1 Sport, health and ideology

There is a large and expanding literature on the relationship between physical activity and health. Almost all of this literature has been written from a physiological perspective and has typically been concerned with issues such as the relationship between physical activity and cardiovascular functioning, or the way in which exercise can help to control obesity. However, very little has been written about the relationship between exercise, sport and health from a distinctly *sociological* perspective. The central object of this chapter, which in some respects sets the scene for the remainder of the book, is to try to develop a properly sociological approach to understanding some of the key issues in the relationships between exercise, sport and health. More specifically, the objects of this chapter are: (1) to outline and to examine critically the widely accepted idea that sport and exercise have beneficial consequences for health; (2) to examine the different patterns of *social relations* associated with sport and exercise; and (3) to examine some of the *physiological* consequences of these social differences, in terms of the rather different impacts which sport and exercise can have on health.

SPORT, EXERCISE AND THE ETHOS OF THE HEALTHY BODY

There are probably few ideas which are as widely and uncritically accepted as that linking sport and exercise with good health. What is particularly striking about this ideology is its near universal acceptance across a range of societies for, in developing and developed societies, in capitalist and communist societies and in democratic and totalitarian societies, there is a broad consensus that 'sport is good for you'.

The ideology linking sport and health has a long history. In nineteenth-century Britain, the birthplace of many modern sports, an ideology of athleticism which linked sport with health, both physical and 'moral', was developed in the Victorian public schools (Mangan, 1981), while the promotion and maintenance of the health of schoolchildren has long been an

area of concern to physical educators. Colquhoun and Kirk (1987: 100), for example, note that when physical education was introduced as a subject in the elementary school curriculum in the early twentieth century, it 'had the express purpose of improving the medical, physical and hygiene provision for children in schools'. Throughout the inter-war period, *The Health of the School Child*, the annual report of the Chief Medical Officer of the Board of Education, regularly made reference to the importance of physical education for the health of schoolchildren, and the idea that sport and exercise are associated with health is widely known and accepted by British schoolchildren today; a study for the Sports Council (1995: 128) noted that 'the health and fitness message seems to be well known by children. Virtually all of them, 92 per cent agreed that it was important to keep fit. . . . In addition, most children, 82 per cent, agreed that they felt fit and healthy when they did sport and exercise.' Not surprisingly, the idea that sport is health-promoting and even life-enhancing is one which is frequently stressed by those involved in sport; to quote the former Olympic gold medalist Sebastian Coe: 'Sport is an integral part of a healthy lifestyle in today's society' (foreword to Mottram, 1988).

Such views have been endorsed over many years in a variety of official and semi-official health publications in Britain. In 1988, *The Nation's Health*, a report from an independent team (Smith and Jacobson, 1988), noted that regular and moderate exercise has a number of health benefits while *The Allied Dunbar National Fitness Survey* (Sports Council and Health Education Authority, 1992) and the Department of Health in its *Health of the Nation* (1992) similarly noted a number of health benefits associated with regular physical activity. More recently, the Health Education Authority (1997: 2–4) has suggested that 'the health benefits of an active lifestyle for adults are well established' while the same organisation in its *Young and Active?* policy framework (1998) has also drawn attention to the health benefits of physical activity for young people. In similar fashion, the English Sports Council, in its strategy document *England, the Sporting Nation* (1997: 3), points to what it calls the 'well rehearsed' health benefits of sport.

Such statements are not confined to Britain. In *Targeting Sporting Change in Ireland*, a strategic plan drawn up by the Sport Section of the Irish Department of Education (1997), it is noted that there 'is serious concern across all levels of Irish society at the lack of general fitness and involvement in physical activity', and the document goes on to suggest that there are 'major health benefits to be gained in Ireland through increased participation in sport and physical activity' (1997: 6). In the United States an authoritative report from the American College of Sports Medicine and the Center for Disease Control recommended that adults should take 30 minutes of moderate activity on most days of the week (Wimbush 1994), while the Surgeon General's report, *Physical Activity and Health*

(US Department of Health and Human Services, 1996: 10), argued that 'significant health benefits can be obtained by including a moderate amount of physical activity on most, if not all, days of the week'. In Canada, a discussion paper prepared for Health Canada and Active Living Canada (Donnelly and Harvey, 1996) noted that the most comprehensive examination of Canadian data had similarly identified several significant health benefits of physical activity.

Such views are not limited to capitalist societies, or to countries in the developed world. Riordan, for example, has pointed out that governments in developing societies frequently place considerable stress on the development of sport, not only for the consequences which sport can have for nation-building and national integration but also for the effects it can have on hygiene and health; indeed, Riordan (1986: 291) argues that 'of all the functions of state-run sport in modernising societies, that to promote and maintain health must take first place', and he goes on to point out that 'in many such states sport comes under the aegis of the health ministry'. Elsewhere, Riordan (1981: 18) has pointed out that, following the Bolshevik Revolution in October 1917, the new Soviet Government saw regular participation in physical exercise as 'one – relatively inexpensive but effective – means of improving health standards rapidly and a channel by which to educate people in hygiene, nutrition and exercise'. Similarly, following the victory of the communists in China in 1949, emphasis was placed 'on the need to promote national sports, expand public health and medical work, and safe-guard the health of mothers, infants and children'. This policy, which dates from 1950, was endorsed by Mao in June 1952 when he called upon the Chinese people to 'promote physical culture and sport, and build up the people's health' (Clumpner and Pendleton, 1981: 111).

However, it might be noted that although the ideology linking sport and health is very widespread, the view that sport is good for health has only relatively recently come to be applied to women as well as men, for, during much of the nineteenth century, women were actively discouraged from taking part in vigorous exercise, which was often seen as *damaging* to their health. Patricia Vertinsky (1990: 39), in describing the situation in late nineteenth-century Britain, writes: 'The widespread notion that women were chronically weak and had only finite mental and physical energy because of menstruation had a strong effect upon the medical profession's and consequently the public's attitude towards female exercise and sport.' She argues that, 'Not infrequently, medically defined notions of optimal female health . . . have justified the practice of viewing female physiological functions as requiring prescribed and/or delimited levels of physical activity and restricted sporting opportunities' (ibid., p. 1).

