

# Influence of body language on penalty takers' performance

Seiler, Kirstin<sup>1</sup>, Schweizer, Geoffrey<sup>2</sup>, & Seiler, Roland<sup>1</sup>

<sup>1</sup>Institute of Sport Science, University of Bern, Switzerland

<sup>2</sup>Department of Sport and Exercise Psychology, University of Heidelberg

## Introduction

Previous laboratory research on nonverbal behavior (NVB) in the sport performance setting (e.g., Furley & Dicks, 2012; Furley, Moll, & Memmert, 2015) has shown that NVB might be among the most important factors influencing emotions and outcome expectations among perceivers. However, the research so far has neglected to conduct studies in non-laboratory settings and to measure the behavioral consequences of NVB. Thus, following the call from Baumeister, Vohs, and Funder (2007) to conduct more studies on the behavioral consequences of findings derived from questionnaires, we were aiming to realize a field study (i.e., a real-world soccer penalty scenario) on the effects of NVB, assessing both subjective variables (i.e., perceived goalkeepers' strength, outcome expectations) and objective performance variables (i.e., precision and speed of the penalties).

## Results

### Subjective Variables

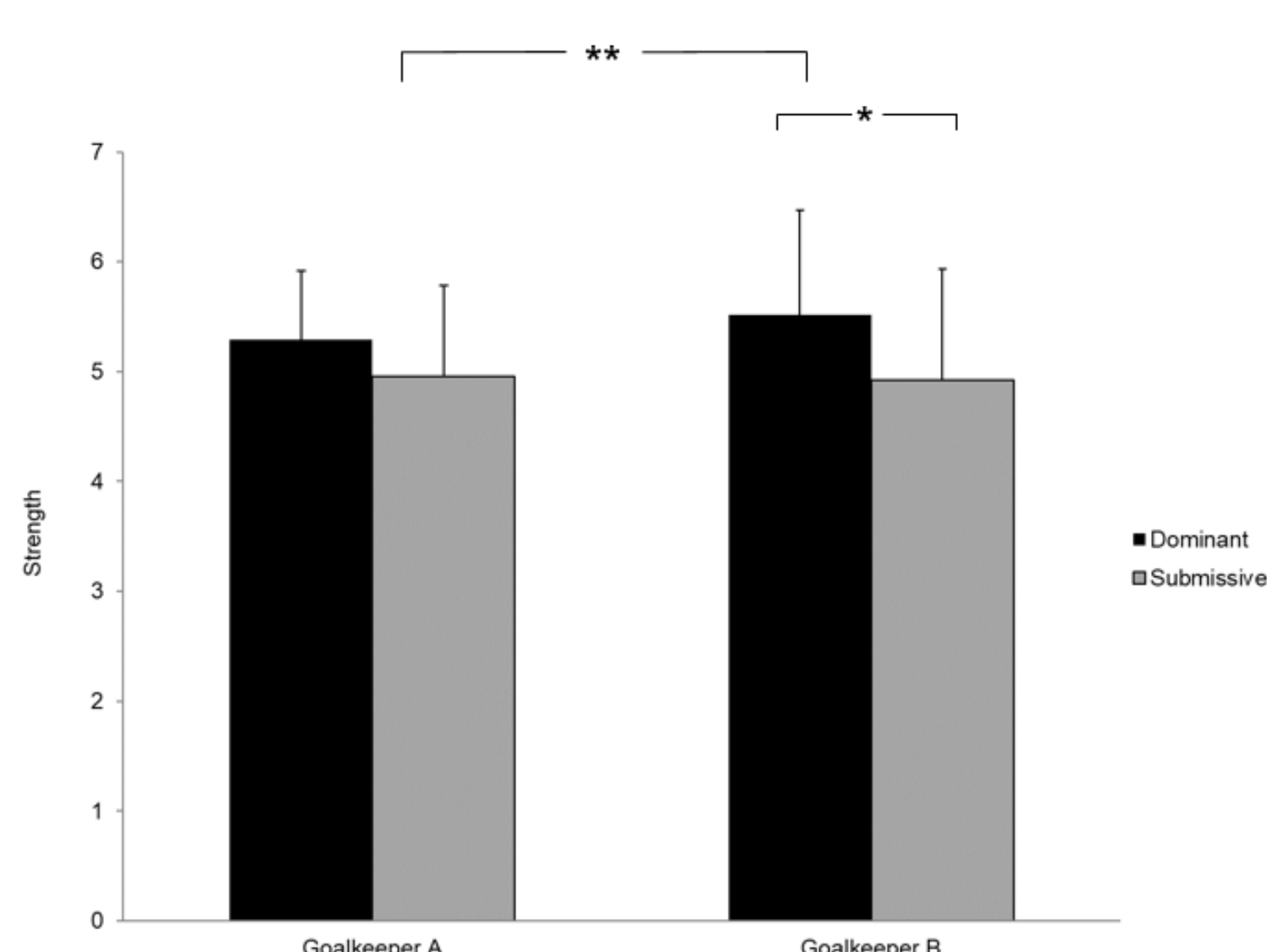


Figure 3. Mean strength ratings as a function of NVB and the goalkeeper. The error bars represent standard deviations.

