money into their companies, even if this involves borrowing from friends and family, on the grounds that it 'concentrates the mind.' (Haycock, 1999). If they are at all widespread, practices of this kind could contribute to the high proportion of offers of venture capital which are turned down (Storey, 1994, pp. 240–1), though the news that the founders of new companies might find themselves left with as little as 10 per cent of the equity could also be a contributory factor (ibid.). Despite their prominence on the CVCP mission it is not clear that the venture capitalist's views on risk are all that relevant to the future of science-based company formation. According to Storey (1994, pp. 222–4) most of the investment of these companies goes into management buy-ins and buy-outs, and they have never invested more than one fifth of their funds into start-ups of any kind.

In defence of the project of enterprise education, the committed could argue that the present processes of science-based company formation are precisely what needs to change. The 'soft start-up', the insinuation into a network of high technology customer-supplier relationships and the reliance on public support need, perhaps, to give way to a risk-taking, expansion-oriented entrepreneurship. Possibly so, but this is new territory and if we enter it, we do so as an act of faith, not on the basis of evidence and experience. The precedents which exist, even in the USA, do so at an individual level, at which it is difficult to disentangle the consequences of entrepreneurialism from the competitive advantages of a new technology and the infrastructures of state and community support.

# 7

# Bubbles in Biotech: Testing the Entrepreneurial Model of Science-Based Innovation

## Introduction

As industrial policy, the promotion of scientific entrepreneurship has much in common with the laissez faire economics to which it is closely related. On the assumption that UK research is already world class and of a nature capable of generating new applications and industries, the direction of industrial development is left up to the direction of the research itself, albeit as influenced by the research councils. And because this involves the abandonment of any attempt to relate industrial policy to existing skills and manufacturing capabilities, it is assumed that appropriate infrastructures will emerge in response to economic opportunity. In this vaguely-conceived vision of the future, there is no thought of adapting industrial development to existing communities; the whole will be replaced by a knowledge-driven economy.

It is of course too soon to attempt an evaluation of the economic consequences of this policy. Given its orientation towards the future, perhaps it will always be too soon. It is not too early, however, to discern the shape of that future. On the science and business parks of UK universities, there is a noticeable preponderance of software and biotechnology companies, especially in the clusters centred on Cambridge and Oxford. Biotechnology, in particular, has the ear of government through the agency of the BioIndustry Association (Evans and Leigh, 2004). It is clearly regarded as a flagship of the new policy.

Notwithstanding the debate around genetically-modified foodstuffs, the biotechnology industry is dominated by pharmaceuticals in terms of market capitalization (Niosi, 2000). The probable reason is that new drugs for previously untreatable conditions can be priced at very high

levels (Arundel, 2000). In 1998, Froud, Haslam, Johal, Williams and Willis concluded that the contribution of UK pharmaceuticals both to GDP and skilled employment was small and likely to remain so. Subsequent research suggests that the industry's take-up of biotechnology will not substantially modify that conclusion (Owen and Lemme, 2001) and nor will there be much effect on employment in other sectors (DTI, 2000). Unlike the later reports, Froud et al (1998) also pointed out that most of the new drugs developed by pharmaceutical companies are replacements for expiring patents, and that most of the rents accruing to these patents are extracted from systems of social medicine. This may be wealth creation as far as the pharmaceutical companies are concerned, but that is not the meaning it carries for most people. As a driver of the new economy, biotechnology looks decidedly underpowered.

The aim of this chapter is more modest than these industry-level assessments. Instead of inquiring into the consequences of pharmaceuticals for the economy, it asks what are the consequences of entrepreneurship for the development of pharmaceuticals. By extension, the argument also applies to other programmes of science-based product development. The occasion was provided by three high-profile biotechnology collapses which occurred in the late 1990s. Because of the effects on investor confidence in what had been regarded as a key sector of the knowledge-driven economy, there was an inquiry by the House of Commons Select Committee on Science and Technology (HC 888, 1998). Broadly speaking, the inquiry concluded that the major problem lay with the information provided to investors by the companies concerned.

The chapter takes issue with that conclusion. It argues that the potential for such crises of confidence is inherent in the entrepreneurial model of science-based product development. The same entrepreneurial characteristics of vision, drive and commitment which are required to bring science based products to market through the medium of start-up companies will always be accused of putting a positive spin on the state of development programmes whenever these end in failure. To that extent the collapses of confidence which occurred in biotechnology were not the result of a pathology particular to the companies concerned. Rather they were a belated recognition of the fact that investing in risk-taking enterprise is itself a risk. Scientific entrepreneurship may be a creative force, but it also entails costs which are now recognized in the biotechnology sector in the form of an increased cost of capital.

## Importing bioenterprise

### The US template

The first dedicated biotechnology company in the USA was Genentech, established in 1976. Biogen and Hybritech followed in 1978, Amgen in 1980. These companies were classical entrepreneurial start-ups, using seed funds from family, friends and business angels. They expanded using finance from venture capitalists and there followed an initial public offering, usually on the NASDAQ exchange. Between the flotation of Genentech in 1980 and the end of 1983 more than a dozen US biotechnology companies followed this route. It is the path of development now being promoted to audiences of UK scientists by venture capitalists, professors of entrepreneurship and government ministers. I will call it the entrepreneurial model of science-based innovation.

In fact the US experience has been more varied and equivocal than the model suggests. Partly because of the duration and scale of the trials needed to obtain clinical licenses for new drugs, the development of many of them turned out to be more uncertain, slower and more expensive than expected. In consequence, most of the new biotechnology firms burnt cash for a decade or more. Stock exchange enthusiasm generated by unrealistic expectations of quick profits was followed by periods of disillusion during which funding for anything biotechnological virtually dried up. Amgen's 7,000 plus employees and £65bn capitalization notwithstanding (2001 figures), the hope that some of the new firms might grow to rival the established giants of 'big pharma' has been disappointed.

In part this is because the pharmaceutical giants took steps to acquire biotechnology capabilities of their own, either through partnerships with the new companies or by acquisition. Both developments were facilitated by the tendency of biotech start-ups to run out of cash. The result has been an emerging division of labour in which the majority of these companies are, in effect, performing contract research for 'big pharma'. Hybritech sold out to Eli Lilly in 1985 and Genentech, running short of cash after a disappointing returns from a new heart drug, entered an agreement in which Roche acquired 60 per cent of its equity.

As for the experience of those biotechnology companies which remained independent, even Amgen, a frequently cited inspiration for UK bioentrepreneurs, ran short of funds during the development of Epogen, a treatment for anaemia. Amgen was rescued only by an injection of cash from a partnership deal with a Japanese company.

Epogen, as it happened, went on to achieve worldwide sales of $2.8bn in 1998. Even so, in everything but the expectations of its shareholders, Amgen remains small compared to the established pharmaceutical companies. In 2001, it had only three major medicines on the market (Taylor, 2001).

For all its capacity to inspire UK policy, the economic performance of the US biotechnology industry as a whole has been disappointing. In 1998, 20 years after the founding of Genentech, the estimated 1283 North American dedicated biotechnology firms were still unprofitable taken as a whole, spending $5.1bn more than their total revenues of $13.4bn (Morrison and Giovanetti, 1999). Even at that the industry is heavily subsidized. Senker (2000) estimated Federal Government expenditure on biotechnology research at about $6bn annually, with the national total much higher because research is also funded by individual states. On the output side only 63 new drugs had been brought to market by 2001 (Owen and Lemme, 2001).

## Promoting bioentrepreneurship in the UK

Ironically for an industry which is now thought of as a flagship of the enterprise culture, UK biotechnology began with the Callaghan government's industrial policy. The Spinks report (not published until 1980, after the 1979 General Election) recommended that a new biotechnology company should be established to develop and exploit the research funded by the Medical Research Council. Public investment would be necessary, since it was felt that such a venture would not attract private investors. Exceptionally, the incoming Thatcher government decided to continue with this venture, but only on condition the taint of socialism could be removed by involving private capital. Celltech was established in 1980, owned jointly by the National Enterprise Board and a consortium of financial institutions. In 1987, the public stake was sold off and Celltech survived for a while as part of Chiroscience. In May 2004, the company was sold off to the Belgian drugs and chemicals group UCB, 'all but end[ing] Tony Blair's dream of a British firm rivalling US businesses that took an early lead in the emerging biotech sector more than 20 years ago' (Bowers, 2004).

As a financial model, Celltech was a false start. More typical of what was to come was British Biotech, set up in 1986 by Brian Richards and Keith McCullagh. McCullagh had qualified in veterinary medicine from the University of Bristol in 1965 and obtained his PhD in pathology at Cambridge in 1970. By 1985, he was Senior Director of UK Research with the international pharmaceutical company, G D Searle

& Co. In 1985, Searle was taken over by Monsanto who then decided to close down the UK operation. McCullagh was one of a number of scientists who established British Biotech on the basis of expertise developed in Searle. Contrary to the subsequent emphasis of UK government policy, spin-outs of this kind, by scientists with many years experience in large high-technology companies are least as common in the US as those originating in universities (Roberts, 1991). They have also tended to be more successful (Siegel, Siegel and Macmillan, 1993).

It was the research output of the universities, however, which attracted the attention of the Thatcher government. The fact that most of it was funded by the research councils and that the outputs were then the property of the state-owned British Technology Group appealed to the deregulationist instinct for an under-exploited source of profit. For many decades it had been the received wisdom that the research of the UK's universities, as measured by per capita output and citations, was competitive with any in the world. It was also evident that the UK record on patents was poor and that on commercial exploitation even worse.

Influenced by similar legislation in the USA, a first move in 1985 was to allow the universities to retain the rights to the intellectual property created by their research (Harvey, 1994). Licensing was one way of converting these rights into income, though technology transfer offices, even in the USA, were happy enough to cover their own costs (Newby, 1999). Much of the take-up of licenses from UK universities, moreover, was by foreign-owned multinationals (HL 62, 1997, para. 3.21) so that the net benefit to the UK economy may have been close to zero. Potentially more patriotic as well as more lucrative (Bray and Lee, 2000) was the alternative of encouraging the scientists themselves to set up new firms in which the universities would take an equity stake. Accommodation was available on the science parks mushrooming around the UK's universities following the pioneering example of Cambridge in 1976. Advice on company start-ups was available from Business Link, albeit much of it from middle managers who had taken redundancy from large companies (Miller and Kerfoot, 2004). And there was financial assistance in the form of whole range of subsidies designed to promote enterprise and self-reliance. The Small Firms Loan Guarantee Scheme partially guaranteed bank loans to small companies against default, the Business Expansion Scheme reduced or eliminated capital gains tax for any 'business angels' prepared to tie up capital in small companies and, from 1988, there were the Small Firms Merit Awards for Research and Technology (SMART). Altogether, the Thatcher government introduced

no less than 64 schemes of assistance to small business (Randlesom, 1993). Probably more important than any of them in encouraging the exploitation of university science, there was the hidden subsidy of the 'soft start-up' (Segal Quince and Partners, 1985). The encouragement of 'third mission' activities in universities allowed entrepreneurially-minded scientists to continue drawing their salaries whilst building up the research team, the technology and the customer base which would form the assets of a new company.

The state support of small-company enterprise continued and expanded with the Blair government. In 1991, a scheme of Support for Products Under Research (SPUR), was introduced in parallel with SMART. Later the schemes were merged within an integrated Grant for Research and Development. In 1999 the universities were invited to compete for the first round of the University Challenge, a competition which allocated seed funds to the value of £45m for the establishment of new businesses. Another competition, the Science Enterprise Challenge, aimed to promote a culture of enterprise within the universities and to facilitate the commercial exploitation of scientific research. Twelve Science Enterprise Centres were established in the first round of the competition in 1999/2000, with £28.9m of government funding. Also in 2000, tax credits to the value of 150 per cent of the costs of research and development were introduced for SMEs. In 2003, it was announced that £110m would be made available for a new Public Sector Research Exploitation Fund.

Under the Thatcher government, the various schemes of support had given the impression of pragmatic and piecemeal moves to promote enterprise by a non-interventionalist government acting against its instincts. Now they were cohering within a whole theory of national prosperity based on scientific enterprise. The definitive statement of this new joined-up thinking was the 1998 DTI paper on Competitiveness discussed in Chapter 6. Because the new policy was linked to new money, University Vice Chancellors adapted quickly to the new language. The vocabulary of the knowledge-based economy began to infiltrate the universities' publicity material, with the descriptor 'vibrant' cropping up in unusual contexts. From the security of predictable career paths university bureaucrats organized enterprise-fests in which scientists could draw inspiration from entrepreneurs and business angels. But most of all, as befits the universities, there was education. Undergraduate scientists – and others – were to be taught what could be taught of entrepreneurship. In response to the sudden demand there appeared a sudden hatch of professors of

entrepreneurship, many of whom had tales to tell of failed business ventures or blocked promotion in more traditional fields of study.

In all this more general endeavour, biotechnology featured prominently. The prime minister himself declared that 'Biotechnology is the next wave of the knowledge economy, and I want Britain to become its European hub' (Blair, 2000). Mr. Blair then went on to estimate the potential European market for the industry at $100bn by 2005 and the number of people employed in biotechnology, and related areas at possibly 3m. The likely source of these figures was EuropaBio (1997), a trade association publication which arrived at its figures by claiming almost all of the output and employment in the agro-food industry for biotechnology (Arundel, 2000).

According to the more restrained statistics produced for a workshop at the DTI's Office of Science and Technology in 2000, employment in the UK's dedicated biotechnology firms then stood at about 14,000 with possibly another 10,000 working in the sector outside of these firms. This is rather under 0.1 per cent of UK employment. An annual growth rate of 15 per cent would double this proportion to 0.2 per cent by 2005. Alternatively, if the whole of employment in pharmaceuticals were credited to biotechnology, current employment in the sector would amount to about 0.2 per cent of the UK total, though on present trends of rising productivity, the proportion would still be 0.2 per cent in 2005. As for the contribution to GDP, the pharmaceutical sector as a whole contributes about 0.7 per cent, increasing by about 5 per cent per annum. The industry's export performance is more significant at about £7bn or 4 per cent of the UK total, and more significant still is the trade surplus of £2bn, possibly doubling by 2005. Because of the long lead-times of bio-engineered drugs, however, not all of that increase can be credited to biotechnology per se (DTI, 2000).

Considered as a forecast of economic significance, therefore, the Prime Minister's remarks appear to have been wide of the mark (see also Owen and Lemme, 2001; Froud et al, 1998). As with so much in New Labour thinking, however, the numbers may have been meant in a gestural rather than a literal sense; as a signification of symbolic rather than material significance. As a demonstrator for the knowledge-driven economy, biotechnology has certainly shown that it is possible to create new companies – if not exactly new industries – on the basis of scientific innovation. Taken in that sense, the UK's science parks might be viewed as a vast theme park of possibility in which there is a noticeable preponderance of software, biotechnology and other outputs which can be developed in the absence of a manufacturing

infrastructure. By the same token, regrettably, these are technologies which are unlikely to create much employment in the UK.

By the early 1990s, British Biotech was regarded as the UK flagship of the new applied science and McCullagh as a rôle model for the aspirant scientist-entrepreneur. In 1992, he succeeded in overcoming the reluctance of the London Stock Exchange to list companies which generated no income because all of their products were still under development – biotechnology companies being the example which sprung to mind. British Biotech promptly floated for £151m, making it the first company to take advantage of the new provisions. By the end of 1995 about 25 biotechnology firms had followed suite.

Official recognition followed. McCullagh was invited to chair Geoffrey Robinson's High-Technology Working Group at the Treasury and to sit on one of the six working parties on competitiveness set up by Peter Mandleson during his tenure at the Department of Trade and Industry. Accolades of this kind bestowed by what was becoming an enterprise establishment made the catastrophe which shortly engulfed both Keith McCullagh and British Biotech all the more shocking. Yet the possibility of failure is structured into the development of any science-based product and indeed into any venture involving entrepreneurial risk. Simply, British Biotech's drugs turned out not to work, and it had taken a decade of vastly expensive research and clinical testing to find that out. The shares which stood at 324p in May 1996 had dropped to 19p in 1999, by the time the last report on the affair was published.

The collapse of investor confidence in what had been regarded as an iconic sector of the knowledge-driven economy precipitated an inquiry by the house of Commons Select Committee on Science and Technology (HC 888, 1998). From the beginning, the inquiry proceeded on the assumption that the cause of the debacle was specific to British Biotech rather than general to the entrepreneurial model of science-based innovation. On this assumption, there was blame to be assigned and McCullagh took most of it, the grounds being that he had prevented British Biotech's investors from learning promptly of the intimations of failure emerging from the company's clinical test programmes. From this it followed that measures to ensure a flow of timely and unbiased information to investors would, given time, restore confidence. The Bioindustry Association set to work on a code of practice designed to ensure just this (BioIndustry Association, 2001).

It was a diagnosis which might have remained plausible but for two further biotechnology crashes which occurred even as the follow-up

inquiries on British Biotech were in progress. On 1 December 1998, the board of Cortecs revealed that its two major products were 'not as advanced as had previously been indicated' and in September 2000, the shareholders of Scotia learnt that the US Food and Drug Administration had rejected the licence application for the company's one remaining prospect of survival. The shares in both companies collapsed even more rapidly than had British Biotech's. Scotia went into administration early in 2001, whilst Cortecs narrowly squeaked through to be reborn as Provalis. British Biotech itself was acquired by Vernalis.

One death and two near-deaths in a clinical trial are not statistically significant. They are, on the other hand, grounds for suspicion. The purpose of this chapter is to give form to that suspicion; that there *are* general features of the entrepreneurial model which make for occasional collapses and crises of confidence. Inter alia it calls into question the simplifying formulae through which events at British Biotech were interpreted, not just by the media, but also by the scientifically-informed members of the House of Commons Select Committee. It is a formula grounded in a clear distinction between scientific facts and the interpretation or misrepresentation of those facts. If anything has emerged from the last 30 years of ferment in the sociology of science, it is that no such clear distinction exists (for example, Latour, 1987, 1989). Without endorsing the over-statement that everything in science is socially-sanctioned interpretation,[1] down to the death of a patient and the drugs and dosage received by that patient, it is clear that the results emerging from clinical trials, especially interim results, are susceptible of a considerable latitude of interpretation (Collins, 1989). The scientists on both sides of the controversies reported in this chapter say as much. They also make the point that people who are committed to a certain line of inquiry in applied science, and have organized companies and research teams around that commitment – scientist entrepreneurs in other words – are not people to give up easily. They could only function on the basis of commitment, enthusiasm and the ability to shrug off minor setbacks. The opinion is general in the industry. A recent survey of experienced practitioners reported in the online journal *Bioentrepreneur* that:

> In our discussions with entrepreneurs, many mentioned optimism, persistence, enthusiasm, self-confidence and intelligence as desirable entrepreneurial habits.
>
> Hodgson and Ward, 2003

Similar qualities have been confirmed as correlates of entrepreneurship in empirical psychological research, albeit repackaged as 'self-efficacy' or 'inner locus of control' and after some re-working of the operationalizations involved (Mueller and Thomas, 2001). As Krueger, Reilly, and Carsrud (2000) summarize it, 'Entrepreneurship is a way of thinking, a way of thinking that emphasizes opportunities over threats'.

All this suggests that scientist-entrepreneurs are likely to make the optimistic interpretation of any fragments of data which suggest that a project might be running into trouble. It is an optimism which *may* lie outside the bounds of scientific probity, but also may not. The problem with picking over the wreckage of a disaster, which is what both the journalists and the Select Committee were doing in the case of British Biotech, is that it creates the illusion that the signs of its approach were clear and unmistakable. Feeding into to the great upwelling of distress which accompanies any crash in share prices, the belief that warning signs were ignored crystallizes into a search for scapegoats, a search which also serves to protect the entrepreneurial model from interrogation. Censured in a Stock Exchange report of 1999 for misleading investors, Keith McCullagh's reaction was that it was 'nonsense.' He was, he said, 'pretty miffed by the whole thing.'

Let us see.

## British Biotech

British Biotech was founded on the basis of a new approach to the treatment of cancer. Instead of killing tumour cells, as in orthodox chemotherapy, the new drugs were designed to inhibit the enzymes which enable cancer cells to enter the bloodstream and so spread throughout the body. The most important were the anti-cancer drugs, Batimastat and Marimastat, and a treatment for panchreasitis called Zacutex. Batimastat was the first into clinical test. Because Batimastat suffered from the painful disadvantage that it had to be injected directly into the patient's stomach, Marimastat was under development as an orally-administered equivalent.

McCullagh's ambitions were large, though not untypical of biotechnology entrepreneurs. Instead of selling out to 'Big Pharma' once the drugs had been developed, he intended that British Biotech would manufacture and distribute them through a series of collaborative agreements. His stated intention, again not untypical, was that British Biotech would become the next Glaxo Wellcome (Clark, 2001). Depending on how things are measured, it was not out of the question.

After only 15 years of operation, the market capitalization of Amgen grew to rival that of AstraZeneca, though that precedent did not exist during the early years of British Biotech.

By 1992 British Biotech's prospects seemed bright enough for the company to obtain £151m in the first stock exchange flotation of a UK biotechnology company. An additional £94m was raised in 1994, followed by a rights issue for £143m in 1996. By May 1996 the company was valued at nearly £2bn, placing it just outside the FTSE 100 (Clark, 2001). As with other biotechnology ventures, it was a valuation based entirely on the investors' anticipation of future rents on intellectual property; in this case patented treatments for cancer. At that stage, British Biotech had not shipped a single product; nor had it even succeeded in developing one. Behind the optimistic progress reports, in fact, things were already starting to unravel.

In the advanced industrial nations, new drugs must be licensed before they can be used in clinical practice. Because of this, product testing in the biotechnology industry has become heavily institutionalized. Stage 1 trials on comparatively small numbers of healthy volunteers are used to provide an initial evaluation of a drug's safety, how it is absorbed, which parts of the body it reaches and how much should be used. Stage 2 trials investigate the therapeutic and side effects of the new drug on a range of medical conditions. At this point the studies are still open. The trial patients, that is, are known to have been given the drug and are not compared to control groups who have been given other treatments. It is on the results of stage 3 trials that the authorities decide whether or not to licence a new drug. These are large-scale comparative trials in which a significant advantage over existing treatments must be demonstrated by the statistical analysis of survival rates and the occurrence of side-effects. In order to prevent bias in the choice of subjects and their care, stage 3 trials are 'double blind'; that is, neither the patients nor their doctors know which patients have been given which treatment. These trials are a major part of the expense of developing new drugs. They may involve several hundred patients and many institutions. They may run for two years or more and the cost may run into millions of pounds. Particularly in the case of new cancer treatments, they are also harrowing. Such therapies can only be tested on desperately ill patients who are willing to take pot luck of a new treatment, the best conventional treatment and sometimes a placebo.

In October 1994 it emerged that some of the patients in a US stage 3 trial of Batimastat were developing peritonitis, a painful condition which kills half of its victims. Though no such problem had emerged

during earlier trials in the UK, and though stage 3 trials are 'double blind', Andrew Millar, British Biotech's Director of Clinical Research, began to suspect that the deaths were caused by the Batimastat injections. In January 1995, he decided to test the drug on one patient at a time. By 23 January the first new patient had contracted peritonitis and shortly afterwards Millar ordered the doctors to stop the study. On 17 February, British Biotech issued a press release announcing that the Batimastat trial was being discontinued, citing 'abdominal discomfort and pain' (but not peritonitis) as the reason. It was suggested that the trials would resume later in the year.

