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**Expectancy effects in tennis: The impact of body language and playing record on
impressions of a tennis player and ratings of performance**

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Abstract

1
2 This study examined the impact that pre-event body language and knowledge of a performer's
3 playing record had on ratings of tennis performance. Participants (N = 123) were allocated to one
4 of four experimental groups (good body language/bad body language vs. positive playing
5 record/negative playing record) and viewed a *live* player warming up and completing a series of
6 tennis shots. Information outlining the player's recent win/loss record was coupled with body
7 language condition during a period of warm-up footage. Likert-type scales were employed to
8 record impressions of the player and judgements as to the quality of the play. ANCOVA revealed
9 that the player was viewed more favourably having displayed positive as opposed to negative body
10 language ($p < .001$). Participants presented with a positive playing record ($p = .001$) formed a more
11 favourable impression and rated the players performance more positively ($p = 0.001$). The study
12 corroborates and extends the findings of recent work incorporating live models in expectancy
13 effects investigations.

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15 Key words: expectations, judgements, body language, playing record

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25 **impressions of a tennis player and ratings of performance**

26 Expectations derived from cues detected early in social encounters have been posited to
27 guide one's attention to, and processing of, subsequent target information. ⁽¹⁾ A sound body of
28 evidence now exists demonstrating that such expectancy effects are reliably witnessed in the
29 sports arena. ^(2,3,4,5,6,7,8) More specifically, Buscombe et al., ⁽⁵⁾ have demonstrated that pre-event
30 information (body language) can influence judgements of a tennis player and soccer penalty
31 taker respectively. Employing video footage of a tennis player, Buscombe and colleagues
32 showed that the body language displayed by the target individual prior to performing influenced
33 judgements of that individual's physical performance thereafter. More recently, Buscombe and
34 Greenlees ⁽⁷⁾ have shown that the impacts of pre-event information on ratings of a tennis player's
35 performance are moderated by the conditions under which the judgement of that performer
36 occurs. More specifically, Buscombe and Greenlees found that when under time pressure
37 participants relied more extensively on early target information and thus became more
38 susceptible to forming expectancy based judgements.

39 An individual's motivation to be accurate with their judgement has been proposed to
40 moderate the extent to which a perceiver exhibits expectancy effects. ^(9, 10) When motivation is
41 diminished a perceiver is posited to withdraw resources from an impression formation task and
42 report judgements in line with his/her expectations of that individual. ⁽¹¹⁾ In line with theoretical
43 predictions, when subject to experimental manipulation, motivation has been shown to moderate
44 expectancy based processing ⁽¹²⁾ although work published to date in the sports field has failed to
45 account for the impact that this naturally occurring, extraneous variable may be having on the
46 judgements being made of sports performers. ⁽⁵⁾

47 Although expectancy effects have been studied with participants observing a ‘real-life’
48 university professor⁽¹³⁾ and ‘live’ school children⁽¹⁴⁾ research conducted in sport has, to this
49 point, employed an approach whereby participants form judgements of sports performers based
50 on either observation of recorded player footage^(15, 5) or when viewing point-light displays.⁽⁶⁾
51 Findlay and Ste-Marie⁽⁴⁾ identified the “controlled video setting” (p.164) employed during their
52 data collection to be a limitation of their study and supported the need for future work to
53 consider expectancy effects when observing live performers. Buscombe and Greenlees⁽⁷⁾ and
54 Thelwell et al.⁽⁸⁾ have also more recently called for future studies to investigate expectancy
55 effects in *live* performance conditions. The purpose of the present study was therefore to
56 investigate the impact that body language and knowledge of a performer’s prior playing record
57 have in influencing judgements of a real-life tennis player and ratings of that individual’s
58 performance.

59 It was hypothesised that when the participants viewed the target displaying positive body
60 language they would form a more favourable impression of the player and rate the performer’s
61 play more favourably than when the player was seen displaying negative body language. It was
62 also hypothesised that when presented with a positive prior playing record the participants would
63 form a more positive impression of the player and rate the performer’s play more favourably
64 than when presented with a negative prior playing record.

