"White men can't jump." But can they throw? Social perception in European basketball

P. Furley[1], M. Dicks[2]

[1]German Sport University, Cologne, Germany, [2]University of Portsmouth, Portsmouth, UK
Corresponding author: Philip Furley, PhD, German Sport University, Cologne. Institute of Cognitive and Team/Racket Sport Research, Am Sportpark Müngersdorf 6, 50933 Köln, Germany. Tel: +49(0)221 4982-4310, Fax: +49 221-4982 8260, E-mail: p.furley@dshs-koeln.de

In the present article, we investigate the influence of sociocultural stereotypes on the impression formation of basketball players and coaches. In Experiment 1 ($n = 32$), participants were shown a picture of a black or white basketball player prior to observation of a point-light video of a player executing a basketball free throw. The participant was informed that the player depicted in the picture was executing the free throw. Results indicated that ethnicity of the target player significantly influenced participant evaluations, demonstrating specific stereotypes about black and white basketball players when evaluating performance. In Experiment 2 ($n = 30$), results derived from the Implicit Association Test indicated that black players are implicitly associated with athletic player attributes. The results are in line with social schema theory and demonstrate that – similar to findings that have been reported in the United States – a subpopulation of German basketball players and coaches hold specific stereotypes about the abilities of black and white basketball athletes. These stereotypes bias impression formation when coaches and players make assessments of basketball performance.

The occurrence and nature of stereotypical comments in sports have been discussed in depth (e.g., Buffington & Fraley, 2011). In the 1970s and 1980s, it was not uncommon for people in the sports media to attribute black athletic superiority to a form of Social Darwinism, arguing that the hardships of slavery led to an increase in the number of people who possessed especially adaptive physical abilities (e.g., Kane, 1971). Indeed, recent high-profile cases of racism in European football including on-field abuse from fellow players and off-field abuse from fans have highlighted that racism still remains a significant problem in the sport domain (e.g., http://www.bbc.co.uk/sport/0/football/19636473; retrieved on 07.012.2012). Although such incidents of abuse can be considered as overt racism, it has been suggested that within the sports media, there have been many more subtle ways at insinuating the same point. One such example is that black athletes are credited for their "natural athleticism" whereas white athletes are believed to compensate for their lack of "natural athleticism" with "discipline" and "knowledge of the game" (Stone et al., 1997; Buffington & Fraley, 2011). To date, these stereotypical beliefs about athletic performance have almost exclusively been identified within the United States, while very little empirical work has examined athletic stereotypes in European countries. As stereotypes are believed to differ across cultures and countries (e.g.,

Aronson et al., 2005), the present research attempts to address this shortcoming in the literature by investigating sociocultural stereotypes in the sport of basketball in Germany.

Stereotypes in sports

A stereotype or social schema has been described as a mental shortcut, which people use to "fill in the blanks" when the given information about another person is scarce (Fiske & Taylor, 1991). In general, a stereotype can be described as an overgeneralization toward a member of a social group in which identical characteristics are attributed to all members of that group regardless of individual variation among the group members (Allport, 1954). One of the most prevalently documented stereotypes in North American sports is the "black brawn versus white brains" distinction, which is well documented in private face-to-face conversations (May, 2000; Myers, 2005) and media reports (e.g., Azzarito & Harrison, 2008; Buffington & Fraley, 2011).

In disciplines as diverse as linguistics, psychology, sociology, and anthropology, language in sport commentaries has proven to play a decisive role in the transmission of sport specific stereotypes (Semin & Fiedler, 1988; Maas & Arcuri, 1996). For example, Desmarais and Bruce (2010) demonstrated that sport commentators draw

on existing national stereotypes in order to direct the attention of the audience toward restricted interpretations of the action on the field. Commentators tended to reduce teams or players to a few essential characteristics and make sense of athletes' actions on the field through the "interpreting filter" of stereotypes. For such reasons, Buffington and Fraley (2011) have argued that most Americans are aware of stereotypical beliefs concerning black and white athletes. This statement is well supported by social psychological research in the United States (Stone et al., 1997, 1999).

North American basketball has been one of the most influential sports in fostering the stereotype of black natural athletic ability. During the past 25 years, 75–80% of North American Basketball Association (NBA) players have been black (Gladwell, 1997), which is a far greater proportion than one would expect given that the proportion across the entire US population is approximately 13% (Aronson et al., 2005). In order to understand the implications of such statistics on the impression formation process, Stone et al. (1997) assessed the stereotypical claim of the popular Ron Shelton film that "White men can't jump." In this study, the authors demonstrated that university college students rated a basketball player on a radio broadcast as possessing more athletic ability and having played a better game when they were led to believe that the radio commentator was talking about a black athlete compared to a white athlete. This striking finding suggests that the American college students' judgments of an identical athletic performance were influenced by sociocultural stereotypes.

Recent research has further highlighted the influence of stereotypes on sporting performance, suggesting that merely introducing a negative stereotype about a social group can potentially result in performance decrements of members of that group; a finding that has been labeled stereotype threat (Steele & Aronson, 1995). Various studies – all of which were conducted in the United States – have found evidence for this assumption in the sports of basketball (Stone et al., 1997) and golf (Stone et al., 1999; Beilock et al., 2006). The underlying mechanisms of stereotype threat are considered to be caused by either reducing available working memory capacity due to worry about the negative stereotype (Schmader & Johns, 2003), by directing attention to the step-by-step control of well-learned sensory-motor skills (Beilock et al., 2006), or by decreasing effort on the respective performance due to the negative stereotype (Stone, 2002). In contrast, a different line of research suggests that stereotypes may also positively impact performance in both academic (e.g., Shih et al., 2002; Mendoza-Denton et al., 2008) and sport situations (e.g., Krendl et al., 2012). If existing stereotypes within a society have the potential to affect performance, an important research step is to investigate the existence of specific stereotypes in different societies as it is highly plausible that they may differ across cultures and countries (e.g., Aronson et al., 2005).

The present research

Given the well-documented influence of sport stereotypes within the United States, it is somewhat surprising that research on stereotypical beliefs about athletic performance has received minimal attention in different countries. As it is important to document potential stereotypes in different domains to avoid discrimination, we investigated sociocultural stereotypes among both athletes and coaches in Germany. In line with the earlier work of Stone et al. (1997), we studied basketball, which is currently the third most popular team sport in Germany based on television coverage and number of spectators. Comparison of the percentages of black and white athletes in the highest German basketball league reveals that 42.8% of the players in Germany during the 2011–2012 season were black compared to 75% of black athletes in the NBA. Therefore, there are more white players compared to black players in the highest German League. Furthermore, by far the most successful and prominent German basketball player, Dirk Nowitzki – German athlete of the year 2011 – is white and therefore such status may influence stereotypical beliefs concerning basketball players in Germany. Moreover, as only ~2% of the German population is black, the proportion of black basketball players in the German League is much larger than one would expect. The proportion of black to white players is reversed if one only assesses the "starting five" in which 55% of players in the German league are black. Moreover, eight out of 10 players in the top-scorers are black. These statistics aside, it remains unclear whether stereotypical beliefs about basketball performance in Germany are comparable to those in the United States.

