Title       False Start? UK Sprint Coaches and Black/White Stereotypes
Name        David Turner

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FALSE START? UK SPRINT COACHES AND BLACK/WHITE STEREOTYPES

by

David Turner

A thesis submitted to the University of Luton for the degree of Master of Science by Research

May 2004
Abstract

UK sprint coaches' employment of common racial stereotypes in explaining the success of Black and White sprinters was studied. It was hypothesised that the success of Black individuals would be attributed to innate genetic factors; whereas the success of White individuals would be attributed to socio-economic advantages, intelligence, and hard work.

Thirty-one sprint coaches voluntarily participated in success attribution exercises. A two-way between subjects design was used, with scaled item survey questionnaires, based upon photo elicitation, and subsequent statistical analysis via Mann-Whitney tests and Spearman's correlation. Qualitative data was collected, via a one-to-one interview design (open-ended and semi-structured), with subsequent inductive content analysis.

Quantitative results reveal no significant difference between the scoring of Black and White photograph conditions, and a positive correlation between the comparative scoring of eight stereotypical factors ($r = 0.994, N = 8, p = 0.001$). The only statistically significant difference between individual factors is for longer limbs, with coaches scoring this as contributing more to the success of the pictured Black athlete ($U = 54.000, N_1 = 16, N_2 = 15, p = 0.008, two tailed$). Qualitative results indicate that most coaches adopt a biological determinist attitude, with genetic factors implicated as associated with success, to a greater extent than developmental factors. Several unprompted statements reveal direct racial stereotypes.

Generally the hypotheses are not supported quantitatively. However, specific aspects do partly provide support, and there is a tendency to score the Black athlete more highly across all stereotypes, possibly indicating that coaches believe Black athletes to be more suited to sprinting. Qualitative results indicate that sprint coaches may be susceptible to the employment of natural ability stereotypes because of an over emphasis on biological determinism, and a lack of recognition for less immediately apparent developmental factors. Several comments evidencing the use of situated racial stereotypes in sprint coaching lend support to the hypotheses.

Reassuring evidence has been gained that UK sprint coaches do not widely employ stereotypes in attributing differently the success of Black and White athletes. However, there is sufficient evidence of susceptibility and replication, to necessitate continued vigilance. The interdisciplinary and multi-method approach used is deemed to have provided a broad and deep view of the problem, representing a contribution to a neglected area of study. A theoretical model of stereotype influences in sprinting, and recommendations for both coaching and coach education are presented.
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Acknowledgements

Thanks to my various supervisors throughout the course of this work: - Dr Richard Davison for encouraging me to undertake a Masters by Research; Ricky Rasmussen for his initial ideas and inspiration; Dr Pirkko Korkia for her example as a research role model; and Dr Ian Jones for his specific expertise in relation to qualitative research (and for stepping into the vacant supervisors role when all of the aforementioned had left).

Finally, my appreciation to my wife for her invaluable support and faith.
Declaration

I declare that this thesis is my own unaided work. It is being submitted for the degree of Master of Science by Research at University of Luton.

It has not been submitted before for any degree or examination in any other University.

Name of candidate:  David Turner

Signature:  

Date:  May, 2004
Chapter 1 – Introduction

1.0 Introduction

Sport has long been viewed as a potential site of racial integration, social mobility and acceptance. However, sport is also a reflection of the society within which it operates, and therefore it also has the potential to mirror and reinforce inequalities, prejudices and stereotypes (Eitzen, 1999).

Despite prolific writing and research in relation to the study of sport and race in the modern era (e.g. Carrington & McDonald, 2001) racial stereotypes in sport remain firmly established as a kind of racial folklore (Hoberman, 2000). In particular, there is a commonly assumed notion in society that Blacks, as a result of genetic endowment, are more naturally athletic than Whites (Shermer, 2000) – especially in sports requiring speed and jumping (Davis, 1990). This is reinforced via over-representation in some sports and specific positional roles, disproportionate success in certain activities, and media representation of Black athletes, emphasising supposed inherent physicality (Coakley, 2000). Consequently, Black athletic superiority based upon a genetic foundation is accepted as unquestioned by large numbers of both Blacks and Whites, even in the absence of convincing scientific proof (St Louis, 2004). These ideas strongly encourage the view that Blacks and Whites are biologically different in meaningful ways (Halinan, 1994), and lead to stereotype formation and application (Harrison, 2001).
Since running is truly global, and does not require specialist coaching, equipment and amenities to the same extent as most other physical activities, one might anticipate that elite runners would emerge from a broad variety of nationalities and population groups (Burfoot, 1992). Conversely, the contemporary dominance by athletes of West African descent in the sprints, and by East Africans in endurance races (Entine, 2001), indicates that certain population groups may be more successful in particular events due to predisposing physical attributes.

Essentially two opposing camps have formed in the explanation of racial dominance within certain sporting activities. One stresses that differences in racial genetic potential is the major factor, and that a societal taboo precludes us from discussing this due to concerns about political correctness (e.g. Burfoot, 1992; Entine, 2000a). The other faction dismisses arguments based on Black physical superiority as symptomatic of a racist ideology, which is attractive to the uninformed; and emphasises influences other than merely supposed racial genetic differences, such as sociological and environmental perspectives (e.g. Smith, 1995; Coakley, 2000).

1.1 Aim of the Study

Sprinting is probably one of the most obvious areas of sport where racial stereotypes are formed and applied (Johnson, Hallinan & Westerfield, 1999; Rasmussen, Turner, & Esgate, 2003). The aim of the present study was to assess the extent to which coaches in a sports specific setting (i.e. sprint
coaches in athletics) are affected by common stereotypes associated with supposed genetic advantages of Black athletes, and supposed socio-economic advantages and capacities for intelligence and hard work of White athletes. Specifically, the study aimed to assess this through a photo-elicited success attribution exercise, which reflected coaches’ likely preconceptions of athletes based on race. Semi-structured interviews were used in an attempt to gain further insight into the reasons behind patterns of success attribution.

1.2 Delimitations

The study focussed on sprinting in athletics - a high profile sporting activity, widely recognised as being one within which Blacks are over represented (Sailer, 1996), whilst Whites are under represented, at elite performance levels (George, 1994), in relation to their respective percentages of the overall population. It also concentrated on Black and White population groups, as this tends to be the most common societal racial categorisation (Birrell, 1989). Whilst acknowledging that the majority of research in this area is American, the investigation is centred within the social context of the United Kingdom, since findings are rarely fully transferable between cultures (Lyle, 2002). Finally, the study examined males, since Black/White over representation and under representation issues are not as marked (though still present) in women’s sprinting (Sailer & Seiler, 1997).
Chapter 2 - Literature Review

2.0 Over and Under-Representation

Athletics, boxing, basketball, football, and more recently rugby, have relied greatly on Black aptitude in the past few decades (Polley, 1998). Eitzen (1999) reported that African Americans made up 80% of professional basketball players, and 67% of American footballers, despite representing only 12% of the United States population. Cashmore (1998) claimed that in 1995, 90% of boxing World Champions were Black.

In the United Kingdom, Black people represent less than 2% of the population (Owen, 1994), but constitute 60% of First Division English professional basketball players (Chappell, Jones, & Burden, 1996), 12% of professional footballers (Norris & Jones, 1998), and 8% of county cricketers (Malcolm, 1997). It has also been estimated that at least 50% of British boxing champions and the British athletic squad are Black (Jarvie, 1991).

In athletics, the world record for every commonly competed running distance is currently held by a Black athlete – with those of West African ancestry in ascendancy up to 400 metres, and those of East and North African descent predominant at longer distances (Entine, 2000a). 100 and 200 metres UK records are also presently held by Black athletes (UK Track and Field All-Time Lists, 2003).
However, in several sports Black representation is virtually non-existent; for example, hockey and gymnastics (Hartmann, 2000). Blacks are typically under-represented in sports where elevated socio-economic status is required for access — e.g. golf, swimming, tennis, cycling (Cashmore, 1998). Conversely, sports involving less investment, and easier access (particularly in urban environments where Black populations are more concentrated), tend to be characterised by Black over-representation — e.g. football, basketball, boxing, and sprinting (Polley, 1998). Nonetheless, the high profile and status of those few sports in which Black people are over-represented, causes a distortion in media and public perceptions that Blacks dominate sport as a whole (Shermer, 2000). In reality Black athletes achieve highly in a narrow range of sports, probably because of restricted opportunities arising from differential treatment.

Career opportunities post sports participation for Black individuals in the US are dismal (Frey & Eitzen, 1991). Recent evidence demonstrated a lack of coaching and management opportunities for Black ex-athletes, even in sports where Blacks are over-represented (Lapchick & Matthews, 1998). In 1998, there was only ten Black head coaches in the professional basketball, baseball, and American football leagues combined (LeUnes & Nation, 2002). Polley (1998) confirmed that a correspondingly small amount of Black individuals take up coaching and management positions Britain. “Without a shadow of a doubt my colour has held my managerial career back. You can’t pretend racism isn’t a problem,” stated Keith Alexander, one of only 5 current Black managers among the 96 English League football clubs (all in the lower
divisions), despite representing 13% of professional footballers (Taylor, 2003, p. 36). Black ex-footballer, Ricky Hill claimed that “The view that Black people are not capable of management still persists”, after failing to secure a coaching position in the UK (Brown, 1995, p. 26). Although Chappell et al. (1996) found that the percentage of Black First Division coaches in English basketball had raised to 38.5%, they noted that coaching opportunity changes were not keeping pace with player changes. Indeed, the number of Black coaches seems to not be in step with Black participation in several sports (Coakley, 2000), and it is highly likely that this is linked to stereotypes regarding Black intellectual and leadership inferiority. Rimer (1996) found evidence of unequal opportunity for equal ability, in that Blacks who did secure coaching posts, had longer and more prolific playing careers in comparison to similarly employed Whites.

2.11 Stacking

Evidence for the possible use of stereotypes by coaches, can be found in the phenomenon of stacking, which may be defined as the segregation of positions in team sports based on race (Margolis & Piliavin, 1999). Stacking research emerged from the broader societal issue of racial integration, arising from the Civil Rights movement, and remains an active area of investigation and debate.

Rosenblatt (1967) indicated that the early integration of Black players into American professional baseball did not signal more equal treatment. He
suggested they had to perform to higher standards than White players in order to secure selection, and experienced particular difficulty in gaining access to central playing positions and influential non-playing roles. This was supported by consistently higher Black batting averages to those of White team-mates, and under-representation in key areas – less than 30 Black pitchers, only one official, one coach, and no managers for the 13 year period examined. Rosenblatt concluded discrimination was in operation, in that the allotment of roles within baseball, was not comparable for Black and White individuals, whether during or post playing career.

Loy and McElvogue (1970) proposed a theory of centrality, as a means of investigating racial discrimination in team sports. Based upon findings that central or powerful functional roles within baseball team structure (e.g. pitcher, catcher, third base) were fulfilled by a low percentage of Black players, they proposed that racially based discriminatory practices existed within baseball. White players were disproportionately allocated to central positions (e.g. 94% of pitchers), which necessitated leadership qualities, decision making abilities, and high levels of communication; whilst Black players were disproportionately allocated to peripheral positions (e.g. 49% of outfielders) emphasising instinctive qualities and athleticism. The authors pondered whether this might indicate the existence of racial segregation in baseball, but cautioned that there might be numerous non-blatant types of discrimination involved.
Curtis and Loy (1978) re-evaluated several baseball analyses, and confirmed racial stacking was evident, in comparing central positions involving kudos and reward, with lower status peripheral positions. Based on longitudinal data on race and position in professional baseball Phillips (1991) attempted to differentiate more clearly between the more significant central positions and the less central; reporting that from the 1980s Black athletes began assuming some influential positions; possibly indicating decreased racial discrimination. However, Lapchick and Benedict (1993) suggested these changes represented only a slight improvement. Following an analysis of baseball careers, Smith and Seff (1990) argued that stacking persisted long into the 1980s, with Black players having to be better than their White counterparts in order to play regularly, and often not being considered for control or outcome roles.

Similar patterns were evidenced in professional American football. Black integration started in the 1960s, but central roles, such as quarterback, were still predominantly occupied by White players (97%) in the mid 1970s (Eitzen & Sage, 1978). Whilst Best (1987), and Lapchick and Brown (1992), subsequently found similar distributions for White quarterbacks (97% and 92% respectively), a trend towards declining overall numbers of White players was reflected in a minor weakening of over-representation in central positions. Concurrently, Black over-representation in peripheral positions (e.g. 90% of running backs, 89% of wide receivers) intensified, as the overall number of Black players increased (Lapchick & Brown, 1992).
Stacking has been evidenced in several American collegiate football studies (Eitzen & Sanford, 1975; Williams & Youssef, 1975; Schneider & Eitzen, 1979; Jones, Leonard, & Schmitt, 1987; Lewis, 1995). Black prospective quarterbacks were either channelled into other positions, utilised as more athletic "running" quarterbacks (as opposed to a White "throwing" style), or pursued careers in the relatively stacking free Canadian American football league (Entine, 2000a).

Even in American professional basketball, where all positions now feature an overwhelming Black presence, racial segregation of positions persists. Whilst 80% of forwards and 83% of guards are Black in the National Basketball Association, only 55% of centre positions are occupied by Black players (LeUnes & Nation, 2002). Similarly, although evidence for positional discrimination in American collegiate basketball is not strong, White athletes are more apt to play as centre (Leonard, 1987). Historically, Blacks were over-represented as forwards, and Whites as guards and centres in the 1950s and 1960s. This delineation became less apparent in the 1970s, and disappeared in the 1980s when basketball became a largely mono-racial sport (Coakley, 2000).

Stacking has been investigated in professional sport in various other national contexts. In Canadian ice hockey, English Canadians dominate defensive roles, whilst French Canadians are disproportionately represented as goalies (Lavoie, 1989a). In Australian rugby league Aborigines are over-represented at peripheral wide positions (Hallinan, 1991). In English soccer Black players
are assigned predominantly to forward and wing positions, and are underrepresented as goalkeepers and central midfielders (Maguire, 1988, 1991; Melnick, 1988; Norris & Jones, 1998). In English cricket, Asians were found mostly to occupy high status batting roles, and Blacks to occupy low status bowling roles (Malcolm, 1997). In English rugby union (Maguire, 1991), and rugby league (Long, Carrington, & Spracklen, 1997) Black players are mostly assigned to the wing. Stacking was not evidenced in the contexts of English basketball (Chappell et al., 1996), and Canadian American football (Ball, 1973; Stebbins, 1993). However, in regards to English basketball, the authors recognised that a major reason stacking was not evident, was high Black participation overall (Chappell et al., 1996).

2.12 Theoretical Explanations

According to Edwards (1973) the stacking of Black athletes in non-central positions, which reduce their influence on outcomes and decision-making, is indicative of social processes by which the hegemony of the White majority is jealously maintained. That is, issues of power and control are underlying causative factors. However, the lucidity of the concept of centrality is sometimes problematic. The relationship between central and peripheral roles differs greatly between sports, with some fluidity in positional requirements (Maguire, 1988), and alterations over time. In the context of British sport, the role of the captain is more prominent, and may be adopted by players from various positions (Malcolm, 1997).
Medoff's (1986) "economic" hypothesis proposed that prohibitive expenditure is influential in decision-making, in that certain sporting positions incur greater preparation and expenses in order to achieve mastery, and thus have a bearing on positions that athletes eventually occupy. Thus, the fact that many Blacks originated from low socio-economic backgrounds could partly explain their absence from some positions (and from some country club sports such as golf, tennis, and swimming). He also suggested a role model hypothesis, whereby Black players were thought to possibly aspire to positions previously occupied by heroes or high achievers. This was subsequently reinforced by Chappell et al. (1996), who considered that successful US Black basketball players were acting as inspirational role models for young Black Britons. Medoff (1986) plainly considered that sociological factors provide the greatest explanation of the positional choices athletes make, above biological and psychological influences. He cited gradual improvements in Black economic status, and an associated reduction in discrimination, as important reasons for a perceptible gradual weakening of stacking.

Lavoie (1989b) disputed Medoff's conclusions. He argued that rather than Black athletes choosing to play non-central positions due to economic expediency or the influence of role models, coaches were responsible for instigating positional segregation, via discriminatory subjective playing position assessments that placed impediments on Black athletic progress. Johnson (1988) claimed that stacking occurs due to coaches attempting to match players with roles, which they perceive will suit individual characteristics and physical qualities. This largely subjective process was
viewed as potentially problematic (for example, possibly involving the employment of stereotypes in evaluation), and Johnson suggested developing and adopting athlete profiles or biographies as a means of supporting coaches when endeavouring to allocate positional roles.

Lavoie and Leonard (1994) proposed an “uncertainty” hypothesis, in which inequity is linked to the difficulty and lack of objectivity in assessing player performance at a given position. They claim central positions involve more uncertainty, such that subjective and less pertinent factors (e.g. stereotypes) are more likely to be employed in evaluations. Thus, discrimination ought to be higher at these positions. Ironically, their results only weakly supported the hypothesis. Furthermore, this standpoint presupposes a meritocracy exists in sport, whereby positions would be allotted to the most competent players, irrespective of race.

Whatever the causal means behind stacking, prejudice and discrimination are believed to be involved; and there has been little attempt to find alternative explanations. One exception is the work of Margolis and Piliavin (1999), who used multivariate analysis to examine the influence of control variables (height, weight, age, power, skill, and speed) on the relationship between race and centrality. Although they eventually concluded that most of the variance in positional segregation in baseball should still be attributed to discrimination, results indicated the variable of speed had a significant effect on the race-centrality relationship for Black players. However, their choice of base stealing attempt percentage as a measurement of speed seems rather
dubious, and could also be related to decision-making abilities and cue perception. Furthermore, whether Black players are naturally faster, or have deliberately developed speed because of existing expectations is not considered.

The reasoning behind stacking seems to be that White athletes, who are perceived as more intellectually able, are allocated to positions involving decision-making, influence and leadership; whereas Black athletes, who are perceived as being merely instinctive and physically talented, are assigned to low status, peripheral positions. Woodward (2002) found that American football scouts were significantly more likely to describe Black and White players differently in accordance with the above characterisations. Thus, stacking is largely based upon stereotypes regarding supposed physical and mental differences between races. This is only problematic if the stereotypes are inaccurate. Thus, stacking could be viewed as the result of expediency, with coaches placing players into positions which best suit their abilities and attributes, and provide the best chance of team victory. However, coaches might assign players of different races to certain positions because of (conscious or subconscious) discrimination. For example, Black athletic prowess is widely acknowledged and accepted in society (Baker & Horton, 2003) – especially in relation to speed and jumping ability. It is perhaps unsurprising then that Black athletes predominate in outfield positions in baseball, on the wing in soccer and rugby, and at all positions in basketball. However, such perceptions of prowess can lead to attributed physical characteristics of mythical proportions, and to over-generalisations and
assumptions that fail to recognise the individuality and uniqueness of human beings. Furthermore, the flip side of an over-emphasis on physicality and instinctive performance is the perception that Black athletes cannot properly undertake thinking roles in sports.

Coaches may be allocating and encouraging players to adopt certain positions, and discouraging them from attempting others based on largely unsubstantiated racial preconceptions. This can lead to positional over-representation, which feeds perceptions of differences in racial athletic abilities, and re-fuels a self-fulfilling prophecy cycle. For instance, because fewer Black athletes are given the opportunity to occupy central positions, which involve and develop leadership, communication and decision making qualities, even fewer Black individuals are able to attain coaching, or managerial positions post-playing career. It could be argued that negative racial stereotypes are both adhered to and reinforced in this dynamic. However, as Malcolm (1997) has pointed out, stereotypes alone cannot fully clarify racial participatory patterns in sport, and are as much a result of sport participation as a causative mechanism.

A contributory factor may be that Black athletes actively target or avoid certain positions, based upon perceived opportunities for success (Maguire, 1991). That is, Black people themselves may adhere to naturally gifted athlete stereotypes, and behave in accordance with associated expectations (Cashmore, 1998). This process of self-stacking can maintain and even
intensify existing inequalities, as perceived influences on the likelihood of sporting success begin to act as a self-fulfilling prophecy (Coakley, 2000)

2.13 Stacking Concluded

Remnants of stacking patterns persist in some sports, but there has been a general weakening of the phenomenon. This possibly results from adjustments in team playing and decision making roles, the development of widened access to sporting opportunities, and a more integrated multicultural society (Coakley, 2000). Nevertheless, Smith and Henderson (2000) hypothesised that stacking remains a problem in major team sports today, and offered several elimination strategies – including hiring, monitoring and rewarding of competent coaches; reducing the switching of Black athletes from central positions; optimising playing experience opportunities; and openly welcoming minority athlete participation. Accountability for positive change was focused directly at sports managers, and coaches.

Recently, Jones (2002) found that, in English soccer, the majority of Black semi-professional players interviewed believed that the stereotype of the quick Black athlete was still adhered to strongly by coaches, which could partly explain overrepresentation as forwards and wingers. He also found widespread contemporary belief that they had to be better than White players in order to succeed (and 33% believed that Black footballers are naturally faster than Whites). Nearly all were concerned about the paucity of Black coaches and managers, but perceived an improving situation.
Stacking is reflective of broader societal discriminatory practices, stereotyping, segregation, isolation, impoverishment and tokenism experienced by members of racial minorities. It would be naïve to expect sport to be free of discrimination, but it would also be wrong to accept discriminatory practices, and to not remain vigilant for their employment. Stacking is just one form of discrimination, and even where it has been shown to be weakening, it should be appreciated that this does not signal the end of discrimination. It might just as likely indicate a shift to other forms of discriminatory practices.

Coaches need to develop awareness of social influences upon selection and role allocation in team sports; and employ reflective practice in monitoring their use of racial stereotypes in the process. Thus, they can positively contribute towards the further development of a more egalitarian and ethical sporting environment.

2.14 Black Domination in Sprinting

In athletics, Black representation currently accounts for the majority of UK and US national squads (Coakley, 2000; Horne, 1996), and is concentrated more in track rather than field events (Polley, 1998; Entine, 2001). Long jump is the exception - a field event where sprinting ability is a crucial prerequisite (Smith, 1995). Specifically, Black athletes have come to dominate contemporary sprinting (George, 1994).
In the 1904 St Louis Games, the first Black athlete to gain an Olympic medal took bronze in the 100 and 200 metre hurdles for the USA. At the 1908 London Games, the first Black gold medallist was part of the USA 400m relay team (Entine, 2000a). In 1928 Amsterdam, Great Britain's first Black medal winner, took silver in the 100 metres (Cashmore, 1982). The first Black Olympic gold medallist in an individual track event followed, in the same event, at the 1932 Los Angeles Games (Burfoot, 1992). In 1936 Berlin, Jesse Owens famously won four gold medals, including both the 100 and 200 metres (Cashmore, 1982). Nonetheless, pre 1960's White sprinters were mostly predominant at elite level (George, 1994).

However, since the advent of desegregation Black men absolutely dominate sprinting, holding 95% of the world best times (Entine, 2000a). Only Black men (more precisely those of West African descent) have ever broken the 10-second barrier for 100 metres, and they have done so over 200 times (Entine, 2000a). Burfoot (1992) reported that 44 of the top 50 sprinters on the all-time list were Black; with the highest placed White in 16th position. Entine (2001) claimed that Blacks hold the 220 best times, and 494 of the top 500 ever. At Atlanta 1996, Black men monopolised gold in all seven events between 100 and 400 metres (Sailer, 1996). In the last five Olympics, up to and including Sydney 2000, all forty finalists in the mens' 100 metres have been Black. Inevitably, this acts as a form of powerful commonsense evidence, resulting in stereotypical views concerning Black's as a supposed race.
2.2 Stereotypes

Stereotypes are usually based upon over-generalisations regarding the characteristics of certain population groups (Cashmore, 1996), which are imposed upon persons perceived to be group members (Oakes, Haslam, & Turner, 1994). In social psychology there has been a traditional (e.g. Allport, 1954) and enduring (e.g. Brewer, 1996) emphasis on stereotypes as contributing to social problems, since they are essentially inaccurate, and able to exercise great influence on person perception. It has also been argued that stereotypes are utilised to maintain positions of power, and limit the opportunities of others (Fiske, 1993). For example, societal stereotypes have been shown to limit career potential for many Blacks and contribute to social problems encountered (HoBermann, 1997; Hartmann, 2000).

However, several recent researchers have argued that stereotypes can be either accurate or inaccurate, and often have only limited effects on person perception (e.g. Oakes et al., 1994; Van den Berghe, 1997). For example, Madon et al. (1998) found that teachers’ perceptions of students from different population groups were mostly accurate, and that stereotypes were only occasionally relied upon, with the personal characteristics of the student being much more powerful in predicting person perception. Kunda and Thagard’s (1996) meta-analysis concluded that stereotypes were far less powerful than personal characteristics in regards to person perception; providing only a weak influence even when personal characteristics are ambiguous.
What seems clear is that perceivers arrive at judgements about individuals through using a combination of personal characteristics and stereotypes. Perceivers only tend to resort to stereotyping when they have very little information about the target (Harrison, 2001). They also tend to discard stereotypes once they know more about the target's personal characteristics. This may be somewhat problematic in certain naturalistic settings, where personal contact is brief, and background information is minimal – such as sports trials (Madon et al., 1998).