In fact the statement concealed a developing conflict within the company. The original intention was that a marketing authorization for Batimastat would be obtained in time to lend credibility to the 1996 rights issue. Because the interruption to the test programme had made this impossible, the new plan was to include a statement in the prospectus that an application was imminent. Keith McCullagh, British Biotech's Chief Executive and Peter Lewis, its Director of Research and Development, believed, so they said, that this was actually the case. They were confident, in public at least, that the peritonitis had been the result of differences between the scaled-up manufacturing process used to supply the US trials and the laboratory process used in the UK. Commenting on the February press release, McCullagh stated that:

> Revisions made to the manufacturing process during the course of scaling up production of Batimastat for Phase III have now been shown to be associated with reduced patient tolerance. All affected supplies of the drug have been recalled and new supplies are currently being manufactured. The final step of manufacture will now be carried out exactly as in the original process.
>
> HC 888-i, 1998, pp. 19, 97

Intending to revert to what he called 'the previously successful method of production,' McCullagh ordered Millar to restart the trials. Millar refused. In his view it was premature to assume that the cause of the problem had been identified, and unethical, as well as pointless, to resume the trials 'without having definitely fixed the problem'. Not for the last time, Millar was threatened with dismissal. In the event the Batimastat programme was allowed to wither away and effort concentrated on Marimastat, the orally administered version which was thought to have better sales prospects.

In 1994, Zacutex too entered a stage 3 trial. This ran for two years without demonstrating any significant improvement over existing treatments. Despite this, the company issued an upbeat press release on the drug's prospects late in 1996. In February 1997, Millar communicated his misgivings to an R&D meeting. After the meeting, he was reprimanded by Lewis for 'attempting to demoralize senior management.' (HC 888-i, 1998, p. 32). In May 1997 the European Medicines Evaluation Agency (EMEA) rejected British Biotech's application for registration of the drug, despite which the company went ahead with press releases implying continued progress with Zacutex and announcing a major expansion of its marketing department. In 1998, notwithstanding the failure of the European licensing application, Zacutex entered an 1,800 patient stage 3 trial in the USA, at an estimated cost of £2m. To Millar, spending this kind of money on a drug which had already failed 'seemed like part of an attempt at laying a paper trail to show ''confidence''' (HC 888-i, 1998, p. 33).

It was Marimastat, however, which was the company's great hope. If the drug was successful, it was forecast to generate peak sales of £800m a year (Buckingham, 1998). Marimastat had shown effectiveness in early clinical trials and British Biotech's press releases of 1995 and 1996 had made much of this without mentioning that the data in question were not acceptable to the US Food and Drugs Administration (FDA). Later, the US Securities and Exchange Commission ruled that these statements had been 'materially misleading' and McCullagh and other directors were made the subjects of a cease and desist order in 1999 (Marsh and Corrigan, 1999).

Meanwhile, back in May 1996, Marimastat entered a 400-patient stage 3 trial on pancreatic cancer in order to supply precisely the data required by the FDA. During these trials one of the doctors informed Millar that some of the patients were developing tendonitis. Again the trial was 'double blind', so that Millar had no immediate means of knowing whether Marimastat was responsible. Suspecting the worst, he unblinded the trials – thereby potentially invalidating them for regulatory purposes – and discovered that the tendonitis was indeed specific to the Marimastat patients. Worse, the unblinding revealed that just as many of them were dying just as quickly on Marimastat as on placebo. According to Millar, he communicated these concerns to his colleagues as early as November 1996, and again at the R&D meeting of February 1997. The spending on clinical trials continued. In all there were ten trials. Marimastat was tested on patients with pancreatic, gastric, ovarian, brain and small-cell lung cancer. The drug's failure to improve on existing treatments was replicated in every case.

Back in late 1996, meanwhile, Millar had become convinced that none of British Biotech's major drugs would be licensed in their present form and in the near future. His attempts to persuade McCullagh to re-think the company's strategy in the light of these problems – or even to get them discussed within the company – had been met with disciplinary action and threats of dismissal. It was clear that neither the company's press releases nor its policies were going to change so as to reflect the information coming from the clinical test programmes. As Millar saw it, the company was burning cash to the tune of £60m a year on clinical trials which stood little or no chance of success.

His first reaction, so he said later, was to opt out of company strategy and to cease taking part in the presentations to investors and analysts. Even this negative move, however, was enough to alert Jane Henderson, a stock analyst with Goldman Sachs who had been asked to cover British Biotech (HC 888-i, 1998, p. 54). After a number of phone calls, Henderson succeeded in running Millar to earth. His words, as he recalled them before the Committee of Inquiry, suggest that the confession came as a relief:

> Actually, Jane, I am very concerned about the business plans. I do not know what to do about it. It is just me against ten directors. Am I right or am I wrong? How can I do anything about this?
>
> HC 888-I, 1998, p. 116

That, of course, was enough. Overnight Millar became the most popular conversation companion in the investment bank village. British Biotech's shares which had stood at 370p in May 1996 slid to 204p in June 1997 and to 101p in November 1997. Millar was suspended for suspected 'breaches of company policy' on 11 March 1998, by which time the shares stood at 85.5p. They dropped a further 15.5p on the news. He was dismissed on 20 April 1998, and two days later sent an open letter to the Financial Times setting out his concerns. Disturbed by the impactions for investor confidence in the biotechnology industry as a whole, the House of Commons Science and Technology Committee decided to conduct an inquiry (HC 888, 1998).

The first volume of the Committee's report was published in August 1998, by which time British Biotech's shares had fallen to 38p. Broadly speaking, the report endorsed Millar's view of the way British Biotech had been managed and largely exonerated him from any wrongdoing. On 23 September, McCullagh resigned. In June 1999, a parallel Stock

Exchange inquiry censured British Biotech for issuing misleading information to investors. By then the shares stood at 19p.

### British Biotech: a rush to judgement?

Condensed from contemporary newspaper accounts and from the report of the Select Committee, the foregoing is the story as it 'naturally' appeared to these observers at the time. It is one which slotted easily into a media-standard template: that of whistleblower: variant David-and-Goliath. In fact there were explicit references to D&G in several of the newspaper reports and in the account of Millar himself. The whistleblower story is one in which a person of comparatively lowly status but heroic mettle discovers some disreputable practice which those in power are intent on covering up. All attempts to persuade these authorities to act are stonewalled. Threatened and bullied where not ignored, the whistleblower is eventually driven to the point at which conscience prevails over self-interest and the bad news is broadcast to the world.

Millar's tale fitted this outline in a number of respects. British Biotech's board *did* suppress news of the problems in some of the clinical trials and he *was* bullied. There were threats of legal action and attempts to represent him as insane. What could be more natural than to assume that the stereotype fitted in other respects too – crucially that Millar's tribulations were in the cause of truth? And, in the sense that British Biotech's drugs all eventually failed, it *was* the truth.

On top of that, McCullagh and his fellow directors had motives for suppressing any news which might depress British Biotech's share price: their own holdings for one. In January 1995, they unloaded several hundred thousand pounds' worth of stock at £5.25p per share. Though they were cleared of any wrongdoing by a Stock Exchange inquiry held at the time,[2] they must have been aware of the problems emerging from the US Batimastat trial. Then there was the rights issue of June 1996. Though McCullagh obviously had to admit that the interruption to the trial would delay any licensing application for Batimastat until after the issue, he still declared that 'the potential of Batimastat as a new treatment for certain types of advanced cancer remains unaffected.'

Set alongside Millar's revelations and his palpable mistreatment, these issues of motive contributed to a general sense that British Biotech was a company in which there had been goings-on. This should not have influenced the judgement on whether or not the

investors had been deceived but the tone of the questions put by the Select Committee suggests that it may have done so.

To state what should be obvious: whether or not there was deception does not depend on whether there were motives for doing so. Nor is it demonstrated by the fact that the early intimations of failure were proved correct in the fullness of time. Nor does it depend on Millar's sincerity, nor on the fact that he suffered for it. The sole criterion is whether or not the information given out was a reasonable interpretation of the information possessed by the company at the time. In the case of Batimastat, the question turns on whether it was a deception to inform investors that, contrary to the opinion of the Director of Clinical Research, a problem which had not been apparent in previous trials would be solved by reverting to the drug as prepared for those earlier trials. Whether this was deception, self-deception or not deception at all is by no means clear from the evidence set out in the proceedings of the Select Committee.

Picking over old news in this kind of detail matters because it bears on the question of how far McCullagh's behaviour can be regarded as pathological and how far it is to be expected of any scientist-entrepreneur trying to hold together the science, the regulatory process and the finance in order to bring a new product to market. As we have seen, both the Select Committee and the Stock Exchange took it as read that the investors had been deceived and concluded that McCullagh had been guilty of allowing his concern for British Biotech as a business to over-ride his commitment to scientific truth.

Batimastat, as it happened, faded away, largely because it was thought to have been overtaken by the clinically preferable Marimastat. Probably for that reason, it did not figure all that prominently in the accusations of deception. The critical case was that of Zacutex, specifically the events leading up to the failed application for a European marketing authorization in May 1997. It was critical in the sense that it was the one picked out as a proven instance of deception by Paul Geradine, the Head of the Listing Department of the London Stock Exchange, in his evidence to the Select Committee's investigation of the regulation of the biotechnology industry (HC 535, 1999, p. 23). If the verdict in this case turns out to be questionable, so does the general conclusion.

## British Biotech: the verdict of the stock exchange

The accusation that British Biotech misled investors on the prospects for licensing Zacutex centres on two press releases of May 1997. At the

time the company had just received a preliminary report from the rapporteurs of the European Medicines Evaluation Agency (EMEA), raising questions about the data which had been submitted in support of the application. There were also indications from a second trial that all was not well with the drug, though the significance of these indications was disputed. In the event the application was rejected in June 1997 and British Biotech's share price roughly halved over the succeeding four months.

There were two clinical trials at issue, one in the UK and one in the US. The UK trial ran from June 1994 to September 1996. On the conclusion of the trial, the main analysis showed that Zacutex had reduced mortality, though not to a statistically significant extent. As Andrew Millar recorded it, the immediate reaction of Peter Lewis, British Biotech's Director of Research was, 'That's it, we're cratered.' (HC 888-i, 1998, p. 31). On further analysis, a significant effect was discovered on those patients who had been treated within 48 hours of the onset of the disease. Re-analysis of this kind, unfortunately, is known to statisticians as 'dredging,' and it is regarded as a crime against data.[3]

At the time, Millar's view of the future of Zacutex, as expressed to McCullagh was:

> I think the drug works but we do not have absolute proof. It can form the basis of an MAA (Medical Authorization Application), but you must tell me you can live with it being rejected before we make it.
>
> HC 888-i, 1998, p. 31

In September 1996, therefore, both men still believed that Zacutex worked, though they differed in their estimates of the chances of getting it licensed.

The US study compared Zacutex at two dosages with a placebo. In November 1996, it emerged that the 'event rate' (the death rate, that is) was lower than that in the UK trial, suggesting that the study had recruited patients who were less seriously ill. By then there had been 12 deaths, all but one of them on Zacutex.[4] The fact that the death rate was lower than in the UK trial and concentrated on the Zacutex patients, suggested to Millar that the US trial was revealing a 'toxicity effect' which had been masked by the poorer initial state of the patients in the UK trial. Zacutex, in other words, might be poisoning the patients, even as it slowed the progress of their disease. Though Millar accepted that 'the numbers were clearly too small to make any

judgments', he felt that there was 'the possibility that we had misled ourselves with the results of [the UK study]' (HC 888-i, 1998, p. 78). For that reason, he objected to a press release of late November 1996 which reported only the UK results, omitted to mention that they had not been statistically significant, and linked them to the prospect of a launch for Zacutex.

By January 1997, another 17 patients in the US study had died, 13 of them on Zacutex and 4 on placebo – still worrying but still 'Clearly too small to draw any conclusions.'[5]

In February 1997, a marketing authorization application for Zacutex was submitted to the European Medicines Evaluation Agency (EMEA) on the basis of the UK data. Millar's estimate of the chances of success at this time was about 40 per cent (HC 888-i, 1998, p. 116). As is normal, the application was passed out to rapporteurs and in May 1997 a copy of their preliminary assessment was passed to British Biotech. Although these preliminary reports make it clear that they are not a statement of the final position, it is usual for the Agency to rely upon the judgement of their rapporteurs. The preliminary assessment in this case made a number of objections. Millar recalled a conversation between himself and McCullagh:

> I told him that I had read the replies from the regulators which were entirely predictable. We all knew that the primary efficacy analysis on [the UK study] was negative and that we had had to undertake a lot of non-protocolized analyses in order to demonstrate a treatment effect… . I told Keith that we would be able to answer all the questions fulsomely [sic] but could not in anyway [sic] predict the outcome which seemed at best to be 50–50. Keith seemed rather unreasonably distraught about this
>
> HC 888-i, 1998, p. 42

In fact British Biotech had already released a statement on both the UK trial and the application for European marketing approval the day before this conversation. This release had been made with Millar's knowledge though without his approval. The description of the trial itself was word-for-word that released on the conclusion of the UK trial in November 1996:

> The trial, involving 290 patients with acute panchreasitis across 13 UK centres, demonstrated that there were fewer deaths in the Zacutex treated group and this change was statistically significant in those

> patients treated within 48 hours of the onset of disease. There was also a statistically significant reduction in median organ failure scores three days after beginning treatment in the active drug treated group.
>
> HC888-i, 1998, p. 106

Technically speaking, the only factual inaccuracy in this report is the claim of statistical significance for 'dredged' data, as if the analysis which produced it was designed into the study from the outset. It does, however, leave it up to the reader to make the inference that the main result was *not* statistically significant. Though any analyst with pretensions to understanding the industry should have been capable of seeing behind such a form of words, the story which appeared in the *Financial Times* made no such reservations:

> … data released to the public yesterday that showed that the death rates halved in patients given Zacutex within 48 hours of contracting Panchreasitis.
>
> *Financial Times, Companies and Finance*, 13 May 1997, p. 24

Later, it transpired that the reporter had been given an interview by British Biotech's press officer. It is possible that this encounter with professional information management influenced his reading of the press release. On the EMEA application, the company's statement continued:

> Dr Peter Lewis, British Biotech's Director of Research and Development, added 'Following the submission of the European MAA in February, we are setting up the European marketing and sales structure in anticipation of the launch of Zacutex in Europe …'
>
> ibid

Simultaneously, unknown to Millar, British Biotech had issued a second press release giving further details of a whole series of sales and marketing appointments 'to support [the] transition from a research and development company to an international operating business.' Having said this much, the release concluded with a disclaimer:

> This news release contains forward-looking statements which reflect the Company's current expectation regarding future events. Forward-looking statements involve risks and uncertainties. Actual events could differ materially from those projected herein and

> depend on a number of factors including the success of the Company's research strategy, the applicability of the discoveries made therein, the successful and timely completion of clinical studies and the uncertainties related to the regulatory process.
>
> HC 888-i, 1998, p. 106

Five years later, a code of practice issued by the BioIndustry Association (BIA, 2001) was to stipulate that generalized 'health warnings' of this kind were insufficient as a safeguard against misinterpretation. Certainly it was ignored in the *Financial Times* report:

> British Biotech, the UK's largest biotechnology company, yesterday took a significant step closer to commercialising its first product with news of progress in clinical trials and a series of senior marketing appointments.
>
> British Biotech is establishing sales subsidiaries in the UK, France, Germany, Italy, the Nordic region and Spain and from these bases intends to market its products throughout Europe. It has already recruited a managing director for the UK sales subsidiary with the others to follow.
>
> The new executive's first job will be to prepare for the launch of Zacutex, a drug for acute Panchreasitis. The results of Zacutex clinical trials have already been given to medical regulators in Europe.
>
> *Financial Times*, 1997

Though the original press releases are not blameless, it is evident that the newspaper report adds a significant element of evaluation. The trials and the appointments are a 'significant step closer to commercializing'; there has been 'progress in clinical trials' (when the news of these was identical to that released five months ago) and the results 'have already been given to medical regulators' (as if that were all that was required for approval). Millar, who knew nothing about the second press release until he learnt of it through the Financial Times probably assumed that the article was simply a reflection of it. To him it implied that the company was treating the eventual success of the EMEA application as a foregone conclusion. In his view, that put at risk the relationship with the regulators as well as with investors. He, and a number of other senior employees, 'told McCullagh that the FT article destroyed our credibility to negotiate with the regulators who would think we were wide and naïve [sic], knowing that we had received their negative reply only a few days before.' (HC 888-i, 1998, p. 43).

To the extent that the accusation against British Biotech depends on its responsibility for the FT report the case is only partly proven. It is interesting to look at what *The Independent* made of the same two press releases. The new appointments were simply ignored, whilst details of the Zacutex trial were dismissed as old news. The account of the drug's therapeutic effects and sales prospects, moreover, was decidedly low-key.

> Never mind cancer, British Biotech needs to find a cure for no-news-itis. Shares in the UK's largest biotechnology group have underperformed the market by 25 per cent since hitting a 326p high 12 months ago. Small wonder the group has resorted to dressing up old news as new.
>
> Yesterday it used the pretext of a presentation given to a US conference on digestion to announce that final-stage clinical trials on its most advanced drug, Zacutex, the acute Panchreasitis treatment formerly known as Lexipafant, resulted in fewer patients dying and less organ failure. But the story had already been well-rehearsed and British Bio's shares fell 4.5p to 243.5p yesterday.
>
> Many observers reckon Zacutex will be a small drug in sales terms; some project peak world-wide sales as low as £50m against estimates as high as £600m… Even so, Zacutex remains important. Given the encouraging clinical data on the treatment, the group could be the first UK biotech to get a new drug on the market, something that would undoubtedly help sentiment.
>
> *The Independent*, *Business*, 13 May 1997, p. 18

That British Biotech's shares actually *fell* after a press release which was supposed to have deceived the investors into an over-optimistic view of the company's prospects is highly significant. How is an accusation of deception to be sustained if no-one was actually deceived?

It is still arguable, nevertheless, that the press releases should have made reference to the two items which were weighing most heavily on Millar's mind: the deaths of the Zacutex patients in the US trials and the discouraging preliminary evaluation from the EMEA. McCullagh's line on both was straightforward if predictable: unscheduled intermediate results from clinical trials were not data and neither, in advance of the usual discussions between the company and the regulators, were the objections raised by the rapporteurs. On Millar's side, there was no matching certainty: the US data were still a long way from statistical significance and even he thought there was still a significant chance of

satisfying the European regulators. Whichever way either turned out, any statement would appear misleading with the benefit of hindsight. The only remaining way to allow for the doubts they raised, would have been to make no statement about either the UK Zacutex trials or the progress of the EMEA application.

The problem there is that no news is news in itself. It is precisely the job of analysts and financial reporters to establish contacts in the industry and to obtain information from them. Any interruption to the normal flow of news suggests that there is a story behind it, as was demonstrated by Jane Henderson's pursuit of Millar following his withdrawal from British Biotech's press conferences. In its evidence to the British Biotech Inquiry, Perpetual, the second largest shareholder, suggested that biotech companies have a duty 'to manage expectations' (HC 888-iii, 1998, p. 178). If this is truly the case, there is no way of saying nothing.

A further difficulty with framing the issue as one of truth in communication is that it is possible for fact to work as deception. It was perfectly true that British Biotech was recruiting commercial and marketing personnel in anticipation of approval for Zacutex. The deception, if deception it was, lay in the appointments themselves and the thinking behind them. At a number of points in his evidence to the inquiry, Millar accuses McCullagh of precisely this kind of deception, of 'leav[ing] a paper trail of actions consistent with optimism' (HC 888-i, 1998, p. 26). The prevention of this kind of manoeuvre, however, would require restrictions on company policy for which the machinery simply does not exist and which could scarcely form part of any policy of encouraging entrepreneurship.

But *were* the appointments a deception? British Biotech's last injection of cash was the £143m one-for-eight rights issue of July 1996, well before the results from the Zacutex trials and the European submission. There was neither a need for, nor the prospect of, a return to the stock market in the foreseeable future. No-one was going to be deceived into putting new money into the company by optimistic statements on Zacutex or by the creation of an organization in anticipation of its approval.

Ten years after its creation, British Biotech was still a one-product company in the sense that all of its major drugs shared a common therapeutic technology. McCullagh still believed in that technology, as did Millar. The best guess surely, is that McCullagh, knowing that he now held all the cash he ever was going to get, and believing that the drugs were now as effective as they ever would be, had decided to bet

the farm on regulatory approval for either Zacutex or Marimastat. What else would an entrepreneur do?

Shortly after the events at British Biotech, scientist-entrepreneurs were involved in two more high profile biotechnology collapses.

## Cortecs

Cortecs originated in 1976 as one of three contract research organizations operating in the USA, Canada and the UK. In 1979 the company was renamed TIL (Medical) Ltd. and its head office moved to the UK. In 1987 TIL became part of Western Capital Ltd., a company founded by an Australian stockbroker called Glen Travers. Western Capital Ltd. listed on the Australian Stock Exchange in 1988 and, as Cortecs plc, on the London Stock exchange in 1997.

Cortecs' distinctive expertise lay in developing orally administered versions of existing drugs rather than in new drugs per se. The most important was Macritonin, an oral version of calcitonin which is a treatment for osteoporosis normally administered by injection or nasal spray. Its other major projects were Pseudostat, a vaccine against chronic bronchitis or cystic fibrosis and Macrulin, a treatment for diabetes.

In 1994, Cortecs raised £10.6m in order to fund its development costs for the next two years. Issued at 44p in 1994, the shares reached 412p during 1996, powered largely by Travers' sanguine pronouncements on the progress of the clinical test programme. Like McCullagh at British Biotech, Travers spoke of Cortecs as 'the next Glaxo'.

In 1997 the company applied for a primary listing on the London Stock Exchange. Because this involved the disclosure of directors' remunerations it became clear to the investors that a substantial portion of their cash was funding Travers' flamboyant lifestyle rather than research or clinical tests. In addition to an annual salary close to £250,000, it emerged that Cortecs was paying for Travers' vehicle expenses, chauffeur costs, school fees, accommodation, helicopter lessons and his membership of the Young Presidents' Association. Indicative of Travers' view of himself as the CEO of a company employing less than 200 people, the YPA is an organization through which business leaders meet to exchange views in such centres of economic activity as Hawaii and Disneyland Paris. Altogether, Travers received £13m in 1998, mainly in the form of share options. Cortecs' total sales in the same year amounted to £8m (Business Review Weekly, 1999). Naturally these revelations impacted on Cortecs' share

price, which was already suffering from the fall-out of events at British Biotech. By December 1997, the shares stood at 190p.

In June 1998, having become an embarrassment to the rest of the board, Travers resigned (Cortecs' story) or was ousted (Travers' story). Travers' version prevailed at law and he was awarded £1.3m plus costs in an out-of-court settlement. To rub salt into the wound, Cortecs subsequently received a demand from the Inland Revenue for £1m unpaid PAYE on Travers' benefits. (Baws, 1999).

On Travers' departure, Michael Flynn, the Chief Scientific Officer who had been with Cortecs and its predecessor companies from the beginning, took over as acting CEO. Though this solved the problem of Travers' high-profile profligacy, there remained issues of interpretation concerning the state of Cortecs' clinical test programme, particularly between Flynn and Philip Gould, Cortecs' R&D Director.

Gould had joined Cortecs in January 1998 after 20 years' experience in large pharmaceutical companies, including Glaxo Wellcome. Gould's understanding was that he had been recruited to take charge of programmes which were, '"in late stage development" ready for final registration – ready for manufacturing, ready for commercialization.' Instead, his preliminary review found that, 'to pull all these pieces of information together for regulatory submission there was an awful lot to do.' (HC 332-i, 1999, p. 6). Flynn's assessment of the programme was more optimistic than Gould's in a number of respects.