In Experiment 1, participants had to rate a basketball player following the presentation of a picture of a black or white player prior to observation of a point-light video of a basketball free throw. We deliberately studied the basketball free throw as black and white basketball players have identical free-throw percentages in Germany (black players 69% vs. white players 69% during the 2011–2012 season). In Experiment 2, we used the implicit association test (IAT: Greenwald et al., 1998) to assess if sport-specific stereotypes are activated automatically in an implicit manner.

Experiment 1: "white men can't jump". But can they throw?

If German athletes and coaches hold similar stereotypes about basketball performance as demonstrated in the United States (e.g., Stone et al., 1997), then one would expect that the same basketball point-light video will be judged differently depending on whether the observers are informed that the basketball free throw is performed by a black or white athlete. According to Stone et al. (1999), both archival and empirical evidence indicates

that people hold highly specific stereotypes about what lies at the heart of judgments on black and white athletic performance. One important distinction that has been made in previous research in US basketball is that black athletes possess a greater natural athletic ability (Stone et al., 1997; 1999). We test this claim of stereotypical judgments with a set of ratings that assess a target's natural (athletic) ability: how athletic is the target, how high can the target jump, how tall is the target; and how talented is the target? The second claim concerning stereotypical judgments that we test in Experiment 1 is also derived from previous findings in US basketball (Stone et al., 1997, 1999). White athletes have been said to compensate for their (stereotyped) "lack" of natural physical ability through intelligence, teamwork, and diligence. In this respect, we will ask participants to rate how disciplined the target player is, how intelligent the target player acts during the game (court smarts: how well the player can "read" the game), and whether the target player is a good team player.

Previous research (Devine & Baker, 1991; Sailes, 1996) in the United States has reported evidence for a set of further stereotypical beliefs concerning black athletes. Specifically, black athletes are considered to be more competitive, to have greater difficulty controlling their temper, and to be more ostentatious. Hence, we additionally asked the participants how competitive they thought the target was, how hectic they perceived the target player to perform, whether the target had a high temperament, and how ostentatious they considered the target to be. Finally, research indicates that stereotypical beliefs about black and white athletes influence ratings of an athlete's performance (Stone et al., 1997). Therefore, we questioned participants on the perceived precision of the observed free throw and the technical skill exhibited in the performance.

In summary, in Experiment 1, we tested whether the judgment of a basketball free throw by people socialized in Germany – in which there is no known difference between the respective races – is guided by stereotypical beliefs as previously reported in research studies conducted in the United States. If this is the case, the same basketball performance should be judged differently depending on whether the observers are led to believe that the basketball free throw is performed by a black athlete or a white athlete.

Method

Participants

A total of 32 participants were recruited for Experiment 1. The sample consisted of three subgroups: 23 players (13 male and 10 female; mean age = 24 years) who had been playing basketball for an average of 12.5 years at an amateur to semi-professional level and nine male basketball coaches (mean age 28 years) who were all in possession of at least the third highest coaching license in Germany. All participants were Caucasian. Neither age, nor years of experience significantly moderated the pattern of results.

Informed consent was obtained from every participant before commencing the experiment. The study was carried out in full accordance with the Helsinki Declaration of 1975.

Materials and stimuli

The skin color of the perceived target player was manipulated by presenting color photographs of American college basketball players to assure that none of the German participants knew the players. Previous research has suggested that using photographs is a useful tool for evoking stereotypical thoughts, reactions, and feelings (e.g., Ferree & Hall, 1990). We selected a sample of 30 black and 30 white male college basketball players from the National Collegiate Athletic Association basketball website. All photos were edited so that only the head and the neck of the athlete were visible. Furthermore, we reduced the resolution of the pictures to 60×80 pixels so that facial details were not readily detectable. Two independent raters (male basketball players; mean age 23 years) were asked to evaluate each of the 30 photos on four 10-point Likert scales, assessing athletic appearance, physical attractiveness, expected basketball ability, and likability. From these ratings, we selected 12 black athletes and 12 white athletes that received average ratings on all four Likert scales (5 ± 1 SD) to ensure that all of the photos used in the experiment were rated equally.

For the basketball performance display, we used 12 separate point-light videos of a basketball free-throw situation filmed from a side-on perspective (cf. Fig. 1). During filming, 12 different Caucasian basketball players (with at least 6 years of basketball experience) executed basketball free throws in a sports hall where almost all ambient light was removed. Two halogen spotlights mounted on a tripod were positioned 7 meters away from the actor in front of the camera, filming the athlete from a side-on perspective. The actors were wearing tight fitting black clothes with reflective markers attached to all of the main joints and the head
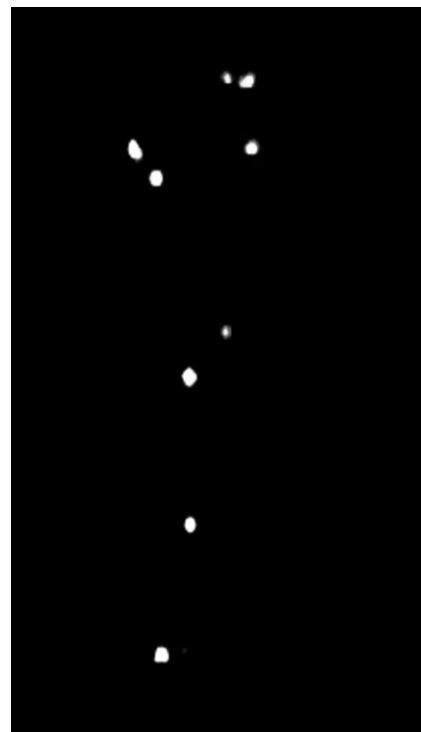

Fig. 1. Single frames of an exemplary point-light stimuli used in the study.

(see Johansson, 1973). After digitally editing the video material, only the reflective markers of the athlete performing the free throw were visible. All the surface features of the player performing the free throw were excluded, leaving only kinematic information. We included a schematic drawing of the basketball hoop on the video, which gave the impression that the point-light character was throwing at the basket.

Measures

After viewing each video, participants were asked to rate the target player on several 11-point digital semantic differential scales. In order to give their ratings, participants had to move a mouse cursor from the middle of a scale toward either pole of the scale and log their rating by clicking the left mouse button. The software (E-prime Professional 2.0; Psychological Software Tools, 2007) transformed the ratings into a value (with three decimals) between 0 reflecting the left pole of the scale and 1 reflecting the right pole of the scale.