The accuracy of stereotypes depends upon the congruence between perceived and actual group differences. Furthermore, even if the stereotype is accurate it does not follow that perceivers will inevitably judge all individual group members accurately (Madon et al., 1998). Indeed, there are a number of reasons why people can come to rely on inaccurate stereotypes and faulty cognition, as we shall examine later. But presently it is useful to recognise that we tend to attach positive or negative values to stereotypes, or make evaluative associations (Harrison, 2001). Thus, stereotypes, which ostensibly appear positive, can often imply negative connotations. For example, in the sporting context, athletic prowess is often inversely associated with intellectual excellence, and directly associated with an animalistic quality suggesting a lack of evolutionary maturity (McCarthy & Jones, 1997). An illustration is provided by comments broadcast by Radio 2 DJ Sarah Kennedy, to the effect that Blacks are good at athletics because only a short time ago they were accustomed to running away from lions! (The Guardian, 2000).
Of particular concern, is the fact that stereotypes fail to recognise the wide variations of physical, mental, psychological, emotional, and cultural differences present within any population group; and generally the complexity and dignity of individuals as human beings (Edwards, 1973; Hoberman, 2000). Furthermore, racial stereotypes falsely assume the existence of a fixed classification system, with unambiguous racial categories as biological realities, obscuring the socio-political processes of racial group perception and formation (Davis, 1990; Bamshad et al., 2003).

2.21 The Concept of Race

The concept of race is uncertain and ill defined, and racial theories are frequently superficial (Birrell, 1989; Martin & Parker, 1995). The purity of genetics and biology required to differentiate individuals into biologically defined "races" has proven meaningless and unscientific as a means of explaining variation (Cashmore, 1998; Halinan, 1994). It is simply unrealistic and impossible to set up unequivocal dividing lines between racial groups, such that categories themselves are suspect. In reality, there is often more phenotypic and genotypic variation between individual members of any one supposed racial group, than between any two racial groups as a whole (Samson & Yerles, 1988; LeUnes & Nation, 2002). Indeed average intra race differences are only slightly greater than inter race variation (Bamshad & Olsen, 2003), such that it may be more appropriate to consider the species as one all embracing human race (Halinan, 1994). Thus, racial categorisation is essentially reflective of a social agenda and power relationships, rather than a
natural biological division (Birrell, 1989; Morley & Robins, 1995). Such categorisation is inextricably linked with stereotyping, since stereotyping cannot transpire without firstly designating people to categories (Ridley & Hill, 1999).

Historically, the modern debate on race was born out of pseudo-science (e.g. phrenology, physiognomy) arising from the slavery movement and colonial imperialism, which concentrated on issues of superiority and inferiority – a hierarchy of the races to justify oppression and exploitation (BBC Radio 4, 2002). This fuelled the rise of eugenics in the twentieth century, and subsequent associations with racial genocide, which may have resulted in race science becoming something of a taboo subject in contemporary society (Entine, 2000b). It is interesting to note that Black racial inferiority was the prevailing stereotype prior to the desegregation of sports – with the reasoning that Blacks were only suited to menial occupations and athletic games that did not require great mental ability (Hoberman, 1997). Theories of Black superiority in sport are prominent now – but the stereotype of the unintelligent Black athlete may persist (Edwards, 1986).

The most frequent categorisation takes a Black/White image, via a generalised assessment of skin colour, hair type, and physical features (Birrell, 1989). This habitual assignment of individuals to monolithic groupings is problematic, but remains an undeniable societal reality, and may sometimes reflect a chosen identity of Blackness (McCarthy, Jones, & Potrac, 2003). But phenotypes can be simplistic and confusing markers, and are not
necessarily accurate predictors of genetic composition (Suzuki et al., 1986; Gould, 1994) or the homogeneity of racial group members (Wiggins, 1997). For instance, individual Brazilian children have been categorized as members of different racial groups (Marshall, 1984); and whilst external estimates would likely be much higher, only 4% of Brazilians recently self-classified as Black (Coakley, 2000).

The either/or principle (an individual can belong to only a single, mutually exclusive group) is commonly misapplied to this racial categorisation (Ridley & Hill, 1999), such that even individuals who are half White are generally classified as Black in our race conscious society (George, 1994). Ridley (1995) suggests that this kind of practice is so culturally entrenched that its flawed conclusions frequently go uncontested. For example, Tiger Woods has been hailed as the first Black golfing superstar, but has more South East Asian ancestry in his mixed racial background (Sailer, 2000a). Gene pools usually demonstrate greater variation, and less “racial purity” than might be expected (Hamilton, 2000). For example, Price (1997) claims that 90% of African Americans have some White ancestry; whilst Bamshad and Olson (2003) highlight that racial intermixing means that self-reported ancestry does not necessarily match actual genetic background. Even under South African apartheid, a political regime based upon racial segregation, the criteria for classification as White or non-White was adjusted frequently (Rees, 1996).

Nevertheless, the notion of race has retained popular societal currency (Ridley & Hill, 1999), serving as a common sense ideology. As Sailer (2000b)
has pointed out, although race is difficult to define, as an issue it will not go away (neither will racism), and associated problems may best be addressed by studying it honestly. Some authors, such as Entine (2000a), Sailer (2000b), and Sarich (2000) still contend that race is a valid biological concept. However, these sources could be criticised as being journalistic, whilst in academic circles it is more widely accepted that although race is a reality, this is only so because people have socially and culturally constructed it (Birrell, 1989). Thus, although race may lack scientific validity, it remains an important and significant sociological concept for investigation (Long, Carrington & Spracklen, 1997).

Halinan (1994) highlights that the concept of race is not only accepted as unequivocal by the general public, but is sometimes employed as an apparently clear-cut variable in attempting to explain athletic performance, within sport and exercise science textbooks. He cautions against sport science examination of human diversity without taking into account social science, and contends that such practices invite sports scientists to subconsciously succumb to ideology in explaining performance, promoting the development of antiscientific reasoning and hypotheses.

Despite the ambiguities highlighted above, the term race usually refers to a category of people regarded as distinct because they share certain inheritable traits and characteristics in terms of geographical ancestry (Coakley, 2000). For example, Smith (1995) and Wiggins (1997) highlight that the success of
Black people in sport is commonly viewed as a result of a racially biased biological advantage.

2.22 Preoccupation With Racial Differences In Sport

There seems to be a public and scientific preoccupation with perceived racially linked genetic advantages of Black athletes, whilst attention to White athletic over-representation and successes has been minimal (Davis, 1990; Smith, 1995; Wiggins, 1997; Coakley, 2000). This emphasis seems disproportionate when one considers that Black athletic dominance is restricted to a comparatively narrow range of sports (and to the last half century) - i.e. basketball, athletics, boxing, football, and to a lesser extent baseball (LeUnes & Nation, 2002).

Whilst many are quick to proffer genetic explanations for Black athletic successes, no such attention is paid to the success of other population groups. For example, Coakley (2000) highlights that nobody postulates that there is Swiss skiing gene, a Bulgarian weightlifting gene, nor a gene to account for the predominance of Californian volleyball players. Robertson (1981) makes a similar point in relation to dominance of East German swimmers and Japanese American judo players, and persuasively contends that cultural factors are more critical than genetic ones, in citing American and British ineptitude in cricket and baseball respectively. Wiggins (1997) describes the high Jewish representation in American basketball, and the dominance of Jewish, Italian, and Irish boxers, in the early twentieth century.
Interestingly, he also claims that although commentators certainly held stereotypical beliefs concerning these athletes, they tended to refer to them in more complimentary ways than they do in relation to contemporary Black athletes. In examining the current dominance of distance running by East Africans, Hamilton (2000) reminds us that other specific areas of the World have produced high concentrations of record breakers in the recent past – e.g. England, New Zealand, and Finland – but nobody proposed genetic explanations.

Davis (1990) argues that this preoccupation with genetic racial differences among athletes is indicative of racism, since it legitimises racial categorisation as unambiguous. She claims that Black/White dichotomous categorisation is central to the maintenance of White power structures, and encourages biological determinist arguments regarding sporting success. Such arguments can also be extended to maintaining the racial status quo in wider society, and in explaining and justifying racial oppression. It is also suggested that Whites may perceive Black success in sport as a threat, with this racist fear being reflected in a fascination with the issue of racially linked genetic differences in athletic ability (Simons, 2003). Coakley (2000) describes this divisive modern form of social Darwinism as race logic.

Explicit racism is not as socially and politically acceptable in modern society, and is more likely to be expressed in comparatively subtle and obscured ways. Despite the commonly held belief that scientists are objective (and will be unaffected by issues such as racism), it seems naïve not to recognise that
they are subject to the pressures and influences of social structure and socio-political context. For example, the research questions of sport scientists examining Black/White athletic differences, are reflective of assumed distinctions between the Black or White self, and a Black or White other. Those scientific efforts that have been made to try to uncover genuine differences between particular racial groups tend to substantially ignore the wide range of within groups differences, which clearly exist (Edwards, 1986; Bamshad et al., 2003). As an example, early studies indicated that Blacks as a group tended to lack the stamina to cope well with endurance events. But when Kenyans came to dominate distance running, two types of superior genetic Black athletes were hypothesised to explain the anomaly.

It seems that both in the public (including in the media as we shall examine later) and scientific domains, there is a widespread obsession with explaining Black athletic success, rather than celebrating or recognising achievements. Indeed, White athletic success is often equated with qualities of character, dedication, work ethic, dependability, and intelligence, rather than their “natural physical abilities”. Black success on the other hand has often been equated with inherent or instinctive physical qualities, which many believe to be inversely associated with intellectual capacities – what Hoberman (2000) has described as the enduring influence of the nineteenth century Law of Compensation, which postulates a trade off between brawn and brain.

Since many subscribe to the idea of racially linked genetic differences, and Black dominated sports tend to be very high profile, examination of the issue
is considered as common sense (St Louis, 2004). However, explanations of Black athletic success based upon supposedly inherent genetic characteristics tends to devalue Black achievements. An emphasis on instinctive and/or innate natural qualities, also suggests by inference a lack of hard work or cognitive endeavour. Physicality is emphasised, and Black athletes are dehumanised. Hard work in training, and intelligence are not attributed to Black athletic successes, such that beliefs about Black athletic superiority are strengthened, whilst Black athletes get no credit for actively shaping their own success. Negative stereotypes that Black athletes are gifted with exceptional physical abilities, but are deficient in terms of mental capacities are strengthened. Thus, Black sporting success reinforces the racist ideology of Blacks as distinctly biologically different from Whites, and the stereotypes of being naturally suited for physical activities, but also tending to be lazier and mentally inferior in relation to Whites (Eitzen, 1999).

The preoccupation with racial differences in sporting performance has helped to produce and reinforce stereotypes, and feeds folklore and prejudices about racial groups, which Jarvie and Reid (1997) argue have contributed to discrimination (e.g. through selection and stacking), and issues of under and over-representation. Hoberman (1997) posits that the globalisation of modern sport has brought about a simultaneous dissemination of racial mythology regarding athletic performance. As Harrison (2001) indicates, when there is an inclination toward belief in a stereotype, a plausible explanation is exceedingly believable. But it is debateable how much genuine scientific evidence there is for Black genetic superiority in sport.
2.30 Evidence For Black Genetic Superiority

Those scientists who claim racial athletic superiority based on genetic factors may be claiming more than they can demonstrate (Smith, 1995). Most of the evidence behind speculated physiological sporting differences between races is anecdotal, journalistic, inconclusive or pseudo-scientific. The main scientific evidence that does exist is reviewed below.

2.31 Buoyancy

The paucity of recreational and competitive Black swimmers (Mael, 1995) is frequently attributed to a lack of buoyancy, caused by greater body density, heavier bones, and greater muscle mass (Ama & Ambassa, 1997). Whilst many accept racial genetic inheritance as the primary influence here, racial mixing, ethnicity, environment and acculturation (extent to which non-indigenous peoples blend with the host society) are important contributory factors (Villa & Nelson, 1996; Henry & Eastell, 2001). For example, the influence of ethnicity on physical culture and diet is known to cause significant within race variation in bone mineral density (BMD) (Khan et al., 2001). Thus, while studies have identified interracial differentiation in skeletal density, the relative contributions and interplay of genetics and environment are unclear (Khan et al., 2001).
Recent findings of greater BMD in Black children (Wang, 1997; Bachrach et al., 1999), confirmed earlier and similar results (Bell et al., 1991; McCormick et al., 1991). However, Prentice et al. (1990) and Southard et al. (1991) failed to discover Black/White differences in the skeletal status of children. Gilsanz et al. (1991) indicated that significant racial variation was not evident until late puberty, which questions why so few young Black children swim (Lodewyke, 2003). Elsewhere, significant differences in BMD throughout youth are reported (Li et al., 1989; Laraque et al., 1990), but it is uncertain whether these would necessarily translate to subsequent adult values, or specifically predict adult swimming performance.

It is a fairly consistent research finding that Blacks adults have a higher BMD compared to Whites (Henry & Eastell, 2001). For example, Black adults have been found to exhibit greater BMD at proximal femur, and lumbar spine, and increased cortical thickness (Aloia et al., 1996; Perry et al., 1996; Daniels et al., 1997). However, the effects of mechanical loading arising from physical activity levels might affect these values. Yet in an earlier study, where Black cadavers were found to have denser skeletons, this was particularly so in the non-weight bearing bones, where the genetic contribution is less obscured (Trotter, Broman, & Peterson, 1960, cited in Khan et al., 2001). Indeed, Seale (1959, cited in Schutte et al., 1984) claims that Black skeletons are 10-20% heavier than those of Whites. Although American Blacks seem to have significantly greater bone mass than non-Hispanic Whites, there are also large differences between Hispanic and non-Hispanic Whites (Villa & Nelson,
1996). This Caucasian variation reflects the potential for within race differences due to ethnicity and environment.

Although higher Black bone mass is considered to stem mostly from genetic factors, the genotypic inheritance of individuals with African ancestry may not be so straightforward, and thus may not be as relevant to swimming inferiority stereotypes as might be assumed. For example, Prentice et al. (1990) found that Black West African children have lower bone mass than their White British peers. Similarly, the bone mass of Black South Africans was found not to exceed that of age matched South African whites (Patel et al., 1992). Whilst the BMD of West African adult Blacks was either the same or lower than that of Whites (Prentice et al., 1991; Daniels et al., 1997; Dibba et al., 1999). Bone differences have especially been recognised between African Americans and West Africans (Henry & Eastell, 2001). Once again ethnic gradations and acculturation related differences are implicated. Nonetheless, it is well established that groups with higher bone mass and greater bone size, such as African Americans, will tend to have increased muscle mass (Villa & Nelson, 1996), and thus greater body density and less buoyancy.

Despite common assumptions, the effect of buoyancy on swimming performance has received modest consideration. It is thought to affect performance through influences on drag, and energetic cost (McLean & Hinrichs, 1998). Cureton (1951, cited in McLean & Hinrichs, 1997) claimed that above average buoyancy contributed to competitive swimming success. However, recent research is very limited. Chatard and colleagues claimed that...
buoyancy accounted for 10% of variance in 400 yard swim performance (1990a), and 6% of variance in energy cost (1990b). They also indicated that distance swimmers experienced greater buoyancy than sprinters (1990b), which could explain why the few Black competitive swimming successes have been overwhelmingly in shorter distances (Entine, 2000). Indeed, Arnot & Gaines (1986) propose that muscle power can effectively compensate for lack of buoyancy in distances up to 400 metres. However, the applicability of many buoyancy studies to competitive swimming is questionable, as measures of buoyancy used often do not accurately replicate swimming specific body positions (McLean & Hinrichs, 1997).

Utilising a swimming specific measurement method, and competitive collegiate swimmers, McLean and Hinrichs (1997) examined the influence of buoyancy on male and female performance. Relative fat distribution (females store more in thighs, males more in the trunk) and buoyancy characteristics (greater torque force causing the male feet to be lower in the water, creating more drag) suggested female swimmers would have a natural advantage due to buoyancy in a propulsion kicking task. However, no significant performance variance was evidenced. McLean and Hinrichs (1997) urged that further study is needed to better understand the influence of buoyancy on performance. This conclusion could also question links proposed by other authors between racial differences in buoyancy and swimming performance (e.g. Cunningham, 1972).
Cronk and Roche (1982) indicated that Blacks store proportionately more fat on the trunk, than on the limbs, compared to Whites. This could cause drag similar to that indicated for males by McLean and Hinrichs (1998). But this comparative data was derived from the general population rather than swimmers, and a subsequent study of male Black Africans and Canadian Whites found no difference in relative fat distribution (Ama et al., 1986). Ama and Ambassa (1997) compared African Black and European White male average ability swimmers. Whites had more body fat, which was stored relatively more on the limbs, and had better horizontal buoyancy. No significant difference was evident in vertical buoyancy, and Blacks and Whites generally had average and good buoyancy respectively. However, this study used a small sample of non-competitive swimmers (13 Blacks, 13 Whites), and skinfold sum estimates of fatness, which can only provide reasonable indications, and have a variable correlation with buoyancy.

Schutte et al. (1984) examined the density of lean body mass (LBM) in height and weight matched Blacks and Whites. Predicted densities for both groups were nearly identical, and observed densities were not significantly different. However, in contrast to the Whites, observed densities were significantly greater than densities predicted from anthropometrics and body water analysis for Blacks. The authors claimed that this was consistent with the hypothesis that Blacks have a denser LBM than Whites, speculating that this was due to more or denser muscle mass, since racial differences in BMD alone were insufficient to account for the variation. Whilst Schutte et al. (1984) concluded that the variation was sufficient to warrant separate racial formulae
for estimating body composition from body density; their speculations could only be confirmed by muscle biopsies. The sample was again small (19 White, 15 Black), and whether participants were sedentary or active was not stated.

Blacks as a group certainly seem to be less proficient at swimming than Whites (Mael, 1995). US Drowning rates are 2-3 times higher for Blacks (Campbell, 1991; Baker et al., 1992), lifeguard rescues are disproportionately high (Ellis & Associates, 1991, cited in Mael, 1995), as are failed armed forces swimming requirements (Harrell et al., 2001), and no Black swimmer has ever achieved selection for a US Olympic team (Burfoot, 1992). Campbell (1991) reiterated the research findings of less fat and less buoyancy as possible explanatory factors, adding that reduced insulation from a lack of body fat may also compromise learning and relaxation in cold water. However, relevance to competitive swimming is limited since all elite swimmers exhibit very similar body fat levels that are well below national averages (Mullen, 1993). It has been postulated that sociological factors may better explain the lack of good Black swimmers - such as better pool access for White children, country club status of swimming, lack of inner city pools, no Black role models, media attention on other sports, and non-swimming parents (Mullen, 1993; Mael, 1995).

Mael (1995) investigated swimming proficiency in a large cohort of military cadets. Initial testing indicated Black participants, accounted for 37% of classified non-swimmers, and only 2% of advanced swimmers. The best
predictor of current swimming ability was the age at which the individual learned to swim. Over 90% of Whites had learned to swim by age 9, compared to 58% of Blacks. 1% of Whites had never learned to swim, against 16% of Blacks. Interestingly, despite higher Black drowning rates overall, twice the number of White children aged 1-4 drown (Baker et al., 1992). Indicating that early exposure to swimming could lead to earlier learning, but also higher risks. Nonetheless, Mael (1995) found that Blacks were less proficient swimmers than Whites who had learned to swim at the same age. No difference was found in Black and White body mass index (BMI) scores, which provide an indication of body fat and buoyancy, and BMI and swimming ability were unrelated. Indeed, Whites with lower BMI scores were slightly better swimmers. However, BMI is a crude measure of body fat, which is in turn not the best indicator of buoyancy. Socio-cultural differences in upbringing were found to make a significant contribution to explaining variance in swimming proficiency. Mael (1995) concluded that given sufficient opportunity and encouragement Black swimming rates and abilities would improve. He reported that no military cadet at the host academy, from any population group, had failed to learn to swim by graduation in 30 years. Greater representation of Black swimmers has recently been reported at US Trials (Mullen, 1993), and at the 2000 Olympics (Berger, 2002).
2.32 Distance Running Economy and Fatigue Resistance

Despite overwhelming East African contemporary success in elite distance running (Hamilton, 2000), there have been few scientific studies which have investigated genetic explanations (Weston et al., 1999). Bosch et al. (1990) indicated that African distance runners performed at a higher percentage of maximal oxygen uptake ($\text{VO}_{2\text{max}}$), higher heart rate (HR) and higher respiratory exchange rate (RER), whilst accumulating lower levels of metabolites, for a given workload, during a simulated marathon on the treadmill. Coetzer et al. (1993) claimed that elite Black South African distance runners had superior fatigue resistance, but found no difference in oxygen consumption when expressed relative to body weight. Blacks were found to train more intensely, plus were able to sustain a higher percentage of maximal oxygen consumption during competition. It was speculated that this might be related to lower blood lactate concentrations found in the Black athletes at any given running speed. A major methodological weakness was that the main race distance of participants was not matched – Caucasians were predominantly middle distance runners, Blacks were predominantly long distance runners. In reviewing this study, Entine (2000a) reports that although White runners matched or exceeded the performance of Blacks at distances up to 5 km, Blacks were clearly superior at longer distances. This is unsurprising in the light of the subjects’ profiles. In both Bosch et al. (1990) and Coetzer et al. (1993) studies results may be distorted as they were not scaled relative to substantial differences in body mass between Black and White subjects.
Saltin *et al.* (1995a) reported that Kenyan schoolboy runners consistently outperformed Swedish national champions. Although subsequent investigation indicated that Kenyan runners were more economical than Scandinavian runners, the formula adopted in the normalisation of VO\(_2\) to account for sizeable differences in body mass, tended to accentuate between group differences in oxygen cost for given running speeds. Nonetheless, only slight differences in the ability to take in oxygen/burn energy were discovered. Modest differences observed in the time maintaining energy consumption before metabolic efficiency dropped off, might be explained by a lower accumulation of lactate in the Kenyans, which has been reported in several populations residing habitually at altitude (Rosser & Hochachka, 1993). The most likely cause of Kenyan superiority was reported as a greater running efficiency – the origin of which remained unknown (although leg structure was suspected).

Saltin *et al.* (1995b) found some differences in skeletal muscle oxidative enzyme capacity between Scandinavian and Kenyan runners, greater capillarisation around muscles, and smaller cross sectional muscle fibres. These factors could all aid in oxidation, and possibly delay fatigue onset for Kenyans. But, results are confounded by the effects of altitude exposure, which could account for such adaptations (Weston *et al.*, 1999; Hamilton, 2000). Some reported differences in relation to enzymes, metabolites, and physical efficiency may also be related to adaptations associated with hard physical training. Indeed, the high intensity of Kenyan training regimes was
alluded to in the study. Saltin has commented elsewhere that cosseted Western lifestyle may be incongruous with maintaining training programmes comparable with those of Kenyans (Channel 4, *The Difference*). Nonetheless, Saltin *et al.* (1995b) cautioned that the physiological values found for Kenyan runners were similar to those of other successful endurance runners.

*Weston et al.* (1999) reported that African and Caucasian runners differed in oxidative enzyme activity, rate of lactate accumulation and ability to sustain high intensity exercise. African 10 km runners were able to continue running at a higher percentage of peak treadmill velocity (PTV) for almost twice as long as Caucasian 10 km runners, and accumulated lactate at a slower rate with increasing exercise intensity. Since subjects had similar PTV and VO$_{2\text{max}}$ values, greater fractional utilisation of VO$_{2\text{max}}$ was inferred, associated with a metabolic mechanism.

*Weston, Mbambo, and Myburgh* (2000) found that African runners were able to achieve the same performance as Caucasian runners over 10 km, despite having a considerably lower VO$_{2\text{max}}$. The running economy of the Africans was estimated at 8% better than the Caucasians when results were scaled relative to body mass. The Blacks were able to race 10 km at a significantly higher percentage of VO$_{2\text{max}}$ compared to the Caucasians. This could potentially be an advantage arising from physiological or motivational factors, but the latter seems unlikely as RER and plasma lactate means for both groups were comparable. It was speculated that the difference might be due to higher skeletal muscle oxidative enzyme activity. Results suggested that lactate
removal may be enhanced in African runners, and were consistent with previous findings indicating that African distance runners accumulate less plasma lactate (Coetzer et al., 1993; Saltin et al., 1995b; Weston et al., 1999) and less plasma ammonia (Saltin et al., 1995b). The authors concluded there was greater running economy and higher fractional utilisation of VO\textsubscript{2max} in African distance runners, compared to Caucasians, despite no significant differences in average age, race time, body mass, body fat, or lean thigh volume. The exact origin of these differences was not fully explained, but it was speculated that the findings might partially explain the success of African runners at elite level, if the advantageous characteristics were present in that sub-population. The Africans in this study were not outside the normal range for well-trained distance runners, but were representative of the higher end.