65 **Method**

66 **Participants**

67 The participants (N = 123, Mean age = 23.7, SD = 6.0) self reported themselves to be
68 physically active, Undergraduate students of which 76 were male and 47 female. The

69 participants recorded their ethnicity indicating that 67% of the group were British, 14%
70 European, 3% Asian, 2% American, 7% African with the remaining 7% marking 'Other'. Of the
71 sample, 40% reported experiencing tennis in a viewing capacity (M=7.62 years), 52% indicated a
72 recreational involvement in tennis (M = 7.54 years), 4% regular tennis playing involvement (M =
73 8.49 years) and 4% reported being involved at a competitive level (M = 13.8 years). All
74 participants were volunteers and signed informed consent forms prior to participation. Ethical
75 clearance for the study was obtained from the second author's institution.

76 **Measures**

77 **Motivation.** The participants' motivation was self reported using three, nine-point
78 Likert-type scales. The measure was completed immediately after the participants had finished
79 reporting their judgements of the target's play. The questions included: 1) 'How motivated were
80 you to form an accurate judgement of the player? 2) How important to you was it to make an
81 accurate judgement of the player? and 3) How much of your attention did you devote to
82 completing the task accurately? Questions 1 and 2 were anchored with 'Not at all
83 motivated/important' and 'Highly motivated/important'. Question 3 was anchored with 'Very
84 limited attention' and 'complete attention'. The scores from the three questions were summed to
85 form an overall motivation score. A similar approach has been used successfully in previous
86 research to record motivation during the completion of an impression formation task (Tetlock &
87 Kim, 1987).

88 **Impressions of Opponent.** Impressions of the target player were recorded via eight,
89 nine-point Likert-type scales. These scales were anchored with; has self-control-lacks self-
90 control, self confident-lacks self confidence, energised-lethargic, focussed-not focussed,

91 assertive-non-assertive, decisive-not decisive, competitive-non competitive and dominates
92 opponents-is dominated by opponents. The scores from the eight items were summed to form an
93 overall impression score which was found to demonstrate high internal reliability (Cronbach $\alpha =$
94 0.85). These items have also been employed previously to record impressions of tennis
95 players.⁽⁵⁾

96 **Ratings of the Target's Play.** Perceptions of the target's play were recorded on seven
97 aspects of performance using nine-point Likert-type scales. These dimensions included
98 perceptions of the player's forehand, movement and speed around the court, footwork, power
99 generated in his shots, accuracy and balance on court. The scales ranged from one to nine and
100 were anchored in accord with the specific dimension being measured (e.g., 1=extremely
101 slow/very limited power to 9=extremely fast/extremely powerful). A number of items were
102 reversed in order to encourage the participants to attend to each scale individually. The measure
103 demonstrated high internal reliability (Cronbach alpha, $\alpha = 0.85$).

104 **Procedure**

105 Testing took place at a tennis facility situation in Central London. The facility housed
106 one, full-size, regulation tennis court with tiered seating running the length of the court parallel
107 to the tramline. Upon entering the tennis facility the participants were instructed to position
108 themselves in one of two seating areas at one end of the tennis court. These seating
109 arrangements ensured that the participants had an unobscured view of the playing area. Once
110 seated the participants were informed that a male tennis player (target) was due to arrive at the
111 facility shortly. Prior to the target player appearing the experimenter introduced the individual as
112 being of similar age to the participants and having been recruited from a local tennis club. The

113 participants were informed that once the target player entered the facility the player would be
114 carrying out a sequence of 20 tennis shots from which they would be required to rate the
115 performer's play. At this stage questionnaires were administered to the participants which
116 contained information about the player they were about to view and also the Likert-type scales.
117 The participants were informed that they had from the moment the player comes in to view up to
118 one additional minute after the player had left the facility to complete the questionnaire. This
119 approach standardised the time that the participants received to complete the questionnaire.

120 The front sheet of the questionnaire pack provided generic information about the
121 performer such as name, age, and the fact that the performer is still actively competing. In
122 addition to this information details of the player's recent win-loss record and Lawn Tennis
123 Association ranking were provided. Unbeknown to the participants two versions of the
124 introductory player information were distributed. The participants received information
125 indicating that the player had either "21 wins-5 losses in their last 26 matches and their LTA
126 ranking had recently increased" (positive expectation, N=59) or that the player had "21 losses-5
127 wins in their last 26 matches and their LTA ranking had recently declined" (negative
128 expectation, N = 64). The two versions of the questionnaire were administered simultaneously
129 with participants in the same seating block receiving either the positive or negative expectancy
130 information, respectively. The methodology employed and the creation of the expectancy
131 conditions was thus identical to that which was successfully used by Kelley⁽¹³⁾ when studying
132 perceptions of a University lecturer.