The items assessing natural athletic ability (Stone et al., 1997, 1999) were (a) athletic (*athletisch*) – not athletic (*nicht athletisch*); (b) high jump height (*viel Sprungkraft*) – low jump height (*wenig Sprungkraft*); (c) tall (*groß*) – small (*klein*); (d) talented (*talentiert*) – not talented (*nicht talentiert*). The items assessing a compensatory set of beliefs (Stone et al., 1997; 1999) for white athletes were (e) disciplined (*diszipliniert*) – not disciplined (*undiszipliniert*); (f) high court smarts (*viel Spielintelligenz*) – low court smarts (*keine Spielintelligenz*); (g) team player (*Teamspieler*) – no team player (*kein Teamspieler*). The items assessing the additional stereotypes in the literature (Devine & Baker, 1991; Sailes, 1996) were (h) competitive (*konkurrenzfähig*) – not competitive (*nicht konkurrenzfähig*); (i) hectic (*hektisch*) – not hectic (*nicht hektisch*); (j) high temper (*temperamentvoll*) – low temper (*nicht termperamentvoll*); (k) ostentatious (*sehr prahlend/protzend*) – not ostentatious (*nicht prahlend/protzend*). The items assessing the free-throw performance were high shot precision – low shot precision; high shot quality – low shot quality.

Procedure

Participants were informed that the purpose of the experiment was to judge the skill levels of basketball players based on information that was included in a photo of the player and a point-light video of the same player executing a basketball free throw. Before every video, a photo of a player was randomly selected from the 24 photos (12 black players and 12 white players) and presented for 1 second. Then, a point-light video was randomly selected from the pool and displayed in a continuous loop for three times before the rating scales appeared on the screen. All of the 12 videos were presented twice in a random order; once combined with a photo of a white player and once combined with a photo of a black player. The videos were approximately 2.5 s long and displayed for a cumulative time of approximately 7.5 s. Every participant was tested individually and first performed two practice trials to familiarize themselves with the experimental procedure. After the practice trials, the 24 experimental trials began and participants gave their ratings by clicking the left mouse button on the various scales described above. At the end of the experiment, participants were asked whether they had the impression that the skin color of the photographs had affected their ratings. After completing the experiment, participants were informed about its purpose.

Data analysis

We calculated four mixed design multivariate analysis of variance (MANOVAs) with repeated measures on the within subject inde-

pendent variable ethnicity (black vs. white) and the between subject independent variable participant group (male coach, male player, and female player) on the four stereotype subscales derived from the literature on sociocultural athletic stereotypes: natural athletic ability, compensatory skills, additional stereotypical characteristics of black athletes, and free-throw performance. We followed-up the MANOVA with a series of equivalent univariate ANOVAs to examine the effect of ethnicity on all player evaluation scales.

Results and discussion

Natural athletic ability

The descriptive statistics of Experiment 1 over all participants for the natural athletic ability scales are presented in Fig. 2. The 2 (*black* vs. *white*) × 3 (*male player; female player;* and *male coach*) MANOVA using Pillai's trace revealed a significant main effect of ethnicity on the natural athletic ability variables ($V = 0.647$; $F(4, 26) = 11.901$, $P = 0.000$, $\eta^2 = 0.647$). This result demonstrates that, irrespective of the population subgroup (German male athlete, German female athlete, German male coach), the skin color of the athlete significantly influenced how physically gifted the target player was rated. The MANOVA did not reveal a main effect for group [$V = 0.345$; $F(8, 54) = 1.406$, $P = 0.215$] nor an interaction between group × ethnicity of target player ($V = 0.335$; $F(8, 54) = 1.356$, $P = 0.237$) suggesting that irrespective of participant group, the target player ratings were comparable. The univariate analyses for the individual dependent variables are shown in Table 1.

Compensatory stereotypes for white athletes

The descriptive statistics for the compensatory scales are presented in Fig. 3. The 2 (*black* vs. *white*) × 3 (*male player; female player;* and *male coach*) MANOVA using Pillai's trace revealed a significant main effect of ethnicity on the compensatory variables [$V = 0.289$; $F(3, 27) = 3.663$, $P = 0.025$, $\eta^2 = 0.289$]. Irrespective of par-
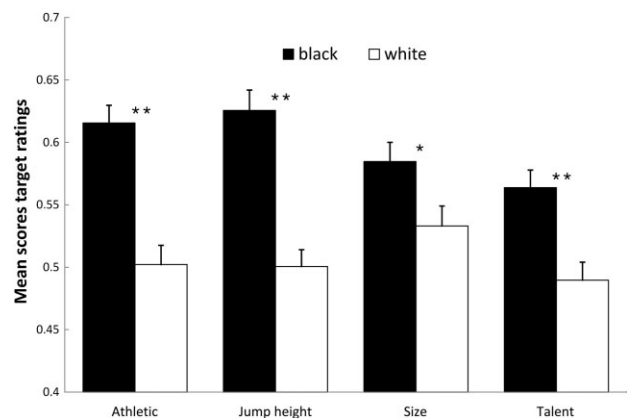

Fig. 2. Mean scores of the natural (athletic) ability item ratings of the target player as a function of skin color. Error bars represent standard errors. *$P < 0.05$. **$P < 0.01$.

Table 1. Univariate analysis for the main effect skin color on the dependant variables

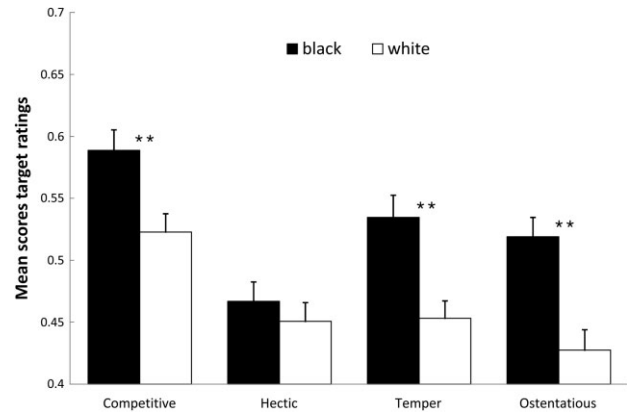| Item	df (model, error)	F	η^2	P
Natural ability				
Athletic ability	1, 29	48.711	0.627	0.000
Jump height	1, 29	46.525	0.616	0.000
Size	1, 29	7.480	0.205	0.011
Talent	1, 29	31.074	0.517	0.000
Compensation for lack of ability				
Discipline	1, 29	11.015	0.275	0.002
Court smarts	1, 29	2.630	0.083	0.116
Team player	1, 29	6.346	0.180	0.018
Additional sociocultural stereotypes				
Competitiveness	1, 29	19.793	0.406	0.000
Hectic	1, 29	0.982	0.033	0.330
Temper	1, 29	17.404	0.375	0.000
Ostentatious	1, 29	22.982	0.442	0.000
Performance characteristics				
Shot precision	1, 29	4.403	0.132	0.045
Shot quality	1, 29	2.340	0.075	0.137

Fig. 4. Mean scores of the additional athlete stereotype items derived from Sailes (1996) and Devine and Baker (1991) as a function of skin color. Error bars represent standard errors. *P < 0.05. **P < 0.01.