Sheila Fletcher (1987: 145) has similarly noted that women's growing participation in cycling, swimming, golf and hockey in the late nineteenth

century was met with resistance from eugenists such as Dr Arabella Kenealy who, in 1899, argued that women were in danger of neutering themselves by over-indulgence in athletics. The resistance to women's full participation in sport has similarly been documented for nineteenth-century New Zealand (S. Crawford, 1987), Canada (Lenskyj, 1987) and America (Vertinsky, 1987).

THE IDEOLOGY OF 'HEALTHISM' AND VICTIM-BLAMING

It is perhaps not surprising that those involved in what is sometimes called the 'fitness industry' have generally supported the idea that sport and exercise are health-promoting, though it might be noted that such people have frequently conflated the concepts of fitness, health and beauty as a means of more effectively marketing their services. Perhaps of rather greater importance however, since they directly affect every schoolchild in many countries in the developed world, have been recent developments in school physical education which have promoted the role of regular physical activity in achieving and maintaining health. In this context, Colquhoun (1991: 5) has written of an 'explosion' of interest from the physical education profession in teaching health-related issues, an explosion which, he suggests, is indicated by the burgeoning number of professional articles and curriculum guides in several countries, especially Britain, Australia, Canada and the USA.

This is, of course, not a new role for physical education, which, as we saw earlier, has had an association with health and medicine reaching back to the introduction of physical education in the primary school curriculum in Britain. However, Kirk and Colquhoun have suggested that 'the recent re-emergence of health matters to occupy a place of central importance in school physical education marks a new moment in both the production of physical educators' views of their professional mission and in the production of a new health consciousness in society at large' (1989: 417).

Colquhoun and Kirk (1987) have identified several processes which, they suggest, have influenced this re-orientation of physical education towards health-related issues, including a growing societal interest in health matters, the prevalence of heart disease and the spiralling costs of medical care. To these might be added the fact that many physical education teachers, perhaps conscious of the relatively low status of their subject *vis-à-vis* what are often considered more 'academic' subjects, have been more than happy to draw upon the prestige associated with medicine and science to provide what they hope will be a more secure and 'intellectual' basis for their subject.

However, Colquhoun (1991) has suggested that this emerging ideology of health-based physical education (HBPE) is not unproblematic, for it presents a very partial and distorted view of the causes of health and illness.

Drawing upon R. Crawford's (1980) concept of 'healthism', Colquhoun argues that HBPE is premised upon and helps to disseminate the idea that our health is largely under our own control. More specifically, he argues that 'by focusing on individual lifestyle as the major determinant of an individual's health, health based physical education (HBPE) conforms to the practices of conventional health education and has therefore been severely restricted in its potential for emancipation, social justice, equality and social change. Indeed, the political issues which accompany HBPE have not yet been fully exposed' (1991: 6).

The ideology of healthism, it is argued, serves to focus attention on individual responsibility for our own health and, simultaneously, to divert attention away from wider social processes – for example, poverty, unemployment, industrial pollution, or the poor quality or lack of accessibility of health services – which may be associated with high levels of illness. By thus shifting responsibility for health away from manufacturers, governments and other powerful groups, the ideology of healthism diverts attention away from the key issues in the politics of health. As R. Crawford (1980: 368) has noted, it perpetuates the misleading – or, at best, greatly oversimplified – idea that we can, *as individuals,* control our own existence. Moreover, our assumed ability individually to control our lives gradually becomes transformed into a moral imperative to do so for, suggests R. Crawford (1984), we live in an era of a new health consciousness where to be unhealthy has come to signify individual moral laxity. Thus slimness signifies not only good health but also self-discipline and moral responsibility, whereas fatness, in contrast, signifies idleness, emotional weakness and moral turpitude. In this sense our bodies, whether slim or obese, signify not merely our health status for they also become, quite literally, the embodiment of moral propriety or laxity. Within this context, those who fall ill are increasingly likely to be seen not as unfortunate and innocent victims of processes beyond their control but, rather, as people who, through their moral laxity and lack of self-discipline, have 'brought it on themselves'. The Victorian differentiation between the 'deserving' and the 'undeserving' poor is, in some respects, in the process of being replicated in the differentiation between the 'deserving' and 'undeserving' sick.

SPORT AND HEALTH: COMMERCIAL LINKS

One area which casts doubt on the assumed close relationship between sport and the promotion of healthy life-styles is that of sports sponsorship and, in particular, the widespread sponsorship of sport by the manufacturers of two of the most widely used drugs in the western world: alcohol and tobacco. In relation to the former, concern has been expressed about sponsorship of sport by breweries. Dealy (1990), for example, has drawn attention to the health problems associated with alcohol abuse and with

the widespread practice of under-age drinking in the United States and has expressed concern at the close relationship between the National Collegiate Athletic Association (NCAA) and the breweries.

It is, however, the relationship between sport and the tobacco industry which has been the cause of greatest concern. Taylor (1985) has pointed out that from the 1970s, business sponsorship of sport grew rapidly in Britain with the tobacco companies being by far the biggest spenders. Sports sponsorship, he notes, has been a relatively cheap and highly cost-effective means of advertising for the tobacco companies, not least because in Britain it has enabled them to circumvent the 1965 ban on the advertising of cigarettes on television, for cigarette manufacturers have continued to reach large television audiences via the televised coverage of such popular sporting events as the Embassy Snooker World Championships, Benson and Hedges Cricket and the Silk Cut Rugby League Challenge Cup. Sponsorship of sporting events by tobacco companies has for many years been widespread; sports which have been sponsored by tobacco companies in Britain include motor-racing, power-boat racing, cricket, speedway, snooker, darts, bowls, horse-racing, tennis, rugby union, rugby league, basketball, badminton, show-jumping, motor-cycling and table tennis.