Firstly, he thought that a licence might be obtained for Macritonin more quickly than the rest of the board supposed. The normal method of testing treatments for osteoporosis is to measure increases in the patients' bone mineral density. These changes are slow, and any trial based upon them would need to be large, long and expensive. Cortecs, especially in the wake of Travers, needed to reduce its consumption of cash. An alternative, which Flynn believed might be acceptable to some licensing authorities, was to measure the levels of 'bone destruction markers' in the patients' urine. Where permissible, this would speed up the tests and reduce the time to market. Even if it were not acceptable, there was the fall-back option of continuing the same tests to yield the conventional data on bone mineral density.

A second issue concerned the cost of calcitonin, the active ingredient of Macritonin. Cortecs did not itself manufacture calcitonin and recent trials had suggested that the optimum dose might be double that first anticipated. Gould and the rest of the board believed that this raised questions over the drug's commercial viability. Flynn was not convinced of the need for a higher dose, and also believed that the cost of calcitonin would reduce in the future.

Concerning Pseudostat, the original strategy had been to aim for licensing as a treatment for chronic bronchitis. Confirmation of early indications of effectiveness would require a large scale trial and this had been planned for the winter of 1998–99. Unfortunately for Cortecs, it was looking as if supplies of the drug would not arrive in time for this trial to run as scheduled. With this in mind, and in the light of the need to contain spending, the rest of the board, planned to run a smaller preliminary trial, testing Pseudostat against cystic fibrosis. Flynn disagreed with this change of plan. He believed that the company should have pressed on with the chronic bronchitis test, despite the delay and expense, largely because there were no existing data suggesting that Pseudostat might be effective against cystic fibrosis (HC 332-i, 1999, pp. 17–18).

With Flynn consistently on the side of optimism and the high-risk, high-gain alternatives, these differences of opinion with the rest of the board quickly escalated to the point of no return. Flynn left the company at the end of November 1998 after only five months as CEO. Gould took over, and on 1 December the board informed the investing community that the test programmes for Macritonin and Pseudostat were 'not as advanced as had previously been indicated.' The next day, Cortecs' shares, which had been valued at over £4 two years previously, dropped 15p to stand at 11.5 pence.

In March 1999, the House of Commons Science and Technology Committee, concerned that these events would exacerbate the loss of confidence already caused by events at British Biotech, interviewed Flynn and his successor, Philip Gould (HC 332-i, 1999).

## Cortecs: the end of entrepreneurship?

Possibly because the Cortecs case lacked the whistle-blowing drama which dominated events at British Biotech, it offers more in the way of commentary on the entrepreneurial model of science-based innovation. Most of this came from the two CEOs, Philip Gould and Michael Flynn. Both men were scientists with over twenty years' involvement in the industry, Gould in major corporations and Flynn in the small company setting of Cortecs' predecessors. Their testimony to the Select Committee was clearly the product of much reflection.

Both saw Cortecs as emerging from an entrepreneurial phase. For Gould, the man from 'big pharma', this was part of a general maturation of judgement and planning throughout the industry:

> I joined the biotechnology industry at an interesting time – it was in its adolescent phase of unchecked growth. It tended to be run

> by entrepreneurs – these individuals were necessary to establish the industry, but, with the benefit of hindsight, it is possible that on occasions they lacked sound professional management experience with the correct insight and in depth understanding of the drug development process. A maturing process is now occurring throughout the industry; the events at Cortecs are only one example.
>
> HC 332-i, 1999, p. 3

For Flynn, the end of entrepreneurialism at Cortecs was more local and personal. Remembering that his background was in contract research, he saw it as part of Cortecs' transition from a research organization to a business. His departure, and the differences of opinion which led up to it, were, he believed, symptomatic of change of culture, from conviction-driven optimism to a more level-headed commercial evaluation (Gould's 'maturing process').

> … It is my view that founders of bio-tech companies will very seldom last the course until they become real businesses, rather than companies, because it is a different nature, a different way of operating and I fully expected the day would come for me some day when my views about how to proceed would be different from the views of my colleagues.
>
> HC 332-i, 1999, p. 21

> … I was certainly on the optimistic side. I would not necessarily say to be optimistic means taking a less tough view of things but I certainly look positively. I believe you have to look positively to make things happen, but you have to recognize when things are not positive. But I am an optimist.
>
> HC 332-i, 1999, p. 22

As with McCullagh at British Biotech, both men saw entrepreneurial 'optimism' as a particular way of constructing a meaningful picture from the facts, not of ignoring or suppressing them. In this connection, both drew attention to the uncertainties involved in the interpretation of scientific data and the status of test programmes. They insisted on the element of judgement involved in the presentation of information on these matters to outsiders, maintaining this position in the face of considerable pressure from the Committee to admit that Cortecs' investors had been misled. In the following exchange, the

questioner is pressing Gould on the December 1998 statement that the test programmes were not as advanced as had previously been indicated:

> (Questioner) Could I just interrupt? I think the point is: was there any new information in that press release that had not already been given to the City by yourself in September?
>
> (Dr Gould) There was no new information. It was a new realistic standing back and interpretation and statement about where we were …
>
> (Questioner) It is becoming abundantly clear that a picture of false optimism had been given previously. Do you think that that was done wittingly or unwittingly?
>
> (Dr Gould) When one looks at data and the context of the data and the amount of data one can get promising indications. If you are very close to it and an enthusiast and really a supporter of the technology, you can be blind to the degree of promise that it has and the risks and challenges ahead to secure that promise and make it a product. I read into that that the over-optimism was really some of that process. I come from a background of, I hope, rational process and standing back to be realistic and objective and what we needed to do was exactly that process because there were too many things that we were not standing back from…
>
> HC 332-i, 1999, p. 12

As with Flynn *supra*, Gould is arguing that what looks like 'over-optimism' from the outside and with hindsight, is actually essential to the process of developing new science-based products. Flynn, for his part, was adamant that his positive reading of the state of test programmes was just as legitimate as the conservative position adopted by the rest of the board. He speaks here of the disagreements which led to his departure from Cortecs:

> … there was really a four to one … difference of opinion between myself and the other members of the executive board, on a number of matters … Given the same set of data different scientists would all reach different conclusions about the possibility that certain events would come about.
>
> HC 332-i, 1999, p. 20

Flynn also pointed out that the uncertainties of reading data enter into the licensing process itself, thus feeding back further uncertainties into any evaluation of a company's licensing strategy:

> The same data reviewed by different authorities, all of which may use teams of experts to assist in their evaluations may give completely different outcomes, which is a reason some products are available only in certain countries.
>
> HC 332-i, 1999, p. 15

Coupled with the problems of processing information on the supply side, as it were, the difficulties of presenting it in a form appropriate for investors are compounded by the manner in which it is consumed. Gould:

> These minutiae in the way the programmes move forward are always very visible and therefore that relates to how that information goes out to the market and how that information goes out to the market will influence investors…
>
> HC 332-i, 1999, p. 8

As if to reinforce the point, Flynn describes how investors misread a statement on Cortecs' licensing strategy in a manner which exaggerated the risk:

> … with respect to the strategy for registration, what I think seemed to have been forgotten by a number of people was the registration strategy [for Macritonin, the osteoporosis treatment] was to go for something called bone mineral density. There was an alternative [measurement of biochemical indicators of bone resorption] which might get us ahead in a few countries but there was a certain risk attached to that. So [this latter] was a bolt on strategy. That seemed to be re-interpreted [i.e. by investors] as the major strategy …
>
> HC 332-i, 1999, p. 23

Both Gould and Flynn emphasized that the entrepreneurial model of science-based innovation, in which the investors' cash is used to fund the development of a small portfolio of products inevitably meant a roller-coaster ride:

Flynn:

> Even multinationals can have unpleasant surprises but usually have larger product portfolios and the impact of product failure is

> seldom disastrous. Biotech companies, in contrast, may have most of their value represented by only two or three products or even a single product. Every event surrounding the development of that product is closely watched by the investing community and a single product setback can thus dramatically reduce the value of the company.
>
> … Against this background it is clear that in the field of therapeutics, if the success rate for a product entering human tests remains at 10–15 per cent most biotech companies are going to face serious disappointment during their evolution and it is not an industry for fainthearted management or investors. Persistence and perseverance are essential.
>
> HC 332-i, 1999, p. 15

Gould, in his oral testimony, expressed similar views:

> … If [a company] has got one or two or three programmes, that is very different from the large pharmaceutical company which has many programmes, and small pieces of information are of keen interest and that does influence the analysts and the people buying the stock.
>
> HC 332-i, 1999, p. 9

> … I think that if we were a very large company it is much easier to bury dead bodies at night! That is not making any reference to anybody but just the process there. We are a very small company. We have programmes which are visible. We work in an environment which does not make any profit and therefore any minutiae of any detail of any programme is visible and visible to the City.
>
> HC 332-i, 1999, p. 12

Speaking to the Australian Journal *Business Review Weekly* later in 1999, Gould summed up his view of the industry as a whole.

> There is also a feeling now that perhaps biotech should never have been funded by the stock market in the first place, partly because it needs large amounts of money for very high-risk research, which is never going to produce the short-term returns that investors are expecting.

## Scotia

Scotia Pharmaceuticals had its origin in the research of David Horrobin, a prolific and respected biochemist at the University of Montreal. Horrobin had discovered that many ailments, ranging from cancers to behavioural disorders, were accompanied by deficiencies of certain essential fatty acids which occurred naturally in the evening primrose. In 1979, he left the university to set up the Efamol Research Institute in Nova Scotia. Efamol's mission was to market health supplements based on evening primrose oil and to conduct further research into its curative properties.

Using profits from the health supplements, Horrobin set up Scotia Pharmaceuticals in 1987, with establishments in Canada, Scotland, and Surrey. By the early 1990s two lead products had emerged from the research: EF13 (later 'Glamolec') which had been found to kill cancer cells while leaving healthy ones unscathed and EF4 (later 'Tarabetic') a treatment for the nerve damage suffered by diabetics. Funded in part by a £37m share issue on the London Stock Exchange in 1993, clinical trials were carried out on both drugs during the mid 1990s. Though these trials were often relatively small and unsystematic, the enthusiastic statements from Horrobin which accompanied them were enough to propel the shares from 290p at flotation to 714p in September 1995. A contemporary assessment in the Investor's Chronicle (1995) concluded that they were 'fairly priced'. By 1996, Horrobin's 17 per cent stake in Scotia was worth £103 million on paper, enough to put him on the Sunday Times top one hundred 'rich list' (Charlton, 2003).

Meanwhile, Horrobin's eclectic view of the potential of evening primrose oil,[6] together with his tendency to treat the company as a vehicle for his own research had created a highly fragmented clinical trials programme, much of which was incapable of providing the statistical data needed to convince the licensing authorities. In fairness, Horrobin was well aware of the unorthodoxy of his approach. He objected in principle to large-scale trials of new treatments against rapidly lethal diseases. In such cases he felt that the advantage of any new treatment should be clear enough to make large trials unnecessary (Horrobin, 2003).

Tarabetic, however, was a treatment for diabetes, not cancer. An early submission in 1991 failed because of insufficient data. A second submission was also rejected in March 1997, partly because the study did not sufficiently distinguish the drug's effects on the two types of diabetes and partly because the results from Glasgow's Southern

General Hospital appeared to be out of line with those from other centres. When the Glasgow results were taken out of the data, the drug showed no significant effect.

Years later it emerged that a Dr Goran Jamal had manipulated the Glasgow sample so as to favour the treatment. Supporters of Horrobin claimed that this was done without the knowledge of the company (Kelliher, 2003). What must have been known to someone at Scotia, however, was that Dr Jamal had been paid for his work on the trials in the unusual form of a 0.5 per cent royalty on the future sales of Tarabetic (Richmond, 2003).

Horrobin's reaction to the Tarabetic failure was characteristically breezy: he thought it might delay the launch of Tarabetic by nine months, but would be 'astonished' if it didn't get approval eventually.

Tarabetic wasn't the only failure. Over-optimistic extrapolations from what were sometimes little more than pilot studies had led the company to invest effort in a number of other products which then failed at late stages in their development. The rumblings from investors came to a head in July 1997, following the Tarabetic debacle. Horrobin was pressured into appointing a new medical and development director and himself head-hunted Robert Dow for the position. At the time Dow was head of global drug development at Hoffman-La Roche where he had acquired a reputation as something of a hit-man.

Dow soon lived up to it. After a brief reconnaissance, he axed 21 of Scotia's 26 products and rationalized the test programmes of those that remained. Two hundred of Scotia's 450 staff lost their jobs in the process. Incensed at the termination of so many of his pet projects, Horrobin, still a non-executive director at that stage, tried to persuade the rest of the board to remove Dow. Only Horrobin's wife was convinced, and in May 1998 it was Horrobin himself who was forced to resign.

Apart from an appetite suppressing yoghurt, that left Scotia with two major projects: Glamolec, the evening primrose cancer treatment mentioned earlier and Foscan, also a cancer treatment but one based on photosensitive toxins which were activated by laser light once they had accumulated in tumours. Needing cash for the development and testing of these and other projects, the company placed $50m of convertible bonds in March 1998; high-risk finance for a company still living largely on health supplements.

As late as October 1998, Scotia was still recruiting patients with cancer of the pancreas for a phase 3 trial of Glamolec. On April 15, 1999, however, it was announced that an interim analysis of this trial by the Independent Data Monitoring Board had shown no survival benefit from Glamolec. Dow read the rites as follows:

> The cessation of the Glamolec project, on the basis of an interim analysis, from a robustly designed, and speedily conducted study is consistent with our previously announced strategy to determine quickly and cost effectively whether there is any commercial or medical value in our residual lipid pharmaceutical programmes.
>
> The Regulatory News Service, 15 April 1999

This is the authentic voice of the R&D audit. The contrast with the commitment of the scientist-entrepreneur is stark. Where McCullagh at British Biotech insisted on running the Marimastat trials to their bitter conclusion, Dow's attitude might be described as quasi-judicial. Glamolec had to demonstrate a probability of success even to justify the expense of a full trial. The difference was one of commitment and attitude to risk as much as realism.

Dow may have given up easily on Glamolec, but he had to remain committed to Foscan, in public at least, because by 1997 the financial analysts had decided that there was little future for Scotia without it (Dorsey, 1997). The company's interim results of September 1997 spoke of a 'growing weight of clinical evidence underlying the potential of Foscan in the treatment of cancer.' The report also made much of two licensing deals which provided Scotia with $54m of 'upfront and milestone payments' for development and testing. 'These agreements with leading companies', concluded the report, 'provide strong validation for Scotia's PDT [photodynamic therapy] technology.' The upbeat tone was maintained in the interim results of June 1998. Product licence applications for Foscan would be filed in the US and Europe in mid 1999. Preliminary results from the first fifty patients treated in the primary study had been very encouraging, 'with close to 90% experiencing a complete response following treatment.'

In May 2000, however, the Foscan project started to derail. An article in the British Medical Journal (BMJ) reported that tests on a small number of subjects who had been given a single dose of Foscan showed partial thickness burns after exposure to sunlight, with some scarring (Hettiaratchy and Clarke, 2000). Scotia's shares fell by a quarter and the company responded with a threat of legal proceedings. Backing up a detailed rebuttal in the BMJ, Chris Blackwell, Scotia's director of development, made the following public statement:

> The data are at odds with the results of Foscan trials on several hundred other patients. We do not believe that it will have any effect on the likelihood of our receiving approval for this product from the regulatory authorities.

Blackwell's statement proved prophetic, but not in the manner he would have hoped. In September of the same year, the US Food and Drug Administration (FDA) rejected the licence application, not because of Foscan's side-effects, but because the trial had been based on only 64 subjects. When the news broke, Scotia's shares dropped from 124p to 54p in four hours. In a striking demonstration of the dominance of circumstance over temperament, Dow's gloss on the rejection was as headily optimistic as anything produced by Horrobin, or even McCullagh:

> It's not the end of the world and there is a long way to go before we admit defeat. A lot of people still believe Foscan can benefit cancer sufferers and hopefully we can translate that into an approved drug.
> Moncur, 2000

In December, the FDA agreed to consider new data with a decision promised by June 2001. Scotia's problem now was to survive that long: Dow estimated that lasting until June would take £15m of new money. In reality attracting any money at all was a problem since the company had hanging over it the prospect of having to repay the £50m borrowed in 1998, unless, that is, its share price reached the now-unlikely level of 340p by March 2002.

Scotia went into administration in January 2001. Cruelly, Foscan was approved for clinical use in Europe in June 2001 and the administrators sold the rights to Singapore Technologies for approximately £70m. At that price, it would have paid investors to stump up the £50m owed to the bondholders as well as the £15m to keep the company afloat. By that stage, however, they were probably beyond believing any of the company's prognoses for Foscan, thus demonstrating that investors can fall victim to their own scepticism as well as the over-optimism of entrepreneur-scientists.

Even more cruelly, Horrobin died of cancer on 1 April 2003. A blistering obituary in the British Medical Journal described him as a 'snake-oil salesman' and the oil of the evening primrose as 'the remedy for which there is no disease' (Richmond, 2003). The article attracted a storm of protest from Horrobin's former associates and employees. Even to an outsider and layperson, the attack seemed out of proportion. The most Horrobin could be accused of is that he tested a medical hypothesis to destruction, and did so using other people's money. It was not initially implausible that medical conditions which are accompanied by deficiencies in certain fatty acids might be treated by supplements which contain those same fatty acids; not implausible even though it ultimately turned

out to be false. If Horrobin persisted with this vision rather longer than a dispassionate assessment of the clinical trials would have warranted, that is part of the price of having a vision, and in the case of Scotia's shareholders, the price of following an entrepreneur in the grip of one. The monies invested in Scotia were not charitable donations to cancer research. They were investments in the chance that David Horrobin's research would come up with a patented treatment, the rents on which would have paid dividends far into the future. In that sense, the shareholders got the chance they had paid for. Perhaps a fairer assessment of Horrobin was made in The Financial Times at the time of Dow's takeover. Although he was described as a 'maverick' and probably 'the wrong man to lead an established pharmaceutical outfit', the writer was also moved to add, 'His scientific skills shine through and no-one doubts his entrepreneurial flair.' ('Observer', 1997).

On the question of information to investors, we would expect nothing less of Horrobin than that he should describe Foscan as 'a ''magic bullet'' for early stage cancer' (Stevenson, 1996) and to claim of Glamolec that 'Lipids oils will revolutionize medicine. People will be banging at our door for the rights to these products'. (Ahmad, 1997). What was more significant was the transformation which came over Dow's pronouncements when it was Foscan rather than Glamolec which was at issue. Once Foscan had become Scotia's last best hope, Dow, the man from big pharma and dispassionate terminator of sickly projects, found himself in the structural position of the scientist entrepreneur. Caught between the fluctuating fortunes of a one-project R&D programme and the panic tendency amongst investors, within the limits of scientific probity he made the interpretations of data which were necessary for the project to run to its conclusion. At the time of Scotia's insolvency, there were no doubt investors who felt that they had been misled. They were not. Whether or not Dow believed his own positive assessments at the time, they turned out in the end to have been correct.

## Commentary

In a number of respects, British Biotech, Cortecs and Scotia were untypical of the UK biotech sector. They were public companies, they were comparatively large and they either failed or came very close to it. In 2003, only 51 of the 481 biotechnology companies in the UK were public and 19 of these were reporting a profit (HC 87, 2003, p. 7, 11). Amongst all of them, the failure rate was very low (HC 1282, 2003, p. 9).

Untypical they may have been, but the failures were highly consequential. In a market where prices are determined by estimates of market sentiment, high-profile collapses set off a positive feedback in which the reaction to any setback, however minor, is amplified by the memory of earlier over-reactions. Noticeably, the protagonists in both the Cortecs and Scotia cases cited earlier events at British Biotech as a contributory factor behind the volatility of their own shares. The loss of investor confidence in the sector has been such that the markets are effectively closed to new biotechnology offerings (HC 87, 2003, p. 30, 33).

The road to the stock market, nevertheless, remains the preferred path of development for the aspiring bioentrepreneur (HC 87, 2003, p. 29, 33; HC 1282, 2003, p. 12). The alternative of venture capital funding turns out not to be so much of an alternative after all. As against the 12 years it may take to bring a research-based product to market, UK venture capitalists typically seek to cash out their investments after 7 years or so, either through a public offering or a trade sale (HC 87, 2003, p. 27; HC 1282, 2003, p. 9). The option of a trade sale is unattractive to those entrepreneurs who see themselves as heading up a 'new Glaxo', and is also likely to export the new technology to an overseas company (HC 87, 2003, p. 27). So, by a combination of preference and constraint, a company which could still be five years away from a finished product is led back to a disaffected stock market (HC 87, 2003, p. 30). It is in this manner that the entrepreneurial model of science-based innovation raises the issue of communication with investors.

Possibly as a move to forestall regulation by government agencies, the BioIndustry Association (BIA) responded quickly to the 1998 report on British Biotech. Its draft Code of Best Practice was published in July 1999 and examined by the Select Committee on Science and Technology in September (HC 535, 1999).

The Committee's main concerns surfaced in questions 47 and 48 of the Examination of Witnesses: that there was nothing in the code which would have prevented what they saw as the disinformation issued by British Biotech, and that there was no provision for monitoring compliance with the code itself. In what reads like an entertainingly ill-tempered exchange, these issues were pursued through the remaining 70 questions of the examination without ever achieving a satisfactory resolution. On the prevention of misleading information, the line taken by Paul Geradine, Head of the Listing Department of the London Stock Exchange, was straight out of the comedy programme 'Yes Minister.':

> What I am basically saying is that one can never devise laws or regulations which will completely prevent wrongdoing. What one is obviously relying on is the integrity of individuals responsible for complying with those laws and regulations.
>
> HC 535, 1999, p. 22

Comment would be superfluous. On compliance with the code itself, the Chief Executive of the BioIndustry Association, had this to say:

> I do not think there is very much monitoring in terms of investigation anyway that we can do. I think it is always going to have to be dependent upon people bringing things to our attention.
>
> HC 535, 1999, p. 12

Having listened patiently to these two extended statements of the voluntarist faith, the Chairman, Dr Michael Clark, allowed himself the final word:

> We are coming to an end now and you leave us with a tantalising view of your own system being effective, whereas I think we have shown during the last three-quarters of an hour that your own system was not too effective in 1998 in the two companies that we have been looking at.
>
> HC 535, 1999, p. 27

Notwithstanding these sharply-worded reservations, the Committee broadly welcomed the BIA code, probably as an improvement on total inaction. As issued in January 2001, it contains 8 principles, of which the most directly relevant to the question of investor information are those dealing with public announcements about products and the regulatory process.

Taken together, they speak of the need to present a fair and balanced view of the likely outcome of development programmes, the results of clinical research and applications for regulatory approval. There is a need, says the code, to avoid creating an impression that any particular outcome is likely or certain. Generalized disclaimers and 'health warnings' are considered to be inadequate in this respect; the information should enable the reader to distinguish between an outcome that is a near-certainty and one that is highly unlikely.

Public speculation about the outcome of any regulatory application must be avoided. Companies should not 'serialize' the stage-by-stage

progress of an application. There may, however, be occasions upon which a public statement concerning regulatory progress or difficulties is required or warranted. In such cases, Companies must limit themselves to an accurate description of the status of the application for marketing authorization. The relevance and significance of any event in the regulatory process should not be presented in a misleading way, whether by exaggeration or by minimizing the event or otherwise.

Two things stand out about these prescriptions. The first is the reliance on judgement. There is to be judgement on what is 'fair' and 'balanced' and judgement too on the 'impression' it will make, on what will not 'mislead.' The second point is that scant regard is paid to where the information is going, that is, to the nature of the demand. In the fevered atmosphere of a stock market, companies can no more prevent speculation on the significance of their statements than they can prevent speculation in their shares. Any statement they give out will be filtered through the hunches and preconceptions of financial analysts, journalists and tipsters. In such a milieu, any information, or no information at all, is potentially misleading.