With the exception of the studies by Saltin and colleagues (1995a; 1995b), all of the papers discussed used South African subjects. Black international success in distance running is predominantly an East African phenomenon (Hamilton, 2000). Although South African Blacks certainly enjoy disproportionate success in endurance events when compared to Whites, and Entine (2000a) claims that they share a genetic similarity to East Africans, the extrapolation of ethnographic research results across half a continent seems dubious. Furthermore, all of these studies involve laboratory based physiological tests, whose results may not necessarily translate to naturalistic settings. For example, if Weston et al. (2000) found greater running economy and higher fractional utilisation of VO\textsubscript{2peak} in African runners when compared to performance standard matched Caucasians, then why did they have almost
identical mean race times for 10 km in the first place? Similarly, the
differences found by Weston et al. (1999) did not correlate with
contemporaneous 10 km performances. The answer could be related to the
lower \( VO_{2\max} \) reported in Blacks – but if so, then this possible disadvantage
seems to counterbalance other possible advantages, such that a genetic
explanation of Black distance running success is obscured.

The samples seem very small from which to formulate generalised racial
conclusions, being mostly less than 10 subjects from each race. Plus the
volume of scientific articles in this area is limited. Findings were also drawn
from sub-elite athletes, whilst conclusions were frequently extended to
explaining Black elite performance settings. Results might be affected by
adaptations to training differences, which were often not controlled (e.g.
Weston et al. (1999) standardised distance, but not intensity). However, it is
also possible that there might be a difference in racial genetic response to
training (Weston et al., 1999). Saltin and colleagues (1995a; 1995b) results in
relation to Kenyan runners from the Kalenjin tribe, would be liable to be
affected by social factors such as a naturally high carbohydrate diet, high
status of distance running, historical association with long distance cattle
rustling on foot, and long journeys on foot to school, as well as the effects of
living at altitude. Thus, while superior Black fatigue resistance and running
economy is implicated in the highlighted studies, the complex interplay and
relative contributions of genetics, environment, conditioning, and culture, may
tend to preclude clear racial physiological distinctions.
2.33 Psychological Differences

Worthy and Markle (1970) claimed that Blacks perform well at reactive tasks (e.g. dodging, tackling), and Whites at self-paced tasks (e.g. bowling, penalty shooting). These findings were subsequently supported in relation to youth soccer players (Dunn & Lupfer, 1974). This might help to account for Black under-representation in self-paced activities (e.g. golf, swimming), and over-representation in reactive team game roles (e.g. wingers). However, the original study was methodologically flawed, using questionnaires rather than direct measures of reactivity, and arbitrarily categorising skills as reactive or self-paced (Jones & Hochner, 1973). Furthermore, Jones and Hochner (1973) found results that did not support the hypothesis, whilst Leonard (1984) claimed it did not satisfactorily explain the scarcity of Blacks in plainly reactive sports, such as fencing, tennis, skiing, and motor racing.

Jones and Colleagues asserted that Blacks and Whites exhibit different personality profiles in sport. Specifically that African Americans use sport to express their individuality, are more concerned with individual rather than team performance, and style rather than outcome (Jones & Hochner, 1973; Jones & Williamson, 1979). These differences were only examined in the context of basketball, and rest upon the unsubstantiated assumption that the distribution of personality traits is different in African Americans. Nonetheless, they were later echoed by Kochman (1981) who claimed that Black sporting style is more focused on the quality of individual performance/dominance and showboating, as opposed to White preoccupation with winning or losing.
Simons (2003) claims that Black athletes are frequently penalised for exhibiting behaviours such as taunting opponents, and showboating, but that these are a result of acquired Black cultural norms of social expression and resistance (rather than psychological differences). Simons also includes the following quote from the recent film *White Men Can't Jump*, which illustrates how popular culture can reproduce racial sporting stereotypes. “A white man wants to win first and look good second. A black man wants to look good first and win second” (Simons, 2003, p.5).

Nation & LeUnes (1983) did find some significant Black/White differences in a psychological study of 55 collegiate American footballers. Blacks were found to score higher in vigour, the chance dimension of locus of control, devolvement of mental preparation to coaches, confidence in performance even when depressed, ability to overlook past poor performances, and considering physical factors to be more important in explaining performance than psychological. However, there is scant evidence on the validity of the Sport Mental Attitude Survey, which was used in the study, and not surprisingly with such a small overall sample, the authors described their findings as tentative, particularly in relation to how these differences might translate into sports performance.
2.34 Sprinting Related Differences – Anthropomorphic Evaluations

The success of Black sprinters and jumpers in the 1930s, triggered speculation about possible racial physiological advantages, such as a longer heel bone and Achilles tendon, and a higher calf (Wiggins, 1997). The first serious scientific consideration of the issue, by Cobb (1936, cited in Entine, 2000a) indicated that performance variation between great Black and White sprinters was anthropologically insignificant, and found no Black anatomical advantages. A general lack of racial homogeneity was noted; specifically the amount of within group body variance among sprinters. For example, the heel structure of Black Olympic champion Jesse Owens was unremarkable, whilst his calf was of the type commonly considered as Caucasian (lower muscle, shorter tendon). Cobb (1936, cited in Wiggins, 1997) concluded that appropriate training and motivation, as well as inspirational role models, were crucial in developing sprinting excellence. Whilst Cobb examined a large sample of Black and White skeletons in his anthropomorphic evaluation, he only compared the foremost individual Black and White living sprinter.

Metheny (1939, cited in Wiggins, 1997) reported statistically significant differences in bodily proportions between 51 White and 51 Black University students (described as almost all of West African ancestry, although method of determination was not explained). Longer limbs, narrower hips, and lower lung capacity in the Blacks were claimed to have potential athletic performance implications - i.e. improved throwing and jumping, better running economy, and lack of endurance. But these speculations were described as
tentative, and part of a much more complex performance puzzle (Metheny, 1939, cited in Entine, 2000a).

Tanner (1960), proposed ideal physiques for Olympic sports, based on the anthropomorphizm Muslim assessment of 137 Olympians. He asserted that there were large significant racial differences in body types that could boost Black athletic potential in events like sprints and jumps, and hamper performance in endurance events. However, Tanner also found substantial overlap amongst competitors, and did not demonstrate precisely how athletically significant the physiological differences were, nor how they translated into outstanding athletic performances. He claimed that Blacks are well suited for high jump (where they have experienced only limited success) and pole vault (where they have virtually no representation). Tanner (1960) admitted that economic circumstances probably best explained the prevalence Blacks in competitive sport, but paradoxically only studied 15 Black athletes amongst his large sample.

Carter (1976) also examined Olympians in comparing Black and White athletes’ body proportions. Blacks were found to have narrower hips and longer limbs, and the author postulated a biomechanical advantage in running and jumping. However, results did not reflect actual differences between the athletes. They were proportionality differences when measurements were adjusted to a standard height (phantom values). Furthermore, it seems surprising that the differences identified would provide specific performance benefits across the diverse events studied - long, triple, and high jump, and races ranging from sprint to long distance.
Hunter (1988, cited in Entine, 2000a) examined the physical performance of 74 Blacks and 62 Whites in laboratory and field tests. Subjects were matched for age, height, weight, lean body mass, and body mass. No difference was apparent in anaerobic performance in laboratory tests. However, Blacks had a significantly lower body fat percentage, and performed better in the vertical jump and 40 yard sprint. A subsequent analysis of covariance accounting for body fat differences, largely discounted the Black anaerobic advantage. Whilst a possible physiological advantage was implicated, specifically how less fat would be advantageous in relation to sprinting and jumping performance was not fully clarified.

Several authors have indicated that speculation about ideal body shapes does not account for recognisable real world variation between the physiques of sprint champions (e.g. Smith, 1995; Price, 1997; LeUnes & Nation, 2002). In the absence of large sample studies of elite athletes, it is impossible to declare that one physical trait accounts for split second success. Whilst a specific factor such as more fast twitch fibre, would strongly indicate a performance advantage in sprinting, this is negated by the fact that all elite sprinters regardless of race are likely to have a higher proportion of this muscle type (Mullen, 1993). Furthermore, it is accepted that a variety of physiological factors interact in contributing to performance, obscuring relative contributions.
2.35 Sprinting Related Differences - Anaerobic Performance

Ama *et al.* (1986) compared muscle fibres extracted from the thighs of a dozen sedentary White and Black students. The latter were found to have proportionately more fast twitch muscle fibre (an average of 67.5% versus 59% for the Whites), and anaerobic enzyme activity. Although these were relatively small differences, the authors suggested that given a normal distribution curve, there would be more Black individuals than Whites at the upper end of the curve where Olympic sprinters would be found. Just how accurate such a prediction, gleaned from a small sedentary sample, is for the sub-population of elite sprinters is open to debate. Furthermore, the complexity and unreliability of muscle-fibre typing procedures is quite well established (Hobermann, 2000).

Nonetheless, this study spawned several other experiments on racial anaerobic performance, which would presumably be affected by variation in muscle fibre type and anaerobic enzyme activity. Interestingly, none found results that the authors seemed to expect. Boulay, Ama, and Bouchard (1988) found a lack of racial differences in a maximal cycling task. Ama *et al.* (1990) speculated that this might be due to the Black subjects' unfamiliarity with cycling, but subsequently found similar racial anaerobic performance power profiles and capacities among sedentary Black and White subjects in a knee extension task (and no differences in fat free mass or body mass index). However, Black subjects experienced greater fatigue after 30 seconds of intense exercise, which the authors proposed might be due to slightly more
fast twitch muscle and anaerobic muscle enzyme activity. Intriguingly, they discussed several possible reasons why their results "...appear somewhat contradictory with the common observation that Black athletes are generally more successful than White athletes in running events of short duration." (Ama et al., 1990, p. 510). It was recognised that most successful Black athletes are predominantly North American, are likely to have access to exceptional training environments, and exhibit racially mixed gene pools, and are thus perhaps not representative of African Blacks. However, they reverted to possible genetic explanations in hypothesizing that Blacks may respond more favourably to sprint training.

Simoneau et al. (1991) concluded an equivalent Black/White capacity for adaptation of skeletal muscle metabolic characteristics in response to a 12-week high intensity intermittent training programme. Levesque et al. (1994) observed that the muscle fibre type of sedentary Black and White males changed similarly in response to a simulated sprint training programme. Their conclusion, that striking observed differences in Black and White abilities in maximal short-duration exercise could not likely be explained by differences in training adaptations, seems to indicate that the authors may have undertaken the study based on existing athletic racial preconceptions. In contrast to Ama et al. (1986), no significant differences in fibre type proportions prior to training were reported, despite similar sample size, sample type, and fibre typing method. It seems that the original findings of Ama et al. (1986) in relation to racially based muscle fibre differences were either inaccurate, or do not necessarily translate into anaerobic performance advantages. Nevertheless,
this remains the oft-quoted key study in the area (e.g. Burfoot, 1992; Entine, 2000a, Taubes, 2000), and forms the basis of a commonly perceived racial stereotype (Johnson et al., 1999).

The common perception that Blacks are more relaxed athletes under pressure seems to be almost entirely based on anecdotal evidence from coaches and athletes, and possibly on historical stereotypes associating Blacks with laziness, and dancing (Hoermann, 1997). Although no scientific foundation appears to exist, the anthropologist, Carleton S. Coon, commented in a magazine article, that Blacks appeared "loose-jointed", and had an animalistic gait indicative of sprinting and jumping ability (Smith, 1964). In a later magazine article the dubious method of analysing still photographs was used by a biomechanist to compare Black and White athletes; with the conclusion that the former had a far more relaxed gait (Underwood, 1988).

Aside from scientific studies, several journalistic articles have claimed Black genetic advantages in sport (e.g. Smith, 1964; Kane, 1971, Burfoot, 1992; Taubes, 2000). Frequently, these feature the comments and opinions of experts. For example, the aforementioned anthropologist, Coon, expressed the belief that Blacks inherited physiological adaptations - such as longer heel bones, more slender calves, and longer Achilles tendons - allowing them to excel in running and jumping (Smith, 1964). Kane (1971) produced a magazine article, drawing upon expert comment from scientists, coaches and athletes. He argued that Black over-representation indicated superiority based upon genetic factors such as longer limbs, narrower hips, more tendon to
muscle, and eugenics arising from slavery. Largely such articles re-report the findings of the studies previously reviewed, and/or reflect the subjective experiential evaluations of associated experts.

2.36 Summary of Supposed Black Genetic Advantages for Sprinting

The supposed physiological characteristics which might explain the sprinting success of Blacks of West African ancestry, that have arisen from studies of athletic racial differences may be summarised as follows - longer limbs, less body fat, greater muscle mass, narrower hips, longer tendons, longer heel bone, more slender calves, more fast twitch muscle, greater anaerobic enzyme activity, superior relaxation (Coakley, 2000; Entine, 2000a).

However, the scientific evidence behind these supposed differences is far from conclusive. Firstly, the exact definition and categorisation of race is problematic in relation to the samples. Secondly, many of the research questions appear to have been based on common preconceptions of racial differences. Science does not take place in a moral and political vacuum, and scientists cannot claim immunity from prejudices and influences. Thirdly, many studies feature particularly small samples, and thus generalisations may not be representative of, and are difficult to extrapolate to, large population groups. Fourthly, results are often inappropriately extrapolated from one sub population to another. For example, from sedentary individuals to athletes, from sub-elite to elite, and from West Africans to those of African descent living in Britain and America. Perhaps the worst example of this is in relation
to Black babies, where, as Smith (1995) has summarised, several studies have indicated earlier physiological and motor development in comparison to Whites (e.g. Cintas, 1988; Malina, 1988). Entine (2000a) has claimed that this would lead to them becoming athletically accomplished adults, but fails to recognise potentially complicating pre and postnatal environmental factors (Malina, 1988; Hobermann, 2000). Fifthly, whether significant racial differences that are indicated, are specifically significant in relation to athletic performance settings is almost impossible to determine (Samson & Yerles, 1988). For example, it has been speculated that most Whites play as posts in professional basketball because of greater White numbers at the upper end of the overall population height range (Eitzen & Furst, 1989; Entine, 2000a). But surely height should promote performance across all basketball positions, and why do large numbers of Blacks also occupy post positions? Sixthly, the confounding complexity of the relationship between performance and physiological factors obscures the implications of any such differences. Kukolj et al. (1999) found that most of the standard anthropomorphic, strength, and power tests were poor predictors of sprinting performance, and recommended more specific and complex assessments. Seventhly, the amount of scientific studies relating to racial athletic differences can by no means be claimed to be large, and most are not very current. This may be, as Entine (2000a) claims a result of political sensitivity, or the aforementioned methodological difficulties. Eighthly, even if small average group differences were clearly established and accepted, it would mean nothing in relation to individual athletes. And finally, if an individual were blessed with a particular genetic inheritance that could give them specific athletic advantages, but had no
motivation or opportunity to develop those capacities, they would never emerge as a champion sprinter.

Smith (1995) emphasises that any athlete must train very hard to get to the top; and therefore, claims that Black athletes' achievements are the result of natural abilities, tends to devalue their efforts and confuse the issue. Indeed the stereotype that Black athletes are naturally gifted, most likely contributes to the negative stereotype that Black athletes are lazy trainers, such that they would not have to work so hard, or with so much discipline, to achieve excellence (Long, Carrington & Spracklen, 1997; McCarthy & Jones, 1997).

In a socio-historical study of US sprinting, George (1994) highlighted that Blacks first came to dominate sprinting in the 1930s, but that Whites were more successful in the 1940s and 1950s, before virtually disappearing from elite levels from the 1960s onwards. Whilst over 50% of Olympic sprint champions between 1960 and 1984 were Black, they virtually all competed or trained in the US, suggesting a strong cultural influence (Samson & Yerles, 1988). Whites still constituted the majority of sprint champions at Munich 1972, and at Moscow 1980 when there was a US boycott (Samson & Yerles, 1988). Thus, the supposed genetic superiority of Black sprinters appears geographically isolated, and inconsistent over time.

In conclusion, we do not have clear genetic explanations for Black sporting successes, and we not know the relative contribution of sociological explanations (Eitzen, 1999).
To what extent are differences between population groups due to biological influences such as genes or to environmental conditions such as access and opportunity? If environmental factors are emphasised (e.g. Davids, 2000), the assumption is that differences can be modified; if biological factors are emphasised (e.g. Bouchard, Malina, & Pérusse, 1997), the assumption is that differences are relatively stable and unchangeable (Martin & Parker, 1995). Thus, coaches who tend to believe the latter, and reject the former, may overestimate the differences between groups, and thus perceived potentials of athletes (Martin & Parker, 1995). Clearly we are not all born equal, and where we start from in terms of genetic inheritance has a bearing on where we finish in terms of athletic performance. But we develop excellence through adaptive qualities resulting from a number of other factors, such as cultural values and strenuous training (BBC Radio 4, 2002). Singer and Janelle (1999) recently highlighted the interaction between genetics and deliberate practice, and appealed to advocates at both extremes of the nature-nurture continuum for a more integrative approach in research into expert sports performance. Indeed, it is increasingly accepted that nature and nurture inextricably interact, with certain genes being activated or suppressed in response to environmental stimuli, via autocatalytic feedback loops (Shermer, 2000; Ridley, 2003).

Although most scientists would recognise that both nature and nurture contribute to group differences (and that relative contributions are virtually
impossible to disentangle), the beliefs of individuals such as coaches may vary in relation to the perceived importance of each factor. As Coakley (2000, p. 260) put it, they may be "Jumping to genetic conclusions". An indication of how such a view might be erroneous is provided by a study of Olympian identical twins, in which the same training, coach, and highly similar physiological test profiles were insufficient to explain individual differences in athletic achievement. The authors discovered that differing personality traits were the most likely significant influence (Klissouras et al., 2001). Although the Human Genome Project may eventually provide some clarification, the current situation is such that the nature-nurture question cannot be addressed with any degree of scientific rigour, and that the hypothesis that certain population groups are bestowed with crucial genetic advantages is virtually untestable due to the diverse variables that affect elite athletic development (Taubes, 2000). We certainly do not know which genes are involved in the coding of the ability to run 100m (Shermer, 2000).

Those who emphasise genetic variation often highlight racially based medical differences. For example, significantly higher Black hypertension incidence has been considered to be genetically based. However, lower rates in rural West Africans, than African Americans, implicate social factors such as stress rather than genetics (Cooper, Rotimi, & Ward, 1999). The debate about the medical importance of racial groups is still raging (e.g. Cooper, Kaufman, & Ward, 2003; Burchard et al., 2003), and biomedical studies suffer from the questionable validity of social definitions of race as a scientific variable (Bamshad & Olsen, 2003). Entine (2000a) reports that research into muscular
dystrophy has revealed a defective gene, that blocks explosive power in fast twitch muscles. This has been found in 20% of those with Caucasian and Asian backgrounds, but only 3% in African Zulus. It has been proposed that the need for this speed related gene is dying out as it becomes less crucial for survival, and Entine suggests this might affect trainability in some population groups. But, is this another backhand way of insinuating Black primitiveness? Furthermore, where are the elite Zulu sprinters?

An extreme view sometimes expressed is that Black athletes are genetically superior as a result of selective breeding during slavery (e.g. Kane, 1971). However, the short time period, lack of a concerted breeding programme, and racial intermixing make this a dubious proposition (Hoberman, 1997). Hayes and Sugden (1999) make the amusing observation that the best African runners and jumpers would presumably have avoided the slavers anyway. In comparison, despite centuries of deliberate selective breeding, and high rewards, racehorse performance is not getting significantly faster, and has been estimated as only 35% genetically determined (Shermer, 2000). Besides which, the average genetic difference between two individual human beings has been estimated to be as little as 0.1% (Ridley, 2003), with surprisingly little variation in DNA between races, despite prolonged cultural and ethnic separations (Connor, 2003), probably due to a relatively small anthropological bottleneck of ancestors who migrated out of Africa in prehistory (Lander, 2000; Bamshad et al., 2003).
Athletic performance can only be explained by a complex combination of factors, including opportunities, motivation, and economics. Whilst average physiological differences between races may exist, they are only part of the athletic performance picture; and have little bearing upon the achievement of individual potentials. However, simplistic assessments based on stereotypes are both prevalent and appealing, and may result from faults in information processing.

2.40 Schema Theory

It has been suggested that stereotypes are rooted in schema theory, which proposes that humans have a mental framework for the categorisation of individuals (Atkinson et al., 1993). These cognitive schemas result from our accrued observations, beliefs, and knowledge, and are shaped by our experiences. They enable us to process abundant information rapidly and economically by organising knowledge based on the most distinctive social features (Levy, 2000). Schematic processing models of stereotyping have gained considerable acceptance and increased application within cognitive psychology, as a common activity involving adaptive categorisation of social information into simple representational units (Hewstone, Hantzi, & Johnston, 1991; Levy, 2000). Stereotype schemas tend to be stored subconsciously, activated automatically, and are likely to have some bearing on exchanges with individuals perceived to be members of stereotyped groups (Bargh, Chen, & Burrows, 1996). Several schemata may be linked in semantic networks; and the closer two schemata are, the more likely it is that they will
be activated simultaneously (Hewstone, Stroebe, & Stephenson, 1996). For example, Blacks are natural athletes → Blacks are lazy; Blacks are instinctive athletes → Blacks are poor decision makers.

Thus, stereotyping represents a common and habitual cognitive process. A method of substituting absent information concerning persons we are unfamiliar with, by applying supposed qualities of their perceived social grouping. Otherwise, we would have to become intimately acquainted with everyone we ever meet (Harrison, 2001). It is an attempt to use cognitive shortcuts (condensing and categorising information) since we lack the time, processing capacity, or motivation to deal with the superabundance of information we are constantly inundated with (Fiske & Neuberg, 1990). Although these cognitive adaptations tend to reflect our accrued attitudes towards other social groups, they may arise less from malevolence (e.g. overt racism) than from our attempts to simplify a complex situation (Myers, 2001).

The paradox is that the price of cognitive economy is often distortion and overgeneralisation (Atkinson et al., 1993). For example, when stereotypes are maladapted beyond actual group differences to infer negative racial implications, when they cause mental representations to differ significantly from actuality, or when they warp the perception of causal relationships (e.g. the common attribution of Black athletic success to athletic prowess, and White athletic success to effort, hard work, and intelligence). In the absence of complete attributes people may infer or construct characteristics from past memories (Hewstone et al., 1991). For example, if a White person has little
regular contact with Blacks, then they may think that most Black people are
good athletes similar to those observed via the media. Human cognition may
be viewed in terms of defaults, whereby the mind is conditioned to respond to
dynamic environmental alterations. Where scant pertinent information about
an individual is available, there is a tendency to rely on default standards or
stereotypical assessments. The more familiar we are with a person, the higher
we construct our default structure threshold, and the less we resort to
generalisations (Ornstein & Ehrlich, 1989).

When one possesses stereotypical views of another group, observations of
behaviours are not totally objective. Due to a premature cognitive commitment
there is a tendency to search for confirmation bias - information that confirms
our preconceptions (Myers, 2001). Evidence corroborating the implications of
the stereotype receives more attention, whereas contradictory behaviour is
attributed to situational factors or even ignored. For individuals with firm
stereotypical beliefs even ambiguous behaviours are interpreted as
confirmatory (Gilovich, 1991). Furthermore, biased questions may be
employed that assume the validity of the stereotypical view, and lead the
answer in that direction. The search for information may be terminated sooner
when that obtained confirms stereotypical beliefs (Hamilton, Sherman, &
Ruvulo, 1990), whilst contrary information received is often more critically
analysed. Essentially, information about other groups is processed differently
than information about our own (Ostrom et al., 1993). Exceptions to the rule
are often subjected to sub-categorisation, which serves to uphold the
dominant stereotype (Myers, 2001) — "you're different from the others, you're one of us".

Dyer (1980) defined dichotomous thinking as the compulsion to create and defend over simplistic categories, and to be intolerant of ambiguity, such that intellectual laziness and cognitive atrophy result. He further described the ultimate dichotomy, whereby perceivers produce positive descriptions of behaviours in relation to their group, but the same behaviour is viewed as negative in relation to another group (e.g. White sprinting success attributed to hard work, Black sprinting success attributed to natural abilities). Ultimate attribution error occurs when a stereotyped group member's negative behaviour is attributed to their disposition, but positive behaviour is explained away by situational factors or as a special case (Pettigrew, 1979). For example, the achievement of the last White sprinter to win 100m Gold at the 1980 Moscow Olympics is often explained away by the US boycott of the games. When an individual tends to believe in a stereotype, a possible associated explanation becomes extremely credible, with little motivation to disconfirm the attribution, or recognise flaws in reasoning (Harrison, 2001).