Sponsorship of sporting events by tobacco companies is, of course, not confined to Britain. In 1982 Dr Thomas Dadour introduced into the Western Australian parliament a Bill to ban all forms of cigarette advertising and promotion. The Bill was narrowly defeated. Had it been passed, one of the first casualties would have been the advertising at the Australia vs. England test match, which was sponsored by Benson and Hedges who had been the Australian Cricket Board's main sponsor for more than ten years. The following year, the state Government of Western Australia introduced another Bill similar to Dr Dadour's. This Bill was also defeated following intensive lobbying by, amongst others, those associated with the cigarette-sponsored sports under threat (Taylor, 1985: 48–9). In a perhaps even more revealing incident in 1995, the highly successful Swedish yacht *Nicorette,* which is sponsored by a company which manufactures products designed to help people give up smoking, was banned from the Cape to Rio race, which is sponsored by the tobacco giant Rothmans. The captain of the *Nicorette* protested against the decision (which was reversed some two weeks later) by saying that 'Rothmans is scared of his boat and the healthy lifestyle it seeks to promote'. Given the close relationship which is often claimed between sport and healthy life-styles, many people may find it more than a little incongruous that the organisers of a sporting event should not only accept sponsorship from a cigarette manufacturer but that they should also ban an entry sponsored by a manufacturer of products which are explicitly designed to help people give up smoking (*The Times,* 14 September 1995; *Guardian,* 27 September 1995).

The widespread sponsorship of sporting events by tobacco companies would not, at least in the context of the present argument, be of any

significance were it not for the fact that, by the early 1980s, cigarette smoking was estimated to be responsible for more than 300,000 premature deaths a year in the United States, and nearly half a million deaths a year in Europe. The US Surgeon General has described cigarette smoking as 'the chief, single, avoidable cause of death in our society, and the most important public health issue of our time', while in Britain the Royal College of Physicians, in their report *Smoking and Health Now*, referred to the annual death rate caused by cigarette smoking as 'the present holocaust' (Taylor, 1985: xiv, xvii). More recently the British Government, in its consultation paper *Our Healthier Nation* (1998: 20), has pointed out that smoking 'is the biggest cause of early deaths in England. It is estimated to account for nearly a fifth of all deaths each year – 120,000 lives in the United Kingdom cut short or taken by tobacco.' Without labouring the point, one might reasonably suggest that the ideology which associates sports with healthy life-styles sits uneasily with the widespread acceptance of sports sponsorship by breweries and, even more so, by tobacco companies.

There are, however, clear signs that the relationship between sporting organisations and the tobacco companies will, at least in Britain, have to change in the next few years. Within three weeks of the Labour Party's general election victory in May 1997, the new Health Secretary in the incoming Labour Government announced that the Government intended to legislate to ban the sponsorship of sports events by tobacco companies. It is interesting to note that, rather than reporting this decision as good news in terms of health policy, some papers chose to report it as bad news for sport: *The Times*, for example (20 May 1997) reported the story on its front page under the headline 'Cigarette adverts ban could kill top British sports events', and it began its report by saying that 'Top sports events could be forced out of Britain or left impoverished if a Government pledge to outlaw the sponsorship of sport by cigarette manufacturers goes ahead'.

The Government had originally proposed that all sponsorship of sporting events would be required to end by the year 2003, but it subsequently decided that Formula One motor-racing should be given an extra three years – until 2006 – to find alternative sponsors. The draft legislation, which was announced in June 1999, also gave a similar extension to the snooker world championship, organised by the World Professional Billiards and Snooker Association (*The Times*, 18 June 1999).

EXERCISE AND HEALTH

There is now a substantial body of data from both epidemiological and clinical studies which indicates that moderate, rhythmic and regular exercise has a significant and beneficial impact on health. In Britain, the Royal College of Physicians of London (1991: 28) concluded that:

> There is substantial evidence that regular aerobic exercise such as walking, jogging, dancing or swimming is beneficial to general physical and psychological health. Regular exercise appears to be particularly effective in prevention of coronary disease and osteoporosis and of some value in the management of obesity and diabetes.

More recently, the Health Education Authority (1996: 1) has summarised the health benefits of regular physical activity as follows:

- lower levels of all-cause mortality;
- reduced risk of developing coronary heart disease, stroke, hypertension and non-insulin-dependent diabetes mellitus;
- better control of obesity;
- possible protection against some cancers;
- decreased levels of moderate depression and anxiety;
- maintenance of healthy bones and possible prevention of osteoporosis;
- benefits for those with existing diseases, particularly for those with controlled hypertension, hyperlipidaemia, mild depression and chronic anxiety.

Studies in North America point to similar conclusions, and suggest that regular exercise is associated with reduced mortality from all causes, from cardiovascular disease and from cancer of combined sites (Paffenbarger *et al.*, 1986; Blair *et al.*, 1989), while a review of four population surveys (two carried out in Canada and two in the United States), suggests a positive association between physical activity and lower levels of anxiety and depression (Stephens, 1988). The report of the US Surgeon General (US Department of Health and Human Services, 1996) claimed to bring together, for the first time, what has been learnt about physical activity and health from decades of American research, and produced a list of health benefits very similar to those identified above by the Health Education Authority in Britain.

It might be noted that some of these health benefits are very substantial. The British Medical Association, for example, has noted that insurance statistics indicate that men with only moderately high blood pressure can expect to live about fifteen years less than men with low blood pressure, and it noted that regular exercise 'is potentially a major non-pharmacological method of lowering blood pressure' (BMA, 1992: 18). Similarly, one of the studies in the United States (Paffenbarger *et al.*, 1986) indicates that death rates among men whose work or leisure involves regular exercise are between one-third and one-half lower than those among men whose lives are more sedentary.