To return to the questions of balance and fairness. What the three cases outlined in this chapter surely demonstrate is that any entrepreneur capable of setting up a company on the basis of new science and bringing it to the point of a stock exchange flotation is almost bound to take an optimistic view both of the underlying science and the regulatory process. Since entrepreneurship also entails motivating a team behind a particular vision, that optimism is also likely to be shared by senior employees and directors. To those caught up in the business of making new science work, optimism *is* fairness and balance.

Both the BIA code of practice and the Committee's commentary on it attempted to deal with this problem by calling for a clear distinction between fact and opinion in any company statements. It is a prescription which overestimates the facticity of scientific knowledge and underestimates the demand for information.

Contrary to the popular view, scientific knowledge consists not so much of facts as of theories which link facts together.[7] In that sense science is already an interpretation of fact. In the case of stable, established science, the interpretation is so nearly universal and so rarely questioned that it approximates, by default, to the status of fact. Because this is the kind of science taught in schools, it is also the popular image. In the case of new science, however, especially bioscience where hypotheses are no sooner born than they are packed off for trial by experiment, theory is partial and mutable. Contrary to the

Popperian idealization, the experiments designed to test it are rarely decisive in practice (Popper, 1972; Collins, 1989), largely because there are so many uncontrolled yet potentially relevant factors. Evidence that a treatment does not work, in consequence, can often be explained away by appealing to these factors; by tacking the excuse, as it were, onto the original theory. An example was British Biotech's assumption that unexpected fatalities in a clinical trial of Batimastat could be explained by changes in the manufacturing process. The crucial point is that this kind of tendentious interpretation of failure – roughly speaking the original theory plus the excuse – may actually turn out to be correct: correct, that is, in the sense that a medical treatment modified so as to deal with the extenuating circumstances, works. Though too late to save the company, this turned out to be the case with Scotia's Foscan. Uncertainty of this kind was the legitimate side of David Horrobin's persistence with the oil of the evening primrose and Keith McCullagh's with the possibility of inhibiting the transport of cancer cells. Such views are not a spin on scientific fact, they are interpretations of fact within the empirically-grounded debate of which science is made up.

Beyond this, there is, again, the question of the demand for information. Stock markets might be thought of as a zero-sum competition superposed on more general price movements. The demand for information, in consequence, is competitive; the aim of investors being to trade on the basis of better information than their competitors. On the back of this, there is a whole industry devoted to achieving the effects of insider trading without, for the most part, actually breaching the rules against it. For this reason biotechnology companies, more than most, are pursued by analysts and commentators, anxious to provide their clients and employers with a competitive edge: recall again the hunting-down of Andrew Millar by Jane Henderson. Whilst the aim at the individual level is an exclusive tip, the result at the aggregate level is a constant pressure on spokespersons to go beyond the current state of the science and regulatory process and make precisely the prognostications of success or failure which the BIA code is designed to prevent. And, for the reasons given earlier, these prognostications are likely to be optimistic.

The chairman of the Select Committee had a point. It is difficult to see how investors will be defended against the commitment and risk-taking of entrepreneur-scientists by a voluntary code of practice which relies on those same entrepreneurs to avoid misleading information-hungry analysts. To insulate investors in this manner, indeed, would seem to be contrary to the logic of the entrepreneurial model of

science-based innovation. Unless entrepreneurship is to be reserved for the independently wealthy, it makes no sense to praise entrepreneurs for taking risks and then complain that they do so with other people's money. And if those other people are not themselves risk-takers, the use of their money will inevitably involve encouraging them to take a positive view of the hazards which it will encounter.

Mr Beard, in his role as the Panther of the Select Committee, put precisely this point to Keith McCullagh in 1998:

> you felt you could overcome the odds which applied normally in pharmaceuticals [but]… there was another judgment, was there not? Most of the biotechnology industry has gone for the sort of softer research and then the development has either been sold on or done in joint arrangements, or companies have merged with bigger companies to do it, but in your strategy you were going to go on and do the whole thing internally in British Biotech… . But is it not the case that that then required a level of funding which was really quite high compared with the rest of the biotechnology industry, and the conflict between the uncertainty on the scientific side and the need to keep that confidence going externally was really what led to these circumstances? Indeed, you could not in your strategy tolerate any bad news from either of your scientific directors, because that bad news conveyed outside would jeopardize the whole strategy? Is that not the bind you were in?
>
> HC 888-i, 1998, p. 23

To Mr Beard, this was a line of reasoning which established a motive for deception. An alternative view is that it is a trenchant analysis of the interaction of science and entrepreneurship in a single-product company. Because product development programmes burn cash, the interpretation of test results at any stage is also, to a greater or lesser extent, a decision on whether or not to proceed with the programme itself. The extent is at its greatest when a company is unable to continue without a further injection of cash. It is at its least when it has just received one. As has been argued at some length, the interpretation in question need not be a dishonest one. Between the unselfconscious enthusiasm which finds reasons to be cheerful in any set of data and the desperation which bets the stack on one throw of the dice, there is a whole continuum, all of which falls short of outright deception.

But precisely because it is the tendency of investors to seek the rewards of risk without actually being exposed to it, there is a ready market for

assurances that they are not so exposed. In biotechnology this translates into preference for good news about the underlying science and the clinical test data. An entrepreneur who wants to stay in the game has to play to this tendency, quite apart from any temperamental inclination towards optimism. Where these tendencies hold, any stock-market losses are going to be unexpected, and will inevitably be accompanied by accusations of misinformation. This analysis of 'Bad News' is from Peter Lewis' written Memorandum to the 1998 Select Committee:

> When should a potential setback be disclosed to shareholders? This is not straightforward; early warnings of bad news are often false alarms. Patents are routinely rejected and only granted on appeal; regulatory rebuffs are often overcome and product licences are eventually granted. However, once a definite rejection is handed down and disclosed, shareholders always complain that they were not informed at the first indication of difficulty.
>
> HC 888-iii, 1998, p. 177

The fact that British Biotech's 'misinformation' boosted prices for those canny – or lucky – enough to sell at the top of the market tends to be forgotten. The cries of the dispossessed drown out the delight of those who have made good, so that the overall impression created by a falling stock market – like that of a school playground or a Lloyd's of London syndicate – is one of collective misery. This is the 'problem' of confidence to which the Select Committee addressed itself. In reality a decline from (an equivalent) 42p per British Biotech share at flotation to 19p on the publication of the Stock Exchange censure was not bad outcome, considering that there was the chance of a world monopoly of an innovative cancer cure along the way. The real losers were those who bought into the rights issue of July 1996 at 324p per share. But that was *before* the allegedly misleading press releases, and anyone who sold at that price must have been quite happy with the information provided by the company.

The problem is not one of accurate and timely company information. Given the exigencies of science-based innovation there is no means of deciding what *is* accurate or even when is timely. And to insist that company information should spell out all the risks and uncertainties would simply dry up the flow of funds on which the entrepreneurial model depends. This, in a sense, is how the 'wisdom of the market' has already reacted to events at British Biotech. If it is now all-but-impossible to float a new issue in the sector, this is because

investors and analysts have learnt to discount the prognostications of scientist-entrepreneurs to the point that the cost of capital is effectively infinite.

The real problem, in biotechnology and elsewhere, is that of funding programmes of development and testing which may take a decade or more before yielding a product and consume tens of millions of pounds in the process. The entrepreneurial model requires that companies formed around single-project development programmes can attract funding on this scale and do so with due emphasis on the risks and uncertainties involved.[8] As a policy, it has surely been tested to destruction. Considered as a system of innovation, the strength of entrepreneurialism is that it brings together the expertise and commitment needed to push a programme as far as it will go. Its weakness is that it lacks a means of 'killing off losers' (Eliasson, 2000). Notwithstanding the vested interests of what is now a considerable enterprise establishment, it is perhaps time to re-examine the Callaghan government's alternative of publicly-funded development programmes which might then licence their outputs as universities now licence out the underlying science. It is an approach which might be particularly appropriate for the biotechnology sector, since the UK profits accruing to patented treatments will mostly take the form of a transfer of funds from a publicly-funded health service.

# 8

# Conclusion: Entrepreneurship – Unpicking the Work of Attribution

## Attributional work

Entrepreneurialism is like any other policy. Along with the administrative labour of trying to make it work there is the intellectual labour of trying to make it *appear* to work. Of this there has lately been a great deal, largely because the post 1980s New Right capture of government policy in the USA and UK has created both the market and the funding for representations of reality which attribute economic success to entrepreneurship. Even describing the process in such terms begins the task of opening up those attributions to critical examination.

To some extent, this theme has been touched upon earlier. In Chapter 1 there was a brief discussion of the 'small firm story' Harrison (1997, pp. 15–17) – the questionable representation of the small company as an engine of job creation and technological advance. Similarly Chapter 5 examined some of the successes claimed for the UK's subsidy of entrepreneurship. This conclusion will be organized around more of the same.

## Manufacturing outputs

Success for entrepreneurialism has been created, first of all, by the tendentious equation of self-employment with entrepreneurship (cf. Dale, 1991). It is an identification which flies in the face of the mass of evidence which links the 1980s growth of self-employment in the UK to rising unemployment and the availability of government assistance (Storey, 1994, pp. 44–5). The ethnographic studies reviewed in Chapter 5, moreover, reinforce the impression of a grim struggle for survival for most of these newly self-employed. Even where this was not

the case, it is well-established that the majority of small businesses are not entrepreneurial, in that they neither expand nor are interested in doing so (Storey, 1994, pp. 113–120). In the face of all this, it is astonishing that a prominent Professor of Entrepreneurship could say of the period, 'It is clear that enterprise has now firmly re-visited the United Kingdom, that starting up your own business is a respected and accepted lifestyle more than ever in recent history.' (Birley and Watson, Cited in Randlesom, 1993).

It is also possible to manufacture an appearance of success by treating measures of input and expectation as though they were outputs. Before the bubble burst, for example, British Biotech was fêted as the flagship of its industry on the basis of a market capitalization which at one stage put it just outside the FTSE 100. Surely it is obvious that the capital invested in a company is an input, not an output and, in the case a company which has yet to deliver a product, an input which is a measure of hope, not of value created. Yet the booklet *The University Culture of Enterprise* (Universities UK, 2004, p. 8) tells of 'Spectacular spinout companies that are pouring millions into Britain's new economy'. It turns out that the millions are pouring into these companies, not out of them and into the economy at large. The lead story is of Celoxica, a software company spun out of Oxford University which has succeeded in attracting £30m of venture capital. It may turn out that the investment pays off, and Cazenove Private Equity certainly hopes so, but that still would not make it a measure of wealth creation.

Share prices, it is true, may be an output as far as some of the early investors are concerned – the founders, venture capitalists or university technology transfer offices who sell out on a rising market, and good luck to them. This, however, is a transfer of wealth from one set of investors to another, not a creation of value by productive activity. If the dotcom boom achieved nothing else, it should have clarified this distinction. By the standard of value created, Owen and Lemme (2001) have concluded that the outputs of the entire US biotechnology industry represent a poor return on the aggregate investment, once the costs of public support have been included.

Similar remarks apply to the role of entrepreneurship in job creation. Even where a gain of employment net of displacement effects can be substantiated, it is still the case that employment is a measure of input from most points of view. For those employed, it was an undeniable achievement that DeLorean Motor Cars Ltd. succeeded in providing jobs for 2,400 people at one point in its brief existence (Chapter 5). From all other points of view, the outputs from that consumption of

resources were lamentable. The same was true of Wedtech and who knows what proportion of the other company start-ups and expansions funded by government subsidies (also Chapter 5).

## Tales of the valley

Just as prevalent as the confusion of inputs and outputs, is the tendency to discover entrepreneurship in every economic success. In this aspect, entrepreneurialism approaches the logical form of those religions in which the omnipotence of the deity is a matter of definition. A prime target for attributional work of this kind has, of course, been Silicon Valley.

In a currently favoured version, entrepreneurship in Silicon Valley takes the form of networked groups of specialists, alternately co-operating and competing on the model of flexible specialization made familiar by Piore and Sabel (1984). In fact the source material of this story, the industrial districts of Central Italy, had more to do with the markets for fashion goods than the development of high technologies, and was more about the exploitation of illegal labour and subcontractors than egalitarian flows of information (Blim, 1990; Harrison, 1994a, 1994b). Piore and Sabel's vision of economic salvation through innovation networks, however, seemed to offer an alternative to competing in the world's mass markets. In this respect it was a message fitted well with the politics of entrepreneurialism, and the literature which it inspired was correspondingly vast. A note of realism was injected by Hobday (1994) who pointed out the obvious fact that networks of independent high technology entrepreneurs simply lacked the production capability, the global marketing outlets and the financial resources needed to capture the rewards from mass market innovations. In these respects they were entirely dependent on their relationships with large integrated corporations.

This observation leads to a third story, and one which is closer to the truth in the view of Harrison (1994b) and Fong (2001). This is one in which entrepreneurship functions in symbiosis with major multinational corporations and with the support of such federal agencies as the US Department of Defense and the Small Business Innovation Research programme (Bozeman, 1994; Mowery and Langlois, 1996; Williams, 1998). Interestingly, Piore himself (1990) has conceded that this is part of the truth. As Castells (1996, p. 60) judges the case, the base technology of the Information Technology Revolution was developed by the state in collaboration with large corporations. The contribution of the entrepreneurs who spun out independent companies

from these sources was to apply these technologies in '… the kind of decentralized, flexible technological devices that are diffusing throughout all realms of human activity.'

These alternative readings of Silicon Valley are not academic nitpicking; they raise important questions about how far the phenomenon can be emulated elsewhere simply by the encouragement of entrepreneurship amongst scientists (Johnson, 2001). As an ideology-driven policy the problem for entrepreneurialism lies in recognizing its limitations (Castells op. cit., p. 58). As ideology it needs Silicon Valley as an iconic triumph of the entrepreneur, but the effect on policy is to obscure the contributions of other factors.

The tales of Silicon Valley are also symptomatic of a more general tendency to downplay the element of public subsidy in reports of entrepreneurial success (Radosevich, 1995). Chapter 6 instanced Bookham Technology which, over a period of 9 years, grew to a company of 50 persons within the Rutherford Laboratories at Cambridge University, supported by the (then) Department of Trade and Industry, and all this before shipping a single product. This publicly funded programme of research and development was held up as an example of scientific entrepreneurship at the 1999 Physics Congress in a session devoted to the topic of 'Science and the Entrepreneur.'

As well as public support for the independent entrepreneur, there is that of the corporate sector. As a spin-out of international 'Big Pharma' rather than a university, British Biotech was not at all untypical (Chapter 7). Roberts (1991) estimated that about half of US high technology start-ups originated in this fashion, with the mean period of prior employment in the corporate sector about 15 years. The prolonged gestation appears to be important, since the research of Cooper, Gimenogascon and Woo (1994) indicates that industry-specific know-how is crucial to the success of these new ventures. Whilst it is quite reasonable to attribute some of the successes of these spin-out companies to entrepreneurship, it is also clear that they are heavily dependent on their corporate parentage.

In the same way, scientific entrepreneurship in the universities depends on the contribution of those scientists who are not entrepreneurs. Innovation in applied science *always* depends on a prior stock of communally-produced knowledge. As was pointed out in Chapter 6, the entrepreneurialist policy-maker tends to regard the 'science base' as a kind of 'information common', there to be exploited for personal gain (Johns, 2004). The entire modern biotechnology industry, for example, depends on the discovery of the double helix molecule by

Crick and Watson, the recombinant DNA technique developed by Boyer and Cohen and the production of monoclonal antibodies by cell fusion as discovered by Milstein and Koehler (Owen and Lemme, 2001). Intellectual property in the biotechnology industry and elsewhere is therefore subsidized, both intellectually and financially by the free availability of a prior knowledge base, most of it produced by publicly funded research. Some scientists are keenly aware of that fact and have questioned the morality of claiming extensions to the scientific 'common' as intellectual property (Goldworth, 1987). Apart from the ethical question, there may be a new 'tragedy of the commons' in the making. If the teaching of entrepreneurship and the enticement of executive lifestyles lures the best of the nation's dwindling supply of scientists into short-range product development, the result may be an atrophy of the science-base on which it all depends (HL 18, 1991, para 3.10).

## Culture and entrepreneurial charisma

As well as attributions of success to entrepreneurship, there are attributions to the entrepreneur of the qualities which make for success. As one of many examples, Hill and Levenhagen (1995) claim that a key attribute of the entrepreneur is the ability to make sense of an uncertain environment in the form of a communicable metaphor, or mental model, of how that environment works, so that others may be inspired by the same sense of mission. Superficially, both Freddie Laker and Richard Branson appear to have been adepts of this kind of charisma. For some years after its owner had sold up, for example, the former staff of Virgin Music held reunions to celebrate the spirit of the company (Jackson, 1994, p. 302). On closer examination, both Laker and Branson turn out to differ from Hill and Levenhagen's characterization in one important respect: that the visions through which they created the loyalties on which their early success depended were not created by themselves. One of Laker's major assets was his emergence from the culture of practical aviation shared by the ex-RAF mechanics and aircrew of Aviation Traders (Eglin and Ritchie, 1980, pp. 24–5). Similarly, Branson succeeded in tapping into the sign-system of the 1960s counter-culture both as a means of marketing its products back to itself and of camouflaging a commercial operation behind the image of the commune (Bower, 2001, p. 143 ff.). Both men, in consequence, were able to operate a system of 'lifestyle employment' in which poor pay and conditions were the quid pro quo for participation in a

preferred cultural milieu. Where they differed from each other was in their own commitment to the cultures which they were able to exploit. After much soul-searching, so he tells us, Branson sold out the music business and moved on, whereas it is hard to imagine Laker away from aircraft (Chapter 3).

## Attribution bandwagon

As the language of enterprise is picked up by unwitting commentators, the attribution of economic success to the entrepreneur, originally an expression of ideological conviction, seems to acquire a momentum of its own. An example comes neatly to hand at the time of writing. In a recent *Guardian* profile, James Dyson, the originator of the vortex vacuum cleaner, is described three times as an entrepreneur to only once as an inventor (Branigan, 2004). Twenty years ago, he would have been an inventor *simple*. In its small way, the effect of describing a commercially successful inventor as a entrepreneur is to claim a little of the cultural capital due to engineering and invention for entrepreneurship.[1]

Repeated over and over, the result of this process in the aggregate is that the concept of entrepreneurship appears to have developed a powerful gravitational field into which are drawn manifestations of innovation and enterprise from such diverse fields as librarianship (DeVries, 2003) and the formation of moral opinion (Yurtsever, 2003). The field of practice most open to this accretion of the concept, however, is management, entrepreneurship's predecessor as the supposed prime mover of capitalist society.[2] As Kanter states the case, 'The association of entrepreneurship with the formation and ownership of an independent business is too restrictive. Instead, an entrepreneurial career is one in which growth occurs through the creation of new value or new organisational capacity.' (Kanter, 1990, pp. 313–31). At one time very similar words would have served to define management as against 'administration' (Armstrong, 1996). Sensing the rumble of a rolling bandwagon, researchers, consultants and managers themselves have been busy repackaging their projects in enterprise-speak. Within the large bureaucratic corporation the ambitious executive has taken up 'intrapreneuring' (Pinchot, 1985), whilst 'institutional entrepreneurs' (for example, Colomy, 1998) displace the old 'change agents' and 'product champions' re-badge themselves as 'corporate entrepreneurs' (for example, Abetti, 1997). There are even suggestions that practice may change along with the terminology. According to some enthusiasts, entrepreneurial management signifies a shift to a more decentral-

ized and opportunistic style of managing the corporation (Levinson, 1983; Stevenson and Jarrillo-Mossi, 1986). On that definition, the Lucas Electrical Company was practising entrepreneurial management almost half a century ago (Nockolds, 1978, p. 219).

## The absence and misdirection of entrepreneurship

The indispensability of entrepreneurship can be demonstrated by the attribution of failure to its absence as well as success to its presence. In the UK a theory of this kind became the subject of a major state-funded research initiative following a 1972 speech by Keith Joseph, then minister for education. According to Joseph, much poverty was the result of 'cycles of deprivation' in which cultures of work-avoidance, dependence and criminality were perpetuated through the influences of family and community. Popularized by the Institute of Economic Affairs' publication of the work of Charles Murray (1990), the theory was vigorously contested for a time in the field of social policy (for example, Bagguley and Mann, 1992; Morris and Irwin, 1992). In the world of entrepreneurship research it lives on as a not-very-controversial but also not-very-prominent presence. In 1989 Hjalager discovered that the Lolland region of Southern Denmark remained depressed because of the lack of entrepreneurial motivation amongst its population.

A more pressing task for the neo-liberal project (Yergin and Stanislaw 1998) has been to explain the failure of privatization to kick-start the transition economies of the former Soviet Bloc. On this point, Rebernik (2002) has found the concept of entrepreneurial management a useful stick with which to beat the ingrained habits of bureaucracy: 'Along with clearly defined and regulated ownership rights, entrepreneurial management has to be enforced.' At first glance, this sinister prescription looks like an accident of poor translation. On reflection, perhaps it isn't.

More popular as an entrepreneurialist explanation of the poverty of communities and societies (and more consistent with Joseph's cycles of deprivation) is the theory that these unfortunate circumstances are not due to the absence of entrepreneurship but to its diversion into socially unproductive channels (Baumol, 1996; Sturzenegger and Tommasi, 1994). The approach is intriguing in that it treats entrepreneurship at the societal level as a quantum of unprincipled opportunism which takes the path of maximum reward and least resistance. This is certainly consistent with the outcomes of the various schemes of public

subsidy discussed in Chapter 5. The directors of the Union Pacific, those of Wedtech and the DeLorean Motor Cars Ltd. all found it easier and more certain to enrich themselves directly from the public purse than by the riskier and more laborious route of investing the funds as they had agreed. Likewise, most of the 'entrepreneurship' stimulated by the UK's Business Expansion Scheme went into devising and selling schemes which qualified for the tax concessions whilst minimizing risk. Activity of this kind, which aims to acquire wealth by transfer – as subsidies transfer wealth from taxpayers to their recipients – goes by the name of 'rent-seeking' amongst economists and it is assumed to be socially unproductive. The contention is certainly consistent with the foregoing examples.

As a *general* way of distinguishing productive from unproductive entrepreneurship, however, the problem with rent-seeking is that it is a concept embedded in the world-view of neo liberalism: it is defined as the expenditure of resources so as to secure transfers of wealth through government action. To the neo-liberal mind, this is necessarily unproductive because government intervention always fails to match the collective wisdom of the market. It is a dogma which rules out ex ante the possibility that the wealth secured by entrepreneurship misdirected might then be productively employed by entrepreneurship proper.

In order to see where this leads, consider some practical cases. The career of Freddie Laker began with the recycling of aircraft surplus from World War II. It progressed by lobbying for troop transport contracts, failed with the one product he tried to develop as a private venture, then blossomed through adroit dealing in the complex environment of export subsidies and the international regulation of air passenger transport (Chapter 3). By the neo-liberal definition of rent-seeking, all of Laker's success as an entrepreneur was unproductive, and so are Branson's efforts to renegotiate the subsidies which go to Virgin Rail.

Or take biotechnology. In Chapter 7 it was pointed out that the goal of much bio-entrepreneurial activity has been to develop state-licensed standard treatments for cancer protected by state-guaranteed intellectual property rights. The profits accruing to these state-protected monopolies will mostly take the form of transfers of wealth from systems of social medicine (Froud et al, 1998). In other words the returns to this kind of entrepreneurial activity are rents. Does that mean that bio entrepreneurship, with all its demonstrable risks, is unproductive?