Hewstone et al. (1991) and Levy (2000) confirmed the pervasiveness of race as a key organising principle in memory categorisation. Resultant stereotype schemas function to preserve group beliefs, sustain distinctiveness, and justify collective actions (Oakes, Haslam, & Turner, 1994). Widespread stereotypical thought processes were recently indicated in a survey where most respondents considered that Whites were better suited for golf and
hockey, whilst Blacks were better suited for basketball, boxing, and sprinting (Harrison, 1999). Steele (1997) also provided evidence of the prevalent perception of Black athletic superiority in the general population. Thus, being Black denotes identification with both general athletic excellence, and specific sports.

2.41 Self-Stereotyping

Blacks themselves may buy into athletic stereotypes, especially through media exposure to potential role models (Hoberman, 2000). For a group with limited social opportunities, the power of such models of highly visible success and achievement as Michael Jordan, Lennox Lewis, and Linford Christie, should not be underestimated. Black people may find it very attractive, and confidence boosting to accept that they are gifted with natural ability. Several famous Black athletes, such as Carl Lewis, and O.J. Simpson have espoused belief in racially based natural athletic abilities (Entine, 2000a). However, such self-stereotyping may also invite associations with animalistic qualities and intellectual inferiority (Harrison, 2001).

Self-schemata are believed to be self-perceptions arising from prior experiences, and can be considered as the psychological outcome of social pressures influencing our development (Harrison 1999). Thus, shared experiences rather than shared genes may be viewed as linking individuals psychologically, and influencing the development of common schemata (Oakes et al., 1994). These may not only define past identities, but more
importantly predict future possible identities, biasing individuals against choices incompatible with self-schemata (Markus & Nurius, 1986). In a particular domain this can enhance cognitive processing of schema consistent information and hinder information processing that is incongruent with self-identity (Harrison et al., 1999). Thus, effort may be focused towards developing abilities deemed suitable for a particular social group (Harrison, 2001). For example, guiding Blacks towards more enthusiastic participation, practice, and persistence in specific sports, with elevated expectations for future success. Indeed evidence exists of racially based self-schema in sport, with African American males shown to exhibit greater desire for participation in specific activities (Coakley, 2000, Harrison, 1998). Harrison et al. (1999) found that the self-schemas in early adolescents of African American descent were significantly different from, and less diverse than those of Whites, and overwhelmingly conformed to accepted Black sport stereotypes – e.g. basketball, boxing and sprinting. White self-schemas were significantly more likely to relate to swimming. Black males expected to reach higher levels of sporting competition than Whites, and reported practicing and participating more regularly. However, there was no significant difference in perceptions of effort required to become accomplished. Harrison et al. (1999) concluded that schema development for particular sports does vary significantly by race, and that this might provide a new perspective on racial performance disparity in certain sports.

Being the target of a negative stereotype that is made salient, about a social identity that is perceived as important, can cause considerable distress and
concern for members of a stigmatised group, and trigger defensive mechanisms (Allport, 1954). Research has evidenced the negative effects of overt racial stereotyping upon the performance of Whites versus Asians in maths (Aronson et al., 1999), and Blacks versus Whites in relation to blood pressure (Blascovich et al., 2001). Sport seems to constitute a rare domain in which negative stereotypes are commonly applied to Whites, who may consequently suffer psychologically. Thus, the theory of stereotype threat (Steele & Aronson, 1995; Steele, 1997) holds that athletic performance may be adversely affected by heightened anxiety, and the threat to self-esteem. Stone et al. (1999) found that performance on a golf task was depressed by triggering negative self-stereotypes – Blacks performed worse than controls when it was described as a test of sports intelligence, Whites performed worse when it was described as a test of natural athletic ability. This suggests that a similar mechanism may operate in reverse, with positive self-stereotyping acting as an important factor in enhancing athletic success. Indeed, Walton and Cohen (2003) recently proposed a stereotype lift effect, after finding that a non-stereotyped group’s members received a performance boost when a negative stereotype about an outgroup was linked to an intellectual test, compared to when it was not. This might translate into anxious poorly performing White sprinters, and confident and relaxed optimally performing Black sprinters. Baker and Horton (2003) recently argued that stereotype threat may help to perpetuate East African distance running dominance, by attributing racial differences to stable external factors. Thus, disempowering White runners by strengthening perceptions of inferiority, and increasing anxiety (particularly at elite levels). In the long-term stereotype
threat can lead to dissatisfaction, withdrawal of practice effort, disidentification, and dropout (Baker & Horton, 2003). Hence, internalised stereotypes ultimately can affect sports participation choices (Coakley, 2000), even at a subconscious level (Baker & Horton, 2003).

Athletic superiority constitutes a rare positive Black societal stereotype, and is associated with athletic fame and high rewards. Furthermore, sport may offer one of the few social opportunities for Black creative expression of style and masculinity (Spraggins, 1999). Therefore, it is perhaps unsurprising that a domain, which offers favourable comparisons with other groups and raises the collective self-esteem of a largely disadvantaged group, results in the perpetuation of self-stereotypes. Harrison, Harrison, and Moore (2002) argued that Nigrescence theory (Cross, 1995) might offer a useful conceptual framework for understanding the relationship between Black racial identity development and that of athletic identity. Developing skills in specific activities may be a powerful means of establishing social acceptability and group membership, and thus to the development of Black identity. Thus, Black youths may be under social pressure to gain respect and approval through participating in particular sports and developing certain abilities. The powerful influence of self-schemas and racial identity may also influence educational performance and occupational patterns. For example, Edwards (1986) reported that Black families were four times more likely to push their children towards careers in sport, often at the neglect of other areas of personal and cultural development.
2.42 Influence Upon Education

Some Black youths hone athletic skills at the expense of academic competencies (Lederman, 1992). This sporting over-investment can become “A treadmill to oblivion rather than the escalator to wealth and glory it was believed to be” (Edwards, 1986, p.33). Research has indicated that the majority of young African Americans believe that a professional sports career is attainable (Eitzen, 1999). Hoberman (2000) reports that 66% of African American teenagers believed they were capable of supporting themselves as professional athletes. Statistically their odds are slightly better (e.g. 1 in 10,000 White, versus 1 in 3,500 Black male American high school athletes), but are long enough to make this a doubtful career choice (Sage, 1990).

Lucrative American collegiate sport may attract Black students on the basis of athletic ability without offering adequate academic encouragement and support (Spignier, 1993). Subsequent academic under-achievement then serves to reinforce the Black stereotype of being physically talented, but lacking in intellectual ability. However, Lapchick (2000) highlights that the common perception of lower graduation rates for student athletes is incorrect, regardless of race. Nonetheless he qualifies that a higher percentage of White student athletes graduate, and that educators are recognising their poor record at graduating all Black students. There is an associated history of academic underachievement among UK African-Caribbeans (Rhamie & Hallam, 2002).
Hartmann (2000) describes how Black sporting success can reinforce and reproduce racial stereotypes, and allow limited opportunities for equality but that sport can also provide a site of potential struggle and challenge against these factors. Carrington (1998) highlighted that UK sport can provide a form of cultural resistance to racism, that a sports club can become a symbolic marker of Black community, and that it can also serve as a form of claim to manhood and recognition by White others. Thus, for many Blacks sport can become associated strongly with image (a "cool pose"), masculinity and a means of self-expression (Majors, 1990). However, such associations are also married to negative stereotypical images of laziness, aggression and anti-intellectualism.

Black association with physicality may serve to subvert intellectual development. In the Black community academic achievement is sometimes equated with unmanliness and racial disloyalty. The perception that academic effort is "acting White" (Ogbu, 1990), can lead to indifference to valuable educational opportunities, and strengthen assumptions of Black unintelligence (Hoberman, 2000). Thus, Lapchick (2000) reports that 62% of Americans think Blacks are not as hard working as Whites, and 53% think they are less intelligent. Furthermore, research evidence indicates that stereotype threat can significantly depress Black intellectual performance (Steele & Aronson, 1995; Steele, 1997).
2.43 The Self-Fulfilling Prophecy

The prospective influence of communicated expectations on subsequent behaviour is known as the self-fulfilling prophecy effect (Rosenthal & Jacobson, 1968). This phenomenon is well established in education (Horn, Lox, & Labrador, 2001). McMormick and Noriega (1986) found that White students were perceived more positively and awarded more positive reinforcement than Black students, who were praised less, criticised more, and received less feedback. Carrington (1983) revealed that British teachers tended to channel Black pupils towards sports, as a result of their perception of these students as being more physical than academic. Recently Hayes and Sugden (1999) established that among 50 English physical education teachers, 52% perceived that Black pupils were disproportionately successful at sport, 82% that Black pupils were advantaged in some sports, 56% that they excelled in athletics particularly, and 74% that physiological reasons explained this success (e.g. citing more fast twitch fibres, and more muscle). Proponents of biological determinism might claim that PE teachers are in a good position to judge the truth of such issues. But some even mentioned boxing, a prohibited curriculum sport, as one in which Black pupils excelled! Whilst a relatively small sample, this study provides strong evidence of adherence to stereotypes, and possible reinforcement via resulting expectancies.

Evidence indicates that the self-fulfilling prophecy phenomenon exists in elite sport settings, though results in non-elite environments are equivocal.
(Solomon et al., 1996a). Otherwise known as expectancy theory, the self-fulfilling prophecy effect upholds that coaches' expectations arise from a range of trigger cues, such as race, and are communicated to athletes through verbal and nonverbal interactions (Martinek, Crowe, & Rejeski, 1982). In the expectancy cycle, coaches' expectations and associated behaviours become prophetic of athletes' perceptions and subsequent behaviour (Sinclair & Vealey, 1989). For example, in basketball, it has been shown that high and low expectancy athletes receive differing amounts of feedback from coaches (Solomon and colleagues, 1996a, 1996b, 1998).

Coaches adhering to stereotypical views regarding racial athletic ability may demonstrate disparity in their expectations. For example, Black sprinters may elicit higher expectations, and subsequently be assessed against higher performance standards. Coaches may hold to intellectual stereotypes, which result in overly negative evaluations of Black athletes' leadership performances (and consequently limited opportunities for gaining influential positions) based upon supposed cognitive shortcomings.

Two types of self-fulfilling prophecy may operate. The true self-fulfilling prophecy, where an original expectation summons the actual predicted behaviour; and the seemingly fulfilled prophecy where expectations alter the subsequent behaviours of another, such that it is hard to disprove the original predictions (Harrison, 2001). An example of the former might be that a sprint coach assumes that a new Black athlete will have more competitive success at sprinting than a new White athlete, and through that coach's subsequent
(differing) behaviours to the athletes, and their reactions to these behaviours, it becomes so. An example of the latter might be that coaches tend to push White athletes towards longer distances, because they perceive that Black athletes are ascendant in sprinting, and so the original expectation of ascendancy is reinforced. Furthermore, the coach's expressed opinions, reinforced by those of the athlete's peers, may become significant factors in forming a "non-sprinter psychology" in White minds (George, 1994).

Because stereotypes play a significant part in the development of expectations about the behaviour of others (Harrison, 2001), they are inextricably linked with the theory of the self-fulfilling prophecy. Expectancies are readily shaped by the activation of subconscious habitual stereotypes, which tend to manipulate how a person might interact with a person from a stereotyped group (Hamilton et al., 1990). Since individuals with stereotype-based expectancies are usually oblivious of the process, and fail to distinguish resulting behaviours as fulfilled expectations, it is difficult to persuade them that they contributed to the behaviour or that their original stereotypical viewpoint was erroneous (Harrison, 2001). Whilst scholars have speculated that the self-fulfilling prophecy effect might be pertinent in regards to coaching and race (e.g. Smith, 1995), little empirical evidence exists. Solomon et al. (1996a) did find that Black basketball players received more instruction, whilst White players received more praise, which might conform to natural ability and hard working stereotypes respectively. However, the sample was small and results were not statistically significant. Nevertheless, coaches adhering to stereotypical views about racial athletic aptitudes are highly likely to have
differing expectancies of athletes, apply different performance standards, and
treat athletes differently, such that progress may be inhibited or facilitated.
Horn, Lox, and Labrador (2001) highlighted the need for future research
examining the interaction between coaches' expectations and athletes' race.

2.5 Media Representations

The media have tremendous power in shaping stereotypical images, and
reproducing societal assumptions with a commonsense legitimacy, to vast
audiences (Sabo & Jansen, 1994). Eastman and Billings (2001) highlighted
that media comments provide a conceptual framework for the sports
experience, which fans often apply to non-sporting contexts. Agenda setting
theory (McCombs & Shaw, 1972) proposes that although the media may not
directly tell the audience what to think, it could indirectly guide them towards
what to think about (Eastman & Billings, 2001). For example, in a society
where different racial groups often remain largely separated, media over
exposure of exceptional Black athletes tends to distort judgement of the
general athleticism of the group, and can predispose viewers to stereotype
schema (Myers, 2001). For instance, contributing to the myth that sport is a
way to escape poverty for Black people (Eitzen, 1999), when in actuality, only
3,500 Blacks are employed as professional athletes in the USA (Coakley,
2000), compared to over 30,000 Black doctors and lawyers (Harrison, 2001).

Various television programmes have periodically featured the issue of Black
athletic superiority, invariably reproducing stereotypes and causing
controversy. In America, baseball executive Al Campanis regurgitated the Black sinker stereotype in relation to swimming, and Black unsuitability for sports management on ABC in 1987; sports commentator Jimmy Synder was sacked by CBS, in 1988, after espousing links between Black sporting superiority and selective breeding through slavery; also in 1988, NBC produced *The Black Athlete: Fact or Fiction*, in which several largely unsubstantiated physiological stereotypes were revisited (Sailes, 1991; Shermer, 2000). In Britain, a 1990 BBC documentary *The Race Game* (Horne, 1996), and more recently Channel 4’s *The Difference* (2002) examined issues surrounding disproportionate Black success in some sports. Similarly, magazine articles such as *Sports Illustrated*’s “An Assessment of Black is Best” (Kane, 1971), *Ebony*’s “Are Black Athletes Naturally Superior?” (Rhoden, 1974), and *Runners World*’s “White Men Can’t Run” (Burfoot, 1992) have periodically amalgamated old evidence, anecdotes, and observations. Lapchick (1998; 2000) highlighted that daily newspapers may also reproduce stereotypes, since most of their sports fans are White, and 90% have no Black sports reporters. Soar (2001) asserts that the frequent primal image of the Black athlete in advertising has become the most visible definition of Black masculinity – particularly citing Nike’s employment of aestheticised images of the Black male body in motion.

Most media related research indicates some evidence of racism in sports coverage (Denham, Billings, & Halone, 2002), with an identifiable tendency in the American media to attribute the achievements of Black athletes to natural abilities, whilst White successes are attributed to intelligence and hard work.
(Sage, 1990; Davis & Harris, 1998). Thus, Black athletes are expected to achieve athletic stature, whilst White athletes are perceived to have to overcome the odds in order to achieve. This could constitute a covert justification of White failure via a stereotype of athletic disadvantage, whilst degrading Black achievement via a stereotype of innate athletic advantage (Edwards, 1969; Dewar, 1993). For example, differential treatment in broadcast commentary was indicated by Rainville and McCormick (1977), who reported disproportionate praise for White, and disproportionate criticism for Black professional American football players. Analysis in American football by Jackson (1989) revealed significantly more “brawn” related comments for Black players, and significantly more “brains” comments for White players.

Sabo and colleagues (1994; 1995) indicated that media producers were recognising the need for unbiased treatment of different racial groups. Messner, Duncan, and Jensen (1993) and Sabo et al. (1996) noted the implementation of sensitivity training and communication coaching in an effort to avoid television broadcasters racially stereotyping and commenting inappropriately. However, Messner et al. (1993) interpreted these efforts as superficial, whilst Davis and Harris (1998) cautioned that suppressed overt racism might simply evolve into more subtle methods. Although Polley (1998) highlighted improved opportunities for Black ex-athletes in Britain to access sports commentary and product endorsement roles, McCarthy and Jones (1997) warned that even if the media were genuinely attempting to project ostensibly positive images, excessive exposure of successful Black athletes could easily fuel stereotypes of Black physicality, and associations with a lack
of intellectualism. Dufur (1998) reported that the physique and physicality of White athletes was rarely emphasised in athletic advertising, whilst Black athletes were invariably portrayed as innately gifted.

Sabo et al. (1996) revealed scant bias against Black athletes in an analysis of several televised international events. However, Eastman and Billings (2001) concluded that traditional racial stereotypes continued to permeate sports commentary, after investigation of college basketball games revealed that Black players tended to be stereotyped as naturally athletic, quick and powerful, while Whites were praised for hard work, effort and intelligence. A subsequent study of US television coverage of the 2000 Olympics, found that Black athletic success was consistently attributed to innate physical qualities, and White athletic success to greater commitment (Billings & Eastman, 2002).

Denham, Billings, and Halone (2002), in a content analysis of commentary on elite collegiate basketball matches, found that while Black athletes continued to be praised disproportionately for physicality and athleticism (61% of descriptors), they also received even more comments about intelligence and leadership abilities (72%). They speculated that the latter result, which conflicted with earlier findings, might be explained by more network communication coaching, and the presence of one star Black player perceived to have exceptional leadership qualities. Of all descriptors, less than 10% related to mental skill and intelligence, with over 50% focusing on athleticism and physicality. Since most players were Black, the authors speculated that this disparity might support the notion that Black athletes are
naturally gifted. However, since the disparity was similar for Whites, it may simply be that basketball players per se are perceived by broadcasters as being typically physical and athletic. The authors recognised that the taxonomy used (same as Eastman and Billings, 2001) required more categories and greater clarity in regards to inter category relationships. Nonetheless, whilst some of the usual stereotypes seemed to not be persisting in this particular context, Black and White participants were still described differently (Denham, Billings, & Halone, 2002).

McCarthy and Jones (1997) undertook an analysis of commentary in televised English professional football. Results revealed virtually identical proportions of negative and positive evaluative comments about Black and White performance. However, there were large racial discrepancies in descriptions of physical and psychological characteristics. Almost 100% of comments made about Black physicality were positive, against only two thirds of those made about White players. Descriptors relating to psychological aspects were split at approximately 50/50 for Blacks, whilst those for Whites were 80% positive. The authors discussed that given the evidence of stacking in English football (Maguire, 1991; Norris & Jones, 1998), physical comments pertaining to Black players might reflect positional demands rather than racial qualities. But either way racial stereotypes would be implicated and reinforced.

In a follow up study by McCarthy, Jones, and Potrac (2003), a larger sample of UK professional soccer television coverage was verbally coded, and the impact of the images portrayed was investigated using racial focus groups.
Quantitatively, player evaluations and psychological descriptors were around 70% positive for both Black and White players; but, physical descriptors were 94% positive for Blacks, as opposed to 75% for Whites, indicating that the stereotype of the physically gifted Black athlete still persisted. Qualitatively, the Black focus group perceived unacceptable and unequal treatment, with unfairly high expectations of Black players and overemphasis of physical capabilities, and greater praise for White players' cognitive abilities. Whilst the White group also recognised these stereotypical portrayals, they were less convinced about the extent of misrepresentation, or critical of the issue.

McCarthy and colleagues (1997; 2003) concluded there was no evidence of overt racial discrimination. However, their studies contribute to the research previously reviewed (albeit scant, particularly in a UK context), which confirms that race is a social reality within media coverage, and that covert reinforcement of common stereotypes is strongly implicated. Specifically, apparently positive Black athletic stereotypes that are expressed tend to imply negative evaluations. For example, the stereotype that Black athletes are able to stay relaxed under pressure was reflected in several comments about Black footballers being too casual or lazy in their approach, in McCarthy and Jones' (1997) study. But, as Majors (1990) has highlighted the cool pose of Black athletes may be a learned and practiced response to social pressures rather than a natural disposition. Similarly, media praise for Black natural athleticism, and implied criticism of Black work rate and intelligence, may increase adherence to stereotypical views by fans, athletes and coaches.
(Cashmore, 1982). Sage (1990) claims that the most frequent media attribution of Black athletic success is the natural ability to run fast.

Even if the media were totally equitable towards Black and White athletes, the audience may project their own stereotypical assumptions onto sports coverage. In a study by Stone, Perry, and Darley (1997) White subjects appraised a basketball player while listening to an identical radio broadcast of a college basketball game. Half were informed the player was White, and they perceived him to demonstrate less natural ability, but more game intelligence and higher work rate. Half were informed the player was Black, and they perceived him to be a better player, to demonstrate more natural ability, but less game intelligence and lower work rate.

2.60 Racial Motivation

Coakley (2000) makes a persuasive argument to explain Black over representation in some sports, which reflects the self-fulfilling prophecy concept. That is, that societal emphasis on Black male physicality, and encouragement to excel in a few sports, along with frustratingly limited socio-economic opportunities in other areas, causes a belief in a biological and cultural destiny, and thus the motivation to develop the sports skills needed. Similarly, Smith (1995) speculates that Blacks may spend more time perfecting their game, as a result of having narrower opportunities than Whites; whilst Jones (2002) found that Black footballers felt they had to be
much better than White players to succeed, and that the best way to deal with racial taunting was to try even harder - strong motivation indeed!

Black athletes might be more driven to succeed, due to sub cultural norms, and few ways out of oppressive social situations (George, 1994). They may be more willing to pay the price, or work harder to be the best in a sport. However, it seems likely that a multitude of other potentially motivating factors may also affect racial participation and sports achievement profiles – media images, role models, stacking, faulty cognition, perceived physiological advantages, self-fulfilling prophecies, confidence, and anxiety.

Whilst Blackness may be a commonly recognized societal fact (Fanon, 1992) with strongly associated and defined identities, Whiteness is often considered as normal, raceless, and less obvious (Bonnett, 1998). Because of related privileges, Whites are more able than Blacks to adopt possible identities, and are thus less restricted by symbolic boundaries (Hall, 1996) in regards to sporting opportunities and choices (Long & Hylton, 2002).

### 2.61 Where Are The White Sprinters?

George (1994) highlighted that the few contemporary elite White sprinters can run no faster than their White predecessors from the 1970s, despite improved training methods, sport science support, track surfaces, and footwear. Even if small average differences in population group performance potentials exist, this would not adequately explain why Whites as a group have made no
progress over a quarter of a century! Brooks Johnson, a Black University athletics coach in the USA, is convinced that White athletes have as much potential as Blacks; and is searching for the "White Carl Lewis". He considers that many Whites are brainwashed into being beaten at the starting line, by their own inflated impressions of Black rivals (George, 1994; Entine, 2000a). Proponents of biological determinism often stress that whilst predisposing average racial differences relating to athletic abilities are small, split seconds can make the difference between champions and also-rans (Entine, 2000a). However, the influence of stereotypes on sprinter psychology, could account for similar performance differentials. An illustration of how the mind can affect running performance is illustrated by the fact that in the year after Roger Bannister first broke the four-minute mile, 45 other runners followed suit (Liggett, 2000). That is, it took a barrier breaking performance to overcome mental barriers. One might speculate that the desire to disprove a negative stereotype could also motivate some White sprinters. But an interesting insight into effort in sprinting is provided by a study where athletes were faster when asked to run at 95% than when they were asked to give 110%; presumably due to excessive tension/arousal (Weinburg & Gould, 1999). For White sprinters fear of failure, and trying too hard could be triggered by negative stereotypes. Whilst Black sprinters may be more relaxed, confident, and motivated as a result of positive stereotypes.

It certainly seems that fewer Whites choose to participate in sprinting in the modern era, and that sprinting appears to be more important in Black subculture than White subculture (George, 1994). Common explanations of
Black athletic success, could possibly lead White athletes to self-select sporting roles that avoid contact with Blacks, due to perceptions that Black athletes have natural advantages over them. Coaches may be a significant influence in this respect, shaping attitudes and channelling athletes from different races either into or away from sprinting as a result of stereotypical assumptions.

2.7 The Coach's Assumptions

Sports coaches operate in an increasingly complex and demanding domain (Gilbert & Trudel, 1999). Furthermore, coaches are often required to make evaluative decisions in the absence of sufficient objective information – e.g. trials, selections, and positional allocations. As such they are in danger of succumbing to faulty cognition arising from an attempt to simplify information processing (Harrison, 2001), for example stereotyping. The modern emphasis on self-reflection and critical analysis in coach education programmes may help to offset this (Kidman, 1994), as may products of professionalisation, such as codes of conduct. But the influential position of the coach is one that requires an ongoing responsibility to guard against discrimination and inequity.

Literature on the coach's use of stereotypes and assumptions is sparse. But the likely employment and impact of these on athlete behaviour and performance is strongly implicated in some of the literature previously reviewed. For instance, coaches have been shown to provide athletes with
different types and amounts of feedback based on expectations of ability (Solomon et al., 1996b); and athletes have expressed the opinion that coaches adhere to popular racial athletic stereotypes (Jones, 2002).

Legendary US Olympic swimming coach James Counsilman argued that Black athletes were markedly superior to Whites in sports requiring speed and power, because they had more fast twitch muscle fibres (Wiggins, 1997). English football coach, Jim Smith said of Black players “They seem to use very little intelligence; they get by on sheer natural talent most of the time.” (Cashmore, 1982, p.45). Admittedly, these are merely two, somewhat dated, examples. However, they are high profile instances of the sort of sweeping generalisations coaches might make, based upon racial stereotypes. Similar assumptions may exist today, but might not be articulated due to concerns regarding political correctness (Entine 2000a).