133 In addition to receiving the positive or negative playing information the participants
134 viewed the target player warming-up for a tennis match in one of two body language conditions.
135 Body language was manipulated based on Weinberg's⁽¹⁷⁾ guidelines with positive body language

136 consisting of the target walking and standing with his shoulders back, chest out, head up and
137 looking directly at the audience (participants) for prolonged periods of time. The negative body
138 language condition consisted of the target adopting a hunched posture, with head and chin
139 pointing towards the ground with only an occasional glance towards the audience. The study
140 design resulted in the construction of four experimental groups: 1) positive body language with
141 positive prior playing information (N = 17M/13F), 2) positive body language with negative prior
142 playing information (N = 17M/12F), 3) negative body language with positive prior playing
143 information (N = 20M/8F), or 4) negative body language with negative prior playing information
144 (N = 22M/14F).

145 The warm-up activities consisted of the same sequence of exercises in both body
146 language conditions. The experimenter recorded via a digital wristwatch the total time the player
147 was in view (300 secs) and the time taken by the target to warm-up (120 secs). Differences of 10
148 secs (total time in view) and 5 secs (time spent completing warm-up activities) were observed
149 across the two testing sessions and post test follow-up indicated that the participants were not
150 aware of the manipulation at the time of testing.

151 After the warm-up was complete a qualified tennis coach fed 20 balls to the performer in
152 a pre-determined order of forehand and backhand strokes. The target player was briefed to hit
153 two balls in the net, two balls out of the back of the court and return the remaining 16 balls
154 aiming for a designated length marked by a coned area at the other end of the tennis court. This
155 approach provided the participants with ambiguous performance information that was largely
156 identical across both body language conditions. The target player was seen wearing the same
157 clothing in both testing sessions. The target player displayed neutral body language during the

158 execution of his shots and approached the court from the same side, carried the same tennis
159 holdall and withdrew the same tennis racket from his bag.

160 **Data Analysis**

161 Independent samples t-tests indicated no significant differences between males and
162 females with respect to perceptions of play ($t_{(121)} = -1.50$; $p = .14$) or first impressions ($t_{(121)} = -$
163 1.35 ; $p = .18$). Based on these results the data was collapsed across gender in all subsequent
164 analyses. A one-way Analysis of Variance (ANOVA) indicated no significant differences
165 existed across the four experimental groups with respect to motivation score ($F(3, 122) = 1.33$;
166 $p = .27$). Second, Pearson correlation confirmed a significant relationship between motivation
167 (covariate) and, ratings of play ($r = .29$; $p = .001$), and impression score ($r = .20$; $p = .03$). Finally,
168 homogeneity of regression slope indicated no significant interaction between first impression
169 score or ratings of play and the four combinations of body language and expectancy condition
170 ($p > 0.05$). According to Field⁽¹⁸⁾ the completion of these checks is an integral part of the
171 ANCOVA process.

172 Two separate 2 (positive body language vs. negative body language) x 2 (positive playing
173 record vs. negative playing record) ANCOVA's with total impression score and ratings of play
174 as dependent variables were computed. Total motivation score was entered as a covariate in
175 each separate analysis. All analyses were conducted with significance set at the $p < 0.05$ level.

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Results

180 Impressions of the Target Player

181 ANCOVA indicated a significant main effect for body language, $F(1, 118) = 17.58$;
182 $p < 0.001$, and playing record, $F(1, 118) = 12.56$; $p = .001$). There was no interaction effect, $F(1,$
183 $118) = 1.85$; $p = .18$. Descriptive statistics displaying group differences for impressions of the
184 target player are presented in Table 1.

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INSERT TABLE ONE HERE

186 These results indicate that impressions of the target player were more positive having
187 viewed the individual displaying positive ($M = 52.9$) as opposed to negative ($M = 46.2$) body
188 language during the warm-up and when participants were presented with a positive ($M = 52.4$) as
189 opposed to a negative ($M = 46.7$) prior playing record.

190 Ratings of the Target's Play

191 ANCOVA indicated a significant main effect for playing record, $F(1, 118) = 10.72$; $p =$
192 $.001$). There was no body language main effect, $F(1, 118) = 3.25$; $p = .07$, and no interaction
193 effect, $F(1, 118) = .52$; $p = .47$. Descriptive statistics displaying group differences for
194 perceptions of play are presented in Table 1. These results indicate that the target's play was
195 viewed more positively when the participants had been presented with a positive ($M = 41.7$) as
196 opposed to a negative ($M = 37.7$) prior playing record.