In fact the whole question of intellectual property rights ties the neo-liberal mind in knots, an unfortunate state of affairs given the weight of

expectation placed upon the Schumpeterian entrepreneur-innovator. On the one hand, the patent is the conventional reward for entrepreneurial risk, but on the other it is a reward which takes the form of a state-guaranteed 'forced scarcity' (Hayek, 1988, p. 36). The front-runner as a way out of this dilemma is a system of compulsory licensing (Johns, 2004), but that solves the problem only at the level of a verbal formula, since it says nothing about who is to set the license fees and at what level.

There is also the interesting question of what unproductive entrepreneurship might mean to those who fail to see a fundamental distinction between intervention in markets by the state and by private capital. Outrageously but significantly, John D. Rockefeller imposed a system of private taxation on any rail company which dared to carry his competitors' oil as well as his own, without any help from government at all (Chapter 5). Clearly the act of an entrepreneur, clearly unproductive and also well outside Hayek's ideas on 'fair' competition by monopolies (Hayek, 1979, p. 80), this still falls outside the definition of rent-seeking because it is not secured by an act of government. Then there is the hybrid case in which entrepreneurs build up reputations in competitive markets, then secure these reputations in the form of (state) registered trademarks so as to artificially segment those same markets. Huge empires were created on this basis by British entrepreneurs in the late 19th and early 20th centuries, both in manufacturing and retail. Amongst other great fortunes, that of the Wills brothers was largely built on the brand of the Woodbine cigarette (Alford, 1977). And it still goes on. As Richard Branson declared at the Millennium Lecture delivered at Oxford University, 'I believe there's no limit to what a brand can do' (Bower, 2001, p. xv).

If rent-seeking largely fails as a means of disassociating entrepreneurship from its adverse consequences, there still remain the more traditional criteria of ethical and legal standards.

## Entrepreneurship, ethics and law

The few academic attempts to draw an ethical boundary around the concept of entrepreneurship so as to exclude the unethical and/or illegal, are unconvincing to say the least. Carr (2003) argues that the ownership of a small business is ethical by its very nature, in the sense that it entails a particular way of life. Perfectly true, but so does any other occupation. Newbert (2003) goes back to the work of Adam Smith and discovers therein an injunction to temper the pursuit of self interest with a sense of community obligation, though what that has

to do with the contemporary practice of entrepreneurship is not clear. Even more left-field is the attempt of Kao, Kao and Kao (2002), to build an ethic around 'entrepreneurism' – by which they seem to mean initiative as expressed in small acts of kindness.

The empirical approach is no better developed. Teal and Carroll (1999) used the Defining Issues Test in which respondents are presented with various decision-making scenarios then asked to rank a set of considerations which might inform the decision. It will come as no surprise that the research concluded that 'entrepreneurs may exhibit moral reasoning skills at a slightly higher level than middle-level managers or the general adult population'. That the entrepreneurs may simply have been more skilled at picking out the 'moral' issues does not seem to have crossed the researchers' minds.

For Keith Joseph the question of entrepreneurial morality was not one which called for prolonged reflection let alone advice from social scientists.[3] In his 1976 pamphlet 'Equality', he lashed out at those who called entrepreneurs 'anti-social self-seekers'. They were, he believed, 'inspired, bold, thoughtful, adventurous individuals'. In 'Conditions for Fuller Employment' he reconsidered somewhat; 'Entrepreneurs are not heroes. They are no better than anyone else. But they are indispensable.'[4] (Denham and Garnett, 2001, pp. 333–4).

The problem with this statement of the issue is that the question of indispensability is not separable from that of morality, because morality influences what is produced as well as the manner of its production. To illustrate; Jacqueline Gold is an entrepreneur whose major success was the revival of the Anne Summers line in sexual apparatus and fetish undergarments within the Gold Group. Her moment of creative destruction came about through contacts at Pippa Dee, a rather stolid range of women's wear which was sold at housewives' parties, in the manner of Tupperware. These contacts suggested that Anne Summers products might be marketed in the same domestic setting, alongside the Pippa Dee range. The results were a revelation:

> I watched wide-eyed as the party organizer stirred the group of giggling women into a frenzy of hysteria as she produced the Double Dong – a double vibrator for the brave at heart. The screams of laughter could be heard throughout the tower block … the guests overwhelmed me with suggestions. This was such fun, they said. Why didn't Anne Summers organize their own parties? We want to buy sexy underwear for ourselves, but we wouldn't be seen dead in any of your shops,' one woman told me…

> That night in Thamesmead I experienced an atmosphere which was totally new to me . . I felt myself being carried along with the enthusiasm. All the young women were talking at the same time: it was the typical sort of atmosphere that you would expect in a close-knit community.
>
> Gold, 1995 pp. 3–4

Clearly Gold is sincere in her belief that what was at issue here was sexual liberation, and not a prurient frisson which depends on its converse. On this, she quotes her father's comment at the time of Lord Longford's (self-appointed) Commission on Pornography; 'We have always presented sex in a healthy and positive light, and we feel that both men and women should be given the freedom of choice to buy products that enhance their sex lives.' (op. cit., p. 27). Evidently the indispensability of the entrepreneur, in this case the question of how far the world is a better place for the wider availability of the Double Dong, depends on one's view of the moral issue.

Normally, however, it is commercial rather than behavioural morality which most concerns the entrepreneur. On this point, the ordure heaped on Keith McCullagh for the crash of British Biotech (Chapter 7) is indicative of a double standard. Whilst the promoters of entrepreneurialism argue that 'the UK needs more risk takers who can rapidly turn ideas into products and businesses' (DTI, 1998, para 2.3), the Stock Exchange is quick to claim a breach of fiduciary duties whenever a risk fails to pay off. Recognizing this, it is now routine for the promoters of entrepreneurialism to criticize the UK insolvency regime for its pre-occupation with the protection of creditors and for its tendency to assume defalcation in cases of insolvency (Gladstone and Lee, 1995; Cohen, 1999). Previous bankruptcy in an entrepreneur, it is argued, should be regarded as a positive learning experience (Chapter 5, but for sceptical views see HL 62, 1997, para 2.19; Storey, 1994, pp. 134–5). On this issue, the government has chosen to listen to the enterprise lobby. In April 2004, a reduced period of disqualification and new procedures for repaying creditors were introduced under the Enterprise Act in cases of non-culpable bankruptcy. The intention was to create 'an insolvency regime that supports, rather than stifles, the development and growth of new business.' (Press Association, 2004).

For Kilpi (1996) the no-fault bankruptcy is quite a wide category which extends to extravagant lifestyles funded by high levels of debt. These, he thinks, should be regarded as the hallmarks of the high-flyer, rather than misdemeanours to be punished. Consistent, if nothing else, he sets out a

suitably restricted view of misdemeanour: 'from the point of view of distributive justice, wealth appropriated through leverage is ethically no worse than prosperity gained by hard work and parsimony.' From the distributive point of view the same might be said of armed robbery.

Meanwhile the careers of both Bloom and Laker (Chapters 2 and 3) suggest that the ethics of debt are something of a non-issue for practising entrepreneurs when the survival of an enterprise is in question. If credit was not forthcoming voluntarily, their response was to take it anyway, surreptitiously assisting capital, as it were, with its economic task of funding the risk-taking venture.

## Entrepreneurship and human weakness

DeLeon (1996) develops the view of the entrepreneur as all-too-human, arguing that certain character traits which are commonly deemed undesirable – egotism, selfishness, waywardness, domination, and opportunism – are actually useful in situations where goals are ambiguous or conflicting and where the means to achieve them are unknown or uncertain. In effect deLeon is describing the under-socialized individual. The suggestion that entrepreneurship might be connected to a more general tendency to transgress has an intuitive plausibility: in the large it seems unrealistic to expect entrepreneurial innovation to ignore the conventions of production and consumption yet pull up short at those of ethics and the law.

The classic warts-and-all study of the entrepreneurial career as one of moral ducking and diving is that of Collins, Moore and Unwallah (1964). For many years a one-off in the literature, notwithstanding its status as a citation classic, Collins et al's mordant view of entrepreneurial opportunism has been partially corroborated by Bhide and Stevenson, (1990). Expecting to find that reputational effects would keep entrepreneurs honest where morality failed, these authors present evidence which indicates the opposite. Philippe Kahn of the software company Borland International, for example, recounts with some gusto how the company, then on the verge of failure, took off after an advert in BYTE magazine which he conned out of a media salesman at cut price and on credit. On the basis of this and similar incidents, Bhide and Stevenson conclude that most dishonesty by entrepreneurs is not found out; that even if it is, they may have become sufficiently powerful for it not to matter and that we don't really mind this anyway because deep down we know 'that knaves and blackguards have contributed much to [human society's] progress'.

With this apologia for the entrepreneur – in effect, Keith Joseph's second thoughts – the attempt to distance entrepreneurship from its anti-social manifestations is more-or-less abandoned. It is admitted that the entrepreneur-hero may be a liar, a thief and driven by greed and worse, but it is also maintained that only a person who is at least some of these things can cheat and bully the rest of us into achieving some great social good. It is a theory which depends on the characteristic New Right assumption that most of us are idle and stupid. It is the justification of the ruthless entrepreneur found in Ayn Rand's *Atlas Shrugged* (1997), Robert Heinlein's *The Man Who Sold the Moon* (1953) and William Hyde Whyte's (1956) nostalgia for the era of the robber barons.

So, by degrees, we have arrived at the illegal. Unfortunately for those who would erect a last-ditch definitional boundary between the entrepreneur and the criminal, it is routinely assumed in the literature of criminology that organized crime is a *form* of entrepreneurship. As stated by Vanduyne (1993), 'enterprise theory' treats organized crime as entrepreneurship in forbidden goods or services (see also VanderBeken, 2004; Friman, 2004). Operating in the meat market, the electronic equipment industry, toxic waste and the stock market, most schemes of institutionalized criminality, says Vanduyne, seek to profit from the evasion of costs imposed by taxation and government regulation. Readers will recognize all three of the entrepreneurs discussed in Chapters 2–4 in this description, though only Richard Branson's evasion of purchase tax was actually illegal.

Gros (2003) has used the notion of entrepreneurship as context-dependent innovation to explain the explosion of transnational crime in the post Cold War era. The so-called failed or collapsed state, he argues, has provided the anomic environment in which criminal means of responding to the demand-pull of globalization have become integral to the 'private accumulation strategies' of public officials, ordinary citizens and entrepreneurs as well as professional criminals. Undoubtedly Gros was thinking of the less developed nations, but the logic of his argument applies equally to those industrialized nations which have sought to encourage entrepreneurship by de-regulation.

Half a century ago Merton (1949) proposed a characteristically simple and robust theory applicable to just such situations. A society which emphasizes achievement without a corresponding emphasis on the means to that achievement, he suggested, tends to produce high levels of innovation in the form of deviance. Epitomized by the phrase 'can do', entrepreneurialism encourages just such a culture, as indeed

do many of its detailed measures. Setting free the spirit of enterprise has involved a bonfire of controls, many of which existed for very good reasons. Rationalized by a considerable volume of research on compliance costs, planning controls, environmental standards, employment legislation, financial reporting requirements and the tax regime have all been relaxed so as to 'ease the burden' on enterprise. It may, of course, be coincidence that Ronald Reagan's first term became notorious for its low standards of public life, with no less than forty-five presidential appointees resigning as a result of criminal or ethics investigations (Traub, 1990, p. 367; Simon and Eitzen, 1986, pp. 6–7). On Mrs Thatcher's premiership, and indeed on her family, the file is still open (Halloran and Hollingsworth, 1995).

It follows that the judgement of entrepreneurialism must be made on balance: in recognition that entrepreneurship comes as a package, with certain quanta of crime, corruption and low cunning as natural ingredients. Once this is taken on board the achievements of John Bloom, Freddie Laker and Richard Branson come into sharper perspective and turn out to be remarkably similar. Sensing that there were opportunities to enrich themselves by undercutting administratively maintained prices in white goods, air passenger transport and recorded music, they achieved the undeniable good of breaking up the producer cartels in these industries. For that they should receive credit, though with all of them the tactic appears to have been a natural extension of earlier experiments in the avoidance of taxes and tariffs.

Also striking is the fact that the success of the three most prominent entrepreneurs of their generations was of such a nature that it destroyed the conditions which had made it possible. In the cases of Bloom and Laker, there is no need to speculate on how they would have fared in the competitive markets they so insistently called for. Once competition became general, they went under, in Laker's case complaining loudly about predatory pricing.

There was also a self-contradictory aspect to the tactics they employed. Their competitive advantage came not from any superiority in efficiency or technology but from a readiness to breach the codes of industry self-regulation and a certain louche attitude towards contract. Perhaps this is what Branson meant by his credo, 'I have always thought rules were there to be broken' (Bower, 2001, p. 4). Whether applied to industry regulation or the ethics of contract, it is an attitude which is essentially parasitic in the sense that it is incapable of generalization.

## The political hold of entrepreneurialism

However the argument goes on the economic consequences of entrepreneurialism, its hold on the centres of power may depend on other considerations. As the ideological altar-piece of the Reagan – Thatcher programme of de-regulation, de-unionization and tax reduction, it will not easily be abandoned by those who currently benefit from these policies. In this connection, it is interesting that the office-holders in the major neo-liberal think tanks are more likely to have backgrounds in the large corporations than in independent enterprise.

From the point of view of corporate wealth, entrepreneurialism may not be so much an alternative to corporatism as an ideological smokescreen for a new and narrower version of it. Now that company profitability has fallen to a level which will no longer sustain the Fordist compromise, it makes sense that government should become an ally of capital and its senior managements in reducing the share of value added consumed by labour and the citizenry. Since 1980 this is exactly what has happened both in the UK and the USA. Between 1980 and 1998 the GINI measure of post-tax income inequality increased from 0.4 to 0.46 in the USA and even more rapidly in the UK, from 0.25 to 0.34 (Smeeding, 2001. See note 5 to Chapter 1 on GINI).

Amongst the policies which have produced this result are cuts in the top rate of income tax, curbs on the ability of trade unions to defend their members and cuts in welfare benefits. Consider how these policies would look without the rhetoric of entrepreneurialism. The first would be a blatant backhander to the wealthy, the second would be a clear invitation to employers to force down the living standards of the working population whilst the third would be an equally blatant clawback from the most vulnerable sections of society. Re-arranged around the figure of the entrepreneur, however, everything appears in a different light. Reduced taxation becomes an incentive to entrepreneurial innovation, the attack on trade unions is a liberation of the individual from the coercive power of the collective whilst welfare cuts become a kind of tough love, freeing the recipients from the dependency on the 'nanny state' and encouraging self-reliance. At the time of writing, the latest target of this project of 'freeing the spirit of enterprise' in the UK (Morris, 1991) is disability benefit, currently received by anything up to one quarter of the working-age males in run-down areas such as Easington, County Durham. The hidden casualties of the Thatcher government's experiment with Milton Friedman's economics, many of these people were placed on disability benefit back in the mid 1980s, as

a means of minimizing the unemployment count. They are now being told they are part of the burden of dependency born by the working population.

Cynicism of this kind apart, the attachment of New Labour to entrepreneurialism is not a simple matter. Whilst the likes of Peter Mandelson declare themselves, 'intensely relaxed about people getting filthy rich' (Sampson, 2004, p. 81) there are also those who believe that entrepreneurship can become the economic engine of a genuine programme of social reform. The question for these latter is whether entrepreneurialism as a policy can be detached from its New Right origins. The cases and outcomes reviewed in this volume suggest that they will have to tread very carefully indeed.

# Notes

## Notes to chapter 1

1 Verbal Communication. John Bridgeman, then Director-General of Fair Trading.

2 In order of their first appearances, the journals most explicitly devoted to entrepreneurship are:
1983 Journal of Small Business and Entrepreneurship
1985 Journal of Business Venturing
1985 Technovation (International Journal of Technical Innovation & Entrepreneurship)
1988 Entrepreneurship: Theory and Practice
1989 Entrepreneurship and Regional Development
1989 Journal of Business and Entrepreneurship
1989 Southern African Journal of Entrepreneurship and Small Business (No longer published)
1991 Entrepreneurship Innovation and Change
1992 Journal of Entrepreneurship
1993 Journal of Enterprising Culture
1994 Enterprise and Innovation
1994 Journal of Applied Management and Entrepreneurship
1995 Academy of Entrepreneurship Journal
1995 International Journal of Entrepreneurial Behaviour and Research
1995 The Entrepreneurial Executive
1996 Journal of Developmental Entrepreneurship
1997 International Journal of Entrepreneurship
1998 Journal of Entrepreneurship Education
1998 New England Journal of Entrepreneurship (No longer published?)
1999 Journal of Research in Marketing and Entrepreneurship (No longer published?)
2000 Enterprise and Innovation Management Studies (no longer published)
2000 International Journal of Entrepreneurship and Innovation
2000 International Journal of Entrepreneurship and Small Business
2001 International Journal of Entrepreneurship and Innovation Management
2002 International Journal of Entrepreneurship Education
2003 Journal of International Entrepreneurship

3 In this judgement, Standard Oil was broken up by apportioning the shares of the holding company to the 38 state-level concerns, despite which the separate companies continued to co-operate (Sampson, 1975, p. 49; Faulkner, 1959, pp. 440–2).

4 Coincidence or not, this line on monopoly is precisely the one taken by Hayek (1979, p. 77).

5 GINI (=Gross Inequality in National Income) is derived from the cumulative distribution of incomes within a population. If the incomes are

arranged from lowest to highest, a graph can be drawn representing the proportion of the total received by the bottom 10 per cent, 20 per cent or any percentage between 0 and 100 per cent. If all incomes were the same, the graph would be a straight line, the first 10 per cent receiving 10 per cent of the income, the first 20 per cent, 20 per cent and so on. Because incomes are unequal, the actual distribution falls below this straight line, with the bottom 10 per cent receiving less than 10 per cent of the income, and so on. GINI is the area between the straight line which represents equality and the actual distribution, divided by the area beneath the straight line. It is thus an aggregate measure of inequality with a value ranging from 0 to 1 as explained in the main text.

6 In fact income inequality increased between 1977 and 1999 even more rapidly in the UK than the USA, but from a much lower base (Smeeding, 2001).

7 Even so faithful a disciple as Sir Keith Joseph departed from Hayek on the question of monopoly. In a speech to the Oxford conservatives in 1975 he said, ' . . The government will need to ensure that there is genuine competition: there will need to be an effective policy to watch for and to break up monopolies . . to safeguard the interests of small business, … and to seek to limit the concentration of economic power.' (Cockett, p. 252).

8 In this too Hayek was not original. The position that monopoly is acceptable provided that it is not used to suppress competition is exactly that adopted by the Supreme Court in the Standard Oil Judgement of 1911 (National Industrial Conference Board, 1925, p. 27).

9 It is possible that the apparent influence of Schumpeter on the academy of entrepreneurship is one of those illusions of perfunctory citation. Most of them are nothing more than acknowledgments of the phrase 'creative destruction', occasionally prefixed by 'gales of'.

10 According to Cockett (1994, p. 124), Fisher attended the inaugural meeting of the Mont Pèrelin Society. According to Hartwell's list of delegates (1995), Fisher was amongst those unable to attend.

11 If it were not already obvious, Hayek's violent anti-unionism was made clear in a letter to *The Times* in 1980, advocating the repeal of the trade unions' immunities. These immunitities are from civil actions in tort for inducing breaches of employment contracts in the course of industrial action (Gamble, 1996, p. 171). Since they were first granted in 1906, these 'privileges' as the political right insists on calling them, are the UK's only, and somewhat unsatisfactory, equivalent of a constitutional right to withdraw labour.

## Notes to chapter 2

1 Collins et al (1964, p. 127) describe the transactional model as follows: 'The apparently aimless early years of these entrepreneurs was in fact extremely important in broadening and deepening their grasp of what may be called the "transactional model of interpersonal relations." They were learning at a deeper level than they had previously known that no interpersonal relationship need carry with it a continuing commitment on the part of those

involved. They were learning to believe that such relationships are to be entered only as long as they are of mutual benefit to the parties involved. Typically the character formation of the entrepreneur is such that he has no qualms about breaking such relationships.'

2 Collins et al (1964) again: p. 129 'Full-fledged entrepreneurship involves mastery of the positive modes of the transactional model. In fact the positive mode of the transactional model of interpersonal relationship *is* entrepreneurship. The act of entrepreneurship is that of bringing ideas, skills, money, equipment and markets together into a profitable combination … He [sic] sees always the bringing together of people into a new arrangement. This is because he must move through people. He sees these people interrelated in terms of the transactional model. If for one moment he lets his eye stray away from this model and gets involved emotionally, he is lost.'

3 In fairness, Bloom claims to have been persuaded into this form of self-promotion against his better judgement. With hindsight he recognized its risible aspects, 'the almost saintly aura of light which surrounded my head likewise caused much mirth … and only served to confirm the worst fears of certain elements in the city.' (Bloom, 1971, p. 188).

4 Richard Reader-Harris Q.C. (Cons. Heston and Isleworth) was invited by Bloom to become Chairman of Rolls Razor in order to lend gravitas to its Board of Directors. His position as the elected representative of the voters of Heston and Isleworth later enabled him to mount a vigorous defence of Rolls' marketing techniques during a parliamentary debate on high-pressure door-to-door selling (Bloom, 1971, p. 83). In 1970, he was hauled up before the Old Bailey on more-or-less the same charges as Bloom, but was acquitted (ibid, p. 244).

5 'd' was the unlikely symbol for the old penny in the United Kingdom's pre-decimalization currency. It was an abbreviation for the Latin 'dinari', adopted because the British Empire was clearly the natural successor to that of the Romans.

6 Later Bloom complained that he was the victim of a very similar deception by the financier Louis Jackson. His first meeting with Jackson took place in 'an extremely luxurious office in Hobart Place'. Only later did Bloom learn that the office was not Jackson's (p. 43).

7 In 1962 Jacobs also developed a front-loading automatic light enough to be handled by a single person, an important consideration given Rolls' direct selling methods. Although he was by then a member of the Rolls Board, Jacobs claimed that the idea on which the machine was based came to him in his own time and registered the patent in the name of a company he had quietly set up within weeks of becoming a director. Rather than lose time-to-market by fighting the case in the courts, Bloom agreed to pay royalties on the design, with a guaranteed minimum of £30,000 in the first year and £50,000 subsequently. Rolls was placed in the hands of the receiver in 1964 before a single machine had been produced to Jacobs' design, but he still received the guaranteed portions of his royalties.

8 This information comes from an unlikely source. In the UK's first deal between a cycling club and a commercial backer, the Duomatic company sponsored the Romford Racing Club. The writer of a 'Retro' column in a

recent cycling magazine, who happened to be a member of that club, recalls the deal from 'the early 1960s'. It ended when the company 'went belly-up, mainly because their product was rubbish' (St. Pierre, 2002). Taken with Bloom's testimony, this places the Duomatic insolvency around 1965.

9 A more compact way of conveying the meaning here would be a reference to the Three Stooges. Their classics of the cinematic under-feature, alas, are unfamiliar to current generations.

10 Great Britain's pre-1971 currency produced a generation capable of extraordinary feats of metal arithmetic. 12 pence (d – note 5 supra) were equal to one shilling (s) and twenty shillings made one pound (£). Not actually minted as a coin since 1813, the guinea (gn) was an anachronistic survival even in this archaic system, which carried aristocratic overtones. Equal to £1 1s, it was familiar at auctions, racetracks, and wherever else one was required to wear tweed jackets preserved in pipe-smoke.