In sports coaching it seems prudent that little should be assumed about an individual athlete based on phenotypic characteristics, such as skin colour, alone. Firstly, even if one were to accept that stereotyped information about a group is generally not erroneous our racial categorisation could easily be inaccurate (e.g. is the athlete of West African or East African descent?). Secondly, within race variations may be greater than differences between races; hence any two Black athletes may be more unlike one another, than they are different from most Whites. Thus, the extrapolation of perceived group differences onto an individual will invariably lead to flawed expectations, faulty judgement, and possible discriminatory treatment (Harrison, 2001).
Thirdly, the coaching principle of individualisation (Rushall, 1985) indicates that no individual should be viewed as an average member of any population group, but is a unique mixture of personality, experience, knowledge, qualities, abilities and therefore potential.

Coaching can never be free of societal context (Potrac, Jones, & Armour, 2002), nor of the personal values of coaches themselves. However, coaches have the ethical and professional responsibility to critically evaluate the coaching environment and self-analyse their assumptions and practice. As Coakley (2000) points out, in the absence of critical analysis, some coaches will persist in using skin colour as a predictor of how athlete’s minds and bodies function.

2.8 Key Studies

In a study by Johnson, Hallinan, and Westerfield (1999) American students attributed the success of White collegiate basketball players to hard work and socio-economic factors, whereas they attributed the success of African American men to innate genetic factors, based entirely upon pictures showing only the head, and thus indicating that racial stereotypes were possibly evoked to explain success.

Rasmussen, Turner and Esgate (2003) recently used the same photo-elicitation method to establish that British higher education students (novice coaches) on a generic coach education programme, significantly attributed
the supposed success of pictured Black sprinters more to innate athletic abilities, whilst attributing the supposed success of pictured White sprinters more to intelligence, hard work and socio-economic factors. This was despite a two way within subjects design, that did not allow for randomisation and exposed all participants to all variables, in such a way that the research topic was easily detectable.

2.90 Aim

The aim of the present study was to assess the extent to which UK sprint coaches employ common racial stereotypes in attributing the success of Black and White sprinters.

2.91 Hypotheses

Based on the studies by Johnson et al. (1999) and Rasmussen et al. (2003) it was hypothesised that sprint coaches would attribute the supposed success of a pictured Black sprinter more to genetic factors than that of a pictured White sprinter.

It was further hypothesised that sprint coaches would attribute the supposed success of a pictured White sprinter more to intelligence, hard work and socio-economic factors than that of a pictured Black sprinter.
2.92 Significance

It is hoped that this study will contribute to the often polarised debate regarding the likely causes of racial differences in athletic participation and achievement rates. It is further anticipated that it will provide empirical evidence in the relatively neglected area of the use of stereotypes by sports coaches. This will also facilitate some comparison with the results of the few other directly related studies, such as Rasmussen et al. (2003) and Johnson et al. (1999). However, it is recognised that direct comparison is compromised by some methodological variation. Since most of the related literature in this area is North American, it is hoped that the study will provide a valuable insight in relation to the UK social context, and in particular may inform both coaching practice, and the development of coach education programmes.
Chapter 3 - Methodology

3.1 Introduction

This section presents the research methods used in this investigation of the possible use of common racial stereotypes in attributing the success of sprint athletes by UK sprint coaches. Following the initial provision of details relating to the participants, the section sub-divides into quantitative and qualitative methods. For each of these sub-sections, a description of design, materials, procedures, analysis, and rationale is provided. The section then concludes with a brief examination of the synthesis of the different research methods employed.

3.2 Participants

Participants were male ($n = 25$) and female ($n = 6$) volunteers, who are sprint coaches, with a qualification from their relevant national governing body of sport (UK Athletics) at level 2 or above, and a minimum of two years experience of practical sprint coaching. These coaches are qualified to lead specialist sprint sessions unsupervised, and are deemed to have a reasonable level of coaching expertise.

This sample of sprint coaches ($n = 31$) was recruited from athletics clubs within the South East of England (London, Bedfordshire, Hertfordshire, Essex, Suffolk, Middlesex, and Cambridgeshire). It is noted that as they volunteered,
they constitute an incidental sample; and thus, it is possible that coaches who chose not to participate may differ significantly. Ages of the participants ranged from 22 to 73 years, with an overall mean age of 52 years ($SD = 13.16$). The mean age for females was 50 years ($SD = 7.22$), whilst the mean age for males was 53 years ($SD = 12.24$). Sprint coaching experience ranged from 2 to 43 years, with an overall mean of 14 years ($SD = 12.82$). The mean coaching experience for females was 18 years ($SD = 9.18$), whilst the mean coaching experience for males was 14 years ($SD = 13.63$). 11 coaches (3 females, 9 males) were qualified at level 2 (UK Athletics Group Coach), 16 (2 females, 14 males) were qualified at level 3 (UK Athletics Event Coach), and 3 (1 female, 2 males) at level 4 (UK Athletics Advanced Coach).

A subjective assessment of participant ethnicity was employed, so as to not possibly draw attention to the subject of the research. Twenty-eight were White, and three were Black (all males).

3.30 Quantitative Methods

Quantitative research methods – namely a photo-elicitation scaled item survey, followed by multivariate statistical analysis – were utilised in an attempt to objectively measure the relative strength of application of common racial stereotypes within the sprint coaching domain.
3.31 Design

A two-way between subjects design was employed. It is acknowledged that this design has implications in that a larger sample is required (since only half of the sample see White or Black photo surveys), and that there is a danger that each participant will employ their own baseline subjective opinion in regards to the scoring scale. However, it is considered that this procedure was likely to produce better quality results, in that it avoided cross contamination between the two photo conditions, did not make the full purpose of the research explicit to participants, and allowed for randomisation of conditions. The independent variable consisted of the pictures on the survey forms, which were either of a Black or White individual. The dependent variable consisted of the stereotype scores relating to the eight stereotypical factors on the survey forms.

3.32 Materials

A review of the literature, and specifically the studies by Johnson et al. (1999) and Rasmussen, Turner and Esgate (2003), identified four White and four Black factors stereotypically believed to contribute to success in sport for these two populations. The factors identified for White athletes were a) knowledge and intelligent use of training methods, b) access to better facilities, c) hard work and dedication, and d) access to better coaching. The factors identified for Black athletes were: a) relaxation and movement economy, b) natural speed and quickness, c) longer limbs, and d) natural
large muscle mass. The eight items were rotated to counterbalance for order effects on scaled tick sheet surveys, along with a picture of a White or a Black athlete, so that their perceived relative importance in contributing to sport specific success could be assessed (see Appendix A - Examples of Survey Forms). Participants were randomly assigned either a survey with a White photo, or a survey with a Black photo.

The photographs of Black and White supposedly successful club standard athletes were of the head and neck only, so as to eliminate most differences in physical characteristics between the pictured individuals. Pictured persons did not wear spectacles, earrings, or have beards/moustaches, so as to not provide possible distractions. Neither of the pictured individuals were actually involved in sprinting or indeed athletics, thus, they were merely posing as sprinters. Consensus was gained prior to the study, to confirm their belonging to either the White or Black population group, using a small sample (5) of University of Luton staff. A short pilot study was also undertaken, with four staff members at University of Luton, who had some experience of coaching athletics, to ensure that the survey forms were clear, adequate to gain relevant data, plus that the element of race was not overtly clear in the success attribution process.

Responses were recorded on a seven point likert scale. This is a type of closed question, with a scaled response – in this case between highly probable and highly improbable - in relation to whether a factor contributed to an athlete’s success. Surveys were scored by subtracting the total scores for
the four stereotypes associated with Black sporting success (natural ability), from the sum of those associated with White success (socio-economic, intelligence, and hard work) for each picture. Overall trends could then be examined. Mean scores for the sum of the four Black stereotypes, and the sum of the four White stereotypes, for each of the two photograph conditions were also established, to further examine emerging patterns of success attribution.

Furthermore, the comparative scoring of the eight individual factors was examined, in order to assess both general patterns, and the relative strength of individual stereotypes within the specific sporting context of sprinting.

3.33 Procedures

Informed consent, and demographic data (age, sex, previous coaching experience, level of coaching qualification) was obtained from all participants prior to the study (see Appendix B - Consent Form). Participants were informed that the intention of the study was to determine how coaches attribute success in relation to sprint athletes. Participants were informed that their participation required a brief tick questionnaire response to a photograph and statement, and a brief recorded semi-structured interview.

Coaches were interviewed in field situations (i.e. mostly at training sessions or track meets) at mutually agreed times and venues. The subject of race and stereotyping was not made overtly clear, so that the use of stereotypes in
success attribution could be evaluated without an adjustment to naturalistic applications by coaches.

3.34 Analysis

The results were analysed using descriptive statistics, and the Mann-Whitney test (as data was ordinal, and thus non-parametric in nature) using SPSS. The level of significance was set at 0.05.

Mean scores for the sum of the 4 Black, and 4 White, stereotypical factors on the survey forms, for both the Black photograph and White photograph conditions, were presented graphically in order to visually compare attribution patterns.

The eight stereotypical survey items were placed in rank order, and Spearman’s rho was employed in order to assess the correlation between the scoring of individual stereotypical survey items for the Black and White photograph conditions.

Mann-Whitney was also used to examine whether there were significant differences between the scoring of individual stereotypical survey items for each condition.
The use of photographs in social science is well established as a research tool that can delve deeper than the purely descriptive level to draw out individuals’ attitudes and perceptions regarding specific social issues. Photographs provide greatest leeway in evoking thoughts, reactions, and feelings from individuals about their perceptions of pictured others based on generalisations (Snyder & Kane, 1990).

Photo elicitation technique may be viewed as an innovative possible approach in the study of sport, and has previously been utilised in sport contexts in interviewing athletes (Curry, 1986), to gain data on attitudes to women’s sports (Snyder & Kane, 1990), and to examine the use of racial stereotypes in basketball (Johnson, Hallinan, & Westerfield, 1999) and sprinting (Rasmussen, Turner, & Esgate, 2003). This method provides a means by which the encounter with the practitioner (the coach) can move from the real (the exact objects in the image) to the socially abstract (what the objects in the image represent to the individual concerned). Gans (1995, p. 12) describes stereotypes based upon racist images of athletes as “pictures in our head”. It is in this social context that a photo elicitation technique was proposed in relation to this research project in order to tap current perceptions of coaches in relation to racial stereotypes and sprinting success.

Since photo elicitation is a projective method that connects with the interests and eagerness of the respondent, it is a useful technique in examining the
opinions, values and norms present in a particular sport subculture; and in seeking to understand the attitudes and meanings people associate with population groups within that subculture. Furthermore, visual images can often act as a means of bringing forth information from respondents that would otherwise remain veiled.

The seven point likert scale was utilised as it provides a greater range of scoring, a wider choice of expression, and increases the reliability of the instrument.

3.40 Qualitative Methods

The use of semi-structured interviews, and subsequent content analysis, will attempt to gain further insight into the cognitive processes behind identified patterns of success attribution by coaches.

3.41 Design

A one-to-one interview design was used, which was both open-ended and semi-structured; such that the interviewee was not guided or forced to respond in a particular manner. Thus, subjects were allowed the freedom to emphasise and discuss areas that they perceived as most relevant. The interview questions followed an identical sequence, and were designed to be clear and included language which was likely to be familiar to the participants. Probing techniques were pre-prepared to help subjects clarify or elaborate on
certain statements, and to ensure consistent depth of questioning across interviews. Whilst some questions initially appear more closed in nature, it was ensured that these were followed by open-ended elaborative questions.

The interview was deliberately kept brief (four questions), as data collection took place in field conditions (i.e. mostly at athletics clubs) where the coach was likely to be in demand from athletes and time was precious. In order to maximise the trustworthiness of the data collection, only one interviewer was employed throughout, who is knowledgeable within the area of the study, and familiar with the coaches' role and the nature and terminology of the sport (i.e. has previously completed a study on stereotyping in sport, has coached athletics, and is currently a Senior Lecturer in Sports Coaching).

3.42 Materials

Advice was sought from a learned colleague (Dr Ian Jones) with experience of using interviews within an academic study, as to the general process and effectiveness. A short pilot study was also undertaken, with four staff members at University of Luton, who had some experience of coaching athletics, to ensure that the questions and probes were clear, adequate to gain relevant data, plus that the element of race was not overtly clear in the success attribution process.

Interviews were tape-recorded, and were then transcribed verbatim, after which grammatical changes were made, taking care that the content or
meaning of the transcripts were not altered (see Appendix C – Example of Transcribed Interview). Recordings were logged and stored such that it will be possible for primary data to be revisited or audited.

3.43 Procedures

As per previous procedures section for the full context of data collection.

The procedure for the semi-structured interview itself was as follows. Participants were thanked for taking part in the study, and were initially asked an icebreaker question – What are your personal reasons/motivations for coaching? This was to help put them at their ease, to encourage them to interact, but also to gain enlightening information on their coaching philosophy and values underpinning coaching practice. The second question was - What personal attributes or qualities do you believe that sprinters have to possess in order to be successful? This question helps to begin to focus on sprinting, and factors associated with success; but is broad and general, such that participants could develop their own ideas and opinions. The third question was – Do you believe sprinters are mostly born or made? This question specifically draws attention to the nature-nurture debate, and encourages participants to consider the relative influence of innate qualities and developmental influences such as coaching. The final question was – Do you believe that there is a level playing field in relation to sprinters and their likely success? This question encourages participants to consider equality issues, and factors likely to inhibit or promote success. Thus, whilst still not making
race explicit, the last question is perhaps most likely to draw responses based
upon racial stereotypes about sporting levels of aptitude or opportunity.

Probes were pre-prepared, and were used as appropriate (see Appendix D -
Interview Questions and Probes).

3.44 Analysis

Transcribed interviews were analysed inductively using the qualitative
techniques put forward by Cote et al. (1993), and recently used by Bloom et
al. (1999). Two major steps were used: creating tags and creating categories.
Interview text was divided into separate pieces of information or meaning
units, containing one idea or concept, and capable of standing on its own.
Once identified, meaning units were named or tagged based on the content.

All of the identified tags from the first step were then listed and compared,
with meaning units having similar tags being regrouped into broader
categories with common themes, which were also named or tagged with a
label, which attempted to capture the essence of the particular topic being
discussed. Categories were not determined prior to the analysis, although it is
recognised that the structure of the four interview questions may have
provided an initial framework (thus although mostly an inductive analysis,
there is some element of a deductive approach).
Three individuals (interviewer, project supervisor, and a learned colleague with experience in qualitative research), acted as judges within the coding (tagging and categorising) process. The results from individual deliberation were compared, and discrepancies deliberated until a consensus was reached, in order to maximise the dependability and confirmability of the inquiry.

3.45 Rationale

Qualitative research has been used extensively in many research fields, such as sociology and education, but is not widespread in the study of sport. There is an emerging awareness of the possible benefits and credibility of qualitative research methods, which can be powerful in enlightening previously unknown or vaguely known areas, and are able to provide familiarity through rich description (Strean, 1998).

Good qualitative research can provide a basis for an in-depth understanding of how people make sense of their world and the context in which they reside. It can also offer particular opportunities to help us understand and characterise the complex processes by which events and actions occur. Furthermore, this approach is well warranted in that it tends to enable researchers to understand how events, actions, and meanings are shaped by the unique dynamics of the contextual circumstances in which they occur. Qualitative methodology is particularly well suited for grasping the complexity of the phenomena studied in the sport domain, which often does not lend itself...
easily to experimental investigation. Inductive approaches or emergent
designs provide opportunities to identify unanticipated phenomena and
influences that were not considered prior to the study; and thus to develop
new grounded theories based on unexpected and surprising factors can be
developed. Moreover, the narrative forms which tend to arise from interview
based protocols are often more accessible to athletes and coaches as a
potential audience for findings. Thus allowing practitioners to relate results to
their own experiences. The interlinked protocol of semi-structured interview
and content analysis represents the dominant framework for the undertaking
and reporting of qualitative inquiry within the study of sport and exercise (Cote
et al., 1993).

3.5 Synthesis

For many individuals quantitative and qualitative methods represent
essentially different approaches. Quantitative researchers tend to focus on
whether and to what extent variance in x causes variance in y, whilst
qualitative researchers tend to ask how x plays a role in causing y and which
process connects x and y (Biddle et al., 2001). However, methodological
eclecticism (Hammersley, 1996) is an approach that has the potential to
cancel out the respective weaknesses of each method, and make best use of
their respective strengths.

In this particular study the use of scaled item survey questionnaires based
upon photo elicitation with subsequent statistical analysis, and semi-
structured interviews with subsequent content analysis, represents an integrated quantitative and qualitative process. Thus, there is an element of method triangulation (attacking the research problem in different ways, and possibly gaining different perspectives/insights as a result), and an attempt to get at the whole picture as far as is possible. Therefore the intention is to examine this complex area of study, in such a way as to be able to report findings in both a scientific and holistic way, with an emphasis on extrapolating conclusions from both objective and subjective data collection paradigms.
Chapter 4 – Results

4.1 Introduction

The purpose of this study was to assess the use of racial stereotypes by UK sprint coaches, via a photo elicitation and success attribution exercise. This chapter presents a summary of the quantitative and qualitative results. The SPSS output for the quantitative data can be found in Appendices E - G.

4.2 Quantitative Results

4.21 Comparative Scoring of Global Black and White Stereotype Scores

To test the hypothesis that sprint coaches would attribute the supposed success of a pictured Black sprinter more to genetic factors; and would attribute the supposed success of a pictured White sprinter more to intelligence, hard work and socio-economic factors – global stereotype scores for Black and White stereotypical factors, for each condition, were compared using a Mann-Whitney test. There was no significant difference between the scoring of the Black and the White photograph survey forms, for the sum of the 4 stereotypes associated with White sprinters minus the sum of the 4 stereotypes associated with Black sprinters (U = 95.000, N1 = 16, N2 = 15, p = 0.338, two tailed). Therefore, there did not appear to be an identifiably different pattern of success attribution by coaches, for Black and White photograph conditions, based on race consistent stereotypes.
4.22 Grouping by Photograph Condition and Associated Stereotype Factors

To further test the hypothesis that Black and White photograph survey forms would be scored differently in line with associated stereotypical factors, the mean scores for the sum of the 4 Black, and 4 White, stereotypical factors on the survey forms, for both the Black photograph and White photograph conditions, were graphically represented for visual comparison (see Figure 1).

Figure 1. Mean Stereotype Scores for Black and White Photograph

It is apparent that the scoring of the sum of the White and the sum of the Black stereotypical factors, for the White photograph condition, is consistent with that predicted by the hypothesis. That is, White stereotypes were scored more highly than Black stereotypes, in attributing the success of the pictured White sprinter. However, for the Black photograph condition, results are not consistent with the hypothesis, with White stereotypes scored more highly than Black, in attributing success.
4.23 Correlation Between Scoring of Individual Stereotypical Factors For Black and White Photograph Conditions

To test whether the different photograph conditions were generally scored differently in relation to the individual stereotype factors, a Spearman's rho was employed. Figure 2 shows a highly significant positive correlation between the Black and the White photograph survey forms, in relation to the comparative average scoring of each of the eight stereotypical factors ($r = 0.994, N = 8, p = 0.001$). It should be noted that although the sample number for correlation purposes is statistically small, this represents the average scoring for the 8 factors, arising from the total sample of 15 sprint coaches for the Black photograph condition, and 16 for the White photograph condition.

Figure 2. Scatter plot of Black and White Average Stereotype Factor Scores

This indicates that coaches tended to score the individual stereotype factors in a very similar fashion, regardless of the pictured race.
4.24 Rank Orders of Individual Stereotypical Factors

Rank order scorings were also produced in order to examine the relative strength of individual stereotypical factors across Black and White photograph conditions. The strong correlation indicated above by Spearman’s rho, is reinforced via the highly similar rank order of the scoring of the eight stereotypical factors, for each of the conditions (see Table 1).

Table 1. Rank Orders for Stereotypical Factors

<table>
<thead>
<tr>
<th>Black Photograph Stereotype Rankings</th>
<th>White Photograph Stereotype Rankings</th>
<th>Overall Stereotype Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Mean</td>
</tr>
<tr>
<td>Hard work and dedication</td>
<td>93</td>
<td>6.2</td>
</tr>
<tr>
<td>Natural speed and quickness</td>
<td>90</td>
<td>6.0</td>
</tr>
<tr>
<td>Knowledge and intelligence</td>
<td>88</td>
<td>5.9</td>
</tr>
<tr>
<td>Relaxation and movement economy</td>
<td>85</td>
<td>5.7</td>
</tr>
<tr>
<td>Access to coaching</td>
<td>80</td>
<td>5.3</td>
</tr>
<tr>
<td>Access to facilities</td>
<td>77</td>
<td>5.1</td>
</tr>
<tr>
<td>Longer limbs</td>
<td>63</td>
<td>4.2</td>
</tr>
<tr>
<td>Natural large muscle mass</td>
<td>62</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Maximum and minimum possible values would be 105 total, 7 mean, and 15 total, 1 mean for the Black forms; and 112 total, 7 mean, and 16 total, 1 mean for White forms.

4.25 Differences Between Scoring of Individual Stereotypical Factors

In order to assess whether individual stereotypical factors were scored more highly in relation to their associated pictured race, the Mann-Whitney test was revisited. Analysis of the eight individual stereotype factors revealed only one statistically significant difference between the relative scoring for Black and White photograph survey forms. There was a significant difference in the scoring of the factor *longer limbs*, with coaches scoring this factor as being more probable as contributing to the success of the pictured Black athlete, in comparison to the pictured White athlete ($U = 54.000$, $N_1 = 16$, $N_2 = 15$, $p = 0.008$, two tailed).
4.3 Qualitative Analysis

4.3.1 Personal Reasons/Motivations for Coaching

61 meaning units were tagged and grouped into 14 themes, separately for the coach’s responses to Question 1. Results are presented in Table 2. Sub-themes and meaning unit exemplars are shown where appropriate. Some themes are deemed self-explanatory.

Table 2. Personal Reasons/Motivations for Coaching

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
<th>Sub-Theme (Meaning Units)</th>
<th>Meaning Unit Exemplar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Athletes</td>
<td>11</td>
<td>18%</td>
<td>Enjoyment of Developing People (9)</td>
<td>I just like to see youngsters improve, and help people get right at athletics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Getting Best out of Athletes (2)</td>
<td>I think the pleasure in seeing an athlete get the best out of themselves - and you like to think you’ve had some small contribution towards that.</td>
</tr>
<tr>
<td>Enjoying Coaching</td>
<td>10</td>
<td>16.5%</td>
<td>Satisfaction of Coaching Well (3)</td>
<td>I think the fun you get out of it to be honest.</td>
</tr>
<tr>
<td>Putting Back into the Sport/Club</td>
<td>7</td>
<td>11.5%</td>
<td>After Injury (5)</td>
<td>And then I got injured at 16, and wanted to stay in - so I took up coaching qualifications, and coached from then on.</td>
</tr>
<tr>
<td>Staying Involved in the Sport</td>
<td>6</td>
<td>10%</td>
<td>To Promote Better Coaching of Child (2)</td>
<td>I just started off to help out with the group, so the coach could spend more time with my son.</td>
</tr>
<tr>
<td>Got Involved Through Child’s Participation</td>
<td>6</td>
<td>10%</td>
<td>Progressed Naturally to Coaching (4)</td>
<td>I was an athlete myself, and I just carried on drifting naturally from competition into coaching.</td>
</tr>
<tr>
<td>Was an Athlete Myself</td>
<td>6</td>
<td>10%</td>
<td>Passing on Knowledge Gained as an Athlete (2)</td>
<td></td>
</tr>
</tbody>
</table>

1 Please note that throughout this section, percentage totals may be subject to rounding errors associated with individual components.
<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
<th>Sub-Theme (Meaning Units)</th>
<th>Meaning Unit Exemplar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hobby</td>
<td>4</td>
<td>6.5%</td>
<td>Coaching in Own Way (2)</td>
<td>It was something I wanted to do – I wasn’t a teacher, and I like directing people/I’m bossy.</td>
</tr>
<tr>
<td>To Motivate Athletes</td>
<td>3</td>
<td>5%</td>
<td>Experience of Poor Coaching (2)</td>
<td>When I started coaching, I thought I’ll try to get other athletes to have a better coach than I had, and maybe they’d be faster than I was.</td>
</tr>
<tr>
<td>Help Athletes Enjoy</td>
<td>2</td>
<td>3.5%</td>
<td></td>
<td>I was a youth club leader, and there were a couple of athletes in the club, and I started taking them for little sessions, and I grew into it that way.</td>
</tr>
<tr>
<td>Sports Leadership Route</td>
<td>2</td>
<td>3.5%</td>
<td></td>
<td>I think athletics is kind of a minority sport in schools, and there’s an awful lot of emphasis on games.</td>
</tr>
<tr>
<td>Balancing Development</td>
<td>1</td>
<td>1.5%</td>
<td></td>
<td>She wanted someone she felt would care for her and would trust.</td>
</tr>
<tr>
<td>Identified as Potential Coach by Friend</td>
<td>1</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winning</td>
<td>1</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add to CV</td>
<td>1</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Coaches’ motivations were clearly largely positive and altruistic, and focused mostly on the development of athletes, enjoyment of the coaching process, and a continuation of involvement in athletics. There was also some reflection of entry routes into coaching.