Fig. 3. Mean scores of the compensation items as a function of skin color. Error bars represent standard errors. *P < 0.05. **P < 0.01.
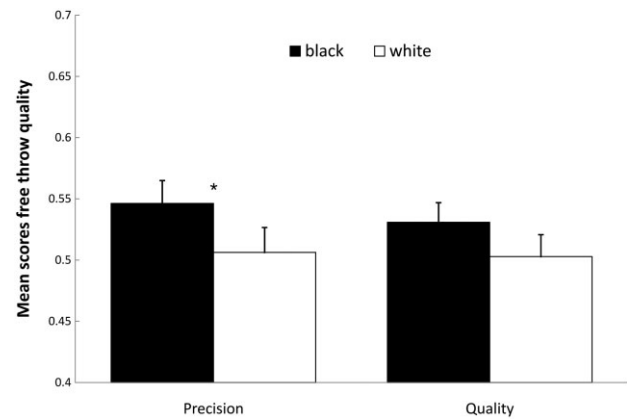

Fig. 5. Mean scores of the shot precision and shot quality scores of the target player ratings as a function of skin color. Error bars represent standard errors. *P < 0.05. **P < 0.01

ticipant group – no main effect (P = 0.405) nor interaction (P = 0.972) – the results support the stereotypical notion that our participants indicated that they believed that white athletes compensated for a perceived lack of natural athletic ability through intelligence, teamwork, and diligence (Stone et al., 1997, 1999). The univariate analyses for the individual dependent variables are shown in Table 1.

Additional stereotypical beliefs concerning black athletes

The descriptive statistics of Experiment 1 over all participants for stereotypical items derived from Sailes (1996) and Devine and Baker (1991) are presented in Fig. 4. The 2 (*black* vs. *white*) × 3 (*male player; female player;* and *male coach*) MANOVA using Pillai's trace revealed a significant main effect of ethnicity on the additional athletic stereotypes reported in the literature [V = 0.601; F(4, 26) = 9.784, P = 0.000, $\eta^2 = 0.601$]. Again, no group effect (P = 0.552) nor an interaction

(P = 0.301) was evident. The univariate analyses for the individual dependent variables are shown in Table 1.

Free-throw performance

The descriptive statistics of the free-throw performance measures are shown in Fig. 5. The MANOVA only showed a trend toward a significant main effect for target player ethnicity [V = 0.145; F(2, 28) = 2.378, P = 0.111, $\eta^2 = 0.145$] as the univariate analysis of the separate performance items only revealed a main effect of target player ethnicity on free-throw precision while shot quality failed to reach significance (cf. Table 1). There was no main effect (P = 0.105) nor an interaction (P = 0.304) for participant group.

In general, the results support the hypothesis that German basketball players and coaches hold specific stereotypes about black and white basketball players that are in line with stereotypical beliefs in the United States (Devine & Baker, 1991; Sailes, 1996; Stone et al., 1997, 1999). The participants also judged the precision of the

observed free throw more favorably when they had the impression that it was being performed by a black athlete. Hence, one might want to extend the stereotypical phrase to "white men can't jump and they can't throw."

At the end of Experiment 1, we included a final question asking whether the participants thought that the skin color of the picture had influenced their ratings. Of the 31 participants tested, only five answered "no" to this question, while the remaining 26 had the impression that the skin color had influenced their ratings. Although problematic from a statistical perspective due to large differences in group sizes, we ran an additional series of ANOVAs with repeated measures on the within subject independent variable ethnicity (black vs. white) and the between subject independent variable "influenced by skin color" (yes vs. no) on the individual dependent measures. Neither interactions nor any main effects for "influenced by skin color" reached significance. Nevertheless, this can be considered a limitation of Experiment 1, as we are not able to rule out the possibility that participants inferred the purpose of the study and gave their ratings according to the expectations of the experimenter (see Rosenthal, 1976 for a review).

Following this limitation, we attempted to assess implicit stereotypes of basketball players of different ethnicities using the IAT (Greenwald et al., 1998). This methodology enables us to measure stereotype activation in a visible manner which has been described as a challenge confronting schema accounts of social cognition (Quinn & Macrae, 2005). Furthermore, the IAT addresses a limitation of Experiment 1, which concerns the dependency of different ratings, given one after the other, for one and the same presentation. That is, one may argue that the results do not provide sufficient evidence for the assumption that the perception of an athlete's ethnicity triggers a certain athlete stereotype and may instead demonstrate a person's need to comply with experimenters' expectations or avoid *cognitive dissonance* (Festinger, 1957), a topic we return to in the general discussion.

Experiment 2: IAT

The results of Experiment 1 suggest that certain stereotypes exist across German basketball players and coaches concerning black and white basketball players. In order to directly test whether the pattern of results found in Experiment 1 can be explained within the schema/category driven theory of impression formation (Fiske & Taylor, 1991), we utilized the IAT (Greenwald et al., 1998). In Experiment 2, we aimed to measure the implicit association between black and white athletes and attributes associated with athletic and non-athletic athletes.

The IAT rests on the premise that it should be easier to make the same response (a key press) to concepts that

are strongly associated to one another compared to concepts that are only weakly, or not associated (Greenwald et al., 1998). The simple idea of the IAT is that concepts that are associated by some feature should be easier to put together than concepts that are not associated and has therefore recently been shown to be a useful tool for assessing constructs such as implicit stereotypes or person schemas (Rudman & Ashmore, 2007). Moreover, and of relevance to the sport domain, the IAT has been successfully adapted to measure implicit components of an exerciser's self-schema (Banting et al., 2009), while also demonstrating that certain non-verbal behaviors are associated with positive and negative athlete stereotypes (Furley et al., 2012a). Following this initial research in the field of sport, we aimed to further the application of the IAT by testing whether ethnicity triggers particular athlete schemas.

Method

Participants

Male basketball players ($n = 30$; $M = 26.4$; $SD = 4.1$), who had been playing for an average of 7 years at an amateur level in Germany took part in the study. Neither age, nor expertise-related differences were evident within the group. All participants were Caucasian. Informed consent was obtained from every participant before commencing the experiment. The study was carried out in full accordance with the Helsinki Declaration of 1975.