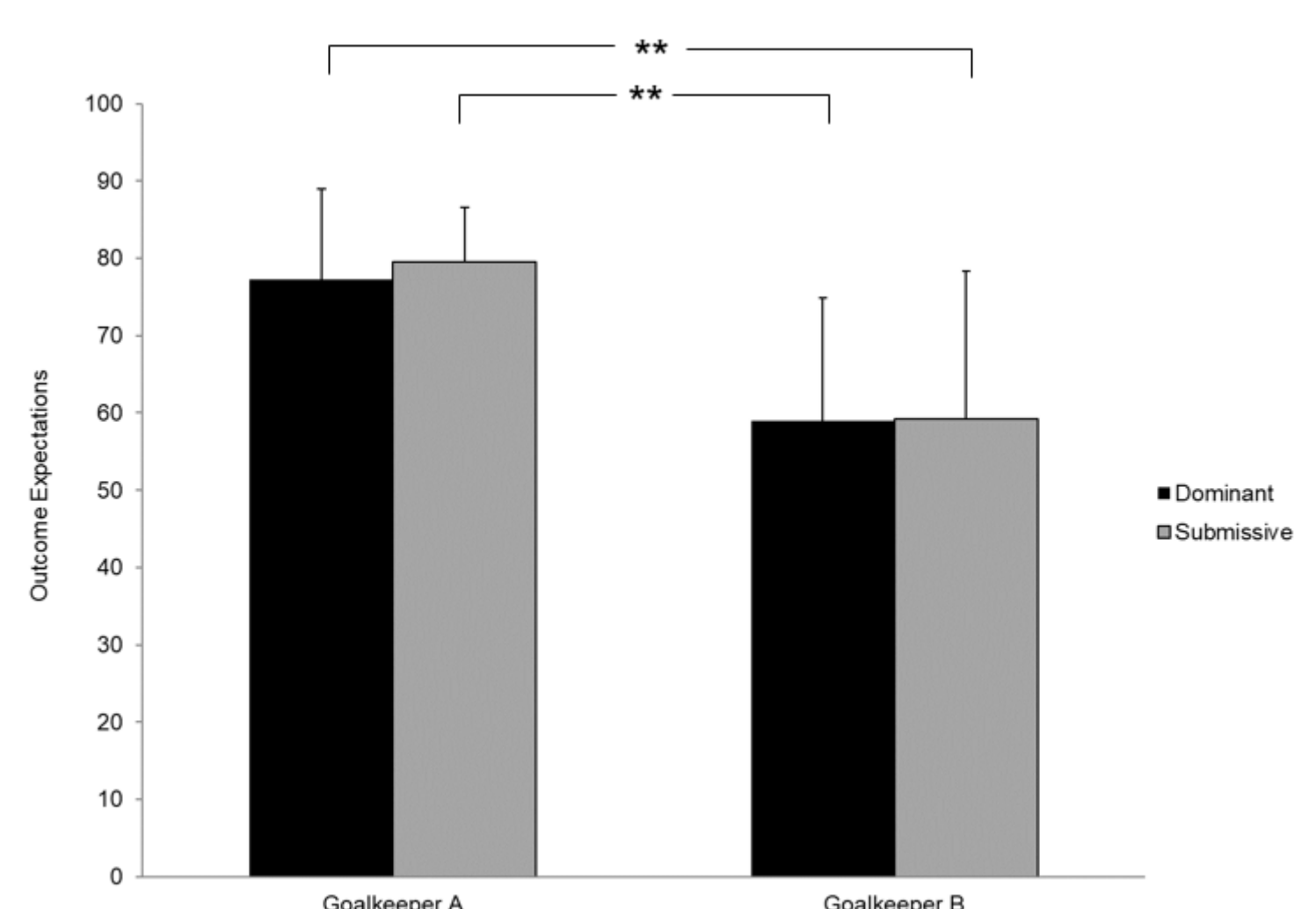


Figure 4. Mean outcome expectation ratings as a function of NVB and the goalkeeper. The error bars represent standard deviations.

### Objective Variables

#### Accuracy

- NVB:  $F[1, 41] = 1.36, p = .25, \eta^2_p = .03$
- NVB x Dom 1<sup>st</sup> and NVB x A 1<sup>st</sup>: n.s.

#### Speed

- NVB:  $F[1, 43] = 1.49, p = .23, \eta^2_p = .03$
- NVB x Dom 1<sup>st</sup> and NVB x A 1<sup>st</sup>: n.s.