4.32 Are Sprinters Mostly Born or Made?

31 meaning units (one from each coach) were tagged and grouped into 4 themes, for the initial responses to this closed question. Results are presented in Table 3.
Table 3. Are Sprinters Mostly Born or Made?

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Born</td>
<td>16</td>
<td>52%</td>
</tr>
<tr>
<td>Mostly Born</td>
<td>5</td>
<td>16%</td>
</tr>
<tr>
<td>Mixture</td>
<td>7</td>
<td>22.5%</td>
</tr>
<tr>
<td>Made</td>
<td>3</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

A clear majority of coaches considered that sprinters are mostly born with necessary qualities for success, rather than made through development. Indeed, if born and mostly born are amalgamated, they account for 68% of responses. Responses for a mixture of both born and made represent less than half, whilst those for made represent less than a fifth, of those for born.

4.33 Likely Balance Between Born and Made?

31 meaning units (one for each coach) were tagged and grouped into 7 themes, for the responses to this closed sub question. Results are presented in Table 4.
Table 4. Likely Balance Between Born and Made?

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stated % in Favour of Born</td>
<td>18</td>
<td>58%</td>
<td>75/25%</td>
<td>90-60%</td>
</tr>
<tr>
<td>Stated % in Favour of Made</td>
<td>4</td>
<td>13%</td>
<td>70/30%</td>
<td>85-65%</td>
</tr>
<tr>
<td>In Favour of Born but No Percentage Stated</td>
<td>3</td>
<td>9.5%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Inextricably Mixed</td>
<td>2</td>
<td>6.5%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Even Split</td>
<td>2</td>
<td>6.5%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Could Not Attempt</td>
<td>1</td>
<td>3%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Misinterpreted question</td>
<td>1</td>
<td>3%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Coaches' responses tend to reflect a strong bias towards sprinters being more born than made. The number of coaches who offered a stated percentage in favour of born, was over four times that of the number of coaches who offered a stated percentage in favour of made. The former also represented the majority of responses, and a further three coaches were in favour of born, but did not state a specific percentage. If *inextricably mixed* and *even split* are amalgamated, they equal the amount of *made* responses.
4.34  Is There a Level Playing Field in Relation to Sprinters and Their Likely Success?

24 meaning units were tagged and grouped into 4 themes, for the initial responses to this closed question. Results and examples are presented in Table 5.

Table 5. Is There a Level Playing Field?

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>14</td>
<td>58.5%</td>
<td>There is no level playing field – others get a better deal.</td>
</tr>
<tr>
<td>Qualified no</td>
<td>3</td>
<td>12.5%</td>
<td>It is not perfectly fair – but athletics vis-à-vis other sports is more of a level playing field.</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>12.5%</td>
<td>A good sprinter could come from anywhere in the country.</td>
</tr>
<tr>
<td>Qualified yes</td>
<td>4</td>
<td>16.5%</td>
<td>There probably is a level playing field – but there are so many variables involved.</td>
</tr>
</tbody>
</table>

A clear majority of coaches felt that there was not a level playing field in relation to sprinters and their likely success. If one adds no and qualified no, and yes and qualified yes, the comparison is 71% versus 29% respectively. Thus, over two thirds of coaches perceive a lack of equality of opportunity in relation to sprinting success.
4.35 Amalgamation of Responses to All Open Questions

447 meaning units were tagged and grouped into 6 themes, for Qualities and attributes of successful sprinters?, plus Why? statements for Born or made? and Level playing field? Results are presented in Table 6.

Table 6. Amalgamation of Responses to All Open Questions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Meaning Units</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of Genetic Factors</td>
<td>126</td>
<td>28%</td>
</tr>
<tr>
<td>Social Support and Socio-Economic Factors</td>
<td>114</td>
<td>26%</td>
</tr>
<tr>
<td>Psychological Factors</td>
<td>108</td>
<td>24%</td>
</tr>
<tr>
<td>Interaction of Nature and Nurture</td>
<td>54</td>
<td>12%</td>
</tr>
<tr>
<td>Importance of Made Factors</td>
<td>25</td>
<td>5.5%</td>
</tr>
<tr>
<td>Direct Generic Racial Comments</td>
<td>20</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

The importance of genetic factors accounted for the most meaning units, reflecting the earlier emphasis of coaches on born qualities. However, social support and socio-economic factors and psychological factors also score highly. Each of the aforementioned areas represented around 25% of total
responses. Thus, potential developmental factors also seem to score more highly in this section. Nonetheless, relatively small percentages account for comments relating to the interaction of nature and nurture, or specifically the importance of made aspects. Finally, a small but important percentage of meaning units relate to direct generic racial comments. This is particularly significant since this subject was not overtly broached with the coaches, and several comments clearly reflect established sporting racial stereotypes.

Sub-themes and examples of meaning units are presented below (Tables 7 – 12) for each of the main themes identified in Table 6.

Table 7. Sub-Themes for Importance of Genetic Factors

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (126)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Health/Robustness</td>
<td>6</td>
<td>Susceptibility to injury or disease.</td>
</tr>
<tr>
<td>Motor Control</td>
<td>10</td>
<td>Linked brain to muscle, and muscle fibre type – but you’ve got to work very hard at trying to get that control.</td>
</tr>
<tr>
<td>Mobility</td>
<td>2</td>
<td>Range of movement – some people are born with that predisposition.</td>
</tr>
<tr>
<td>Long Limbs</td>
<td>4</td>
<td>Require a certain size of limbs/long bones – you can use father’s height as an indicator of potential.</td>
</tr>
<tr>
<td>Physique</td>
<td>8</td>
<td><em>I am looking for a mesomorph – that genetic sort of balance which makes a sprinter.</em></td>
</tr>
<tr>
<td>Muscular Strength/Power</td>
<td>13</td>
<td>Need good strength relative to muscle.</td>
</tr>
<tr>
<td>Fast Twitch Muscle</td>
<td>23</td>
<td>Ultimately, they would have that fast twitch, that reaction – that would make a huge difference in sprinting performance.</td>
</tr>
<tr>
<td>Natural Speed and Quickness</td>
<td>7</td>
<td>They have got to be naturally fast movers.</td>
</tr>
<tr>
<td>Natural Ability/Talent</td>
<td>10</td>
<td>They need the right genes, that natural ability.</td>
</tr>
<tr>
<td>Easy Recognition of Sprinters</td>
<td>10</td>
<td>You can look at a person and think – yes, they will be sprinters.</td>
</tr>
<tr>
<td>The Michael Johnson Paradox</td>
<td>2</td>
<td>He is probably a coach’s nightmare – technique is awful, but leg speed is wonderful.</td>
</tr>
<tr>
<td>Importance of Born Over Made</td>
<td>31</td>
<td>You can run faster with adequate training – but competing at top level you’ve got to have natural ability – gotta be in your genes. <em>You can make a middle distance runner a lot easier than a sprinter.</em></td>
</tr>
</tbody>
</table>
## Table 8. Sub-Themes for Social Support and Socio-Economic Factors

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (114)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coach-Athlete Relationship and Motivation</td>
<td>7</td>
<td>You've got to have a coach you believe in.</td>
</tr>
<tr>
<td>Importance of Being part of a Training Group</td>
<td>12</td>
<td>It is important to give them the feeling of being part of a group, so that they get social support for each other.</td>
</tr>
<tr>
<td>Access to Facilities and Coaching</td>
<td>44</td>
<td>Access to coaching isn't equal.</td>
</tr>
<tr>
<td>Financial Background, Parental, and Other Support</td>
<td>24</td>
<td>Athletics is really middle class – they have the time and transport.</td>
</tr>
<tr>
<td>Balancing Work, Education, and Social Life</td>
<td>9</td>
<td>Peer pressure to socialise is not conducive to athletics.</td>
</tr>
<tr>
<td>Socio-Economic Disadvantages</td>
<td>7</td>
<td>In poor areas the question of equipment costs and fees is a drawback.</td>
</tr>
<tr>
<td>Overcoming Socio-Economic Disadvantages</td>
<td>5</td>
<td>Athletics clubs are very cheap.</td>
</tr>
<tr>
<td>Means of Escaping Oppression</td>
<td>6</td>
<td>More sprinters come through from poorer backgrounds – they see athletics as an escape route.</td>
</tr>
</tbody>
</table>

## Table 9. Sub-Themes for Psychological Factors

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (108)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of Personality Types</td>
<td>4</td>
<td>Coach has to accept working with a wide range of personality types.</td>
</tr>
<tr>
<td>Need for Personality</td>
<td>9</td>
<td>Perhaps aggression, but I'm not convinced it is a big factor. You can be quieter and still succeed.</td>
</tr>
<tr>
<td>Arrogance/Self-Drive/Selfishness</td>
<td>7</td>
<td>Need to be very self-motivated/self-driven. It is not a team game – just you, coach, and squad.</td>
</tr>
<tr>
<td>Inner Mental Strength</td>
<td>16</td>
<td>The edge, psychologically you either want it or not. Not frightened to fail.</td>
</tr>
<tr>
<td>Concentration/Focus</td>
<td>7</td>
<td>Need intelligence applied to attitude to training, vision of where to go, and competition racing.</td>
</tr>
<tr>
<td>Open-Minded/Keen to Learn</td>
<td>11</td>
<td>If they want to work with me and improve, I'll work with them.</td>
</tr>
<tr>
<td>Attitude</td>
<td>8</td>
<td>Relaxed, doesn't get uptight before a race. You can run fast but ruin it with muscle tension, and can't swim.</td>
</tr>
<tr>
<td>Dedication/Application</td>
<td>16</td>
<td>They need a one-track mind, to be dedicated and train hard – no drinking/nights out.</td>
</tr>
<tr>
<td>Motivation/Determination</td>
<td>15</td>
<td>Everyone starts off wanting to be a 100m runner, because that's who they see on TV.</td>
</tr>
<tr>
<td>Ability to Work Hard</td>
<td>14</td>
<td>Depends on determination as well – the mind in many cases is stronger than the body.</td>
</tr>
</tbody>
</table>

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Table 10. Sub-Themes for Interaction of Nature and Nurture

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (54)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Natural Abilities</td>
<td>12</td>
<td>You have got to have inherent fast twitch, then build on that – fast twitch works better through good coaching.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Natural Speed – you’re either fast or you’re not. I think you are born naturally quick. Up to 17 you can get by on being naturally quick – but performance sprinter is made by the development of that natural ability.</td>
</tr>
<tr>
<td>Technique and Motor Control</td>
<td>9</td>
<td>They are able to control their movement – it may be movement education, or just being born with innate ability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>That’s not to write off the uncoordinated, they can grow out of it – don’t stereotype or pigeon-hole – but just know that the long-limbed good moving youngster will achieve. They are born with an aptitude within them – harness it and develop it.</td>
</tr>
<tr>
<td>Influence of Coaching</td>
<td>4</td>
<td>With sprint coaching methods I can make whoever it is run faster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not everyone has the same ability, but training can equalise.</td>
</tr>
<tr>
<td>Achievement of Potential</td>
<td>11</td>
<td>I am coaching identical twins – one just happens to be better despite similarities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Often it is the B+ people not the A’s who will eventually come through. You can get so far on natural ability, but if you’re not bothered to train, or things come too easy... it takes a good coach to keep you at the top of the tree.</td>
</tr>
<tr>
<td>Need for Hard Work and Dedication</td>
<td>18</td>
<td>You might be born the fastest, but you have to build on it. You don’t stay naturally the quickest – got to work damn hard. Born to begin with, made as an end result.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hard work and dedication – without it, it doesn’t matter what they look like physically.</td>
</tr>
</tbody>
</table>

Table 11. Sub-Themes for Importance of Made Factors

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (25)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predominance of Hard Work</td>
<td>3</td>
<td>Some of the greatest sprinters – it is hard work that takes them there – not just being physically fit.</td>
</tr>
<tr>
<td>Importance of Genetics</td>
<td>10</td>
<td>Genetics is not particularly important – because a brother or sister is very good, it doesn’t mean a youngster is the same.</td>
</tr>
<tr>
<td>Refuted</td>
<td></td>
<td>Sprinters come in all shapes and sizes – I wouldn’t like to limit anybody.</td>
</tr>
<tr>
<td>Specific Physical Attributes Refuted</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Luck</td>
<td>1</td>
<td>Luck is involved – do you get the right coach?</td>
</tr>
</tbody>
</table>
Table 12. Sub-Themes for Direct Generic Racial Comments

<table>
<thead>
<tr>
<th>Sub-Theme</th>
<th>Meaning Units (20)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Association With Sprinting</td>
<td>4</td>
<td>Afro-Caribbeans tend to be quite attracted to sprinting (you don’t see many in middle distance) – they do see it as their event/field.</td>
</tr>
<tr>
<td>Black Physiological Stereotypes</td>
<td>5</td>
<td>Obviously the classical fast sprinter will always be a coloured boy/girl – it’s a lot to do with their physical make up.</td>
</tr>
<tr>
<td>Black Laziness Stereotype</td>
<td>1</td>
<td>Blacks are not as bothered about doing the work. The White boys are really keen, but haven’t got the natural ability.</td>
</tr>
<tr>
<td>Black Socio-economic Background</td>
<td>3</td>
<td>I think a lot of coloured boys do well because it’s like getting out of the ghetto.</td>
</tr>
<tr>
<td>Doubts about Racial Stereotypes</td>
<td>4</td>
<td>A lot more Black guys are very good sprinters. They have been more in the limelight – and that’s the reason why. I don’t think race as such has anything to do with it.</td>
</tr>
<tr>
<td>White Stereotypes</td>
<td>3</td>
<td>You will get a fast White sprinter every so often, but not as often as Afro-Caribbean sprinters.</td>
</tr>
</tbody>
</table>

These themes, sub-themes, examples and implications will be discussed further in the next chapter.
Chapter 5 – Discussion

5.1 Quantitative Results Discussed

The Mann-Whitney test on the comparative scoring of global Black and White stereotype scores was non-significant, which is not consistent with the hypothesis that the success of the pictured Black athlete would be attributed more to genetic factors, and that the success of the pictured White athlete would be attributed more to hard work, intelligence and socio-economic factors. That is, one would have expected a significant difference between the scoring of the Black and the White photograph survey forms, for the sum of the 4 stereotypes associated with White sprinters minus the sum of the 4 stereotypes associated with Black sprinters in order for the hypothesis to be supported. In fact both conditions were scored very similarly. The global Black stereotype scores, for the Black and White conditions respectively were 300 and 300. The global White stereotype scores, for the Black and White conditions respectively were 338 and 346. Even given the fact that there were 15 Black survey forms, and 16 White, relative scoring is remarkably similar.

Graphical representation of the mean scores for the 4 Black, and 4 White stereotypes, for each photograph condition, revealed overall patterns of stereotype scoring (see Figure 1). Although the direction of scoring for the White condition was as predicted by the hypothesis (i.e. associated White stereotypes scored more highly than non-associated Black stereotypes), the scoring for the Black condition was the opposite of that which was expected (i.e. associated Black stereotypes scored less highly than non-associated
White stereotypes). Similarly, whilst the mean score for Black stereotypes with the Black photograph condition was higher than that for Black stereotypes with the White condition (consistent with the direction of the hypothesis); the mean score for White stereotypes with the White photograph was actually outsored by that of the White stereotypes with the Black condition (not consistent with the direction of the hypothesis). Interestingly, another difference is evident between the sum of the mean scores for both Black and White stereotypes, for the White condition (40.4), and the sum of the mean scores for both Black and White stereotypes for the Black condition (42.5). This might indicate that Black athletes were considered more suitable for sprinting than White athletes, across all of the stereotypical factors as a whole. However, the magnitude of differences between all of the above was not great. Maximum possible scores were 28, and minimum 4. All of the mean scores were between 18.8 and 22.5. The largest difference between any of the above comparisons was 2.8 between White photo and White stereotypes, and White photo and Black stereotypes – representing less than one point difference on the 7 point likert scale for each of the 4 stereotypical factors.

Spearman's rho revealed a highly significant positive correlation between the Black and the White photograph survey forms, in relation to the comparative average scoring of each of the eight stereotypical factors. Once again this is not consistent with the hypothesis, which would have predicted a weak correlation based on the supposition that Black stereotypes would be scored highly in relation to the Black, and lowly in relation to the White conditions, and vice versa. Nonetheless, it is interesting to note that the line of best fit
does reveal a general difference in scoring in relation to the pictured race. That is, that average Black scores for the stereotypical factors were generally slightly higher than White scores. Perhaps, once again, this might indicate that Black athletes were considered as more suited to sprinting in general, across all of the stereotypical factors as a whole. However, the magnitude of these differences is again not great.

The rank order of individual stereotypical factors further confirms that the Black and White conditions were scored in a highly similar manner, once again not supporting the hypotheses. The order was indeed identical, save for longer limbs and natural large muscle mass (which were last and next to last respectively for the White condition, and vice versa for the Black condition). The predominance of the White stereotypical factors in explaining the supposed success of the pictured sprinters, is highlighted by the fact that 4 out of the top 6 in the rank order refer to hard work, intelligence, and socio-economic factors. Nonetheless, the aforementioned pattern, whereby the pictured Black athlete was generally scored more highly across all of the stereotypical factors as a whole, is reinforced. Only in relation to hard work and dedication, and natural large muscle mass, are the White average scores higher than the Black. In one other factor, access to coaching, the mean scores are equal. For all of the other 5 stereotypical factors, the Black average scores are higher than the White. Once again this indicates that the coaches are scoring the Black athlete more highly across all of the stereotypes as a whole, perhaps because they consider Black athletes as being more generally suited to sprinting than White athletes.
According to the hypotheses there should be significant differences between the scoring of each of the individual stereotypical factors across the different photograph conditions, since the factors were selected as being either consistent with Black stereotypes (genetic) or White stereotypes (intelligence, hard work, socio-economic). However, Mann-Whitney tests on the eight individual stereotype factors revealed only one statistically significant difference - in the scoring of longer limbs, with coaches attributing this factor as more probably contributing to the success of the pictured Black athlete, in comparison to the White. This finding is in a direction that supports the hypothesis, but clearly general statistical support for the hypothesis is lacking, in that the other 7 factors do not reveal significant differences in the expected directions. Indeed, overall, even taking into account non-significant differences, whilst there are 4 factors that conform to the direction of the hypothesis, there are also 4 that do not. Furthermore, even the hypothesis consistent finding for longer limbs is somewhat devalued, in that this factor was the lowest scoring stereotype overall. Thus, considered to contribute least to sprinting success.

In summary, the quantitative results mostly do not support the hypothesis. Although sprint coaches did attribute the supposed success of a pictured Black sprinter more to genetic factors than that of a pictured White sprinter, the difference was very small. Furthermore, sprint coaches did not attribute the supposed success of a pictured White sprinter more to intelligence, hard work and socio-economic factors than that of a pictured Black sprinter. In fact,
the success of the Black sprinter was attributed slightly more to these White stereotypical factors, than it was for the White sprinter. There was no significant difference in the global scoring of the stereotypes, the individual factors were highly correlated in regards to their relative scoring, the rank orders were almost identical, and there was only one significant difference between the scoring of the individual stereotypical factors, across the two conditions.

However, an interesting related pattern that was identified was the tendency to score the Black athlete more highly across all of the stereotypes in general. This was evidenced by the higher Black total stereotype score, the line of best fit in the correlation between the relative scoring of the individual factors, and the fact that 5 out of 8 factors were scored more highly for the Black athlete. As speculated earlier, this might indicate that the sprint coaches felt that Black athletes are more generally suited to sprinting than White athletes, possibly as a result of the large over-representation of Blacks in sprinting (Entine, 2000a). Nonetheless, it should be reiterated that these differences are not of a great magnitude.

Whilst generally the hypotheses are not supported by the quantitative results, there were some differences in the way that the Black and White conditions were scored by coaches. Some of these were consistent with the hypotheses, such as the White athlete being scored more highly in relation to White stereotypes than Black stereotypes.
5.2 Qualitative Results Discussed

5.21 Personal Reasons/Motivations for Coaching

Responses to this initial icebreaker question provided useful contextual information as to the general motivation and philosophy of the coaches in the sample. The overall picture was of a group of coaches operating for positive and constructive social reasons; either in terms of contributing to the development or enjoyment of others, to their own development/enjoyment, or to maintaining involvement with the sport. Interestingly only one coach cited winning as a motivation.

Insight was also provided into the routes that led them to coaching (got involved through child’s participation; was an athlete myself; sports leadership route; identified by potential coach as friend). These ostensibly positive reasons for coaching require a more rigorous critical examination. For example, some coaches may wish to optimally develop athletes because of the associated kudos they main gain as the successful athlete’s coach. The coach’s own enjoyment or development through coaching might not be sufficiently athlete focused. Furthermore, ex-athletes may stay involved in the sport because they wish to maintain personal status, or positions of power, rather than for philanthropic reasons. Although it is perhaps debateable whether ex-athletes necessarily make the best coaches, 3 ex-athletes in this sample saw it as a natural progression into coaching, and a further 2 expressed their happiness to pass on knowledge gained as an athlete.
Of the 6 responses indicating that coaching was a way of staying involved in the sport, 5 also mentioned sustaining injuries. The traditional route of initially getting involved as a sports parent was clearly shown to persist. Of those 6 coaches who got involved through their children's participation, 2 stressed that they starting to help out and then developed an interest in coaching. In most cases the children had moved on, but the parent was still coaching. However, this reason for coaching was not always quite as laudable as it might first appear.

I helped with the group so my son got more coaching, and to check my son got the right coaching.

Whilst it is pleasing to see that two of the coaches became involved through what seems to be the coherent route of starting with sports leadership, it is interesting that only one coach was pre identified as having personal qualities (caring and trust) which might make him a good coach. There are many modern talent identification schemes for athletes in operation, but none are apparent in regards to the coaches who they rely upon for developmental guidance. Furthermore, potential coaches are rarely screened as to their values and beliefs. This could clearly have implications for the possible use of racial stereotypes.

Nonetheless, the general impression gained from this sample of coaches, was that of a positive and dedicated group of volunteers, providing a valuable service to the community in general, and athletes specifically. Of those who
indicated that improving athletes was a motivating factor, nearly half (5 out of 11) specifically mentioned developing youngsters. This reflects a mix of both participation and performance coaches in the sample.

Coaching is a demanding activity, invariably unpaid and undervalued, and often involving high turnover or burnout. Therefore it was particularly pleasing to note how many of these sprint coaches expressed enjoyment of their coaching. Three coaches felt satisfaction because they considered they were doing a good job. Interestingly, of the 3 coaches who indicated that they wanted to motivate athletes, 2 had previously experienced bad coaching themselves.

5.22 Main Qualitative Results

Coaches were revealed as being mostly biologically determinist in their outlook. Over two thirds were of the opinion that sprinters were born, or mostly born, as opposed to made or a mixture of the two. Only 3 coaches felt that sprinters were made through development. Similarly over two thirds were willing to express that the likely balance between born and made was in favour of the former; with the average stated percentage being 75/25. Only 4 coaches were willing to express a balance in favour of made, whilst a further 4 indicated a mixture of the two.

Over two thirds of coaches perceived a lack of equality of opportunity, whilst only 3 coaches expressed the opinion that there was a level playing field in
relation to sprinting success. Presumably, this is at least partly as a result of
the perceived importance of innate qualities detailed above.

The importance of genetic factors also accounted for the most meaning units
of all responses to open questions – again indicating a strong trend towards
biological determinism in success attribution in sprinting. However social
support and psychological factors scored almost as highly, such that
potentially developmental attributions were also well represented.
Nonetheless, meaning units directly related to the interaction of nature and
nurture, and the importance of made factors combined represented less than
a fifth of all responses to open questions.

Direct generic racial comments made up only 4.5% of meaning units. But this
is perhaps not surprising, as the subject was not overtly broached with
coaches. Nonetheless, these comments are very revealing, and do provide
considerable support for the hypotheses. Common stereotypes are shown to
persist in this sports specific setting – relating to Black suitability for sprinting,
Black propensity for fast twitch muscle, Black laziness, and White hard work
(despite lack of natural ability). There were also comments pertaining to the
socio-economic background of sprinters, which indicated that a rough urban
developmental background might be perceived as a potential advantage for
Black sprinters. This reflects socio-economic advantages that were included
as White stereotypes in the survey form – that is, possible disadvantages in
relation to sprinting in the light of the previous comments. There were also
some doubts expressed regarding the accuracy of common stereotypes (which nonetheless indicate that they exist in this domain).

Sub-themes and exemplars for each of the main themes identified from all the responses to open questions are discussed below.