Materials and stimuli

Figure 6 gives a schematic illustration of the IAT used in Experiment 2. In order to investigate whether a black basketball player image is implicitly associated with a schema of an "athletic basketball player," we paired the *target-concept* of player ethnicity with an *attribute dimension* of athletic versus non-athletic basketball players, as is standard procedure when using the IAT. For the initial *target concept discrimination* (Fig. 6, second column), we selected six images from the stimuli used in Experiment 1 showing a black college basketball player and six images showing a white college basketball player. For the *associated attribute discrimination*, two independent basketball experts (both in possession of the second highest German coaching license) rated a list of adjectives as being associated with an athletic basketball player or with a non-athletic basketball player. Following the expert ratings, we produced a list of 12 attributes (see third column of the last row in Fig. 6), six of which were associated with an athletic player and six with a non-athletic player. The athletic attributes were (German translation in italics) quick (*schnell*); strong (*kräftig*); muscular (*muskulös*); explosive (*explosiv*); bounce (*sprungkräftig*); assertive (*durchsetzungsfähig*). The non-athletic attributes were slow (*langsam*); lanky (*schlaksig*); slender (*schmal*); prone to injury (*verletzungsanfällig*); lethargic (*träge*); bony (*knochig*).

Procedure

All participants were seated individually in front of a standard 19-inch desktop computer and provided all their responses via a computer keyboard. Participants were informed that the experiment involved a simple reaction time test and were blind to the actual purpose of the experiment. The procedure used was similar to Greenwald et al. (1998 for further detail of the IAT procedure) and is illustrated in Fig. 6. The IAT consisted of five blocks of

| Sequence	1		2		3		4		5	
Task description	Initial target-concept discrimination		Associated attribute discrimination		Initial combined task		Reversed target-concept discrimination		Reversed combined task	
Task instructions	Black player Press "q"	White player Press "p"	Athletic player Press "q"	Unathletic player Press "p"	Black player or athletic player Press "q"	White player or unathletic player Press "p"	White player Press "q"	Black player Press "p"	White player or athletic player Press "q"	Black player or unathletic player Press "p"
Sample stimuli			•Quick •Strong •Muscular •Explosive •Bounce •Assertive	•Slow •Lanky •Slender •Prone to injury •Lethargic •Bony	•Quick •Muscular	•Slow •Slender			•Strong •Bounce	•Lethargic •Slow

Fig. 6. Schematic description and illustration of the implicit association test (IAT with the sequence order congruent before incongruent) used in Experiment 2.

trials with the first experimental block (block 3) combining the stimuli from the concept category with the attribute category, while the second experimental block (block 5) reversed this combination (cf. Fig. 6, fifth column). Blocks 1, 2, and 4 were practice blocks for participants to learn the associations between the different stimuli and the respective keys. Depending on the experimental condition, the first experimental block was either congruent concerning our hypothesis (i.e., black player images paired with athletic player attributes; and white player images paired with non-athletic player attributes) and the second experimental trial incongruent (i.e., white player images paired with athletic player attributes; and black player images paired with non-athletic player attributes), whereas in the other experimental condition, we switched this order to exclude potential order effects. In addition, the order of blocks 2 and 4 were changed according to the experimental condition to match the attribute categorization of the subsequent experimental blocks 3 and 5. If the target categories of player ethnicity are differentially associated with the attribute dimension (athletic vs. non-athletic) as hypothesized, then participants will respond faster to the congruent block in comparison with the incongruent block.

Data analysis

We conducted a mixed design ANOVA on the reaction times of participants with repeated measures on the within subject factor congruency (*congruent*: black player and athletic player attributes and white player and non-athletic attributes vs. *incongruent*: black player and non-athletic player attributes; white player and athletic player attributes) and the between subject factor sequence order (*congruent* before *incongruent* vs. *incongruent* before *congruent*). Furthermore, we ran an additional ANOVA on reaction times with repeated measures on the within subject factors congruency (*congruent* vs. *incongruent*) and stimulus material (player image vs. player attributes). A series of follow-up dependent *t*-tests were run to examine the origin of significant effects. Furthermore, based on the procedure of Banting et al. (2009), we computed a modification of the individual difference measure *D* (Greenwald et al., 2003) on the five-block version of the IAT to assess individual
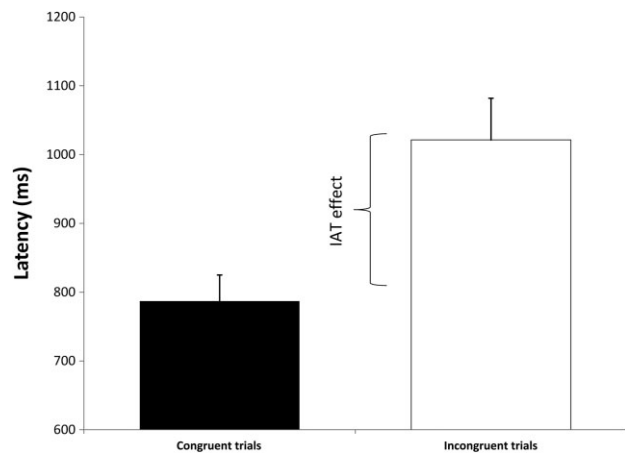

Fig. 7. Mean latency results from sequence 3 and 5 of Experiment 2. Error bars represent standard errors.

differences in automatic associations between player ethnicity and skin color. First, the algorithm eliminated all trials with response times above 10 000 ms and participants with 10% of trials under 300 ms were excluded. Second, the algorithm was modified so that the difference between the incongruent and congruent block was divided by the inclusive standard deviation (Banting et al., 2009). The resulting number from this equation represented an individual's implicit association between skin color and athleticism.

Results and discussion

Figure 7 displays the mean latencies between the congruent block of the IAT ($M = 787.19$; $SD = 207.76$) and the incongruent block ($M = 1021.03$; $SD = 331.64$). A mixed design ANOVA on the reaction times of participants with repeated measures on the within subject

factor congruency (*congruent* vs. *incongruent*) and the between subject factor sequence order (*congruent* before *incongruent* vs. *incongruent* before *congruent*) only revealed a significant main effect for congruency ($F(1, 28) = 15.062$, $P = 0.001$, $\eta^2_p = 0.350$). Both the main effect for sequence order ($P = 0.230$, $\eta^2_p = 0.051$) and the interaction between congruency and sequence order ($P = 0.422$, $\eta^2_p = 0.023$) failed to reach significance.

An additional ANOVA on reaction times with repeated measures on the within subject factors congruency (*congruent* vs. *incongruent*) and stimulus material (*player image* vs. *player attributes*) revealed a main effect for congruency [$F(1, 29) = 15.238$, $P = 0.001$, $\eta^2_p = 0.344$] indicating that the IAT effect was evident for both player attributes (*congruent*: $M = 905.02$; $SD = 250.11$ vs. *incongruent*: $M = 1139.97$; $SD = 379.30$) and player images (*congruent*: $M = 669.02$; $SD = 196.81$ vs. *incongruent*: $M = 902.92$; $SD = 368.69$). Furthermore, the ANOVA revealed a main effect for stimulus material [$F(1, 29) = 47.162$, $P = 0.0001$, $\eta^2_p = 0.619$] revealing faster response times for the player images compared to the player attributes.

