

UNIFORM COLOR AND A WINNING ELEVEN

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Introduction

Hill and Barton (2005) have found that football teams wearing red uniforms scored more than teams in blue uniforms in the Euro 2004 Championships. There are competing explanations for the superior performance of teams in red, including increased production of testosterone by players wearing red, and perceptual bias on the part of the referee (Hagemann, Strauss, and Libing 2008). We investigated whether such effects were also observable in a virtual world, using the football game “WORLD SOCCER Winning Eleven”, by Konami Digital Entertainment Co., Ltd.

Method

We held a tournament using Winning Eleven (2010 edition). The participants were six Japanese male university students with substantial experience of the software. They played a total of 20 games under four conditions based on two factors: home or away (i.e., playing left-to-right, or right-to-left) and with red or blue uniform. Participants always sat on the left side of the screen when playing left-to-right, and vice-versa. Participants wore white bibs (described as denoting status as experimental subjects) to prevent the color of their actual clothing affecting results. Participants received modest financial reward for their time, including an incentive to perform well.

Results & Discussion

Figure 1 shows that winning percentage (measured using factorial ANOVA) differs significantly with uniform color $F(3, 5)=5.98, p>.10$. Other factors we collected statistics for (including number of shots, passes, and fouls) do not differ significantly with color. Since we confirmed with Konami that their software has no color bias (refereeing or otherwise), we can conclude that any performance difference is an artefact of perceptual color effects on the players themselves. Our results suggest that findings of increased fouls by teams in red in professional games may be due to perception bias in referees.

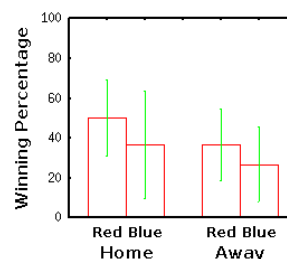


Figure 1. Mean winning rates under four conditions: home or away, and red or blue uniform color

Conclusion

We have demonstrated that uniform color affects players even in a virtual world, thus showing how interdisciplinary approaches can illuminate the real-world game of football.

References

1. Hill, R. A. and Barton, R. A. (2005). *Nature*, 7040(435): 293.
2. Hagemann, N. and Strauss, B. and Libing, J. (2008). *Psychological Science*, 19: 769.