At first glance, studies like those cited above might seem to indicate that the health-based arguments in favour of sport and exercise are overwhelming. Donnelly and Harvey (1996: 5) have noted, tongue-in-cheek

that the 'numerous, almost miraculous claims for the benefits of physical activity lead one to wonder why it has not been patented by an innovative company', but, more seriously, they go on to point out that the widespread nature of these claims should serve as a warning against their too easy and uncritical acceptance, and that the context of the claims needs to be examined carefully. In this context, there are some important provisos to be borne in mind when considering studies on the relationship between exercise and health. The first is that these studies do not suggest that *all* exercise is beneficial; rather, they indicate that exercise *of a particular kind, amount and intensity* has a beneficial impact on health. *The Nation's Health* (Smith and Jacobson, 1988: 126), for example, refers quite specifically to the beneficial effects of what it calls 'moderate, rhythmic and regular exercise', which it goes on to define as exercise such as that involved in brisk walking, running or swimming for 20–30 minutes about three times each week. The British Medical Association (1992: 14) similarly suggested that the 'recommended amount of exercise from a health perspective is about twenty to thirty minutes of moderate exercise three times a week'. It noted that the exercise that is most frequently suggested is brisk walking, and added that the level of activity which produces significant health benefits 'is related to the initial level of fitness: for the middle-aged sedentary individual, this may correspond to walking, cycling slowly or gentle swimming' (1992: 14). The precise activity which is considered to constitute 'adequate' exercise varies from one study to another, but activities mentioned in this context include 'energetic getting about' and manual work around the house and garden (Morris *et al.*, 1980), dancing (BMA, 1992) and regular climbing of stairs (Paffenbarger *et al.*, 1986), while the US Surgeon General (US Department of Health and Human Services, 1996) recommends as examples of moderate activity washing and waxing a car, washing windows, gardening and raking leaves.

It is important to emphasise, therefore, that what these studies have documented is a beneficial effect on health of 'moderate', or even gentle, forms of exercise; as Morris *et al.* noted, the activities which were defined in their study as constituting adequate exercise were 'by no means extreme', and they added, of the 17,944 men who took part in their study, that 'our men are no athletes' (1980: 1210). The British Medical Association similarly noted that several studies, and 'particularly those from North America, have suggested that only rather low levels of activity are necessary to confer some degree of protection against heart disease both in terms of the intensity of effort and of the total amount of exercise taken' (BMA, 1992: 19).

This is an important point to note for, quite clearly, one cannot assume that the health benefits associated with moderate exercise will simply be duplicated – still less can one assume that they will be increased – by exercise which is more frequent, of longer duration and of greater intensity, for exercise of this kind, as we shall see later, may generate substantial

health 'costs' in terms of additional stresses or injuries (for example, those associated with 'overuse'). In short, to suggest that a 30-minute gentle swim three times a week is good for one's health does not mean that running 70 miles a week as a means of preparing for running marathons is good for one's health in an equally simple or unproblematic way. Indeed, it might be noted that one of the American studies, which found that death rates generally went down as levels of physical activity increased, also found a reversed trend at the highest levels of physical activity. The authors note that this result may have been associated with methodological difficulties in the study, though they also recognise that it may reflect 'actual increased hazards associated with vigorous activities' (Paffenbarger *et al.*, 1986: 606). It might also be noted that one study in New Zealand (Sullivan *et al.*, 1994) – significantly, it was a study of competitive athletes, many of whom were ranked in the top 10 per cent nationally in their age group and might therefore be expected to have engaged in relatively intensive training – found a strong positive association between exercise and a large number of symptoms, including anxiety related to competition, stitches, lightheadedness, muscle cramps, wheezing, chest pressure, 'spots in front of eyes', retching and incontinence of urine and stool, while it was negatively associated with only a few symptoms, including headaches, abdominal bloating, sneezing and depression.

The second proviso concerning the studies cited above is that most relate primarily to physical activity or to exercise, rather than specifically to sport. Although sport and exercise are overlapping categories, there are nevertheless important differences between them, and these differences have important implications for their health consequences. It is to these issues that we now turn.

EXERCISE AND SPORT

Most sociological definitions of sport include the element of physical exertion as an essential component (Edwards, 1973; Guttmann, 1978; McPherson *et al.*, 1989). However, if all sport necessarily involves physical exercise, it is not the case that all physical exercise involves sport, for what is usually considered a further necessary component of sport – the competitive element – is frequently more or less absent from many forms of physical exercise. Moreover, since sport is inherently competitive, it must involve more than one person, for while one can exercise alone, one cannot play sport alone, since one needs an opponent. This relatively obvious difference between sport and exercise has important implications for their potentially very different health consequences.

As we have seen, most of the studies cited earlier were concerned with the health consequences of 'moderate, rhythmic and regular' exercise. One

important difference between sport and exercise is that non-competitive exercise involves a rather different pattern of social relations than does sport and, associated with this, the former is much more likely than is the latter to involve physical movements of a rhythmic nature and, of critical importance, the intensity of the exercise is likely to be, to a much higher degree than in the case of sport, under the control of the individual participant. Consider, for example, the situation of a person who regularly takes a brisk walk, or goes jogging or swimming, as a means of 'keeping fit', or perhaps as a means of weight control. When such activities are undertaken alone, as they frequently are, the precise nature of the physical movement – that is, the action of walking, jogging or swimming – as well as both the duration and the intensity of the exercise, are to a high degree under the control of the individual involved in the exercise. Thus, for example, a person jogging or swimming alone can determine for how long to continue the exercise, and at what pace. Where exercise of this kind is undertaken in a small group of perhaps two or three friends, as is also common, the duration and intensity of the exercise are likely to involve a level of activity agreed upon by all participants and with which all participants are reasonably comfortable. It is important to note that this is *not* the situation in the case of sport.