Follow-up dependent *t*-tests revealed significant differences between the congruent and the incongruent conditions for both the player image stimuli ($t(29) = -3.151$, $P = 0.004$, two-tailed, $d = 0.79$) and the player attribute stimuli [$t(29) = -3.575$, $P = 0.001$, two-tailed, $d = 0.73$]. The similar effect sizes between the picture stimulus material and the word stimulus material suggests that the effect was not driven by a potential confound of specific characteristics of the player attributes (e.g., word length). To assess the influence of the individual attribute items on the observed IAT effect, we further computed the mean difference between the congruent and incongruent conditions for every attribute item. Significance tests were computed using a series of dependent *t*-tests: quick ($M_{congruent-incongruent} = 120.2$; $P = 0.2$, $d = 0.21$); strong ($M_{congruent-incongruent} = -45.9$; $P = -0.11$, $d = -0.1$); muscular ($M_{congruent-incongruent} = 262.9$; $P = 0.04$, $d = 0.45$); explosive ($M_{congruent-incongruent} = 608.1$; $P = 0.11$, $d = 0.33$); bounce ($M_{congruent-incongruent} = 116.1$; $P = 0.28$, $d = 0.15$); assertive ($M_{congruent-incongruent} = 342.0$; $P = 0.11$, $d = 0.32$); slow ($M_{congruent-incongruent} = 335.8$; $P = 0.00$, $d = 0.75$); lanky ($M_{congruent-incongruent} = 349.3$; $P = 0.01$, $d = 0.58$); slender ($M_{congruent-incongruent} = 465.9$; $P = 0.03$, $d = 0.47$); prone to injury ($M_{congruent-incongruent} = 8.6$; $P = 0.48$, $d = 0.01$); lethargic ($M_{congruent-incongruent} = 134.0$; $P = 0.12$, $d = 0.17$); bony ($M_{congruent-incongruent} = 88.8$; $P = 0.15$, $d = 0.26$).

The IAT procedure used in Experiment 2 demonstrated a strong automatic association between ethnicity of the player and athleticism. Participants responded significantly faster when pairing black basketball player images with athletic attributes in comparison with white player images compared with athletic attributes. This finding supports the suggestion that certain characteristics of athletes are automatically associated with certain athlete schemas (Greenlees, 2007). Thus, the result from

Experiment 2 is supportive of social schema theory (Fiske & Taylor, 1991) as player ethnicity is automatically associated with further information, which is linked to certain athlete schemas.

Further to demonstrating an average implicit association between black skin color and athleticism in German participants, we examined individual differences in this association using the *D* statistics (cf. Figure 8). The individual difference analysis using the *D* statistics appeared to confirm the latency analysis by revealing a high correlation between the response latencies of the incongruent and congruent block and the *D* measure ($r = 0.814$, $P = 0.000$). Together, the majority of participants showed medium to strong implicit associations between black skin color and athleticism, whereas only participant 5 and 29 demonstrated a strong association between white skin color and athleticism (cf. Fig. 8).

General discussion

The goal of the present study was to examine the existence and influence of sociocultural stereotypes in European basketball. The results suggest that a subpopulation of German basketball players and coaches hold specific stereotypes about the abilities and skills of black and white athletes. In support of the previous findings of Stone et al. (1997), the stereotypical beliefs of German basketball players and coaches were fairly differentiated, as black players were not rated more positively on all of the assessed characteristics. White players were considered to be more disciplined and more likely to be team players. The similarity of the present results with previous findings within the United States (Stone et al., 1997) might be partially attributable to the media attention of the NBA in the German media, which may have lead to the transfer of stereotypes from one culture to another (Semin & Fiedler, 1988; Maas & Arcuri, 1996). In addition to cross-culturally validating the findings of Stone et al. (1997), the results in Experiment 1 also extend previous research in the following ways: (a) the measurement of responses to point-light sport performances instead of radio broadcaster's commentary; (b) the use of multiple pictures of basketball players allowed verification that ethnicity influenced the results rather than individual characteristics of the photo; and (c) measurement of a wider range of stereotypical beliefs adapted from the literature published after the original Stone et al.'s study. Thus, in sum, the results from Experiment 1 are supportive of the notion that activated schemas influence later judgments and interpretations (Azzarito & Harrison, 2008; Desmarais & Bruce, 2010; Buffington & Fraley, 2011).

A further important extension to previous findings was Experiment 2, where we focused on the stereotype of black natural athletic ability and directly tested if this sport-specific stereotype is activated automatically in an implicit manner. Results indicated that a triggered ste-
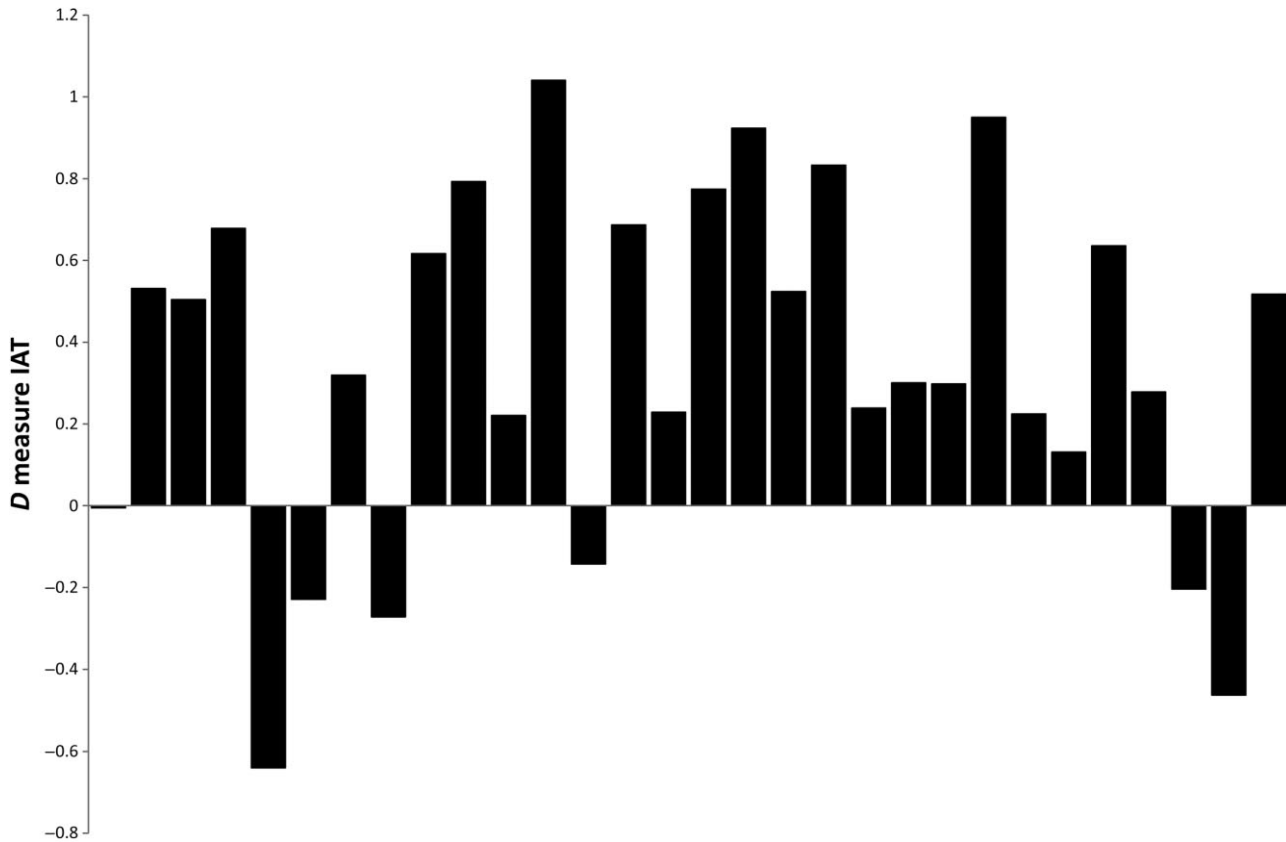
Fig. 8. Individual difference scores of the participants in Experiment 2 using the *D* measure. High positive values represent strong automatic associations between black skin color and athleticism.