5.23 Importance of Genetic Factors

Within this, the largest theme overall, the largest sub-theme related to the importance of born over made. Coaches repeatedly emphasised that natural qualities were essential prerequisites for success in sprinting – even at the expense of their own developmental influence.

Athletes can run faster with adequate training – but competing at top level you’ve got to have natural ability – gotta be in your genes.

You can’t really make a sprinter – it’s got to be there, then you can work on it, bring it out.

Sprinting is definitely more innate than distance running.

You can coach someone to improve – but exceptional sprinters are born with fast twitch fibres/blessed with speed – you can’t coach that, that’s just genetics.

Coaching doesn’t add a lot really – youngsters can shift whether they have a coach or not.
Such comments are important since such a biologically determinist standpoint may predispose sprint coaches to the stereotyping process. Consider for example to following comment from the same sub theme, and how easily it could be linked with established stereotypes about White hard work and determination, and Black natural ability/laziness in training.

The hard worker will get somewhere, but gotta work far far harder – born athletes train once a week, and not that hard.

The second largest sub-theme was fast twitch muscle. Sprint coaches seem to be almost obsessive about this subject. Allusions to it also appear in other sub-themes as was demonstrated above. Whilst fast twitch muscle fibres undoubtedly play a significant part in sprinting performance, their contribution is affected by the quality of training programmes, and the development of the central nervous system. Furthermore, muscle fibre typing is notoriously difficult (Hoberman, 1997), and virtually unknown in practice at club level in athletics. Nonetheless, the following comment illustrates how assumptions can arise from such opinions, even in the absence of confirming muscle biopsies.

The lad over there (White athlete) he’s about 20. He has all the right attributes; he has the technique, and everything like that. But he can’t run faster than 12.5, because he hasn't got the natural fast twitch muscle fibres to do it.

One wonders how the coach concludes that this is the likely cause? If the athlete indeed lacks fast twitch, then he is doing incredibly well to achieve
12.5. But it is perhaps doubtful whether he is likely to run any faster if the coach quite literally believes that he does not have it in him.

Other sub-themes relate to possible areas that might also easily relate to established sporting stereotypes – the need for muscular strength and power, natural speed and quickness, natural ability, motor control (which could relate to relaxation and movement economy), and longer limbs. An interesting sub-theme arising was the easy recognition of sprinters.

As a schoolteacher you can just see the sprinters straight away.

As a coach you just know that with some coaching they will be special – and that’s something they are born with.

You can tell if they keep at it from age 10 they’re gonna be a champion.

Observation and the use of intuition in coaching are key qualities for effectiveness. But both potentially expose the coach to more risk of stereotyping; and alarmingly, there are indications that this could affect athletes from an impressionable early age (Carrington, 1983).

5.24 Social Support And Socio-Economic Factors

By far the largest sub-theme here was in relation to access to facilities and coaches. There was great emphasis on the fact that such access is not equal, and varies in quality. The second largest sub-theme dealt with issues regarding financial background, parental, and other support, with the
consistent message that athletes need some positive support behind them in order to fully achieve their potentials. In this regard it is important to bear in mind that athletes from a cultural background where physicality is valued will be more likely to receive social support and financial investment. Similarly, the importance of being part of a training group emphasised that peer support and competitive culture were essential to promote development.

Have they got other people to train with? Sprinters are usually lazy – the best are often the laziest. They need the motivation of a group.

In relation to this last point, it is possible that an athlete's development might be compromised because they do not fit in with a racially dominated training group. For example, during data collection, the author witnessed a sprint training group of 19 Black athletes and 1 White, and a distance running training group of 19 White athletes and 1 Black, at one athletics club training evening. Athletes may well self-select events on this basis, depending on their perceived racial group membership.

Despite some comments regarding the middle class status of athletics, and possible disadvantages associated with equipment and training costs, there were also comments pertaining to the ability to overcome socio-economic disadvantages in athletics, and the idea that sprinting may be seen as a means of escaping oppression.

Somebody born in the ghetto knows what it means to struggle – their instinct for survival can help balance out inadequacies in facilities.
Desire to get out, you know – and that’s all they know to do is sprint – it’s like in America with the basketball.

The best sprinters come from a background with a bit of a rough neighbourhood – Black or White.

Since many Black people live in poor inner city urban environments, and have narrower societal opportunities (Coakley, 2000), it is likely that they may effectively be channelled into athletics, as coaches and facilities may be more available, and motivation may be enhanced if it is perceived as a way out of oppression. Whilst the possible advantage of more common White middle class rural backgrounds was also alluded to here, these could ironically also imply less access to athletic facilities and coaches, and possibly less intrinsic motivation (due to greater extrinsic motivation from parents, and the effect of a more cosseted lifestyle on capacity for hard training).

5.25 Psychological Factors

Sub-themes emphasised the need for inner mental strength, dedication, and application to work hard. In regards to inner mental strength, several comments expressed the need to build confidence despite failure, which could be crucial if applied to overcoming stereotype threat for White sprinters (Stone et al., 1999).

Sprinters need success to build on – to see progression.

You’ve gotta have self confidence, but also got to be able to fail to get better.
They need perseverance, to be able to lose without losing motivation.

In relation to the sub theme of motivation, the following comment touches upon the power of media images (Sabo & Jansen, 1994), and the high status of the 100m event.

Everyone starts off wanting to be a 100m runner, because that’s who they see on TV.

But since that event is currently dominated by Black athletes (Entine, 2000a), there is a clear lack of race consistent motivational role models for potential White sprinters.

5.26 Interaction Of Nature And Nurture

In this theme, the need for hard work and dedication despite natural ability was the largest sub theme.

You might be born the fastest, but you have to build on it. You don’t stay naturally the quickest – got to work damn hard. Born to begin with, made as an end result.

In the sub theme of development of natural abilities, several genetic advantages are revisited, but with important qualifications.

You can have fast twitch, but the way your limbs are developed can inhibit ability – needs refining and conditioning.
Earlier discussion pertaining to motivational factors is interestingly reflected in the sub theme related to the *achievement of potential*.

It is often the B+ people, not the A's who will eventually come through. You can get so far on natural ability, but if you're not bothered to train, or things come too easy... it takes a good coach to keep you at the top of the tree.

Early success, very rarely have I seen them stick to it. With the boys in particular it's the physical development, and particularly the Black athletes. Others catch up, and by the time it comes to 17/18 years old, where their motivation or other interests are coming in, they tend to go pretty quickly.

Once again there is potential here for association with stereotypes, such as Black natural abilities, but Black laziness in training.

In the sub-theme of technique and motor control, one coach mentioned the need to not stereotype or pigeon-hole athletes. This represents the only direct reference to awareness of the stereotyping issue in the athletic domain.

Another comment stated:

They are able to control their movement – it may be movement education, or just being born with natural ability.

Indeed a comprehensive movement education will be highly beneficial to any athlete. But the interesting factor here is that the children most likely to experience the best movement education will come from a background that features identification with physical culture. This could represent a differential
cultural influence upon the development of Black and White athletes. Furthermore, when one observes an accomplished athlete, natural ability may seem more immediately apparent and explanatory, rather than appreciating an underlying foundation of movement education.

5.27 Importance of Made Factors

In this theme, the importance of specific physical attributes and genetic inheritance was refuted by coaches, and the predominance of hard work as a prerequisite for success was emphasised.

Inherited factors can be used as a guideline, but not a signpost for the coach. From parent to child, you cannot categorise.

Sprinters come in all shapes and sizes – I wouldn't like to limit anybody.

Some of the greatest sprinters – it is hard work that takes them there – not just being physically fit.

It is interesting to note that from this minority of coaches, who believe that development is more important than biological determinism, there are indirect references to the need not to stereotype, and direct recognition of the less immediately apparent factor of hard work.
Here we find the greatest evidence of the employment of racial stereotypes in the sprint coaching context. Earlier emphasis on genetics generally, and specific predisposing physiological factors for sprinting, is reflected in the largest sub-theme being *Black physiological stereotypes*.

Black athletes have got stronger reflex muscles/twitch muscles – that's obviously important.

I think there is some sort of physiological reason why, particularly Black girls can often run fast – there's something in their pelvis and something in the top of their hips that look different from a White girl, and that helps them to sprint better I think, the way they walk and so on – so they're lucky that way.

Obviously, the coloured kids tend to be a bit stronger. They've got naturally stronger limbs. For whatever reason, they just develop far more muscular structure. But I'd put it down to what they're naturally gifted naturally – what they're sort of born with really, the majority of the time.

Obviously the classical fast sprinter will always be a coloured boy/girl – it's a lot to do with their physical make up.

Afro-Caribbean group is advantaged in sprinting – they have a bigger proportion of fast twitch.

Issues relating to racial and sporting identity, and possibly bio-cultural destiny, were touched upon in the sub theme of *Black association with sprinting*. 
Afro-Caribbean’s tend to be quite attracted to sprinting (you don’t see many in middle distance) – they do see it is their event.

Doubts about racial stereotypes were also expressed. Whilst these indicate a healthy scepticism from coaches, they also highlight (as the first quote illustrates well) that such stereotypes are made salient in relation to sprinting, otherwise coaches would not be refuting them in such an unprovoked way.

Whether or not Black people are quicker runners? I don't know the stats, so I wouldn't like to judge.

I have heard about Asians not having fast twitch muscle, but I don’t believe that.

A lot more Black guys are very good sprinters. They have been more in the limelight – and that’s the reason why. I don’t think race as such has anything to do with it.

Sprinting does attract the Black community – they see all the Black sprinters on TV, and think I could do that.

Earlier issues regarding the socio-economic background of sprinters are revisited in *Black socio-economic background*.

I think a lot of coloured boys do well because it’s like getting out of the ghetto.

The top sprinters, they come from the South, the Black community, the inner city.
The sub-theme of White Stereotypes largely focuses on White disadvantage compared to supposed Black natural advantage. The stereotype of White hard work despite a lack of natural ability is also reproduced in the first example.

You’ll always find coloured people are a lot faster – you have to accept that, and you have to guide your training to compete with those guys.

You will get a fast White sprinter every so often, but not as often as Afro-Caribbean sprinters.

Finally, there was one overt example of the Black laziness stereotype, which has been alluded to earlier, coupled with the White stereotype detailed above.

Blacks are not as bothered about doing the work. The White boys are really keen, but haven’t got the natural ability.

5.3 Synthesis

Generally, the quantitative results do not support the stated hypotheses. However, some specific aspects do partly support the hypotheses, and there seems to be a weak but perceptible trend towards coaches scoring Blacks as being more suitable for sprinting than Whites. The qualitative results indicate that UK sprint coaches might be vulnerable to stereotypes regarding certain groups being naturally suited/gifted for sprinting, or vice versa, since they clearly indicate an emphasis on biological determinism. Furthermore, several direct comments regarding racial stereotypes are evidence that they can be, and are used in contemporary sprint coaching contexts. Thus the qualitative
results may be deemed to somewhat support the hypotheses, in regards to conditions facilitating their use, and in admittedly limited, but unprovoked direct employment.

Hence, rather than the qualitative results complementing the quantitative results, they tend to provide a somewhat contrasting picture. This may indicate that the former is providing a richer, more holistic picture in regards to UK sprint coaches and their possible use of stereotypes. However, it might also indicate methodological issues, which will be considered later.

In regards to the overall results of this study, it is pleasing that there is not a great deal of evidence to indicate that UK sprint coaches are generally treating athletes differently on the basis of racial stereotypes. However, it is of concern that these coaches may be susceptible to several common stereotypes, as a result of preclusion towards biological determinism. For example, they may overly focus on immediately observable qualities indicating natural ability, rather than recognising less apparent but crucial underpinning factors such as hard work, and socio-cultural influences. The direct reproduction and employment of several specific racial stereotypes in the sprint coaching domain, is clearly alarming, despite the fact that these comments make up a small fraction of responses overall. This indicates that at least some UK sprint athletes will be affected by Black/White racial stereotypes, which are adhered to by their coaches.
5.4 Methodological Issues

The photo elicitation method of data collection employed in this study clearly revealed the use of race consistent stereotypes in sports settings in two previous studies (Johnson et al., 1999; Rasmussen et al., 2003). However, these investigated the use of stereotypes in somewhat different social contexts, and with different sample populations. Johnson et al. (1999) was not only undertaken in a different national context (US), and in relation to a different sport (basketball), but also employed a generalised sample of university students in the Deep South, where there is a particular legacy of racial tension and separation. Whilst Rasmussen et al. (2003) was set in the UK, and involved sprinting, the sample were generic novice coaches on a Higher Education course. Thus, while both sample groups were able to reflect common societal sporting stereotypes operating in their respective contexts, they lacked experience of the specific social setting of sprint coaching in athletics. It is possible that this lack of a direct experiential background with athletes in which to anchor the photo elicitation responses predisposed the samples to the stereotyping process, since as Harrison (2001) highlights, in the absence of person specifications stereotypes will be more likely to be employed. In contrast, the sample population in the present study were reasonably experienced at working with specialised athletes, most likely in extended one to one coach-athlete relationships. Therefore, it is speculated that when confronted with the photo elicitation exercise, they effectively transposed an image of one or a composite of their athletes onto the image actually presented — such that personal characteristics of particularly
successful sprinters with whom they had worked were employed in formulating a response. Thus, the photograph itself may have acted as a trigger to elicit such responses, regardless of the Black or White condition. This might explain the highly similar pattern of success attribution across the two photograph conditions, which by chance alone one might expect to differ. That is, it is speculated that the coaches responded to the success attribution exercise by reference to their own experiences of coaching successful sprinters, rather than in response to the picture conditions themselves.

Since Black athletes are clearly over represented in sprinting (Entine, 2000a), it is also highly likely that these sprint coaches will have worked with Black athletes. Thus, it is also possible that the ignorance and suspicion, which underlie hostility to strangers, has effectively vanished due to the contact hypothesis (Kunda & Thagard, 1996). However, whilst it seems very difficult for people to maintain racist sentiments towards individuals they have come to know, we do know that they can create sub categories or special cases, to justify their own continued adherence to stereotype schemas (Pettigrew, 1979). Either way, it is suggested that because many of these coaches had most likely worked with Black athletes on a one to one basis over an extended period of time, that they had become familiar with their personal characteristics, and might effectively have become race blind and stereotype blind in the success attribution exercise for the Black condition, because they had a personalised reference point rather than group one. Kunda and Thagard (1996) indicated that stereotypes are far less powerful than personal characteristics in regards to person perception. Thus, rather than measuring
stereotype scores, it is possible that the survey forms ended up measuring the amalgamated characteristics of successful sprinters regardless of race. Nonetheless, it is interesting that the pictured Black athlete was scored more highly generally across the various factors, possibly indicating a perception of greater suitability for sprinting.

The utilisation of a more focused pilot study might have highlighted the above methodological issues. But although a pilot was undertaken for the photo elicitation exercise, the sample consisted of individuals who had been some experience of coaching athletics, but were not directly involved as current specialist sprint coaches. Thus, the pilot sample may have been more reliant on stereotypes, rather than specific experience of coaching sprint athletes.

This study might be criticised for employing rather arbitrary definitions of race, and for contributing to a preoccupation with racial differences in sport (Davis, 1990). Whilst the concept of race is accepted as uncertain and ill defined by the author (Birrell, 1989), it is considered that since it retains a common societal use as a categorising criteria (Ridley & Hill, 1999), it remains an important sociological concept to be investigated (Long, Carrington, & Spracklen, 1997). Thus, the study does not intend to legitimise the concept of race, but to investigate and reflect its common societal employment in a sports specific setting. Previous literature pertaining to a preoccupation with racial differences has focused firmly upon perceived genetic advantages of Black athletes (e.g. Burfoot, 1992), whilst this study aims to question the use
of both Black and White racial stereotypes, and to help dispel racial mythology in sport (Eitzen, 1999).

Another methodological issue is that the subject of the study was not overtly broached during the qualitative interview. This resulted in a lot of potentially peripheral data, and it is possible that a more direct approach might have been more productive. For example, Hayes and Sugden’s (1999) study of racial stereotype adherence by UK physical education teachers, asked direct questions, and found strong evidence of stereotype employment. However, it is also possible that such an approach might have changed or curtailed the comments of the coaches in this study due to concerns about political correctness. Furthermore, it is considered that a broad picture was gained in this study – with not only unprovoked expression of situated stereotypes, but also some indication of the reasons behind their use.

The ethical issue of not making the subject of the study overtly clear to the participants perhaps needs to be considered also. It should be noted that this approach was not employed in order to catch out the coaches, but to gain data that was largely uncontaminated by political correctness. As Entine (2000a) points out, race has become something of a taboo subject in the sporting domain, and thus the truth may be obscured, or largely unexplored. Participants were informed that the study was concerned with success attribution. This was not entirely untrue, and allowed coaches to contribute without the anxiety associated with a potentially controversial area.
Furthermore, those unprovoked comments pertaining to stereotypes, which did arise, may be viewed as all the more valuable and genuine.

It should be noted that the author found no evidence of overt racism, or malicious discrimination, and is generally supportive of the work of coaches such as those in the sample. However, it is hoped that this study will focus attention on the possible influence of racial stereotypes on coaching practice, and thus potentially reduce their influence through heightened awareness. Perhaps stereotyping needs to be divorced from the stigma of racism, for it to be recognised as a habitual and pervasive process for dealing with cognitive complexity?

It must be recognised that the results of this study may be specific to that portion of the intended sample group, that, for whatever motivation, was inclined to respond to our survey, and thus may not be fully representative of UK sprint coaches as a whole. It should also be noted that the resulting sample consisted of both participation and performance coaches, who operate in quite different contexts. Thus, a more homogenous sample might be more appropriate in future studies.

5.5 Comparison With Previous Literature

Patently, the vast majority of literature reviewed earlier was North American in origin, and it is possible that the limited nature of some of the results of this study are due to racial stereotypes in UK sport being less prevalent. However,
research in the UK context undertaken in areas such as stacking (Long, Carrington, & Spracklen, 1997), media broadcast images (McCarthy, Jones, & Potrac, 2003), physical education (Hayes & Sugden, 1999), and the experience of Black athletes (Jones, 2002), is at least indicative of similar societal processes and problems. Plus, whilst the hypotheses in this study are not fully supported, there are clear examples of the reproduction of some racial sporting stereotypes by coaches in the UK social context, as was also the case in Rasmussen et al. (2003).

Contrasting the modern experiences of Black and White athletic groups is problematic, since true comparison is contaminated by hegemonic White power structures and values (Hall, 1996), the salience of race as an organising category in contemporary society (Ridley, 1995), and actual cultural differences arising from differential treatment (Carrington, 1998). Ironically, we could only really begin to resolve if there are indeed any racially based genetic differences in athletic performance, in a truly race blind society.

However, it remains a fact that Black athletic success is concentrated in a narrow range of specific sports, whilst White success is more widely spread across sports in general (LeUnes & Nation, 2002). Specifically, Black athletes have certainly come to dominate contemporary sprinting (George, 1994). But the cause behind this phenomenon is less clear-cut. If it is genetic superiority, then it seems surprising that Blacks have not experienced more success across broader history, geography, and sports (Samson & Yerles, 1988; Smith, 1995; Wiggins, 1997). Furthermore, one might expect that they would
self-select other sports with high associated rewards, such as golf, tennis, or beach volleyball (Coakley, 2000).

It is proposed that the cause may be more related to how others and themselves have reacted to their Blackness (or Whiteness). It is important to recognise that because athletes may be deemed to be part of a socially constructed racial group, that they may also adhere to common cultural values regarding sports participation (Simons, 2003). Thus, athletes bring with them both distinctive genetic and environmental inheritances. Whilst this makes the coach's role more demanding, it could also become an ally in effective coaching. For example, appreciating the relationship between the development of racial identity and sporting identity could be a useful tool for coaches working in racially diverse environments. Ultimately, this could help to avoid racial tensions through facilitating better understanding and communication with individual athletes from different racial backgrounds (Harrison, Harrison, & Moore, 2002).

Unfortunately, simplistic stereotypical explanations of racial representation in sport are more prevalent (McCarthy & Jones, 1997), and these are usually founded on supposed racially based physiological advantages or disadvantages. Undoubtedly such stereotypes can be misleading, and harmful (Brewer, 1996); and individual differences must be recognised, since members of social groupings are not all the same (Hoberman, 1997). Unquestionably, individual genetic makeup results in different athletic potentials (Bouchard, Malina, & Pérusse, 1997), but environmental and
cultural influences ensure that no two individuals are exactly alike (Klissouras et al., 2001). Thus, individual athletic potentials are unique and complex, and require personalised nurturing. Therefore, standardised (or generalised) coaching approaches are likely to optimise the development of only a small percentage of athletes, and may impact negatively on others.

Nonetheless, Black underperformance in swimming is often explained by a lack of buoyancy (Ama & Ambassa, 1997), achievement in distance running explained by better running economy (Coetzer et al., 1993), and achievement in athletics by an enhanced natural ability to run and jump (Entine, 2000a). Whilst it is possible that there may be some small average differences in racial athletic abilities, the above explanations belie the fact that successful sporting performance is a biopsychosocial phenomenon. That is, the complex interplay of genetic and environmental contributions indicates that, rather than being dichotomous, nature and nurture are inextricably linked, and indeed complimentary (Shermer, 2000; Ridley 2003), in regards to athletic development (Singer & Janelle, 1999). Nonetheless, equivocal research findings in relation to race and athletic performance have not precluded the spread of largely unfounded stereotypes (Hoberman, 1997). For example, in this study it has become clear that many sprint coaches adhere to the stereotype of Black propensity towards having fast twitch muscle fibre. But the key study in this area, by Ama et al. (1986), featured a small and sedentary sample, potentially unreliable procedures, and borderline statistical significance. Nevertheless, this appealingly simplistic explanation seems to be adhered to in a naturalistic setting.
It is patently important to uncover why some embedded stereotypes seem to persist (Billings & Eastman, 2002). In the context of this study, it might be that sprint coaches are particularly susceptible to stereotypes and stereotyping. Principally, because of preclusion towards biological determinist explanations for sprinting success, which might predispose them to stereotypes regarding Black natural athletic abilities. It is suggested that coaches need to recognise more fully the complex interplay of both nature and nurture in the phenomenon of athletic excellence (Singer & Janelle, 1999). They should also recognise and value their own crucial developmental influence more highly.

Natural ability is an appealing simplified explanation, and seems coherent since it is obvious and observable. What is not so obvious, and what cannot be seen, is sustained hard work, a foundation of movement education, and the influence of facilitating socio-cultural support. The real answer is complex, paradoxical, and off-puttingly challenging. For example, one paradox is that whilst Black achievement in sport may be both a result of, and a perpetuation of, narrow societal opportunities elsewhere, Black athletic achievement still needs to be recognised and celebrated, rather than denigrated and explained away by spurious stereotypes.

There is a further paradox that coaches need to develop and value intuitive abilities that characterise part of excellent coaching, but at the same time must be vigilant to suppositions based on stereotypes. Coaches are frequently involved in non-deliberative decision-making, where episodic memory and routinised decisions are employed. Thus, without critical self-
reflection about their own assumptions and beliefs, they may be particularly susceptible to habitual over generalisations (Madon et al., 1998). Therefore, the pervasive and automatic nature of stereotypes must be recognised and challenged within the sporting context (Smith, 1995).

It was proposed earlier that stereotypes are rooted in schema theory (Atkinson et al., 1993). Schemas allow us to cope with cognitive complexity, which is certainly a demand in the coaching role (Gilbert & Trudel, 1999). However, that benefit is tempered against issues arising from categorisation, and information processing bias, which operate to maintain the simplicity of the coping mechanism (Levy, 2000). Thus, whilst schemas are conducive to making simple associations and linking semantic networks regarding stereotypes (because this reduces complexity), they are not conducive to recognising multifaceted contributions to performance and dealing with naturalistic paradoxes (because this increases complexity). Consequently coaches may be subconsciously drawn to appealingly simplistic, but not necessarily accurate, explanations for racial athletic performance. Furthermore, as Harrison (2001) indicates there is little motivation to challenge such apparently straightforward reasoning, since stereotypical beliefs can gain considerable credibility in success attribution. To combat this effect, coaches need to recognise the complexity of their role, and regularly employ critical self-reflection, in order to review the appropriateness of their opinions, beliefs and values. This will require a greater consideration of the why of coaching practice, as opposed to the what. Furthermore, coaches need to ensure that they develop and refine their knowledge base through
continuing professional development, and therefore promote evidence-based practice.

For example, the unintelligent athlete stereotype must be challenged regardless of race. The two are historically linked (Hoberman, 2000), but there is no associated scientific evidence. Interestingly, there was very little evidence of coach adherence to Black or White racial stereotypes about intelligence in this study. This may be due to a perceived lack of cognitive demand and decision-making in sprinting.

You don’t have to be too brainy to be a sprinter, because you basically have to run from gun to tape as quick as possible.