## Notes to chapter 3

1 Speaking of her faithful factotum, William Whitelaw, Margaret Thatcher famously failed to resist the *bon mot*, 'Everybody needs a Willie'.

## Notes to chapter 4

1 Some years after the incidents reported by Branson, the author encountered a similar self-described commune in a remote Welsh village. All were working on a farm for nothing more than their own subsistence. Except that one of them owned the farm. That one reacted angrily, and for a moment violently, to the author's suggestion that what was at issue was not communality but a particularly exploitative form of capitalism.

2 Branson's autobiography prepares the ground for this form of justification by stating earlier that Powell 'recognized that *Student* was really my and Johnny's creation' (Branson, 1999, p. 45). On this logic, of course, the ownership of Virgin Records should have gone to John Varnom and Tony Mellor, and that of Virgin Music to Tom Newman.

3 The various biographies of Branson concur on this quasi-egalitarianism, although they differ, interestingly enough, on the actual amount. In contrast to Branson's figure of £20 per week, Jackson writes that, in 1969 all Virgin's senior staff drew £50 per week, whilst a secretary was paid £12 – 'significantly less than the £20 her talents might have commanded elsewhere.' (Jackson, 1994, p. 28, 30). Bower variously tells us that in 1971 all Virgin employees were paid an 'egalitarian' £12 per week (B. 21, 22) and that until 1973, Branson himself was officially earning just £20 per week (Bower, 2001, p. 44).

4 Jackson makes the following curious statement of these, and similarly shareholdings which he subsequently reveals to have been worthless, 'None of the three were asked to pay a penny for their shareholdings, nor to accept any financial risk on their own heads. Branson was prepared to take all the risks and to find all the money; the shareholdings were simply a reward, an expression of confidence in the future and a gesture of thanks

for useful advice already given and work already done.' (Jackson, 1994, p. 44). And this in a biography which Branson regarded as deliberately biased against him! (Jackson, 1994, p. 385).

5 The name may have been Branson's in-joke at the expense of the man he was about to deceive. Zimmerman is the real name of Bob Dylan.

6 Branson makes no mention of Fields' role in the negotiations with Boeing. In his account Boeing's lawyers began negotiations with *him*, and *after* the CAA had approved the financial backing for Virgin Atlantic (Branson, 1999, p. 223). According to Jackson, the final deal was a modification of that described by Bower, and it was secured by Fields. Boeing agreed to sell the aircraft to Virgin Atlantic for $27.8m and to buy it back for $25m after a minimum period of one year, at the option of the airline (Jackson, 1994, p. 110).

## Notes to chapter 5

1 Besides the government bonds and the first mortgage bonds, the Union Pacific issued bonds against the security of its land grants and its future income.

2 One hesitates to take issue with a subsequent Nobel prize-winner in economics, but the relevant perception of risk in this calculation is not that of the market at large but that of the directors of the Crédit Mobilier. This is because the market perception of risk would have been made up of two components: that the project, honestly pursued, would nevertheless fail and that the project might not be honestly pursued. In the light of the fraud and corruption prevalent amongst the promoters of 19th century American railroads, the second risk was by no means negligible and would have accounted for some of the discount on the bonds. The directors of the Crédit Mobilier, on the other hand, knowing themselves to be men of unimpeachable integrity, were exposed only to the risks of the actual project. Fogel's figure for the justifiable profit, therefore, was too high though how much so is a matter for conjecture. On the basis of a lower figure for the justified profit, the railroad might even have paid its way.

3 Offloading risk at cost may have the effect of replacing the risk of an adverse outcome with an economically equivalent higher risk of a less adverse outcome. The Union Pacific case was the limiting one in which the risk reached 100 per cent but the outcome, as it turned out, was still adverse.

4 As one of innumerable examples, Professor Gerry McKenna, Vice Chancellor of the University of Ulster (of all places!) had this to say in an address of 22 February 2000, 'Let me share with you a revealing aside, in the words of Nathan Myhrvold, Research Director of Microsoft. 'Europe does not have the right attitude towards failure. In Silicon Valley, it is very common for these young start-up companies to fail and so, if a man has been CEO of three failed companies and has burned $3 million of investors' money with nothing to show for it, is he going to get funded the next time? Of course he is! He is considered an experienced guy'. (http://www.ulster.ac.uk/vice-chancellor/speech10.html, last accessed 20 August 2004).

5 An exception was a 1989 report in *The Independent* which revealed that £117m of the £742m lent between 1981 and 1989 had been lost. More than

22,000 start-ups used the scheme during this period but one in four did not survive their first three years. The report also described a case in which a successful applicant was required to use part of the government-backed loan to repay a personal overdraft with the lending bank (Cole, 1989).

## Notes to chapter 6

1 Not all scientists are comfortable with the idea that public science should be appropriated for private profit (Goldworth, 1987).
2 The example quoted in the report was a 1996 study of patents in human genetic technology. Whereas United Kingdom scientists produced 6.5 per cent of the papers on the subject, only 2.8 per cent of the patents were owned in the United Kingdom. In contrast, Japan which produced only 4.8 per cent of the papers, owned 12.3 per cent of the patents.
3 Though put about by certain professors of entrepreneurship (Chapter 8), this contention is highly debatable. If the witness had in mind the growth in self employment during the 1980s, there is ample evidence that this had little to do with entrepreneurship as this is conventionally understood (see, for example, Dale, 1991).
4 During his spell as Secretary of State for Trade and Industry, Lord Young of Graffham was a noted ideologue and factotum of the Thatcher government. So consequential during the 1980s were his musings on enterprise that an entire chapter of Keat and Abercrombie's *Enterprise Culture* is devoted to them (Fairclough, 1991. See also Young, 1990).
5 One could also add the objections that the qualities attributed to entrepreneurship by research on the topic are often vaguely specified, widely distributed amongst the population at large and sometimes internally contradictory. Welsh's 11 characteristics of the successful entrepreneur (1984), for example, read: Good health, a basic need to control and direct, self confidence, a never-ending sense of urgency, comprehensive awareness, realism, superior conceptual ability, low need for status, an objective approach to interpersonal relationships, sufficient emotional stability and an attraction to challenges, not risks. Should this list be thought untypical in its banality, Hood and Young's 1993 survey of top executives in entrepreneurial firms yielded: the 'mentality attributes' of creativity, opportunistic thinking, vision, and positive thinking and the personality characteristics of self-motivation, propensity for risk-taking, and deep-seated ethical values.
6 The ideological work performed by the fusion of logically separable concepts is a feature of enterprise ideology previously noted by Keat (1991, p. 13).
7 This is indicated by the tendency for the same names tend to recur. In addition to the example given in the main text, Mr. Hugh Thompson, Director of Research and Consultancy Services at the University of Strathclyde gave evidence to the House of Lords Select Committee and also accompanied the Vice-Chancellors on their mission to North America. Similarly, the venture capital firm APAX submitted written evidence to the select committee, was represented by its director on the CVCP fact-finding team, whilst both its chairman and director gave presentations at the CVCP conference.

8 'It will be interesting to see whether the Sheffield bid will be successful.' was the comment of the chairperson for this session, broadcaster Sheena MacDonald. It was.
9 London Innovation (http://www.london-innovation.org.uk/) is a joint governmental-higher education-private sector consortium intended to stimulate innovation in the region. The Innovation Lectures are sponsored by the CBI, the DTI Innovation Unit, the Design Council, the Royal Academy of Engineering and the Royal Society.
10 An issue here, not confronted in any of the official reports, is how far these characteristics are compatible with the practice of scientific research itself. Scientists who might be said to have taken risks with uncertain data from clinical trials feature prominently in Chapter 7.
11 There is a failure of logic here. If it is true that risk is inherent in ownership, and if owners are, on the whole, fitted to their vocation, Brockhaus (1980) should have found that small business owners *were* more risk tolerant than managers.
12 See McNally and Mason (1995) for illustrations of lifestyle enterprise from the brewing industry.
13 Radosevich reports that in early 1980s Los Alamos National Laboratory offered support for inventor-entrepreneurs, which included the assignment of intellectual property rights, laboratories and equipment, leave of absence and partial appointments in order to prepare for 'the act of entrepreneurship'.
14 In the German biotechnology firms observed by Pfirrmann (1999) the provision of specialized equipment and consultancy services to niche markets was used as a secure basis from which to launch more speculative and ambitious product development programmes.
15 This typification of the high-technology start-up is corroborated in Massey, Quintas and Weild's (1992, p. 39) study of UK science-park firms. Many of them are not leading-edge in the technological sense. Rather they apply existing high technology to new markets. They see themselves as short-term commercializers of, and advisors on, the new technology in which they specialize.

## Notes to chapter 7

1 This was the position of the so-called 'strong programme' in the sociology of science (Bloor, 1976). This asserted that what counts as true in science is just as much determined by the social dynamics of the scientific community as what is later judged to have been error. Depending on what is meant by social factors, this position is either trivially true or substantially false. Science, by definition, is always open to the empirical world in the sense that no scientist would accept evidence from an experiment in which the outcome was programmed into its design.
2 Later the issue was re-opened in the light of Millar's revelations, as part of a wider investigation into the biotechnology companies' way with information. This was the inquiry into the regulation of the biotechnology industry (HC 535) which reported in 1999.

3 By dividing a sample in different ways enough times, virtually any data can be made to reveal 'significant' associations which are of no significance at all. Social scientists do it all the time, but medical licensing authorities are more discerning.
4 Unfortunately the papers appended to the Select Committee report do not record the number of patients on Zacutex and placebo at that time, so it is impossible to judge how 'insignificant' the deaths really were.
5 This and the preceding quotations on the US study are taken from a memo from Millar to McCullagh dated 15 May 1997 (HC 888, 1998, 44).
6 Dr Jackie Storey, a nutritionist working for Scotia Pharmaceuticals, claimed that evening primrose oil was effective in the treatment of arthritis, eczema, pre-menstrual tension, asthma, dyslexia, hyperactivity in children and some aspects of alcoholism, including withdrawal symptoms, hangovers and damage to the liver and brain (Jackson and Lewis, 1996).
7 As was pointed out in note 1 supra, there are sociologists of science for whom natural science is interpretation from start to finish. They would make excellent subjects for clinical trials.
8 There are scientist-entrepreneurs who see this problem very clearly. According to Sir Chris Evans of Merlin Bioscience 'The City has got to wake up. It's no good saying they want to take less risk.' (Quoted in Pratley, 2003). Unfortunately it's also no good to base an industrial policy on exhortations to the City to take more risk. It isn't going to happen.

## Notes to chapter 8

1 Such issues of terminology are consequential, as was demonstrated by the occasion of the article. Dyson had resigned from the board of the Design Museum in protest against an exhibition of the work of the flower-arranger Constance Spry. He regarded this as symptomatic of a tendency on the part of the Design Council to erase the distinction between engineering design and aesthetic styling.

   Regarding the absorption of the credit due to invention into the concept of entepreneurship, there is also a reverse process in which each description of a disreputable person as an entrepreneur undoes a little bit of the good work. Musson and Cohen (1997) report an interview in which the entrepreneur was thought of as 'a money grubber like Richard Branson.' Amazingly the authors reported this as evidence of the hegemony of enterprise discourse.
2 '… management is … the specifically economic organ of an industrial society' (Drucker, 1955 p. 6). Thirty years on, Drucker had moved with the times, though his *Innovation and Entrepreneurship* (1985) kept one foot in the past with chapters on entepreneurial management and the entrepreneurial business.
3 Keith Joseph had little regard for social science. So little, in fact, that he forced the then Social Science Research Council to drop 'science' from its name and become the Economic and Social Research Council.
4 On this point, Sir Keith was disagreeing with Schumpeter, probably without realizing it. Schumpeter, of course, believed that the entrepreneur *was* dispensable, in the historical sense that innovation was becoming internal-

ized within the modern corporation. The trend is attested by the voluminous literature of new product development (NPD), the bulk of which is addressed to the organization of product innovation within large companies. From the mid 1980s onwards, there have been attempts to claim that innovation within the large organization *is* a species of entrepreneurship, but that wasn't Sir Keith's meaning and nor was it Schumpeter's.

# Bibliography


Abetti, P. A. (1997) The Birth and Growth of Toshiba's Laptop and Notebook Computers: A Case Study in Japanese Corporate Venturing. *Journal of Business Venturing*, Vol. 12, No. 6, 507–29.

Acs, Z. J. and Audretsch, D. B. (1990) *Innovation and Small Firms*. Cambridge Mass., MIT Press.

Aglietta, M. (1979) *A Theory of Capitalist Regulation: the US Experience*. London. NLB.

Ahmad, S. (1997) 'Scotia – A Biotech Shocker' *Investors Chronicle*, 14 March 1997, 12.

Airliners.net (2004) http://www.airliners.net/discussions/general_aviation/read.main/1764740/5/, Last Accessed 2 November 2004.

Alford, W. E. (1977) 'Penny Cigarettes: Oligopoly and Entrepreneurship in the UK Tobacco Industry in the late 19th century'. Ch. 3 in Supple, B. (ed.) *Essays in British Business History*. Oxford. Clarendon Press, 49–68.

Allen, C. A. and Lee, D. R. (1996) 'The Entrepreneur as Hero'. *The Journal of Private Enterprise*, Fall 1996, No. 1, Vol. XII, http://www.apee.org/whatisapee.html, Last Accessed 2 November 2004.

Allswang, J. M. (1977) *Bosses, Machines and Urban Voters: an American Symbiosis*. Port Washington, New York. Kennikat Press Corp.

Armstrong, P. (1996) 'The Expunction of Process Expertise from British Management Teaching Syllabi: an Historical Analysis' in Glover, I. and Hughes M. (eds) *The Professional – Managerial Class: Contemporary British Management in the Pursuer Mode*. Aldershot. Avebury Press, 269–302.

Armstrong, P. (2001) 'Styles of Illusion'. *Sociological Review*. Vol. 49, No. 2, 155–73.

Arrow, K. (1975) 'Gifts and Exchanges', in Phelps, E. S. (ed.) *Altruism, Morality and Economic* Theory, New York, Russell Sage Foundation, 13–28.

Arundel, A. (2000) 'Measuring the Economic Impact of Biotechnology: from R&D to Applications', Ch 6 in J. De La Mothe and J. Niosi (eds) *The Economic and Social Dynamics of Biotechnology*, London, Kluwer Academic, 83–100.

Audretsch, D. B. (2002) 'The Dynamic role of Small Firms: Evidence from the US. *Small Business Economics*, Vol. 18, Nos. 1–3, 13–40.

Audretsch, D. B., Weigand, J. and Weigand, C. (2002) 'The Impact of the SBIR on Creating Entrepreneurial Behavior', *Economic Development Quarterly*, Vol. 16, No. 1, 32–8.

Autio, E. (1997) 'New Technology – Based Firms in Innovation Networks Symplectic and Generative Impacts', *Research Policy*, Vol. 26, No. 3, 263–81.

Bagguley, P. and Mann, K. (1992) 'Idle Thieving Bastards? Scholarly Representations of the Underclass', *Work, Employment and Society*, Vol. 6, No. 1, 113–26.

Bank of England (1996) *The Financing of Technology-Based Small Firms*, London, Bank of England.

Banks, H. (1982) *The Rise and Fall of Freddie Laker*, London, Faber and Faber.

Barry, N. P. (1979) *Hayek's Social and Economic Philosophy*, London, Macmillan.

Baumol, W. J. (1996) 'Entrepreneurship: Productive, Unproductive, and Destructive' (Reprinted from *Journal of Political Economy*, 1990 Vol. 98, 893–921), *Journal of Business Venturing*, Vol. 11, No. 1, 3–22.

Baws, M. (1999) 'Cortecs Gets £1m Bashing by Taxman', *Daily Mail*, 26 October, 71.

Bean, J. J. (1996) *Beyond the Broker State: Federal Policies Towards Small Business 1936–1961*, Chapel Hill, University of North Carolina Press.

Bean, J. J. (2001) *Big Government and Affirmative Action: the Scandalous History of the Small Business Administration*, Lexington, University Press of Kentucky.

Beard, C. A. [1912] (1970) *American City Government*, New York, Arno Press.

Bechard, J. P. and Toulouse, J. M. (1998) 'Validation of a Didactic Model for the Analysis of Training Objectives in Entrepreneurship', *Journal of Business Venturing*, Vol. 13, No. 4, 317–33.

Begley, T. M. (1995) 'Using Founder Status, Age of Firm, and Company Growth-Rate as the Basis for Distinguishing Entrepreneurs from Managers of Smaller Businesses', *Journal of Business Venturing*, Vol. 10, No. 3, 249–63.

Begley, T. M. and Boyd, D. P. (1987) 'Psychological Characteristics Associated with Performance in Entrepreneurial Firms and Smaller Businesses', *Journal of Business Venturing*, Vol. 2, No. 1, 79–93.

Benton, T. (1981) '"Objective" Interests and the Sociology of Power', *Sociology*, Vol. 15, No. 2, 161–84.

Berger, P. L. (1966) *Invitation to Sociology: a Humanistic Perspective*, Harmondsworth, Penguin.

Berger, P. L. and Luckman, T. (1967) *The Social Construction of Reality*, Harmondsworth, Penguin.

Berle, A. A. and Means, G. C. (1933) *The Modern Corporation and Private Property*, New York, MacMillan.

Bhide, A. and Stevenson, H. H. (1990) 'Why Be Honest If Honesty Doesn't Pay?' *Harvard Business Review*, Vol. 68, No. 5. 121–9.

Binks, M. (1985) 'Small Loans Scheme Guaranteed to Fail', *The Guardian*, 22 March 1985.

BioIndustry Association (2001) *Code of Best Practice*, Principle 5, Explanatory Note, http://www.bioindustry.org/dbfiles/CGItemp23077.BIA, Last Accessed 2 November 2004.

Birch, D. L. (1987) *Job Creation in America: How Our Small Companies Put Most People to Work*. New York. Free Press.

Birley, S. and Watson, L. Cited in Randlesom, C. (1993) The Business Culture in the United Kingdom. Ch. 4. in Randlesom, C., Brierly, W., Bruton, K., Gordon, C. and King, P. *Business Cultures in Europe*, Oxford, Butterworth-Heineman, 203–62.

Blair, A., the Rt. Hon. (2000) Speech at the European Bioscience Conference. London, November 2000.

Blim, M. L. (1990) *Made in Italy: Small-scale Industrialization and its Consequences*, New York, Praeger.

Bloom, J. (1971) *It's No Sin to make a Profit*, London, W.H. Allen.

Bloor, D. (1976) K*nowledge and Social Imagery*, London, Routledge and Kegan Paul.

Blum, J. M. (1976) *V Was for Victory: Politics and American Culture During World War 2*, New York, Harcourt Brace Jovanovich, 123.

Bouveresse, J. (1999) 'Rules, Dispositions and the Habitus'. Ch. 3 in Shusterman, R. (ed.) *Bourdieu: a Critical Reader*, Oxford, Blackwell, 45–63.
Bower, D. J. (1992) *Company and Campus Partnership: Supporting Technology Transfer*, London, Routledge.
Bower, T. (2001) *Branson*, London, Fourth Estate.
Bowers, S. (2004) 'Celltech Sale Ends Blair's Biotech Dream', *The Guardian*, 19 May 2004.
Bowles, S. and Edwards, R. (1985) *Understanding Capitalism : Competition, Command and Change in the US Economy*, New York, Harper and Row.
Bowles, S., Gordon, D. M. and Weisskopf, T. E. (1990) *After the Waste Land: a Democratic Economics for the Year 2000*, New York, M.E. Sharpe Inc.
Bozeman, B. (1994) Evaluating Government Technology Transfer – Early Impacts of the Cooperative Technology Paradigm, *Policy Studies Journal*, Vol. 22, No. 2, 322–37.
Branigan, T. (2004) 'The Guardian Profile: James Dyson.' *The Guardian*, 1 October 2004, 16.
Branson, Sir R. (1999) *Losing my Virginity: the Autobiography*, London, Virgin Publishing Ltd.
Branson, Sir Richard. (1998) *Address to London Innovation*, http://www.london-innovation.org.uk/, Last Accessed 2 November 2004.
Bray, M. J and Lee, J. N. (2000) 'University Revenues From Technology Transfer: Licensing Fees vs. Equity Positions', *Journal of Business Venturing*, Vol. 155, Nos. 5–6, 385–92.
Brockhaus, R. H. Sr. (1980) 'Risk-Taking Propensity of Entrepreneurs', *Academy of Management Journal*, Vol. 23, No. 3, 509–20.
Brown, G. (1995) Interview 11 June 1995, http://www.bbc.co.uk/otr/intext94-95/Brown11.6.95.html, Last Accessed 4 November 2004.
Brown, G. (2004) 10 Downing St. Press Release, http://www.number-10.gov.uk/output/Page5241.asp, Last Accessed 28 January 2004.
Bryson, A. and White, M. (1996) *Moving in and Out of Self-Employment*, London, Policy Studies Institute.
Buckingham, L. (1998) 'Rumours Leave British Biotech on the Ropes'. *The Guardian,* 28 April 1998, 3.
Bullock, M. P. D. (1983) *Academic Enterprise, Industrial Innovation and the Development of High Technology Financing in the United States*, London, Brand Bros.
Bunzle, J. H. (1979) *The American Small Businessman*, New York, Arno Press.
Burawoy, M. (1985) The Politics of Production: Factory Regimes under Capitalism and Socialism, London, Verso.
Burrows, R. (ed.) (1991) *Deciphering the Enterprise Culture: Entrepreneurship, Petty Capitalism and the Restructuring of Britain*, London, Routledge.
*Business Review Weekly* (Australia) (1999) 'Cortecs Pays For Its Lack Of Diversity', News And Features, 3 September 1999, 81.
Carland, J. W., Hoy, F., Boulton, W. R. and Carland, J. A. C. (1984) 'Differentiating Entrepreneurs from Small Business Owners – A Conceptualisation', *Academy of Management Review*, Vol. 9, No. 2, 354–9.
Carr, P. (2003) 'Revisiting the Protestant Ethic and the Spirit of Capitalism: Understanding the Relationship Between Ethics and Enterprise'. *Journal of Business Ethics*, Vol. 47, No. 1, 7–16.

Carson, D. (ed.) (1973) *The Vital Majority. Small Business in the American Economy: Essays Marking The Twentieth Anniversary of the US Small Business Administration*, Washington.

Carvair (2001) http://www.geocities.com/anjapaul/carvair.htm, Last Accessed 5 September 2001.

Castells, M. (1996) *The Information Age: Economy, Society and Culture. Volume 1. The Rise of the Network Society*. Oxford. Blackwell.

Chancellor of the Duchy of Lancaster (1993) *Realising our Potential: A Strategy for Science, Engineering and Technology*, London, HMSO, Cmnd. 2250.

Chandler, A. D. (1962) *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*, Cambridge Mass., MIT Press.

Chandler, A. D. (1977) *The Visible Hand: the Managerial Revolution in American Business*. Cambridge Mass. Harvard University Press.

Charlton, B. G. (2003) 'Re: Obituary of David F Horrobin – originally submitted to BMJ on 15th April 2003', *British Medical* Journal 30 April 2003.

Chase, A. G. (1973) 'Federal Support of the Vital Majority: the Development of the US Small Business Administration'. in Carson, D. (ed.) (1973) *The Vital Majority: Small Business in the American Economy: Essays Marking the Twentieth Anniversary of the U.S. Small Business Administration*, Washington, 3–24.

Chell, E., Haworth, J. and Brearly, S. (1991) *The Entrepreneurial Personality: Concepts, Cases and Categories*, London, Routledge.