reotype and associated knowledge leads to the easier (faster) categorization of black player images with athletic attributes. To our knowledge, Experiment 2 was the first study to demonstrate implicit stereotype activation in the basketball context. Moreover, this methodology allows uncovering individual differences in stereotypical thinking which might prove useful for both future research on stereotypes in sport and practical interventions aimed at avoiding discrimination by, for example, coaches or talent scouts.

In addition to the findings of Stone et al. (1997), our results indicated that stereotypical beliefs did not only center on athletic ability, but also generalized toward the observed free-throw performance. This finding is perhaps surprising as research indicates that accurate person perception judgments are predicated on the information specified by the movement kinematics of the observed actor (Runeson & Frykholm, 1983). Therefore, one may expect that the point-light video should offer a far more informative basis during impression formation. Nevertheless, the identical free-throw performance was rated differently when observers believed that either a black athlete or a white athlete was performing the action.

How might this finding be explained? A recurrent theme within social psychological theorizing has followed the suggestion that humans seek to avoid cogni-

tive dissonance when forming impressions of others (e.g., Festinger, 1957). Therefore, the motivation for cognitive consistency might have led participants to rate the quality of the basketball free throw favorably after rating the athlete positively on all the preceding items except discipline, team player, and court smarts which are arguably not related to free-throw performance. In line with such suggestions, Kahneman (2011) recently proposed that observers may infer the likely behavior of another person on the basis of general traits. One such example discussed by Kahneman is the halo effect (e.g., Nisbett & Wilson, 1977). "If we think a baseball pitcher is handsome and athletic, for example, we are likely to rate him better at throwing the ball, too" (Kahneman, 2011, p.199). Kahneman interpreted this generalization effect with reference to his WYSIATI ("What you see is all there is") rule. Rather than drawing upon or seeking further information before forming an impression of another person, Kahneman proposed that "You build the best possible story from the information available to you, and if it is a good story, you believe it. [. . .] Our comforting conviction that the world makes sense rests on a secure foundation: our almost unlimited ability to ignore our ignorance" (Kahneman, 2011, p. 201). Following this line of argument, it would appear that the participants in Experiment 1 formed an impression on the basis of the earlier viewed picture, with minimal attention paid

toward the information contained within the point-light video. Therefore, rather than utilizing the later, more reliable information, participants made "ignorant" judgments on the basis of the earlier presented photograph.

Further to the previous work of Stone et al. (1997), an interesting finding that emerged from the present study is that basketball coaches appear to hold similar stereotypes concerning performance as players. It is highly feasible that stereotypes bias the decisions of coaches pertaining to team selection and talent identification. For example, a research topic of particular interest would be to ascertain whether starting team selections and player substitutions are biased by sociocultural stereotypes. In sports, it would be further noteworthy to examine the influence of stereotypes on the decisions of referees. While, we did not include referees in Experiment 1, it is plausible that officials may also hold specific stereotypes which bias their decision-making process. If referees hold the similar stereotypical belief of coaches and players concerning athlete temper (cf. Fig. 4), one might expect more fouls to be called against a black player in comparison with a white player. Although, person categorization and stereotypical thinking are considered by some to be useful and adaptive as it helps the perceiver to achieve coherence in a highly complex environment (Freeman & Ambady, 2011), the above examples highlight the negative consequences of stereotypical thinking in sports. However, if stereotypes are prominent in the decisions of officials and coaches, there is now promising evidence demonstrating that it is possible to bring automatic stereotyping under control (Stewart & Payne, 2008).

Although the present results may be interpreted as support to schema accounts of person perception, Freeman and Ambady (2011) have argued that neither solely schema/category-driven nor solely information-driven impression formation perspectives are sufficient in explaining person perception in everyday contexts. Instead, they propose that person perception has to be regarded as a constant interaction between high-level categories, stereotypes and low-level processing of facial and bodily information. This suggestion is supported by recent findings in person perception research in sport by showing that the influence of initially activated schemas on impression formation is diminished if additional performance related information is made available (Furley & Dicks, 2012). Complementary to this viewpoint, Baumeister, Vohs, & Funder (2007) recently stressed the importance of investigating the behavioral consequences of laboratory-based social psychology experiments. That is, psychologists should consider whether confined experimental paradigms that utilize questionnaire and button press measures adequately capture the behaviors that many experiments are aiming to understand. Recent research in the domain of impression formation in sport has attempted to draw a link between findings from controlled laboratory-based experiments toward behavior within actual sport settings in order to gain a more complete understanding on the role that activated schemas have on impression formation and sport performance (Furley et al., 2012b). In this respect, one interesting line of research on stereotype threat has highlighted the influence of the awareness of negative stereotypes about one's own social group on one's own performance (Steele & Aronson, 1995). Presently, little is known about the behavioral and performance influences of stereotype activation of opponents or team-members in sports. We believe that future research should therefore follow the call of Baumeister et al. (2007) in order to advance current understanding of behavioral and performance consequences of stereotypes in sports.

Perspective

In conclusion, this study adds to the slowly growing literature on person perception in sport by demonstrating the existence and use of social stereotypes of German basketball players and coaches in a within-subject design when judging a point-light video of a basketball free throw. In Experiment 2, we provided first evidence that racial stereotyping among a subgroup of basketball players occurred unintentionally and automatically. Thus, in line with social schema theory (Fiske & Taylor, 1991), athletes and coaches appear to be influenced by social stereotypes in their judgments and impressions, which can be regarded as a specific case of the more general finding that people often seek to confirm their expectations (e.g., Aronson et al., 2005). Kahneman (2011) explains this effect with reference to his WYSIATI ("What you see is all there is") rule by arguing that people in general build the best possible story based on the information available to them – no matter how limited this information may be. These results suggest that strategies should be implemented to avoid sport coaches or athletes being biased by stereotypes in their judgments and consequent behavior.