As we noted earlier, sport cannot be played alone for it must involve two or more opposing players. This, together with the fact that sport involves not only co-operation but also, and in a highly institutionalised form, competition, means that sport, and particularly team sport, is usually a considerably more complex social activity than is non-competitive exercise. Consider, for example, a game of soccer or rugby or American football. The game involves a complex interweaving of the actions of a substantial number of players, together with the relationships between players and match officials, club coaches and many others, including, at the elite level, large numbers of fans. Even if we considerably oversimplify the situation by confining our analysis solely to the interactions between the players, it is clear that we are dealing here with a social phenomenon of some complexity. Elias and Dunning (1986: 193) drew upon the example of Association Football (soccer) to illustrate what they called the 'dynamics of sport groups'. They wrote:

> From the starting position evolves a fluid figuration formed by both teams. Within it, all individuals are, and remain throughout, more or less interdependent; they move and regroup themselves in response to each other. This may help to explain why we refer to this type of game as a specific form of group dynamics. For this moving and regrouping of interdependent players in response to each other *is* the game.
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> It may not be immediately clear that by using the term 'group dynamics' in this context we do not refer to the changing figurations

> of the two groups of players as if they could be considered in separation, as if each had dynamics of its own. That is not the case. In a game of football, the figuration of players on the one side and that of players on the other side, are interdependent and inseparable. They form in fact a single figuration. If one speaks of a sport-game as a specific form of group dynamics, one refers to the overall change in the figuration of the players of both sides together.

One aspect of the complex structure of sports such as football is that each match tends to develop what is often called a 'game pattern'. Though there is sometimes a tendency to speak of this game pattern as though it were something separate from the players, it is important to remind ourselves that it is in fact nothing other than the complex interweaving of the actions of a large number of players. However, it is also important to note that, as the game pattern becomes more complex – for example, as we move from a two-person game such as tennis to a multi-person game such as soccer – it becomes increasingly beyond the ability of any single player to control this game pattern and, indeed, from the perspective of any single player, this game pattern may appear to have a life of its own.

An associated aspect of the complex structure of many sports is that, in comparison with non-competitive exercise, any individual player is much less able to control their own movements and the pace and intensity at which they are required to play. Thus while the lone jogger and walker can determine their own movements with minimal reference to others, the movements of, for example, a soccer or rugby or ice-hockey player can only be understood in relation to the movements of other players on their own and the opposition side. Moreover, as a means of beating opposing players, players frequently initiate moves, or respond to the moves of others, involving rapid changes of pace and direction. In most sports, this gives rise to a pattern of movement which is the very opposite of rhythmic, for it often involves sharp and intensive bursts of activity, interspersed with short periods in which individual players may be able to take a 'breather'. It is important to emphasise, first, that the frequency and intensity of these bursts of intensive activity are, at least in complex games, largely beyond the ability of any single player to control; second, that players are almost inevitably constrained by the moves of their opponents to engage in activities which are anything but rhythmic; and third, that many of these movements, such as those involved in rapid acceleration and deceleration, or the twisting or turning movements involved in rapid changes of direction, impose considerably greater stresses on the body than do the much more rhythmic movements involved in non-competitive walking, jogging or swimming. These considerations, however, do not exhaust the health-related differences between sport and exercise. The competitive character of sport, in particular, requires further elaboration.

SPORT AND COMPETITION

Dunning (1986a) has pointed out that the growing competitiveness of modern sport is a long-term trend which may be traced back over two or more centuries. This process has, however, been particularly marked in the post-1945 period, and has been associated with, amongst other processes, the increasing politicisation and commercialisation of sport, both of which have had the effect of greatly increasing the importance of, and the rewards associated with winning, while downgrading the traditional value associated with taking part (Waddington and Murphy, 1992). This trend towards the growing competitiveness of sport has not, however, been without significant health 'costs' for athletes, most particularly in the form of more stress injuries and overuse injuries, and increased constraints to continue competing while injured (for a detailed example, see the situation in relation to professional football in England, described in Chapter 4).

A common sight in many sports is that of the trainer or physiotherapist running on to the field of play to treat an injured player, often by the application of an aerosol spray to a painful area, thereby enabling the player to continue. However, as Donohoe and Johnson (1986: 94) have pointed out, one of the functions of pain is to '"warn" us that we need to rest the damaged area', and they suggest that most athletes and coaches 'fail to recognize the damage that can be caused by suppressing pain'. This issue is part of the more general concern about overuse and recurrent injuries, a growing problem which is clearly associated with the increasing constraints on sportsmen and women to compete and more particularly to win with, one suspects, often scant concern for the potential longer-term health risks. Donohoe and Johnson (1986: 93) have noted that to 'succeed in modern sport, athletes are forced to train longer, harder, and earlier in life. They may be rewarded by faster times, better performances and increased fitness, but there is a price to pay for such intense training.' Part of the price of such intense training and of the readiness – often encouraged by coaches and medical advisers – to continue training and competing despite injury, is unquestionably paid in the form of overuse and recurrent injuries, which now constitute a serious problem in sport, and not just at the adult elite level. As Donohoe and Johnson (1986: 93) have noted, the 'long-term effects of overuse injuries are not known, but some concerned doctors have asked whether today's gold medallists could be crippled by arthritis by the age of 30', and they cite world-class competitors who have, in their words, 'been plagued by a succession of overuse injuries'. In this respect, the preliminary results from an ongoing study at Coventry University are very revealing. Of 284 former professional football (soccer) players who completed a questionnaire from the University's Psychosocial Rheumatology Research Centre, 49 per cent had been diagnosed with osteoarthritis, a percentage which is five times as high as that in similarly aged males in the general population. Of all the respondents 15 per cent were now registered

disabled while a third of ex-players had, since retiring from professional football, undergone surgery for football-related injuries (Hicks, 1998).

Examples of athletes with painful and potentially serious injuries who have continued to compete are almost innumerable. In her autobiography, Olga Korbut, the former Olympic gold-medal-winning gymnast, described how, following the 1972 Munich Olympics, the successful Soviet gymnastics team was taken on a tour of what was then West Germany. She wrote: 'During that tour of Germany, the lumbago in my back began to hurt more and more. The novocaine injections took away the pain for a while, but I needed time to rest and heal. By the end of the tour, I walked as though I had a stake in my spine.' She added that 'My strongest memories of that entire period are fatigue, pain, and the empty feeling of being a fly whose blood has been sucked out by a predatory spider' (Korbut, 1992: 81–2).