Chen, C. C., Greene, P. G. and Crick, A. (1998) 'Does Entrepreneurial Self-Efficacy Distinguish Entrepreneurs from Managers?' *Journal of Business Venturing*, Vol. 13, No. 4, 295–316.

Chia, R. (1996) 'Teaching Paradigm Shifting in Management Education: University Business Schools and the Entrepreneurial Imagination', *Journal of Management Studies*, Vol. 33, No. 4, 409–28.

Chinoy, E. (1955) *Automobile Workers and the American Dream*, New York, Doubleday.

Clark, A. (2001) 'Slow Death of a Cancer Cure', *The Guardian*, 14 February 2001.

Cockett, R. (1994) *Thinking the Unthinkable: Think tanks and the Economic Counter-Revolution 1931–1983*, London, Harper Collins.

Cohen, N. 2004 'It Just Doesn't Add Up'. *Observer*, 8 August 2004, 29.

Cohen, R. (APAX Partners) (1999) Verbal Presentation at CVCP (1999) *Driving Technology Transfer: Growing Enterprise in Universities*, Conference. QE11 Centre, 11 February 1999.

Cole, R. (1989) 'Loan Guarantee Scheme Cases Cause Concern'. *The Independent*, 24 August 1989, 27.

Collins, H. M. (1989) 'The Meaning of Experimentation: Replication and Reasonableness' in Lawson, H. and Appignanesis, L. (eds) *Dismantling Truth: Reality in the Post-Modern World*, London, Weidenfeld and Nicolson, 82–93.

Collins, O. F., Moore, D. G. and Unwalla, D. B. (1964) *The Enterprising Man*, East Lansing, Michigan, Bureau of Business and Economic Research, Michigan State University.

Colomy, P. (1998) 'Neofunctionalism and Neoinstitutionalism: Human Agency and Interest in Institutional Change'. *Sociological Forum*, Vol. 13, No. 2, 265–300.

Commager, H. S., 'Jefferson and the Enlightenment'. Ch. 2 in Weymouth, L. (ed.) (1973) *Thomas Jefferson: the Man, his World, his Influence*, London, Weidenfeld and Nicholson, 39–68

Cooper, A. C., Gimenogascon, F. J. and Woo, C. Y. (1994) 'Initial Human and Financial Capital as Predictors of New Venture Performance', *Journal of Business Venturing*, Vol. 9, No. 5, 371–95.

Corner, J. and Harvey, S. (1991) 'Mediating Tradition and Modernity: the Heritage/Enterprise Couplet'. Ch. 2 in Corner, J. and Harvey, S. (eds) *Enterprise and Heritage*, London, Routledge, 45–75.

Cuff, R. D. (1973) *The War Industries Board: Business-Government Relations During World War 1*, Baltimore, Johns Hopkins University Press.

Curran, J., Stanworth, J. and Watkins, D. S. (eds) (1986) *The Survival of the Small Firm* 2, Aldershot, Gower, 77.

CVCP (Committee of Vice-Chancellors and Principals) (1999) *Technology Transfer: the US Experience*, London, CVCP.

Dale, A. (1991) 'Self-Employment and Entrepreneurship: Notes on Two Problematic Concepts', Ch. 3 in Burrows, R. (ed.) *Deciphering the Enterprise Culture: Entrepreneurship, Petty Capitalism and the Restructuring of Britain*, London, Routledge, 35–52.

Danziger, S. and Gottschalk, P. (eds) (1993) *Uneven Tides: Rising Inequality in America*, New York, Russell Sage Foundation.

De Certeau, M. (1984) *The Practice of Everyday Life*, Berkeley, University of California Press.

Dean, H. and Taylor-Gooby, P. (1992) *Dependency Culture: the Explosion of a Myth*, Hemel Hempstead, Harvester Wheatsheaf.

DeLeon, L. (1996) 'Ethics and Entrepreneurship', *Policy Studies Journal*, Vol. 24, No. 3, 495–510.

DeLorean, J. Z. (1980) *On A Clear Day You Can See General Motors: John Z. De Lorean's Look Inside The Automotive Giant*, London, Sidgwick and Jackson.

Denham, A. and Garnett, M. (2001) *Keith Joseph*, Teddington, Acumen Press.

DETI (Department of Enterprise, Trade and Investment) (2004). *De Lorean: the Recovery of Public Funds: a Report by the Comptroller and Auditor General*, NIAO (Northern Ireland Audit Office), HC287.

DeVries, J. (2003) Entrepreneurial Librarians: Embracing Innovation and Motivation, Science and Technology Libraries, Vol. 24, Nos. 1–2, 209–17.

Dinski, J. (2000) 'Stinking Rich', *London Review of Books*, 16 November 2000.

Dobbin F. (1994) *Forging Industrial Policy: the United States, Britain and France in the Railway Age*, Cambridge, Cambridge University Press.

Dorsey, K. (1997) 'Scotia Hurt by Analyst Comment', *The Herald (Glasgow)*, 19 February 1997, 22.

Drucker, P. F. (1955) *The Practice of Management*, London, Heinemann.

Drucker, P. F. (1985) *Innovation and Entrepreneurship*, New York, Harper and Row.

DTI (2000) Office of Science and Technology. *A Scenario for Success in 2005: Biotechnology in the UK*, http://www.ost.gov.uk/policy/futures/biotechnology/dimens.htm, Last Accessed 2 November 2004.

DTI (Department of Trade and Industry) (1998) *Our Competitive Future: Building the Knowledge Driven Economy*, London, HM Stationery Office, Cmnd 4176. http://dti2info1.dti.gov.uk/comp/competitive/main.htm, Accessed 21 September 2000.

DuGay, P. (1996) *Consumption and Identity at Work*, London, Sage.

DuGay, P. and Salaman, G. (1992) 'The Cult(ure) of the Customer'. *Journal of Management Studies*, Vol. 29, No. 4, 616–33.

Durkheim, E. [1893] (1964) *The Division of Labour in Society*, New York, Free Press.
Edwards, R. C. (1979) *Contested Terrain: the Transformation of the Workplace in the Twentieth Century*, London, Basic Books.
Eglin, R. and Ritchie, B. (1980) *Fly Me, I'm Freddie*, London, Weidenfeld and Nicholson.
Eliasson, G. (2000) 'The Industrial potential of Biotechnology: a Competence Bloc Analysis', Ch. 3 in J. De La Mothe and J. Niosi (eds) *The Economic and Social Dynamics of Biotechnology*, London, Kluwer Academic, 29–52.
Ellis, R. E. 'The Political Economy of Thomas Jefferson', Ch. 4 in Weymouth, L. (ed.) (1973*) Thomas Jefferson: the Man, his World, his Influence*, London, Weidenfeld and Nicholson, 81–96.
Erikson, R. and Goldthorpe, J. H. (1992) *The Constant Flux: A Study of Class Mobility in Industrial Societies*, Oxford, Clarendon Press.
EuropaBio (1997) *Benchmarking the Competitiveness of Biotechnology in Europe*. Brussells, EuropaBio, Quoted in Arundel (2000) p. 94.
Evans, R. and Leigh, D. (2004) 'Downing St. Forced To Reveal Secret Meetings', *The Guardian*, 16 March 2004, 1.
Fairclough, N. (1991) 'What Might we mean by Enterprise Discourse?' Ch. 2 in Keat, R. and Abercrombie, N. (eds) (1991) *Enterprise Culture*, London, Routledge, 38–57.
Fallon, I. and Srodes J. (1983) *DeLorean: The Rise And Fall Of A Dream-Maker*, London, Hamish Hamilton.
Faulkner, H. U. (1959) *American Economic History. 8th ed*, New York, Harper and Row.
Fayolle, A. and Livian, Y-F. (1995) 'Entrepreneurial Behaviour of French Engineers: an Exploratory Study', Ch. 10 in Birley, S. and MacMillan, I. C. (eds) *International Entrepreneurship*, London, Routledge, 201–28.
Fogel, R. W. (1960) *The Union Pacific Railroad: a Case in Premature Enterprise*, Baltimore, The John Hopkins University Press.
Fong, G. R. (2001) 'ARPA Does Windows: The Defense Underpinning of the PC Revolution', *Business and Politics*, Vol. 3, No. 3, 213–37.
Foucault, M. (1984) in Rabinow, P. (ed.) (1984) *The Foucault Reader*, London, Penguin.
Friman, H. R. (2004) 'The Great Escape? Globalization, Immigrant Entrepreneurship and the Criminal Economy', *Review of International Political Economy*, Vol. 11, No. 1, 98–131.
Froud, J., Haslam, C., Johal, S., Williams, K. and Willis, R. (1998) 'British Pharmaceuticals: a Cautionary Tale', *Economy and Society*, Vol. 27, No. 4, 554–84.
Galambos, L. (1975) *The Public Image of Big Business in America 1880–1940: a Quantitative Study in Social Change*, Baltimore, John Hopkins University Press.
Gamble, A. (1996) *Hayek: The Iron Cage of Liberty*, Cambridge, Polity Press.
Gartner, W. B. (1989) '"Who is an entrepreneur?" is the wrong question', *Entrepreneurship Theory and Practice*, Vol. 13, No. 4, 47–68.
Geertz, C. (1993) Ideology as a Cultural System, Ch. 8 in *The Interpretation of Cultures: Selected Essays*, London, Fontana, 193–233.
Gibb, A. A. (1985) 'Has Entrepreneurship a Place in the University? an Inaugural Lecture'. Durham. Durham University Press.

Ginsberg, A. and Buchholtz, A. (1989) 'Are Entrepreneurs a Breed Apart? A Look at the Evidence', *Journal of General Management*, Vol. 15, No. 2, 32–40.
Gladstone, B. and Lee, J. L. (1995) 'The Operation of the Insolvency System in the UK – Some Implications for Entrepreneurialism', *Small Business Economics*, Vol. 7, No. 1, 55–66.
Glover, J. D. (1954) *The Attack on Big Business*, Boston, Harvard University Graduate School of Business Administration.
Goffman, E. (1972) *Encounters: Two Studies in the Sociology of Interaction*, Harmondsworth, Penguin, 85–132.
Gold, J. (1995) Good Vibrations: the True Story Behind Anne Summers, London, Pavilion.
Goldworth, A. (1987) 'Who Should Profit from the Business Of Science? – the Moral Limit to Private Profit in Entrepreneurial Science', *Hastings Center Report*, Vol. 17, No. 3, 8–10.
Goodrich, C. (1974) *Government Promotion of American Canals and Railroads 1800–1890*, Westport Conn., Greenwood Press.
Gordon, D. M., Edwards, R. C. and Reich, M. (1982) *Segmented Work, Divided Workers: the Historical Transformation of Labor in the United States*, Cambridge, Cambridge University Press.
Graham, T. (2004a) *The Graham Review of the Small Firms Loan Guarantee. Interim Report,* http://www.hm-treasury.gov.uk/media/8BC/D9/ACF148B.pdf, Last Accessed 2 November 2004.
Graham, T. (2004b) *The Graham Review of the Small Firms Loan Guarantee. Final Report*, http://www.hm-treasury.gov.uk/media/630/2F/6302F406-BCDC-D4B3-1CE017B60A9F5692.pdf, Last Accessed 2 November 2004.
Gray, C. (1992) 'Growth Orientation and the Small Firm', Ch. 5 in Caley, K., Chell, E., Chittenden, F. and Mason, C. (eds) *Small Enterprise Development: Policy and Practice in Action*, London, Paul Chapman, 59–71.
Grayson, L. (1993) *Science Parks: an Experiment in High Technology Transfer*, London, The British Library.
Gros, J. G. (2003) 'Trouble in Paradise', *British Journal of Criminology*, Vol. 3, No. 1, 63–80.
Haddad, W. F. (1985) *Hard Driving: My Years with John De Lorean*, New York, Random House.
Hakim, C. (1989a) 'New Recruits to Self-Employment in the 1980s', *Employment Gazette*, Vol. 97, No. 6, 286–97.
Hakim, C. (1989b) 'Identifying Fast-Growing Small Firms', *Employment Gazette*, Vol. 97, No. 1, 29–41.
Hall, S., Hobson, D., Lowe, A. and Willis, P. (eds) (1980) *Encoding/Decoding Culture, Media, Language*, London, Hutchinson.
Halloran, P. and Hollingsworth, M. (1995) *Thatcher's Gold: the Life and Times of Mark Thatcher*, London, Simon and Schuster.
Harrison, B. (1994a) 'Concentrated Economic-Power and Silicon Valley', *Environment and Planning A*, Vol. 26, No. 2, 307–28.
Harrison, B. (1994b) 'The Italian Industrial Districts and the Crisis of the Cooperative Form: Part II', *European Planning Studies*, Vol. 2, Issue 2, 159–73.
Harrison, B. (1997) *Lean and Mean: the Changing Landscape of Corporate Power in the Age of Flexibility*, New York, Guilford Press.

Hartshorn, C. and Pavin, W. (1999) 'Teaching Entrepreneurship: Creating and Implementing a Naturalistic Model', Paper presented at *Euro PME, Conférence Internationale: L' Entrepreneuriat Demain,* Rennes – St. Mâlo, 30 September – 2 October 1999. (Abstract in Catalogue des Résumés D'Articles. Groupe ESC Rennes, p. 9).

Hartwell, R. M. (1995) *A History of the Mont Pélerin Society*, Indianapolis, Liberty Fund Inc.

Harvey, D. (1990) *The Condition of Postmodernity: an Enquiry Into the Origins of Cultural Change*, Oxford, Blackwell.

Harvey, K. A. (1994) 'The Impact of Institutional Intellectual Property Policy on the Propensity of Individual Universities to Incubate NTBFs', Ch 12 in Oakey, R. (ed.) *New Technology-Based Firms in the 1990s*, London, Paul Chapman, 137–48.

Haycock, P. (1999) verbal presentation at CVCP conference (1999) *Driving Technology Transfer: Growing Enterprise in Universities*, Conference. QE11 Centre, 11 February 2002

Hayek, F. A. (1949) '"Free" Enterprise and Competitive Order', Ch. 6 in *Individualism and Economic Order*, London, Routledge and Kegan Paul Ltd, 107–18.

Hayek, F. A. (1960) *The Constitution of Liberty*, London, Routledge and Kegan Paul.

Hayek, F. A. (1979) *The Political Order of a Free People. Vol. 3. Law, Legislation and Liberty: a New Statement of the Liberal Principles of Justice and Political Economy*, London, Routledge and Kegan Paul.

Hayek, F. A. (1988) *The Fatal Conceit: The Errors of Socialism*, London, Routledge.

Hayek, F. A. [1944] (1979) *The Road to Serfdom*, London, Routledge and Kegan Paul.

HC 1282 (2003) *Sixth Special Report UK Biotechnology Industry. Government Response to the Committee's Twelfth Report of Session 2002–03*, House of Commons Select Committee on Trade and Industry, London, The Stationery Office.

HC 332–i. (1999) *Minutes of Evidence Taken Before the Science and Technology Committee. Wednesday 31st March*, House of Commons Select Committee on Science and Technology, London, The Stationery Office.

HC 535 (1999) *Fourth Report: The Regulation of the Biotechnology Industry*, House of Commons Select Committee on Science and Technology, London, The Stationery Office.

HC 87 (2003) *Twelfth Report: UK Biotechnology Industry*, House of Commons Select Committee on Trade and Industry, London, The Stationery Office.

HC 888 (1998) *Fifth Report. British Biotech*, House of Commons Select Committee on Science and Technology, London, The Stationery Office.

Heal, L. C. (1954) *Patent No. GB702981 Improvements Relating to the Construction of Hollow Bodies of Streamline Form*, London, The Patent Office.

Heal, L. C. (1956) *Patent No. GB756392 Improvements Relating to the Production of Skin-Stressed Surfaces*, London, The Patent Office.

Heelas, P. and Morris, P. (1992) 'Enterprise Culture, Its Values and Value', Ch. 1 in Heelas, P. and Morris, P. (eds) *The Values of the Enterprise Culture: the Moral Debate*, London, Routledge, 1–25.

Heinlein, R. A. (1953) *The Man Who Sold the Moon*, London, Sidgwick and Jackson.

Hellary, Philip, C. P. C. (2005) http://www.hellary.co.uk/laker/bb/index.htm <http://www.hellary.co.uk/laker/bb/index.htm>. Page by Phillip C. P. C. Hellary, son of Laker Airway's one-time chief pilot, Captain Alan Hellary. Last accessed 7 March 2005.

Hettiaratchy, S. and Clarke, J. (2000) 'Burns after Photodynamic Therapy', *British Medical Journal*, 6 May 2000, No. 320, 1245.

Hill, R.C and Levenhagen, M. (1995) 'Metaphors and Mental Models – Sensemaking and Sensegiving in Innovative and Entrepreneurial Activities', *Journal of Management*, Vol. 21, No. 6, 1057–74.

Hills, J. (2001) 'Poverty and Social Security: What Rights, Whose Responsibilities?', Ch. 1 in Park, A. et al (eds) *British Social Attitudes: the 18th report: Public policy, Social Ties*, London, Sage, 1–28.

Hills, J. and Lelkes, O. (1999) 'Social security, Selective Universalism and Patchwork Redistribution', Ch. 1 in Curtice, J., Park, A., Thomson, K. and Jowell, R. (eds) *British Social Attitudes, the 16th report: Who shares the New Labour Values*? Aldershot, Ashgate, 1–22.

Hjalager, A-M (1989) 'Why No Entrepreneurs? Lifemodes, Everyday Life and Unemployment Strategies in an Undeveloped Region', *Entrepreneurship and Regional Development*, Vol. 1, No. 1, 85–97.

HL 18 (1991) *First Report: Innovation in Manufacturing Industry*, House of Lords Select Committee on Science and Technology London, The Stationery Office.

HL 62 (1997) *Third Report: The Innovation-Exploitation Barrier*, House of Lords Select Committee on Science and Technology, London, The Stationery Office, http://www.parliament.the-stationery-office.co.uk/pa/ld199697/ldselect/ldsctech/062iii/st0301.htm, Last Accessed 2 November 2004.

Hobday, M. (1994) 'The Limits of Silicon Valley – a Critique of Network Theory', *Technology Analysis and Strategic Management*, Vol. 6, No. 2, 231–44.

Hodgson, J. and Ward, M. (2003) 'The Habits of Successful Bioentrepreneurs', Nature Biotechnology, Bioentrepreneur Supplement, 23 June 2003, 3–5.

Hofstader, R. (1965) 'What happened to the Anti-Trust Movement? In Hofstader, R. *The Paranoid Style in American Politics and Other Essays*, New York, Alfred P. Knopf, 188–237.

Holbrook, Stewart H. (1947) *The Story of American Railroads*, New York, Crown Publishers.

Hood, J. N. and Young, J. E. (1993) 'Entrepreneurship's Requisite Areas of Development – A Survey of Top Executives in Successful Entrepreneurial Firms', *Journal of Business Venturing*, Vol. 8, No. 2, 115–35.

Horrobin, D. (2003) 'Are Large Clinical Trials in Rapidly Lethal Diseases Usually Unethical?' *Lancet*, No. 361, 695–7.

Huettel, S. (2001) 'Still a Feisty Flyer', *St. Petersburg Times*, 16 June 2001 http://www.sptimes.com/Business.shtml, Last Accessed 2 November 2004.

Hull, D. L, Bosley, J. J. and Udell, G. G. (1980) 'Renewing the Hunt for the Heffalump: Identifying Potential Entrepreneurs by Personality Characteristics', *Journal of Small Business*, Vol. 18, No. 1, 11–18.

Investor's Chronicle (1995) 22 September.

Jackson, C. and Lewis, J. (1996) 'Is Primrose Oil Really a Universal Cure-All?' *Daily Mail*, 23 January 1996, 43.

Jackson, T. (1994) *Virgin King: Inside Richard Branson's Business Empire*, London, HarperCollins.
*Jane's All the World's Aircraft* (1956) London, Jane's Publishing.
*Jane's All the World's Aircraft* (1957) London, Jane's Publishing.
Jaworski, A. and Coupland, N. (1999) 'Introduction: Perspectives on Discourse Analysis', in Jaworski, A. and Coupland, N. (eds) *The Discourse Reader*, London, Routledge, 1–44.
Johns, A. (2004) 'The Nature of Intellectual Property in the Mid-Twentieth Century', *Cultural Policy Workshop*, April 2004, Chicago, University of Chicago, http://culturalpolicy.uchicago.edu/pdfs/theNatureOfIntellectualProperty.pdf, Last Accessed 5 September 2004.
Johnson, P. (2001) 'Pioneering Spirit Turns into Greed', *Times Higher Education Supplement*, 4 May 2001.
Jowell, R., Brook, L. and Dowds, L. (eds) (1993) *International Social Attitudes: the 10th BSA Report*, Aldershot, Dartmouth Publishing Co.
Jowell, R., Curtice, J., Park, A., Brook, L. and Ahrendt, D. (eds) (1995) *British Social Attitudes: The 12th report*, Aldershot, Dartmouth.
Jowell, R., Curtice, J., Park, A., Brook, L. and Thomson, K. (eds) (1996) *British Social Attitudes: The 13th report*, Aldershot, Dartmouth.
Jowell, R., Witherspoon, S. and Brook, L. (eds) (1989) *British Social Attitudes: special international report. 6th Report*, Aldershot, Gower.
Kanter, R. M. (1990) *When Giants Learn to Dance*, London, Unwin Hyman.
Kao, R. W. Y., Kao, K. R. and Kao, R. R. (2002) *Entrepreneurism: a Philosophy and a Sensible Alternative for the Market Economy*, London, Imperial College Press.
Kassicieh, S. K., Radosevich, H. R. and Banbury, C. M. (1997) 'Using Attitudinal, Situational, and Personal Characteristics Variables to Predict Future Entrepreneurs from National Laboratory Inventors', *IEEE Transactions on Engineering Management*, Vol. 44, No. 3, 248–57.
Keat, R. (1991) 'Introduction: Starship Britain or Universal Enterprise?', In Keat, R. and Abercrombie, N. (eds) *Enterprise Culture*, London, Routledge, 1–17.
Kelliher, A. (2003) 'Re: 29 Points About the Obituary', *British Medical Journal* 1 May 2003.
Kerr, C. (1960) *Industrialism and Industrial Man : the Problems of Labour and Management in Economic Growth*, Cambridge Mass., Harvard University Press.
Kilpi, J. (1996) 'Gearing Up, Crashing Loud. Should We Punish High-Flyers For Insolvency?' *Journal of Business Ethics*, Vol. 15, No. 12, 1343–54.
Koch, A. (1957) *The Philosophy of Thomas Jefferson*, Gloucester Mass., Peter Smith.
KPMG (1999) *Loan Guarantee Scheme (SFLGS)*, DTI Evaluation Report Series No 3, http://www.dti.gov.uk/about/evaluation/sflgs.pdf, Last Accessed 2 November 2004.
Krueger, N. F., Reilly, M. D. and Carsrud, A. L. (2000) 'Competing Models Of Entrepreneurial Intentions', *Journal of Business Venturing*, Vol. 15, Nos. 5–6, 411–32.
Laker Airways (International) Limited, *Annual Report and Accounts to March 31st 1980*.
Lakerbio (2001) http://www.webflyer.com/@livefly/fred11th/lakerbio.htm, Last Accessed 22 August 2001.
Lamont, N. (1989) 'Written Answers', Hansard, 27 April 1989, Col. 595.