Key words: sport, stereotype, person perception, point-light, Implicit Association Test, social cognition.

References

Allport GW. The nature of prejudice. Reading, MA: Addison-Wesley, 1954.

Aronson E, Wilson TD, Akert RM. Social psychology. 5th edn. Upper Saddle River, NJ: Pearson Education International, 2005.

Azzarito L, Harrison L. "White men can't jump": race, gender and natural athleticism. Int Rev Sociol Sport 2008: 43: 347–364.

Banting LK, Dimmock JA, Lay BS. The role of implicit and explicit components of exerciser self-schema in the prediction of exercise behaviour. Psychol Sport Exerc 2009: 10: 80–86.

Baumeister RF, Vohs KD, Funder DC. Psychology as the science of self-reports and finger movements. Perspect Psychol Sci 2007: 2: 396–403.

Beilock SL, Jellison WA, Rydell RJ, McConnell AR, Carr TH. On the causal mechanisms of stereotype threat: can skills that don't rely heavily on working memory still be threatened? Pers Soc Psychol Bull 2006: 32: 1059–1071.

Buffington D, Fraley T. Racetalk and sport: the color consciousness of contemporary discourse on basketball. Sociol Inq 2011: 81: 333–352.

Desmarais F, Bruce T. The power of stereotypes: anchoring images through language in live sports broadcasts. J Lang Soc Psychol 2010: 29: 338–362.

Devine PG, Baker SM. Measurement of racial stereotype subtyping. Pers Soc Psychol Bull 1991: 17: 44–50.

Ferree M,M, Hall EJ. Visual images of American society: gender and race in introductory sociology textbooks. Gend Soc 1990: 4: 500–533.

Festinger L. A theory of cognitive dissonance. Stanford, CA: Stanford University Press, 1957.

Fiske ST, Taylor SE. Social cognition. Reading, MA: Addison-Wesley, 1991.

Freeman JB, Ambady N. A dynamic interactive theory of person construal. Psychol Rev 2011: 118: 247–279.

Furley P, Dicks M. "Hold your head high". The influence of emotional versus neutral nonverbal expressions of dominance and submissiveness in baseball. Int J Sport Psychol 2012: 43: 294–311.

Furley P, Dicks M, Memmert D. Nonverbal behavior in soccer: the influence of dominant and submissive body language on the impression formation and outcome expectation of soccer players. J Sport Exerc Psychol 2012a: 34: 61–82.

Furley P, Dicks M, Stendtke F, Memmert D. "Get it out the way. The wait's killing me." Hastening and hiding during soccer penalty kicks. Psychol Sport Exerc 2012b: 13: 454–465.

Gladwell M. The sports taboo. New York: The New Yorker, 1997: 50–55.

Greenlees IA. *Person perception in sport*. In: Jowett S, Lavallee D, eds. Social psychology of sport. Champaign, IL: Human Kinetics, 2007: 195–208.

Greenwald AG, McGhee DE, Schwartz JLK. Measuring individual differences in implicit cognition: the implicit association test. J Pers Soc Psychol 1998: 74: 1464–1480.

Greenwald AG, Nosek BA, Banaji MR. Understanding and using the IAT: an improved scoring algorithm. J Pers Soc Psychol 2003: 85: 197–216.

Johansson G. Visual perception of biological motion and a model for its analysis. Percept Psychophys 1973: 14: 195–204.

Kahneman D. Thinking fast and slow. London: Penguin books, 2011.

Kane M. An assessment of "Black is best". Sports Illus 1971: 34: 72–83.

Krendl A, Gainsburg I, Ambady N. The effects of stereotypes and observer pressure on athletic performance. J Sport Exerc Psychol 2012: 34: 3–15.

Maas A, Arcuri L. Language and stereotyping. In: Macrae CN, Stangor C, Hewstone M, eds. Stereotypes and stereotyping. New York, NY: Guilford, 1996: 193–226.

May R. Race talk and local collective memory among African American men in a neighborhood tavern. Qual Sociol 2000: 23: 201–214.

Mendoza-Denton R, Kahn K, Chan W. Can fixed views of ability boost performance in the context of favorable stereotypes? J Exp Soc Psychol 2008: 44: 1187–1193.

Myers K. Racetalk: racism hiding in plain sight. Boulder, CO: Rowman & Littlefield, 2005.

Nisbett RE, Wilson TD. The halo effect: evidence for unconscious alteration of judgments. J Pers Soc Psychol 1977: 35: 250–256.

Psychology Software Tools. E-Prime (Version 2.0 professional) [Computer software]. Pittsburgh, PA: Psychology Software Tools, 2007.

Quinn KA, Macrae CN. Categorizing others: the dynamics of person construal. J Pers Soc Psychol 2005: 88: 467–479.

Rosenthal R. Experimenter Effects in Behavioral Research. New York: Irvington, 1976.

Rudman LA, Ashmore RD. Discrimination and the implicit association test. Group Process Intergroup Relat 2007: 10: 359–372.

Runeson S, Frykholm G. Kinematic specification of dynamics as an informational basis for person-and-action perception: Expectation, gender recognition, and deceptive information. J Exp Psychol Gen 1983: 112: 585–615.

Sailes GA. An investigation of campus stereotypes: the myth of Black athletic superiority and the dumb jock stereotype. In: Lapchick RE, ed. Sport in society: Equal opportunity or business as usual? Thousand Oaks, CA: Sage, 1996: 193–202.

Schmader T, Johns M. Converging evidence that stereotype threat reduces working memory capacity. J Pers Soc Psychol 2003: 85: 440–452.

Semin GR, Fiedler K. The cognitive functions of linguistic categories in describing persons: social cognitions and language. J Pers Soc Psychol 1988: 54: 558–568.

Shih M, Ambady N, Richeson JA, Fujita K, Gray HM. Stereotype performance boosts: the impact of self-relevance and the manner of stereotype activation. J Pers Soc Psychol 2002: 83: 638–647.

Steele CM, Aronson J. Stereotype threat and the intellectual test performance of African Americans. J Pers Soc Psychol 1995: 69: 797–811.

Stewart BD, Payne BK. Bringing automatic stereotyping under control: implementation intentions as efficient means of thought control. Pers Soc Psychol Bull 2008: 34: 1332–1345.

Stone J. Battling doubt by avoiding practice: the effects of stereotype threat on self-handicapping in white athletes. Pers Soc Psychol Bull 2002: 28: 1667–1678.

Stone J, Lynch CI, Sjomeling M, Darley JM. Stereotype threat effects on black and white athletic performance. J Pers Soc Psychol 1999: 77: 1213–1227.

Stone J, Perry ZW, Darley JM. "White men can't jump": evidence for the perceptual confirmation of racial stereotypes following a basketball game. Basic Appl Soc Psych 1997: 19: 291–306.