It would be very wrong to imagine that such incidents only occurred under the now defunct communist systems of Eastern Europe, for examples of athletes playing on despite painful and potentially serious injuries are commonplace and there is considerable evidence to indicate that, particularly at the elite level, there are considerable constraints on players to play through pain and injury 'for the good of the team'. As Roderick (1998: 65) has noted, an important aspect of sporting culture at the elite or professional level involves a 'culture of risk', which 'normalizes pain, injuries and "playing hurt"'. Consider, for example, the following extract from a pre-match team talk to the Wigan Rugby League team by their coach John Monie:

> There's just one more thing I want to enforce. It doesn't matter what's wrong with you when you're injured, I want you on your feet and in the defensive line. . . . I don't care if the physio's out there and he wants to examine you and all that stuff. That's not important. What's important is . . . you've got twelve team-mates tackling their guts out defending like anything inside the 22 and we've got the physio telling a guy to see if he can straighten his knee out.
>
> I don't care what's wrong with you . . . if the opposition's got the ball, I want you on your feet and in the defensive line. . . .
>
> There are no exceptions to that rule. So from now on, the only reason you stay down hurt and get attention from the sideline is because there's a break in play or you're unconscious – no other reasons will be accepted.
>
> (Hanson, 1991: 77)

Monie's team talk may perhaps be regarded as the English equivalent of the American view that 'you play unless the bone sticks through the meat' which, as Young (1993: 382) has noted, has long been used to rationalise injury in the NFL. Although it may not always be expressed in such blunt

terms, it is clear that, particularly at the elite level, there is a common expectation – which is shared by many players – that whenever possible players should continue to play through injury 'for the good of the team', even if this means playing with pain-killing injections. Hanson reported, for example, that Wigan Rugby League players frequently played after having been given pain-killing injections. Before the Rugby League Cup Final at Wembley in 1990, so many players had pain-killing injections that the club doctor, Dr Zaman, came into the dressing room 'clutching a collection of used syringes and needles' and asked of a Wembley official, 'Do you have a box for sharps [used needles]?' (Hanson, 1991: 193). Don Strock, former quarterback with the Miami Dolphins, has described how players would group around 'injured teammates during a game to screen from spectators the use of pain-killing injections, then hide the needles under the carpet-like synthetic "turf"' (cited in Young, 1993: 376).

It is clear that experiences of this kind are commonplace among elite players. Some aspects of the culture of 'playing hurt' within professional football (soccer) in England are examined in Chapter 4; for the moment, we might note that a survey of 725 professional soccer players carried out by the magazine *Four Four Two* (October 1995) revealed that 70 per cent of players had been asked to play when not fully fit. As Young *et al.* (1994: 190) noted:

> Overt and covert pressures are brought to bear on injured athletes to coerce them to return to action. These may include certain 'degradation ceremonies' . . . such as segregated meal areas, constant questioning from coaches, being ostracized at team functions, or other special treatment that clearly identifies the injured athlete as separate.

An example of this kind of ostracism was provided by the former Liverpool Football Club manager, Bill Shankly, regarded by many as one of the greatest-ever soccer club managers. Shankly refused to speak to any player who was unavailable to play because of injury (*On the Line*, 1996). Young *et al.* (1994: 190) argued that 'Pressure placed on the player to return to action before full recovery is in one sense intended to enhance the team's ability to win, but in the process, the long-term health of the athlete is often given little consideration.'

Although such pressures on players to tolerate and to play through pain may in some respects be associated with particular conceptions of masculinity (to be examined later), it is also clear that there are broadly similar constraints on women athletes to continue competing despite pain and injury and that many women athletes respond in a broadly similar way to their male counterparts. For example, in comparing their research in Canada on female athletes' experience of pain and injury with their earlier research on the experience of male athletes, Young and White (1995: 51) write that 'If there is a difference between the way male and female athletes

in our projects appear to understand pain and injury, it is only a matter of degree . . . it is clear that both men and women adopt similar techniques to help to displace the centrality of pain in their sports lives'. An example of the way in which pain is denied is provided by the example of D, one of the elite women athletes interviewed by Young and White:

> The first time my injury occurred, I ignored it assuming it would go away, as did my previous aches and pains. Bruising, swelling, and muscle pain are integral aspects of basketball. Once the pain persisted, it became annoying. It never occurred to me at the age of 14 that my body was breaking down and needed a rest. I simply pushed harder because my injury was causing me to fall behind in my progress.
>
> (1995: 51)

Young and White add that:

> Years of denial and persistence have seriously weakened D's knees and ankles, and surgery to repair cartilage tears has left her legs badly scarred. At the time of writing, D remains in pain, is unable to play her sport, and uses painkillers almost daily.
>
> (1995: 52)

D's reference to injuries during her teenage years suggests that the problem of overuse and recurrent injuries is not confined to adults and, as we shall see in the next chapter, there is what is, in health terms, a worrying trend towards earlier and more intensive athletic involvement for younger and younger children.

Given the highly competitive character of much modern sport, it is not surprising to learn that overuse and recurrent injuries are very common. Lynch and Carcasona (1994), for example, have noted that a study of 123 male players in a Danish soccer club found that 37 per cent of all injuries were overuse injuries, while a Swedish study of 180 senior male soccer players found that 31 per cent of injuries were caused by overuse. FIFA's report on soccer's 1994 World Cup, held in the United States, indicated that 12 per cent of all treatments of players were for chronic injuries or ailments which predated the World Cup Finals (Nepfer, 1994: 190). It would, however, be quite wrong to think that such injuries only occur at the elite level, for there is little doubt that in most western countries sport at *all* levels has become increasingly competitive and this has given rise to large numbers of recurrent injuries at the non-elite, as well as the elite, level. A large-scale survey carried out in England and Wales for the Sports Council found that one-third of all injuries resulting from participation in sport or exercise were recurrent injuries. On the basis of this study, the Sports Council estimated that in England and Wales there are 10.4 million

incidents a year resulting in recurrent injuries (Sports Council, 1991: 25). Quite clearly, we are not dealing with a phenomenon which is confined to elite sport, but one which is extremely widespread.