Latour, B. (1987) *Science in Action: How to Follow Scientists and Engineers through Society*, Milton Keynes, Open University Press.
Latour, B. (1989) 'Clothing the Naked Truth', in Lawson, H. and Appignanesis, L. (eds) *Dismantling Truth: Reality in the Post-Modern World*, London, Weidenfeld and Nicolson, 101–28.
Leadbeater, C. (1999) *New Labour's Secret Godfather – Keith Joseph*, New Statesman, 16 May 1999, 13–14.
Levin, H. (1983) *John De Lorean: the Maverick Mogul*, London, Orbis Publishing Ltd.
Levinson, R. E. (1983) *Making the most of Entrepreneurial Management: Decentralizing America's Corporations*, New York, AMACOM.
Lilienthal, D. E. (1952) *Big Business: a New Era*, New York, Harper and Brothers.
Luhmann, N. (1979) *Trust and Power*, Chichester, Wiley.
Lynd, R. S. and Lynd, H. M. (1937) *Middletown in Transition: a Study in Cultural Conflicts*, New York, Harcourt Brace and Company.
MacDonald, R. (1992) 'Runners, Fallers and Plodders: Youth and the Enterprise Culture', Ch 6 in Caley, K., Chell, E., Chittenden, F. and Mason, C. (eds) *Small Enterprise Development: Policy and Practice in Action*, London, Paul Chapman, 72–84.
MacDonald, R. (1996) 'Welfare Dependency, the Enterprise Culture and Self-Employed Survival', *Work Employment and Society*, Vol. 10, No. 3, 431–47.
Machiavelli, N. [1513] (1908) *The Prince*, Tr. Marriatt, W. K., London, Dent, 142.
MacPherson, C. B. (1962) *The Political Theory of Possessive Individualism: Hobbes to Locke*, Oxford, Clarendon Press.
Marsh, V. and Corrigan, T. (1999) 'Biotech Settles over US Allegations', *Financial Times*, 11 June 1999, 24.
Mason, C. and Harrison, R. (1992) 'A Strategy for Closing the Small Firms' Finance Gap', Ch. 10 in Caley, K., Chell, E., Chittenden, F. and Mason, C. (eds) *Small Enterprise Development: Policy and Practice in Action*, London, Paul Chapman, 132–50.
Mason, C., Harrison, J. and Harrison, R. (1988) *Closing the Equity gap? An Assessment of the Business Expansion Scheme*, London, The Small Business Trust.
Massey, D., Quintas, P. and Weild, D. (1992) *High-Tech Fantasies: Science Parks in Society, Science and Space*, London, Routledge.
McCraw, T. K. (1984) *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn*, Cambridge Mass., Harvard University Press.
McGrath, R. G., Macmillan, I. C. and Scheinberg, S. (1992) 'Elitists, Risk-Takers, and Rugged Individualists – An Exploratory Analysis of Cultural-Differences Between Entrepreneurs and Non-Entrepreneurs', *Journal of Business Venturing*, Vol. 7, No. 2, 115–35.
McKean, R. (1975) 'Economics of Trust, Altruism and Corporate Responsibility', in Phelps, E. S. (ed.) *Altruism, Morality and Economic Theory*, New York, Russell Sage Foundation, 29–44.
McNally, K. and Mason, C. (1995) 'New Businesses in the UK Brewing Industry: Entrepreneurial Ventures or Life-Style Enterprises?', Ch. 11 in Birley, S. and MacMillan, I. C. (eds) *International Entrepreneurship*. London. Routledge, 229–50.
McQuaid, K. (1982) *Big Business and Presidential Power: from FDR to Reagan*, New York, William Morrow and Company.

Merton, R. K. (1949) 'Social Structure and Anomie', in *Social Theory and Social Structure*, New York The Free Press, 125–49.
Merton-Jones, A. (1985) 'Laker and the Forgotten Airliner: the Avro Tudor in Air Charter Service', *Propliner*, No. 23, Summer 1985, 26–32.
Mill, J. S. (1848) *Principles of Political Economy with Some of their Applications to Social Philosophy*, London, J. W. Parker.
Miller, C. and Kerfoot, D. (2004) 'Starting Up Inequality? The Case of a "Self-Employment" Workforce', Paper presented at the *Work, Employment and Society Conference*, 1–3 September 2004. Manchester.
Miller, W. F., Lee, C-M., Hancock, M. G. and Rowen, H. S. (2001) *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*, Stanford, Stanford University Press.
Mills, C. W. (1951) *White Collar: the American Middle Classes*, New York, Oxford University Press.
Mohl, R. A. (1985) *The New City: Urban America in the Industrial Age 1860–1920*, Wheeling Illinois, Harlan Davidson Inc.
Moncur, J. (2000) 'America Says No To Scots Cancer Drug', *Daily Record*, 27 September 2000, 12.
Morris, L. and Irwin, S. (1992) 'Employment Theories and the Concept of the Underclass', *Sociology*, Vol. 26, No. 3, 401–20.
Morris, P. (1991) 'Freeing the Spirit of Enterprise: the Genesis and Development of the Concept of Enterprise Culture', Ch. 1 in Keat, R. and Abercrombie, N. (eds) *Enterprise Culture*, London, Routledge, 21–37.
Morrison, S. W. and Giovanetti, G. T. (1999) 'Bridging the Gap. 13th Biotechnology Industry Annual Report', Palo Alto California: Ernst and Young LLP, Quoted in Arundel, Anthony (2000) Measuring the Economic Impact of Biotechnology: from R&D to Applications. Ch 6 in J. De La Mothe and J. Niosi (eds) *The Economic and Social Dynamics of Biotechnology*, London, Kluwer Academic, 83–100.
Mowery, D. C. and Langlois, R. N. (1996) 'Spinning Off and Spinning on(?): the Federal Government Role in the Development of the US Computer Software Industry', *Research Policy*, Vol. 25, No. 6, 947–66.
Mueller, S. L. and Thomas, A. S. (2001) 'Culture and Entrepreneurial Potential: A Nine Country Study of Locus of Control and Innovativeness', *Journal of Business Venturing*, Vol. 16, No. 1, 51–75.
Murray, C. (1990) *The Emerging British Underclass,* London, Institute of Economic Affairs.
Musson, G. and Cohen, L. (1997) 'Making Sense of Enterprise: Identity, Power and the Enterprise Culture', Ch. 2 in Ram, M. and Deakins, D. (eds) *Small Firms: Enterprising Futures*, London, Paul Chapman, 9–21.
National Industrial Conference Board (1925) *Trade Associations: Their Economic Significance and Legal Status*, New York, National Industrial Conference Board Inc.
Nelson, R. L. (1959) *Merger Movements in American Industry 1895–1956*, Princeton, Princeton University Press.
Neu, D. (1991) 'Trust, Contracting and the Prospectus Process', *Accounting, Organisations and Society*, Vol. 16, No. 3, 243–56.
Newbert, S. L. (2003) 'Realizing the Spirit and Impact of Adam Smith's Capitalism Through Entrepreneurship', *Journal of Business Ethics*, Vol. 46, No. 3, 251–61.

Newby, H. (1999) Verbal Presentation at CVCP Conference: *Driving Technology Transfer: Growing Enterprise in Universities*, London, QE11 Centre, 11 February 1999.

Niosi, Jorge (2000) 'Strategy and Performance Factors Behind Rapid Growth Firms in Canadian Biotechnology', Ch. 7 in J. De La Mothe and J. Niosi (eds) *The Economic and Social Dynamics of Biotechnology*, London, Kluwer Academic, 101–14.

Nockolds, H. (1978) *Lucas: the First Hundred Years. Vol. 2. The Successors*, London, David and Charles.

Noreen, E. (1988) 'The Economics of Ethics: a New Perspective on Agency Theory', *Accounting, Organizations and Society*, Vol. 13, No. 4, 359–370.

NS archive, Laker 1 = http://www.gwu.edu/~nsarchiv/coldwar/interviews/episode-4/laker1.html, Last Accessed 5 September 2001.

NS Archive, Laker 3 = http://www.gwu.edu/~nsarchiv/coldwar/interviews/episode-4/laker3.html, Last Accessed 5 September 2001.

'Observer' (1997) 'Now Dow', *Financial Times*, 10 December 1997, 25.

Owen, G. and Lemme, J. (2001) *Entrepreneurship in UK biotechnology: the role of public policy*, The Diebold Institute, Entrepreneurship and Public Policy Project, Working Paper No. 14.

Palich, L. E. and Bagby, D. R. (1995) 'Using Cognitive Theory to Explain Entrepreneurial Risk-Taking – Challenging Conventional Wisdom', *Journal of Business Venturing*, Vol. 10, No. 6, 425–38.

Parris, A. W. (1968) *The Small Business Administration*, New York, Frederick A. Praeger.

Parsons, T. and Smelser, N. J. (1956) *Economy and Society: a Study in the Integration of Economic and Social Theory*, London, Routledge and Kegan Paul.

Perrow, C. (2002) *Organizing America: Wealth, Power, and the Origins of Corporate Capitalism*, Princeton, Princeton University Press.

Pfirrmann, O. (1999) 'Neither Soft nor Hard – Pattern of Development of New Technology Based Forms in Biotechnology', *Technovation*, Vol. 19, No. 11, 651–60.

Pinchot, G. (1985) *Intrapreneuring: Why You Don't Have to Leave the Corporation to Become an Entrepreneur*, New York, Harper and Row.

Piore, M. J. (1990) 'United States of America', Ch. 7 in Sengenberger, Werner; Loveman, Gary; Piore, Michael J. (1990) *The Re-Emergence of Small Enterprise: Industrial Restructuring in Industrialised Countries*, Geneva, International Institute for Labour Studies, 261–301.

Piore, M. J. and Sabel, C. F. (1984) *The Second Industrial Divide: Possibilities for Prosperity*, New York, Basic Books.

Piott, S. L. (1985) *The Anti-Monopoly Persuasion: Popular Resistance to the Rise of Big Business in the Midwest*, Westport, Greenwood Press.

Popper, K. R. (1972) *The Logic of Scientific Discovery, Revised ed.*, London, Hutchinson.

Potter, D. (1998) 'Entrepreneurship: Psion and Europe', *Business Strategy Review*, Vol. 9, No. 1, 15–20.

Pratley, N. (2003) 'The Drugs Don't Work', *The Guardian*, *Science*, 27 November 2003, 4.

Press Association (2004) '"Fairer" bankruptcy law introduced', *The Guardian*, Thursday 1 April 2004.

Preston, J. (1999) Verbal presentation at CVCP (1999) *Driving Technology Transfer: Growing Enterprise in Universities*, Conference, QE11 Centre. 11 February 1999.

Radosevich, R. (1995) 'A Model for Entrepreneurial Spin-offs from Public Technology Sources', *International Journal of Technology Management*, Vol. 10, Nos. 7–8, 879–93.

Rand, A. (1997) *Atlas Shrugged*, London, Signet Books.

Randlesom, C. (1993) 'The Business Culture in the United Kingdom', Ch. 4. in Randlesom, C., Brierly, W., Bruton, K., Gordon, C. and King, P. *Business Cultures in Europe*, Oxford, Butterworth-Heineman, 203–62.

Ratnatunga, J. and Romano, C. (1997) 'A "Citation Classics'' Analysis of Articles in Contemporary Small Enterprise Research', *Journal of Business Venturing*, Vol. 12, No. 3, 197–212.

Rebernik M (2002) 'Business Economics and Entrepreneurship at the Crossroads', *Ekonomicky Casopis*, Vol. 50, No. 3, 471–88.

Rees, G. and Thomas, M. (1991) 'From Coalminers to Entrepreneurs? A Case Study in the Sociology of Industrialization', Ch. 4 in Cross, M. and Payne, G. (eds) *Work and the Enterprise Culture*, London, The Falmer Press, 57–78.

Reich, R. B. (1984) *The Next American Frontier: a Provocative Program for Economic Renewal*, Harmondsworth, Penguin Books.

Rezler, J. (1963) 'Labor Organisation at DuPont: a Study in Independent Local Unionism', *Labor History*, Spring, Vol. 4, No. 2, 178–95.

Richmond, C. (2003) 'Obituaries. David Horrobin: Founder of Scotia Pharmaceuticals and the Journal Medical Hypotheses, and Passionate Promoter of Evening Primrose Oil', *British Medical Journal*, No. 326. 19 April 2003, 885.

Ripley, W. Z. (1915) *Railroads : Finance and Organization*, New York, Longmans Green and Co.

Roberts, E. B. (1991) *Entrepreneurs in High Technology: Lessons from MIT and Beyond*, Oxford, Oxford University Press.

Rose, A. (2002) 'The Wheeler Dealers', *Harper's: the Wine and Spirit Weekly*, 13 March 2002, http://www.harpers-wine.com/featuresitem.cfm?FeatureID=63, Last Accessed 2 November 2004.

Rose, N. (1999) *Powers of Freedom: Reframing Political Thought*, Cambridge, Cambridge University Press.

Sadlak, J. (1992) 'New Reality in University-Industry Relations – A Search for Foundations and Forms', *Interchange*, Vol. 23, No. 1–2, 111–22.

Sampson, A. (1975) *The Seven Sisters: the Great Oil Companies and the World they Made*, London, Hodder and Stoughton.

Sampson, A. (2004) *Who Runs This Place? The Anatomy of Britain in the 21st Century*, London, John Murray.

Scase, R. and Goffee, R. (1987) *The Real World of the Small Business Owner 2nd ed.*, London, Croom Helm.

Schumpeter, J. A. (1950) 'The March into Socialism', *American Economic Review*, Vol. 40, No. 2, 446–56.

Schumpeter, J. A. (1976) *Capitalism, Socialism and Democracy, 5th ed.*, London, Allen and Unwin.

Segal Quince and Partners (1985) *The Cambridge Phenomenon: the Growth of High Technology in a University Town*, Cambridge, Segal Quince and Partners.

Seldon, R. (1991) 'The Rhetoric of Enterprise', Ch. 3 in Keat, R. and Abercrombie, N. (eds) *Enterprise Culture*, London, Routledge, 58–71.

Senker, J. (2000) 'Biotechnology: Scientific Progress and Social Progress', Ch. 4 in J. De La Mothe and J. Niosi (eds) *The Economic and Social Dynamics of Biotechnology*, London, Kluwer Academic, 53–68.

Sexton, D. L. and Bowman, N. B. (1983) 'Determining Entrepreneurial Potential of Students: Comparative Psychological Characteristics Analysis', Dallas, Academy of Management, Proceedings. Details of this study are given more accessibly in Sexton and Bowman (1985) *supra*.

Sexton, D. L. and Bowman, N. B. (1985) 'The Entrepreneur: A Capable Executive and More', *Journal of Business Venturing*, Vol. 1, No. 1, 129–140.

Sexton, D. L., Upton, N. B., Wacholtz, L. E. and McDougall, P. P. (1997) 'Learning Needs of Growth-Oriented Entrepreneurs', *Journal of Business Venturing*, Vol. 12, No. 1, 1–8.

Siegel, R., Siegel, E. and Macmillan, I. C. (1993) 'Characteristics Distinguishing High-Growth Ventures', *Journal of Business Venturing*, Vol. 8, No. 2, 169–180.

Simon, D. R. and Eitzen, D. S. (1986) *Elite Deviance. 2nd ed.*, Boston. Allyn and Bacon.

Slaughter, S. (1993) 'Beyond Basic Science – Research University Presidents' Narratives of Science Policy', *Science Technology and Human Values*, Vol. 18, No. 3, 278–302.

Smeeding, T. M. (2001) 'The Gap Between Rich and Poor: A Cross-National Perspective for Why Inequality Matters and What Policy Can Do to Alleviate It', Paper Prepared for *National Institute of Population and Social Security Research*, Tokyo, Japan 21 March 2001.

Smilor, R. W. (1986) 'Building Indigenous Companies: the Technology Venturing Approach', Ch. 3 in Hisrich, R. D. (ed.) *Entrepreneurship, Intrapreneurship and Venture Capital: the Foundation of Economic Renaissance*, Lexington, MA, Lexington Books, 43–69.

Smilor, R. W., Kozmetsky, G. and Gibson, D. V. (1988) 'The Austin/San Antionio Corridor; the Dynamics of a Developing Technopolis', Ch. 10 in Smilor, R. W., Kozmetsky, G. and Gibson, D. V. (eds) *Creating the Technopolis: Linking Technology, Commercialisation and Economic Development*, Cambridge MA. Ballinger Publishing Co., 145–184.

Smith, J. A. (1991) *The Idea Brokers: Think Tanks and the Rise of the New Policy Elite*, New York, The Free Press.

Solomon, S. (1986) *Small Business USA: the Role of Small Companies in Sparking America's Economic Transformation*, New York, Crown Publishers Inc.

Spinks, Sir Alfred (Chair), Advisory Council for Applied Research and Development (1980) *Biotechnology: Report of a Joint Working Party*, London, HMSO, 1980.

St Pierre, R. (2002) 'Retro: Dedicated Followers of Fashion', *Cycling Plus*, No. 129, 16.

Steinmetz, G. and Wright, E. O. (1989) 'The Fall and Rise of the Petty Bourgeoisie: Changing Patterns of Self-Employment in the Postwar United States', *American Journal of Sociology*, Vol. 94, No. 5, 973–1018.

Sternberg, W. and Harrison, M. C. Jr. (1989). *Feeding Frenzy: the Inside Story of Wedtech*, New York, Henry Holt and Company.

Stevenson, H. H. and Jarrillo-Mossi, J-C. (1986) 'Preserving Entrepreneurship as Companies Grow', *Journal of Business Strategy*, Vol. 7. No. 1, 10–13.

Stevenson, T. (1996) 'Scotia's Hopes for Magic Bullet', *The Independent*, *Business*, September 11, 20.

Stewart, W. H., Watson, W. E., Carland, J. C. and Carland, J. W. (1999) 'A Proclivity for Entrepreneurship: A Comparison of Entrepreneurs, Small Business Owners, and Corporate Managers', *Journal of Business Venturing*, Vol. 14, No. 2, 189–214.

Storey, D. and Johnson, S. (1987) *Are Small Firms the Answer to Unemployment*? London, Employment Institute.

Storey, D. J. (1994) *Understanding the Small Business Sector*, London, International Thomson Business Press.

Storey, D. J. and Strange, A. (1992) 'New Players in the "Enterprise Culture"', Ch. 7 in Caley, K., Chell, E., Chittenden, F. and Mason, C. (eds) *Small Enterprise Development: Policy and Practice in Action*, London, Paul Chapman, 83–95.

Stover, J. F. (1970) *The Life and Decline of the American Railroad*, New York, Oxford University Press.

Streharsky, C. J. (1993) 'Creating Ethical University – Industry Partnerships', *SRA – Journal of the Society of Research Administrators*, Vol. 25, No. 1, 23–30.

Sturzenegger, F. and Tommasi, M. (1994) 'The Distribution of Political Power, the Costs of Rent-Seeking, and Economic-Growth', *Economic Inquiry*, Vol. 32, No. 2, 236–248.

Tarbell, I. M. [1904] (1913) 'The Standard Oil Rebates', Ch. 3 in Ripley, W. Z. (ed.) *Railway Problems*, Boston, Ginn and Company, 92–107 [reprinted from *The History of the Standard Oil Company*, 1904, McClure, Phillips and Co].

Taylor, P. (2001) 'The Price Of Biotech', *Financial Times, Survey – Biotechnology*, 27 November 2001, 5.

Taylor-Gooby, P. and Hastie, C. (2002) 'Support for State Spending: Has New Labour Got it Right?' Ch. 4 in Thomson, K., Curtice, J. and Park, A. (eds) *British Social Attitudes : the 19th Report*, London, Sage, 75–96.

Teal, E. J. and Carroll, A. B. (1999) 'Moral Reasoning skills: Are Entrepreneurs Different?' *Journal of Business Ethics*, Vol. 19, No. 3, 229–240.

The Enterprise Panel (1996) *Growing Success: Helping Companies to Generate Wealth and Create Jobs Through Business Incubation*, Midland Bank plc.

Thompson, M. W. (1990) *Feeding the Beast: How Wedtech Became the Most Corrupt Little Company in America*, New York, Charles Scribner and Sons.

Traub, J. (1990) *Too Good To Be True: the Outlandish Story of Wedtech*, New York, Doubleday.

Trudgill, P. (1983) *Sociolinguistics: An Introduction to Language and Society. 2nd ed*, London, Penguin.

Trumbore, B. (2002) *The Arab Oil Embargo of 1973–74* http://www.buyandhold.com/bh/en/education/history/2002/arab.html, Last Accessed 2 November 2004.

Universities UK (2004) *The University Culture of Enterprise: Knowledge Transfer Across the Nation*, London, Universities UK.

VanderBeken, T. (2004) 'Risky business: A Risk-Based Methodology to Measure Organized Crime', *Crime Law and Social Change*, Vol. 41, No. 5, 471–516.

Vanduyne, P. C. (1993) Organized-Crime and Business-Crime Enterprises in The Netherlands, *Crime Law and Social Change*, Vol. 19, No. 2, 103–142.

Wallsten, S. J. (1998) 'Rethinking the Small Business Innovation Research Programme', Ch. 8 in Branscomb, L. M. and Keller, J. H. (eds) *Investing in*

*Innovation: Creating a Research and Innovation Policy That Works*, Cambridge, Mass., MIT Press, 194–220.
Weber, A. R. (1959) 'Competitive Unionism in the Chemical Industry', *Industrial and Labor Relations Review*, Vol. 13, 16–37.
Webflyer = http://www.webflyer.com/@livefly/fred11th/pr-1.htm, Last Accessed 13 July 2001.
Weibe, R. H. (1967) *The Search for Order 1877–1920*, New York, Hill and Wang.
Welsh, J. A. (1984) 'Entrepreneurial Characteristics: the Driving Force', in Smilor, R. W. and Kuhn, R. L. (eds) *Corporate Creativity*, New York, Praeger Publishers, 53–63.
White, H. K. (1913) 'The Building and Cost of the Union Pacific', Ch. 4 in Ripley, W. Z. (ed.) *Railway Problems*, Boston, Ginn and Company, 108–27.
White, L. D. (1928) *The City Manager*, Chicago, University of Chicago Press.
Whyte, W. H. (1956) *The Organization Man*, New York, Simon and Schuster.
Williams, D. W. (2003) 'The Role of Performance Measurement in the Public Administration Discipline: Then and Now', Paper Presented at *The 7th National Public Management Research Conference*, Georgetown Public Policy Institute, Georgetown University, Washington D.C. 9–11 October 2003.
Williams, J. C. (1998) Frederick E. Terman and the Rise of Silicon Valley, *International Journal of Technology Management*, Vol. 16, No. 8, 751–60.
Williams, S. (2004) 'Scores Of Bahamians To Lose Jobs In Airline Pullout', *The Bahamas Journal*, 27 January 2004, http://www.bahamasb2b.com/news/wmview.php?ArtID=3193, Last Accessed 2 November 2004.
Wintour, P. (1999) 'Tony's Got a Brand New Guru', *Observer*, 25 July 1999.
Wollard, D. A. (1973) 'The Small Business Administration Loan Program', in Carson, D. (ed.) (1973) *The Vital Majority. Small Business in the American Economy: Essays Marking The Twentieth Anniversary of the US Small Business Administration*, Washington, 93–122.
Yergin, D. and Stanislaw, J. (1998) *The Commanding Heights: the Battle for the World Economy*, New York, Simon and Schuster.
Young, Lord, of Graffham (1990) *The Enterprise Years: a Businessman in the Cabinet*, London, Headline Book Publishing plc.
Young, Lord, of Graffham (1992) 'Enterprise Regained', Ch. 2 in Heelas, P. and Morris, P., *The Values of the Enterprise Culture: the Moral Debate*, London, Routledge, 29–35.
Yurtsever, G. (2003) 'Measuring the Moral Entrepreneurial Personality', *Social Behavior and Personality*, Vol. 31, No. 1, 1–12.
Zider, B. (1998) 'How Venture Capital Works', *Harvard Business Review*, Vol. 76, No. 6, 131–40.

# Index