197

Discussion

198 The results demonstrated that when presented with a positive prior playing record the
199 participants formed more favourable first impressions and rated the target player's performance

200 more positively than when presented with a negative playing record. Furthermore, when the
201 target player was seen displaying positive body language during the warm-up the participants
202 reported more favourable impressions of the performer. However, the target's body language
203 was not seen to influence ratings of that individual's performance. Overall, the results provide a
204 further indication of the existence of expectancy effects in sport and lend support to the role that
205 information presented pre-event or detected early in an encounter plays in influencing
206 judgements of tennis players.

207 The present study supports the work of Greenlees, et al. ⁽¹⁵⁾ and Buscombe et al. ⁽⁵⁾ who
208 reported similar body language effects when competitive tennis players formed judgements of a
209 target performer from a period of video footage. The magnitude of the effect size ($\eta_p^2 = .13$) and
210 power (.99) associated with this result supports the robustness of the finding. Importantly, the
211 present study extends previous research findings in indicating that an athlete's body language
212 may influence the impression being formed of a *live* performer. Overall, this result appears to
213 support the suggestions of applied practitioners who propose that athletes should display positive
214 body language in the moments leading up to a contest in order to portray a more favourable
215 image to their opponent. ⁽¹⁷⁾ Future research should build on this finding by studying the
216 affective and behavioural response of a perceiver to a real-life target athlete who is displaying
217 either positive or negative body language. The results of this work would enable sports
218 psychologists and coaches to develop a better understanding of the potential role that a
219 performer's body language might play in shaping the outcome of *live* interactions in sporting
220 dyads.

221 Although the hypothesised impact of body language on ratings of the target's play did not
222 reach statistical significance, the data suggests that this result was converging towards a main

223 effect ($p = .07$). Given that the present study employed a real-life target performer as opposed to
224 previous work which has utilised video footage^(19, 20, 5) it can be proposed that the differing
225 experimental set-ups may account for the variability evident in the results. The nature of
226 forming real-life judgements may have served to increase a perceiver's interest in the task with
227 the result that participants were more motivated, and devoted more attention to forming
228 judgements of the performer. The mean motivation score of 19 (maximum possible score of 27)
229 reported by the participants in the present study appears to lend support to these suggestions.

230 The results provide support for the *a priori* hypotheses that prior playing record would
231 influence ratings of the target's play. More specifically, when presented with a positive prior
232 playing record the participants formed more favourable judgements of the target's play than
233 when presented with a negative playing record. These results build on the paper-based approach
234 used in Miki et al.'s⁽³⁾ research demonstrating that knowledge of an athlete's playing record may
235 influence judgements of a real-life athlete's performance. In line with recommendations
236 forwarded by Miki et al.⁽³⁾ the current results support the suggestion that athletes should be
237 educated to 'look beyond' the playing record or rating of an opponent in order to think more
238 comprehensively about the best way to go about defeating that individual. Given that in the UK
239 members of the Lawn Tennis Association can apply for a 'playing rating' which then becomes
240 public appearing on the draw sheet at UK tournaments, and freely available on the internet the
241 use of expectancy based processing may be widespread in competitive tennis in the UK.

242 The findings of the present study provide further evidence of the existence of expectancy
243 effects in sport. Furthermore, this work provides the first indication in the extant literature that
244 expectancy effects may exist when observing real-life sports performers. Further investigations
245 might investigate the consistency of this effect when judgements are based on a range of

246 different sources of expectancy information, across a range of sports, and when female targets
247 are observed.

248 **References**

- 249 1. Fiske, S. T. and Taylor, S. E. (1984). Social schemata. In S. T. Fiske and S. E. Taylor
250 (Eds.), *Social Cognition* (pp.138-181). Addison-Wesley Publishing Company.
- 251 2. Ste-Marie, D. M., & Lee, T. D. (1991). Prior processing effects on gymnastics judging.
252 *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 17, 126-136.
- 253 3. Miki,H., Tsuchiya, H., & Nishino,A. (1993). Influence of expectancy of opponents'
254 competence upon information processing of their discrete attributes. *Perceptual and*
255 *Motor Skills*, 77, 987-993.
- 256 4. Findlay, L. C., & Ste-Marie, D. M. (2004). A reputation bias in figure skating judging.
257 *Journal of Sport and Exercise Psychology*, 26, 154-166.
- 258 5. Buscombe, R., Greenlees, I., Holder, T., Thelwell, R., & Rimmer, M. (2006).
259 Expectancy effects in tennis: The impact of opponents' pre-match non-verbal
260 behaviour on male tennis players. *Journal of Sports Sciences*, 24(12), 1265-1272.
- 261 6. Furley, P., Dicks, M., & Memmert, D. (2012). Nonverbal behaviour in soccer: The
262 influence of dominant and submissive body language on the impression formation and
263 expectancy of success of soccer players. *Journal of Sport and Exercise Psychology*,
264 34, 61-82.
- 265 7. Buscombe, R. & Greenlees, I (2012). The role of time pressure and accountability in
266 moderating the impact of expectancies on judgments of tennis performance.
267 *International Journal of Sport Psychology*, 43(4), 346-363.