SPORT, VIOLENCE AND AGGRESSIVE MASCULINITY

Many sports, unlike most forms of non-sporting exercise, involve physical contact and are, in effect, mock battles. This is perhaps most evident in the case of combat sports, in some of which – for example, boxing – a central object is to inflict physical damage on one's opponent. Clearly, however, the use of violence is not confined to combat sports, for though the level of physical violence permitted in sport has, in general, shown a long-term decline as sports have become more 'civilised' (Dunning and Sheard, 1979; Dunning, 1990), the use of physical violence to a greater or lesser degree remains a central characteristic of modern sport. In this regard, Dunning (1986b: 270) has noted that:

> All sports are inherently competitive and hence conducive to the arousal of aggression. Under specific conditions, such aggression can spill over into forms of open violence that are contrary to the rules. In some sports, however – rugby, soccer, hockey and boxing are examples – violence in the form of a 'play-fight' or 'mock battle' between two individuals or groups is a central and legitimate ingredient.

Many sports have, in present-day societies, become enclaves for the expression of physical violence, not in the form of unlicensed or uncontrolled violence, but in the form of socially sanctioned violence as expressed in violently aggressive 'body contact'; indeed, in the relatively highly pacified societies of the modern West, sport is probably the main – for many people the only – activity in which they are regularly involved in aggressive physical contact with others.

The link between sport, aggression and violence provides an important key to understanding why sport is a major context for the inculcation and expression of gender differences and identities, for sport constitutes perhaps the most widely available arena for the legitimate expression of masculine aggression and for the display of traditional and dominant notions of masculinity involving physical strength and courage. Thus, Young *et al.* (1994: 176), drawing upon their interview data with Canadian adult male athletes, noted that the use of force and violence and the tolerance of risks, pain and injury are valued by many male athletes as masculinising, while the sporting performances of women, gay men and men pursuing alternative versions of manliness are, by contrast, trivialised. In similar fashion, Sheard and Dunning (1973), in their essay on the rugby club as a type of

'male preserve', noted that many of the songs traditionally sung in rugby clubs stress and reinforce masculinity by mocking, not only women, but also gay men.

Young *et al.* (1994) pointed out that these traditional and dominant concepts of masculinity involve, as a central proposition, the idea that 'real' men play sport in an intensely confrontational manner. In the more violent contact sports, this may mean that bodies are used as weapons for, as Messner noted:

> In many of our most popular sports, the achievement of goals (scoring and winning) is predicated on the successful utilization of violence – that is, these are activities in which the human body is routinely turned into a weapon to be used against other bodies, resulting in pain, serious injury, and even death.
>
> (1990: 203)

In such a context, players are expected to give and to take 'hard knocks', to injure and to be injured and, when injured, to 'take it like a man'. A prime example is provided by American football which, though considerably less violent than it was in the late nineteenth century, remains, by comparison with most sports, relatively violent; it is significant that proponents of American football list among what they see as the positive features of the game its bellicosity and its similarities to actual warfare and the pain and self-sacrifice which it requires, while injury becomes what Guttmann (1978: 121) called 'a certificate of virility, a badge of courage'. For many players and fans alike, relatively violent sports such as American football and rugby are, precisely because of their violent character, arenas *par excellence* for young men to demonstrate their masculinity. Not surprisingly, injury rates associated with such sports are considerably higher than those associated with most other sports and very much in excess of those associated with non-competitive exercise. In relation to American football, for example, Guttmann pointed out that:

> The percentage of players incurring injuries severe enough to cause them to miss at least one game a season is over 100 percent; this means not that every NFL player is injured at least once each season, but that those who are not injured are more than offset by those who are injured several times. The average length of a playing career has dropped to 3.2 years, which is not long enough to qualify a player for inclusion in the league's pension plan.
>
> (1988: 161–2)

Studies from England and Wales (Sports Council, 1991) and New Zealand (Hume and Marshall, 1994) similarly indicate that injury rates in rugby are substantially above those in any other sport.

THE EPIDEMIOLOGY OF SPORTS INJURIES

Sports injuries are extremely common and, quite clearly, the risk of injury has to be taken into account in any attempt to assess the health 'costs' and 'benefits' of sport and exercise. The largest and most comprehensive study of the number and cost of sports injuries in Britain was carried out by Sheffield University Medical School for the Sports Council (1991). The study, which related to England and Wales, provides a great deal of relevant information and is worth examining in some detail.

A postal questionnaire, which asked about participation in sports and exercise and injury experiences in the previous four weeks, was sent to a sample of 28,857 people, selected at random from the lists of family (primary care) physicians. The response rate was 68 per cent. Of the 17,564 usable responses, 7,829 respondents (45 per cent) had taken part in vigorous exercise or sport; 1,429 had been injured, and they reported a total of 1,803 injuries (1991: 2).

From these data, it was possible to provide estimates of the annual incidence of sports injuries in England and Wales. On this basis, it was estimated that there were 19.3 million incidents resulting in new injuries and a further 10.4 million incidents resulting in recurrent injuries, making a total of no fewer than 29.7 million injuries a year. The direct treatment costs of new and recurrent injuries were estimated at £422 million, with costs of lost production (due to days off work) estimated at £575 million, giving a total annual cost of sporting injuries of £997 million (1991: 25, 31). In the light of these data, one can understand why one text on sports injuries (Vinger and Hoerner, 1982) is sub-titled 'The Unthwarted Epidemic'.