However, natural ability stereotypes were seen to persist, and possibly even be facilitated by dominant biologically determinist attitudes. Similar patterns have been evidenced in recent associated research, whereby Black athletes receive more credit for cognitive abilities than was apparent in previous studies, but are still considered to be more naturally gifted physically than Whites (e.g. Denham, Billings, & Halone, 2002). Nonetheless, associated negative racial projections may still arise due to media representations of Black athletes, which emphasise physicality (Soar, 2001) – such as White ineptitude and Black primitiveness. Such media representations may also promote the development and adoption of stereotype consistent self-schemata (Harrison et al., 1999), which in turn can affect athletic performance through increased susceptibility to stereotype threat (Steele & Aronson, 141.
1995), and stereotype lift effects (Walton & Cohen, 2003), and the influence of the self-fulfilling prophecy (Horn, Lox, & Labrador, 2001). Thus, it is proposed that a combination of factors is in operation in effectively channelling Black athletes towards, and White athletes away from sprinting. A theoretical model of these stereotypical influences is illustrated in Figures 3 and 4 (see Appendix H – Additional Notes on Theoretical Models). It must be stressed that the author has drawn together these ideas from a number of different domains, which were previously reviewed, and thus credit must be extended to other authors. For example, to Coakley (2000) for his ideas in regards to a model of Black bio-cultural destiny via societal pressures.

Figure 3. Theoretical Model of Stereotypical Influences Upon Black Sprint Performance
Effectively, it is proposed that the cumulative effect of these various influences is profound in relation to the relative importance of sprinting in Black and White contemporary sub-cultures, regardless of whether meaningful physiological differences actually exist or not. Thus, it is important that all coaches (whatever their beliefs) recognise the potential power of the stereotyping dynamic upon athlete development.

Despite the enduring appeal of the egalitarian notion of the level playing field, this sample of sprint coaches were clearly of the opinion that there was inequality of opportunity in sprinting. Analysis of their comments has revealed
that many of the coaches believe that this may arise from differences in the
possession of natural athletic abilities (although differences were also
highlighted in socio-economic circumstances, amount of social support, and
quality of athlete motivation). However, it is possible that Black over-
representation in sprinting is as much a result of perceptions of natural
abilities, as it is of actual qualities. Similarly, the White absence from
contemporary sprinting may be as much to do with perceptions of physical
inferiority, as it is with actual deficiencies. Coaches play a crucial part in
shaping athlete self-perceptions, and in perpetuating or refuting common
stereotypes through their coaching practices.

5.6 Recommendations for Coaches

It is crucial that coaches provide consistent feedback to all athletes, which is
communicated with an underlying conviction that all athletes are capable of
attaining high performance standards, regardless of their perceived race
(Baker & Horton, 2003). Providing differential feedback to athletes due to pre-
existing assumptions (Solomon and colleagues, 1996, 1996b, 1998), and
lacking faith in the potential of some athletes without sufficient supporting
evidence, can lead coaches to become embroiled in self-fulfilling prophecy
effects, which not only employ, but also further fuel stereotypes (Horn, Lox, &
Labrador, 2001). Thus, coaches need to be vigilant with regards to equality of
opportunity for all athletes to practice and improve their athletic skills.
To avoid erroneous assumptions based on stereotypes, coaches should continually supplement their subjective assessments of athletes, with objective performance based biographical data (Johnson, 1988). Such information is particularly important in situations where coaches have to make pressured decisions, with minimal time and athlete contact – such as sports selection trials, or the allocation of positional roles (Madon et al., 1998).

Coaches need to recognise the importance of self-efficacy in relation to athletic performance, and the potentially damaging psychological effects of stereotypes (Stone et al., 1999). Thus, the coach should develop strategies to promote optimism, and to reinforce athlete self-efficacy, even in the face of stereotype consistent competitive setbacks (Baker & Horton, 2003). This could include psychological skills training, with an emphasis on mental toughness.

Coaches need to avoid triggering stereotype threat (Steele & Aronson, 1995) or stereotype lift (Walton & Cohen, 2003) effects in sporting contexts, by ensuring that they do not reproduce stereotypes via casual or supposedly humorous comments. Furthermore, they need to employ critical self-reflection to avoid expressing belief based as opposed to evidence based opinions regarding sporting performance, which may further fuel such effects by making stereotypes salient. Coaches should recognise and emphasise the inconclusive research findings on sports performance and race. Thus, they could actively help to minimise the credibility of largely unsubstantiated
stereotypes (Baker & Horton, 2003), and stem the continued dissemination of racial mythology (Eitzen, 1999).

Coaches must recognise and deal with the paradox that whilst they need to develop and utilise intuitive qualities in order to be effective in the sporting domain, such qualities may lead them to be susceptible to the stereotyping process. To safeguard against this coaches should regularly critically reflect upon the assumptions that underlie their non-deliberative decision making in coaching practice, and undertake continuing professional development in order to regularly enhance and update knowledge and understanding. In particular, coaches should recognise the inextricable contributions of nature and nurture towards sporting performance, and not devalue their own developmental efforts by overly focusing on natural abilities, which may be more immediately apparent, and less on qualities such as hard work and deliberate practice, which are less apparent. An over emphasis on biological determinism seems highly likely to promote adherence to several common racial sporting stereotypes regarding natural ability (Hoberman, 1997).

A further paradox for coaches, relates to that between individualisation, and racial identity. In the process of attempting to maximise the potential of their athletes, coaches should attempt to individualise their coaching as much as possible, since every athlete is a unique product of genes, environment, and motivation. But, whilst the principle of individualisation is fundamental in coaching (Rushall, 1985), we also need to recognise that individuals come to us with influential group identities, which may be based on race, culture, and
ethnicity. Thus, coaches need to appreciate the potential interplay between racial and sporting identities (Harrison, Harrison, & Moore, 2002). For example, Nigrescence theory (Cross, 1995) may offer a useful conceptual basis for understanding the Black community’s identification with sport generally, and sprinting in particular, and the way that stereotypes are both created and adhered to in this social dynamic. Similarly, Whiteness and associated sporting identity needs to be further explored in order to appreciate associated socio-cultural influences (Long & Hylton, 2002). However, recognition of such racial identities should not preclude the coach from seeking to become familiar with the individual athlete, nor from challenging possible restrictions on sporting identities. Nonetheless, slightly different coaching approaches may be necessary, at least initially, for those from different cultural backgrounds (although they should quickly be individualised). For example, the novice White sprinter, who potentially has less race consistent role models and training partners, and is in greater danger of stereotype threat effects, may require more emphasis on the development of self-efficacy and mental toughness. It might also be useful for coaches to help athletes to critically explore their reasons for initially selecting, or for considering switching between, sporting events/positions, and how accurately these might reflect actual sporting potentials and opportunities. Coaches who gain knowledge about individual athletes and their backgrounds may be more empowered to make judicious decisions, as well as broadening their own horizons.
5.7 Recommendations for Coach Education

Generally, coach education needs to attempt to develop socially adaptable and critically self-reflective practitioners, who are accustomed to reviewing the assumptions and beliefs underpinning their coaching practice, and are committed to continuous development and learning. Such individuals will clearly be less susceptible to the influence of stereotypes. This approach requires a shift from the traditional emphasis on the what of coaching, to a greater consideration of the why of coaching practice. Kidman (1994) has recently recommended the adoption of more self-reflection and critical self-analysis in coach education.

Specifically, coach education needs to address the issue of common sporting stereotypes, and critically review the evidence behind them. Examination of racial stereotypes in coach education is very rare indeed, perhaps because of concerns regarding political correctness or sensitivity. However, if stereotypes are not challenged within coach education, this may be viewed as tacit acceptance. One could argue that coach education that does not require coaches to critically question their own assumptions about coaching practice has little intrinsic value.

Coach education should encourage coaches to critically review their coaching practices, and coaching philosophies on an ongoing basis. It should also be considered whether initial coach education should include some sort of
screening for values and beliefs given the potential link to stereotype adherence, and the highly influential role of coaches.

More Black coaches need to be recruited, and their development facilitated, in order to address under-representation (particularly in sports where there is a large Black presence), and dispel certain stereotypes regarding intelligence and decision-making. Similarly, strategies should be devised whereby coaches can help to address racial underachievement in particular sporting contexts – for example contemporary White stagnation in sprinting.

5.8 Implications for Future Research

Future research should perhaps replicate a study such as this, in the context of swimming, where in contrast to sprinting Blacks are highly under-represented, and strong negative stereotypes exist (e.g. buoyancy) (Mullen, 1993). Similarly, it might be interesting to investigate the use of stereotypes by coaches in distance running, where genetic stereotypes regarding East Africans are prevalent (Hamilton, 2000).

In future studies it is recommended that a more homogenous sample of participants is employed. That is, either performance or participation coaches, since their roles, function, and social context differ quite markedly (Lyle, 2002).
In regards to methodology, this study has raised some concerns regarding the use of the photo elicitation method. However, since this method was effective in two previous studies, it might be useful to reassess its usefulness with another sample of similarly experienced and qualified coaches.

As an alternative, the problem of stereotype use by coaches could be attacked head on, as per the methodology of Hayes and Sugden (1999) with physical education teachers. That is, to make the subject of the study overtly clear, and ask direct questions (e.g. Why do you think there are so few Black competitive swimmers?). Whilst this might trigger sensitivity, and potentially contaminate results due to political correctness, the study previously mentioned did obtain some interesting results.

A further possibility is to adopt a more imaginative biography based method. For example, providing identical performance indicating information to coaches, along with a Black or White photograph, and requesting assessments of potential for success. This reflects the type of approach used by Stone, Perry, and Darley (1997) who played an identical radio broadcast of a basketball game to participants, but obtained different player evaluations depending on whether they were informed that the player was Black or White.

Future studies might also choose to evaluate the experience of under-represented athletes and/or coaches, via qualitative interviews. For example, the experience of Black swimmers, White sprinters, or Black football coaches.
This approach was productively used by Jones (2002) in relation to the experience of Black semi-professional footballers.

In the absence of incontrovertible evidence regards racially based genetic sporting advantages, future research should perhaps examine alternative explanations (Baker & Horton, 2003). For example, the role of stereotype threat and stereotype lift in racially dominated elite sport settings requires investigation. Whilst such a subject area is potentially controversial in many ways (e.g. employment of definitions of race), an absence of enquiry due to political sensitivity, could lead to the perpetuation of existing common racial stereotypes.

5.9 What Has This Study Achieved?

This study constitutes a rare examination of the use of stereotypes by coaches in a sport specific UK setting. Thus, it represents an attempt to contribute to a neglected area of academic enquiry. Furthermore, this study is somewhat unusual in regards to its interdisciplinary nature. That is, it embodies a synthesis of different areas of study and different methodological approaches. This reflects a deliberate attempt to be inclusionary – drawing together various disciplines and opinions in explaining complex phenomena. For example, the author rejects the nature-nurture dichotomy, and similar polarisations, and stresses that real world issues regarding the use of situated stereotypes are multifaceted and paradoxical. It is hoped that this approach has provided a rich and ecologically valid picture.
Whilst many academic articles theorise on the use of stereotypes in sport (e.g. Lapchick, 2000), this study is a very rare example of data collection in the area. Some reassuring evidence has been gained that sprint coaches generally do not treat athletes differently on the basis of race. But also some concerns have been raised regarding the susceptibility of sprint coaches to some established racial sporting stereotypes, and evidence that some stereotypes persist, and remain in force. Consequently, a theoretical model of stereotype influences on Black and White sprint performance has been provided, along with potential guidelines for coaching practice and coach education. Hopefully, awareness and understanding of the issue generally has been raised, and a contribution has been made to advancing the literature in the neglected area of the use of stereotypes by sports coaches.
Chapter 6 – Conclusion

This study has investigated the use of racial sporting stereotypes by UK sprint coaches. Reassuring evidence, at least in regards to this sample of sprint coaches, was found that stereotypes are not used widely to attribute differently the success of Black and White athletes (although there was some indication that they may consider the former to be generally more suited to sprinting). However, concern was also raised that sprint coaches may be particularly susceptible to adherence to, and employment of, common racial sporting stereotypes, via a prevailing emphasis on biologically determinist explanations of sprinting success. Socio-economic, cultural, and developmental influences do not seem to be recognised so readily by these coaches, perhaps because they are not so immediately apparent as supposedly natural talent. Furthermore, in situ use and replication of some common stereotypes was shown to persist, highlighting the need for continued vigilance.

As a personal reflection on the research process, the author feels that a broad and deep understanding of the somewhat neglected area of the use of racial stereotypes by sports coaches has been gained. This was facilitated by the interdisciplinary nature of this study, and the use of both qualitative and quantitative methodologies, which provided multiple perspectives on the problem area. Such an inclusionary approach in part evolved from the experience of having four supervisors during the study, with four different specialisms (physiology, psychology, osteology, sociology), but also from a
desire to reflect the complexities of the naturalistic setting of coaching without constructing artificial academic boundaries.

It is hoped the resulting holistic view has provided a valuable contribution to the literature in this area, particularly in regards to data collection, the UK context, theoretical models of stereotype influence on sprint performance, and recommendations for coaching practice and coach education. The study has certainly caused the author to critically reassess his own assumptions in coaching practice, with a resultant shift away from a biological determinist position towards a more integrated appreciation of the interlinked influences of both nature and nurture.
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Appendix A

Examples of Survey Forms
Below is a list of attributes and factors commonly used by many coaches in track and field to describe the success of 100-metre sprint athletes. Look briefly at the pictured sprinter below who is a club standard athlete. Then rate all the statements in terms of how probable they may seem in having been a contributing factor to the athlete’s success on a scale from 1 - 7. With 1 being highly improbable and 7 being highly probable.

<table>
<thead>
<tr>
<th>Highly improbable</th>
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<td>Knowledge and intelligent use of training methods</td>
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<tr>
<td>Relaxation and movement economy</td>
<td></td>
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<tr>
<td>Natural speed and quickness</td>
<td></td>
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<td>Longer limbs</td>
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<td>Access to better facilities</td>
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<td>Hard work and dedication</td>
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<td>Natural large muscle mass</td>
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<td>Access to better coaching</td>
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<td>Knowledge and intelligent use of training methods</td>
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Appendix B

Consent Form
INFORMED CONSENT FORM

Thank you for agreeing to take part in this study. We are currently undertaking research into success attribution in sprint coaches. Before you start we would like to emphasise that:

- Your participation only requires you to complete one short tick sheet questionnaire, and to respond to 4 oral questions (20 minutes max)
- Your participation is entirely voluntary
- You are free to withdraw at anytime

Questionnaires and responses will be kept strictly confidential and will only be available to the researchers for the purpose of statistical analysis. Results may be used for publication in a peer-reviewed journal, but under no circumstances will your name or any identifying characteristics be included in written reports.

Please feel free to ask any questions before we start. Should you have any subsequent questions, you may contact us via email david.turner@luton.ac.uk or ricky.rasmussen@luton.ac.uk

Please sign this form to show that you have read the above information. In signing this consent form you are not waiving any legal claims, rights, or remedies.

_________________________(signed) Male/Female

_________________________(printed) Age

_________________________(coaching qualification) (approx length of sprint coaching experience)

date

Please send a report on the results of the project:

YES NO (circle one)

Address for those requesting final result of the research report

_____________________________________

(Interviewer to keep signed copy and leave unsigned copy with respondent)
Coach 30 (Chelmsford AC) 24/06/03 White

Q1

- I think the fun you get out of it, to be honest.
- And the return from – if I show a level of dedication, and the athletes show a level of dedication, and they improve, and they’re pleased – because I mainly coach juniors. And to see them improve is good fun for me, and makes me come back. That’s the bottom line. I work hard, and if they work hard and they see some improvement, then they get an enormous level of satisfaction. And that obviously comes back on me, and it spurs you on to try and improve the next lad or the next girl.

Q2

- I think a sprinter has got to be born really. You can be a fast runner, a good club runner – but a natural sprinter is born, and you can get them at 10 years/11 years and you can see that they will become, if they work hard, a good sprinter. You can develop other reasonably good athletes, to produce a reasonably high level of sprinting speed, but the good ones are natural.

Any particular personality types that do well in sprinting do you feel?

- I think there’s a level of confidence there. If someone is aware that they’re reasonably good, and not afraid to lose – because a sprinter is I think a bit prima donnish – and if they lose, and they cannot take losing, then they’re never going to improve. You’ve gotta have self confidence, but also you’ve gotta be able to fail to get better.

Physical attributes?

- Obviously, sort of a reasonably good shape. You know, fairly long limbed, but not necessarily, and it’s obviously different for girls and boys. I think it’s just having the muscle type, the fast leg speed, and the ability to do that, and to be able to control your limbs. Some kids can run reasonably fast, but they’ve got no control over their legs at all. They cannot train themselves to take little steps, or little short sprints, or very fast leg turn.

So that’s almost motor control sort of thing?

- It is, yeah.

And you feel that’s a natural innate thing, or you can develop it?

- I think you can develop that, but you’ve got to get them young. Unless they’ve got a really natural ability, if you don’t get them really young, sort of really early teens, then the chances of getting them to be able to do that is gone. It’s very very difficult.

So this is almost like having a movement foundation to start with.

- Yeah. It’s having the ability to move legs more than arms, but certainly legs, to be able to manage the degree of movement that you want them to do. Very short fast steps. And that is sort of linked brain to muscle, and muscle fibre type. But you’ve really gotta work very hard at trying to get that control.
I honestly believe that they are - it's natural. You can be a natural sprinter, a natural long jumper as well. But sprinting - you can pick them at a sports day.

Do you feel that's more so than other athletic events?

I think so. Because, I always think that people start off - everyone perhaps starts off, if you're going to be on the fast movement type of sport - you wanna be a 100 metre runner. And then if they don't make that they go on to a 200, and then they go on to a 400, and then they try and do a bit of long jump as well. But, I think it all starts off with, I wanna be a 100 metre runner, because that's who they see on television. And if they don't make that, then they migrate to the slightly longer, slightly slower distances.

So the 100 metres is more of a glamorous role model type thing?

Yeah. I think they all believe that they're brilliant runners, until they actually get in a proper race, with some other decent athletes, and then they sort of think again, and think well perhaps... It's a shame that a lot of kids are now moving up very early. They run a 100 metres at 12 and get beaten, and think I'm no good at 100, I wanna run 200 next year. And then they run a 200 at 13, and think I'm no good at this, I wanna run 400 at 14. Because they're so convinced they can't do it. What puts that pressure on them I don't know - whether it's sort of peer pressure, or just the fear of losing - they don't want to lose at 100, so I'll go to 200, I'll stand a better chance. I'm losing at 200, I'll go to 400.

Why mostly born?

I think they're born with - they've got the ability to control their movement at an early age, and you can see that. It may be that some kids have done things like gymnastics at a very young age, and that's taught them a huge amount of control. And you can see where kids have done gymnastics at 5 and 6, and I think either that or they're just born with the innate ability to control their movement, without even thinking about it. They don't know they can, they just can do it.

Likely balance?

I would have said 80/20. If you're born to be a good sprinter - 80% of those that are in the County Championships/Essex Schools sprints are made - and you know, you can tell if they keep at it from the age of 10 you know if they keep at it they're gonna be a County/Essex Schools/English Schools champion.

So, just to clarify, they have to keep at it, but it's 80/20 born?

Yeah. The hard worker will get somewhere. He will make the finals. But they've gotta work far far harder. The born athletes are the ones that train once a week, and don't really train that hard, but can still turn out and still run naturally.
I think it’s difficult to answer. My interpretation of that if you like, is what support they get out of the club. I’ve got some very good ones, that because of their home life, home circumstances, home finance, will never reach their proper level. The club can only do so much, but because they can’t pay to go training, or I know they eat terribly, they will never develop. If someone was given everything, or most things, then you’d see a far higher level of achievement. Not just in sprinting, but in all athletics I think.

Even an appreciation of parents appreciating the skill that their child has got, and taking zero interest in it. You know you’ve got that, as well as the basic thing where I’m not going to buy that food, or you’re not going to have that training equipment, or I’m not going to pay for this or the other.

Cultural factors?
I mean, obviously, the classical fast sprinter will always probably be a coloured girl or boy – and that’s a lot to do with their physical make up. But again, they in my mind are the ones that are probably not as bothered about doing the work. From my experience, the White girls/the White boys are really keen to do it – and they’re the ones that are busting to improve, but haven’t got quite the natural ability of the coloured ones. And the coloured people don’t really - are not that interested.

And would the natural ability come back to the movement qualities you were talking about?
Yeah, I think so.

Is there anything else in there?
Obviously the coloured kids tend to be a bit stronger. They’ve got naturally stronger limbs, for whatever reason, they just develop far more muscular structure. But I’d put it all down to what they’re naturally gifted – what they’re sort of born with really, the majority of the time.

On the point that you made earlier about movement, you almost said that the connection between your brain and your muscles- if the connections good then the muscles are gonna grow I suppose?
That’s right. And I think again, they’re not aware that they’ve got that connection. But they can produce the goods – they can produce the fast feet, the close control – which is something you can try and work with kids, and they will be very self defeatist, they will say straight away, I can’t do that. And getting over that I can’t is very difficult.
Appendix D

Interview Questions and Probes
Semi-Structured Interview Questions + Probes
(for clarification/depth)

What are your personal reasons/motivations for coaching?
Why?

What personal attributes or qualities do you believe sprinters have to possess in order to be successful?
Why?
Personality factors?

Do you believe that sprinters are mostly born or made?
Why?
What is the likely balance?

Do you believe that there is a level playing field in relation to sprinters and their likely success?
Why?
Why not?
Important socio-economic factors/
Important genetic factors?
Appendix E

SPSS Output for Mann-Whitney Test on Comparative Scoring of Global Black and White Stereotype Scores
Appendix D - SPSS output for Mann-Whitney Test on Comparative Scoring of Global Black and White Stereotype Scores

NPar Tests

Mann-Whitney Test

<table>
<thead>
<tr>
<th>RACEPIC</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEREOSC White</td>
<td>16</td>
<td>17.56</td>
<td>281.00</td>
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<tr>
<td>Black</td>
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<td>14.33</td>
<td>215.00</td>
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<td>Total</td>
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Test Statistics\(^b\)

<table>
<thead>
<tr>
<th>STEREOSC</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
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</thead>
<tbody>
<tr>
<td>STEREOSC</td>
<td>95.000</td>
<td>215.000</td>
<td>-.993</td>
<td>.321</td>
<td>.338(^a)</td>
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\(^a\) Not corrected for ties.  
\(^b\) Grouping Variable: RACEPIC
Appendix F

SPSS Output for Spearman’s Rho
Appendix E - SPSS Output for Spearman's Rho

Correlations

Nonparametric Correlations

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<th>BLSCORES</th>
<th>WHSCORES</th>
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</thead>
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<td>Spearman's rho</td>
<td>Correlation Coefficient</td>
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<td></td>
<td>Sig. (2-tailed)</td>
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<tr>
<td></td>
<td>N</td>
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</tr>
<tr>
<td>WHSCORES</td>
<td>Correlation Coefficient</td>
<td>.994**</td>
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<tr>
<td></td>
<td>Sig. (2-tailed)</td>
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<tr>
<td></td>
<td>N</td>
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**. Correlation is significant at the .01 level (2-tailed).

Graph
Appendix G

SPSS Output for Mann-Whitney Test on Comparative Scoring of Individual Factor *Longer Limbs*
Appendix F - SPSS Output for Mann-Whitney Test on Comparative Scoring of Individual Factor Longer Limbs

NPar Tests

Mann-Whitney Test

Ranks

<table>
<thead>
<tr>
<th>RACEPIC</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLSCORE white</td>
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<td>1.00</td>
</tr>
<tr>
<td>black</td>
<td>1</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>Total</td>
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Test Statistics

<table>
<thead>
<tr>
<th>LLSCORE</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
<th>Exact Sig. [2*(1-tailed Sig.)]</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>.000</td>
<td>1.000</td>
<td>-1.000</td>
<td>.317</td>
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</table>

a. Not corrected for ties.
b. Grouping Variable: RACEPIC
Appendix H

Additional Notes on Theoretical Models
Additional Notes on Theoretical Models

It should be noted that whilst the various influences included within the models are deemed to be cumulative in regards to their potential impact upon sprinting performance, they are not necessarily sequential. For example, many Black families in contemporary society may have made economic progress, such that they may be viewed as middle class/middle income. Similarly some White sprinters may originate from poor urban working class backgrounds. Therefore, the first influence/stage may not even apply for certain individuals.

Thus, it is important to recognise that stages within the model may in themselves be generalisations, and should not lead to the adoption of uncritical stereotypical assumptions. Nonetheless, the author contends that at the time of writing, Black athletes will generally tend to originate from less advantageous socio-economic backgrounds, and that White individuals will have access to wider societal opportunities elsewhere. That is, stereotypes within the model are deemed to be largely based on current truths, plus are substantiated by much of the reviewed literature.

However, not only are the models in an early stage of development, and requiring testing through further research, they should also be viewed as dynamic, in that societal circumstances may change over time, and reduce the strength or accuracy of the individual contributing factors.

Finally, stages in the models, which appear to be separated, by several intermediate stages, should be reconsidered as potentially feeding directly into one another. For example lack of role models could be directly linked to unconfident and anxious white sprinters, with influences operating in both directions.