- 268 8. Thelwell, R., Page, J., Lush, A., Greenlees, I. and Manley, A. (2013). Can reputation
269 biases influence the outcome and process of making competence judgements of a
270 coach? *Scandinavian Journal of Medicine and Science in Sport*, 23, 65-73.
- 271 9. Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from
272 category-based to individuating processes: Influences of information and motivation
273 on attention and interpretation. In M. P. Zanna (Ed). *Advances in Experimental Social
274 Psychology* (pp.1-74). Academic Press, INC.
- 275 10. Olson, J. M., Roese, N. J. ,& Zanna, M. P. (1996). Expectancies. In E. T. Higgins
276 (Ed.), *Social Psychology* (pp.217-238). The Guilford Press.
- 277 11. Fiske, S. T., Lin, M., & Neuberg, S. L. (1999). *The continuum model: Ten years later.*
278 In S. Chaiken & Y. Trope (Eds). *Dual-Process Theories in Social Psychology* (pp.
279 231-254). The Guilford Press: New York, London.
- 280 12. Neuberg, S. L. (1989). The goal of forming accurate impressions during social
281 interactions attenuating the impact of negative expectancies. *Journal of Personality
282 and Social Psychology*, 56(3), 374-386.
- 283 13. Kelley, H. H. (1950). The warm-cold variable in first impressions of persons. *Journal
284 of Personality*, 18, 431-439.
- 285 14. Rosenthal, R., & Jacobson, L. F. (1968). *Pygmalion in the Classroom: Teacher
286 Expectations and Student Intellectual Development*. New York: Holt.
- 287 15. Greenlees, I., Buscombe, R., Thelwell, R., Holder, T., & Rimmer, M. (2005). Impact
288 of opponents' clothing and body language on impression formation and outcome
289 expectations. *Journal of Sport and Exercise Psychology*, 27, 39-52.

- 290 16. Tetlock, P. E., & Kim, J. I. (1987). Accountability and judgment processes in a
291 personality prediction task. *Journal of Personality and Social Psychology*, 52(4), 700-
292 709.
- 293 17. Weinberg, R. S. (1988). *The Mental Advantage. Developing Your Psychological*
294 *Skills in Tennis*. Leisure Press, Champaign, IL.
- 295 18. Field, A. P. (2009). *Discovering statistics using SPSS: and sex and drugs and rock 'n'*
296 *roll* (3rd edition). London: Sage.
- 297 19. Scheer, J. K., & Ansorge, C. J. (1975). Effects of naturally induced judges'
298 expectations on the ratings of physical performances. *The Research Quarterly*, 46(4),
299 463-470.
- 300 20. Plessner, H. (1999). Expectation biases in gymnastics judging. *Journal of Sport and*
301 *Exercise Psychology*, 21, 131-144.

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303 Table 1.

304 *Estimated marginal means and standard errors for impression score and ratings of play*

	Impression Score			Ratings of Play		
	Positive Body Language	Negative Body Language	Total	Positive Body Language	Negative Body Language	Total
Positive Playing Record	56.76 (1.59) (N=30)	48.00 (1.66) (N=28)	52.38 ^{b*} (1.15)	43.21 (1.20) (N=30)	40.20 (1.25) (N=28)	41.70 ^{c*} (.87)
Negative Playing Record	48.94 (1.62) (N=29)	44.47 (1.46) (N=36)	46.70 ^{b*} (1.09)	38.38 (1.23) (N=29)	37.09 (1.10) (N=36)	37.74 ^{c*} (.83)
Total	52.85 ^{a**} (1.13)	46.24 ^{a**} (1.10)		40.79 (.86)	38.64 (.83)	

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306 ^{a, b, c} indicates main effect comparisons307 ^{**}denotes sig difference at $p < 0.001$, ^{*}denotes sig difference at $p < 0.05$

308