Three years after this major study, a team from Sheffield University Medical School (Nicholl *et al.*, 1994) undertook a survey to ascertain the direct health-care costs and benefits associated with exercise. The health benefits of exercise (such as avoidance of certain chronic illnesses such as cardiovascular disease and osteoporosis) were weighed against the costs of treatment of exercise-related injuries. It was found that, whereas there were clear economic benefits associated with exercise for adults aged 45 and over, for younger adults (aged 15–44), the costs avoided by the disease-prevention effects of exercise (less than £5 per person per year) were more than offset by the medical costs resulting from participation in sport and exercise (approximately £30 per person per year). Put another way, for every 15–44-year-old who regularly participates in exercise, there is a net cost to the British taxpayer of £25 per year. The authors concluded, 'there are strong economic arguments in favour of exercise in adults aged 45 or over, but *not* in younger adults' (1994: 109, emphasis added). A Dutch study which produced similar findings to those of Nicholl *et al.* noted that 'this is an amazing result, and it contrasts heavily with statements of people who use the supposed health effect of sport as an economic argument

to promote sport' (Reijnen and Velthuijsen, 1989, cited in Nicholl *et al.*, 1994).

As was noted earlier, injury risks vary markedly from one sport to another with, not surprisingly, the highest risks being associated with contact sports. The Sports Council study (1991: 33) found, for example, that rugby was by far the most dangerous sport, in terms of risk of injury, with an injury rate of 59.3 per 100 participants per four weeks. The second most dangerous sport was soccer (39.3) followed by martial arts (36.3), hockey (24.8) and cricket (20.2). A study in New Zealand (Hume and Marshall, 1994) similarly found that rugby union had the highest injury rate, while other high-risk sports included horse-riding, soccer, cricket, netball, rugby league, basketball and snow-skiing. That there is a close association between physical contact and injury risk is clear; Lynch and Carcasona (1994: 170–1) cite a study of youth outdoor and indoor soccer in the United States which found that 66 per cent of injuries in the outdoor league and 70 per cent of injuries in the indoor league resulted from physical contact.

Not surprisingly, the Sports Council study in England and Wales found that the activities with the lowest risks of injury were the non-contact and rhythmic (and largely non-competitive) activities involved in 'keep fit' (6.5 incidents per 100 participants per four weeks) and swimming and diving (2.9). However, even relatively rhythmic and non-contact activities may be associated with substantial injury risks. Heil (1993: 5) noted that it has been estimated that in the United States, a third of the nation's 15 million joggers sustain a musculoskeletal injury each year and nearly a half of habitual runners experience lower extremity injury, while there are also 1,000 spinal injuries each year as a result of swimmers diving into water.

Although the majority of sporting injuries are relatively minor, a substantial number are more serious. The Sports Council study (1991: 18–19) found that 25 per cent of new injuries and 31 per cent of recurrent injuries required treatment by a family doctor, hospital or other health professional, while 37 per cent of new injuries and 43 per cent of recurrent injuries involved some restriction on activities. This restriction was usually on the injured taking part in sports or exercise, though 7 per cent of all injuries resulted in the participants taking time off work; in all, 11.5 million working days a year are lost in England and Wales as a result of sports injuries. A study in New Zealand (Hume and Marshall, 1994) found that 15 per cent of consultations at the Dunedin Hospital Emergency Department were for sports injuries, which also accounted for 9 per cent of all injury hospitalisations in New Zealand, and 17 per cent of all injuries compensated by the Accident Compensation Corporation. Both the risk of injury, and also the risk of serious injury, increase in more violent contact sports. In this context Young (1993: 377), writing of American football, has argued that:

> No workplace matches football for either the regularity or severity of injury . . . football injuries may include arthritis, concussion, fractures, and, most catastrophically, blindness, paralysis and even death . . . a review of heat stresses such as cramp, exhaustion and stroke related to amateur and professional football . . . reported 29 player deaths between 1968 and 1978 . . . the 1990 season represented the first in over 60 years without a player death.

CONCLUSION

What conclusions, then, can we draw about the relationships between exercise, sport and health? Do the data support the widely taken-for-granted assumption that 'sport is good for one's health'? Three points would seem to emerge from the data reviewed in this chapter. The first is that no simple generalisation can adequately encapsulate the complexity of the relationships between sport, exercise and health. The second, related point is that it is clearly necessary to differentiate between exercise and sport, for they involve, as we have seen, rather different patterns of social relationships and, associated with this, they are likely to have rather different consequences for health. The third point is that we also need to differentiate between types and levels of sport, with the distinctions between contact and non-contact sport and between elite and mass sport being particularly important.

If we make these distinctions, it may be possible to reconcile what, at first sight, may appear to be radically incompatible findings. Thus, on the one hand, there does seem to be overwhelming evidence indicating that regular, rhythmic and moderate exercise has a significant and beneficial impact on health. On the other hand, Young (1993: 373) may also be correct in his claim, which appears to relate primarily to North America, that:

> By any measure, professional sport is a violent and hazardous workplace, replete with its own unique forms of 'industrial disease'. No other single milieu, including the risky and labor-intensive settings of miners, oil drillers, or construction site workers, can compare with the routine injuries of team sports such as football, ice-hockey, soccer, rugby and the like.

In general, it is probably reasonable to suggest that in the case of rhythmic, non-competitive exercise where body movements are, to a relatively high degree, under the control of the individual participant, the health benefits substantially outweigh the health costs. However, as we move from non-competitive exercise to competitive sport, and as we move from non-contact to contact sport, so the health costs, in the form of

s, begin to mount. Similarly, as we move from mass sport to elite the constraints to train longer and more intensively and to continue competing through pain and injury also increase, with a concomitant increase in the health risks. The health-related arguments in favour of regular and moderate exercise may be overwhelming, but such arguments are considerably less persuasive in relation to competitive sport, and very much less persuasive in relation to elite, or professional, sport. In the next chapter, we examine some of the implications of these conclusions for public policy in relation to sport and health.