## Method

### Design

Repeated measures-design. Participants took 20 penalty kicks alternating against a dominant and a submissive goalkeeper, thus 10 kicks against each goalkeeper (Goalkeeper A vs. B). Goalkeepers changed roles after each participant. First penalty against dominant or submissive goalkeeper or against goalkeeper A or B ( $\rightarrow$  Dom 1<sup>st</sup> vs. Sub 1<sup>st</sup> and A 1<sup>st</sup> vs. B 1<sup>st</sup>).



Figure 1. The experimental set-up before the start of the shootout with the goalkeepers in their dominant and submissive posture.

### Sample

$N = 47$  football experienced male sport students ( $M_{age} = 22.09, SD = 2.19$ )

### Measures

#### Before the shootout (subjective variables)

- Perceived goalkeeper's strength: 1 (not at all strong) – 10 (absolutely strong)
- Outcome expectations (e.g., Furley & Dicks, 2012): scores from 0 to 100

#### During the shootout (objective performance variables)

- Accuracy (distance from goalpost)
- Average speed of penalties

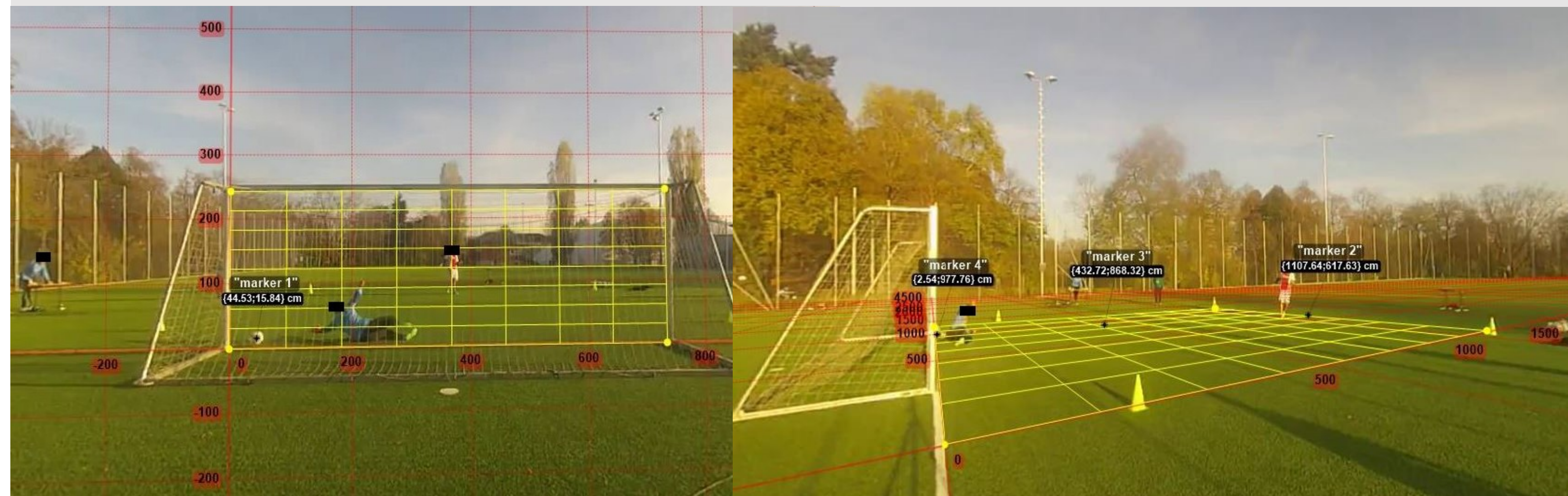


Figure 2. Measurement of penalties' accuracy and speed with GoProHero2 cameras, analysed with Kinovea motion analysis software.

## Discussion

### Summary and theoretical integration of results

**Goalkeepers' strength:** The results are partly in line with previous research as dominant goalkeepers are perceived stronger than submissive goalkeepers (Furley & Dicks, 2012). Notably, this effect is stronger for goalkeeper B than for A. Further, the NVB-manipulation was more clearly for goalkeeper B than for goalkeeper A as only goalkeeper B is perceived significantly stronger in his dominant compared to his submissive NVB-posture.

**Outcome expectations:** The results suggest that not the goalkeepers' NVB significantly influences penalty takers, but the goalkeepers themselves, e.g., their size or their demeanor in general as outcome expectations are significantly higher against goalkeeper A, independent of NVB.

**Objective measures:** No significant influence of NVB on accuracy and speed was found.

### Further directions

Further research is needed to shed light in the generalizability of laboratory results to the field in the psychological research in general, and in the NVB-research specifically as, according to our results, the high effects of NVB found in laboratory setting could not be transferred to the field, especially concerning objective performance variables.

### Key References

- Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science*, 2(4), 396-403. doi:10.1111/j.1745-6916.2007.00051.x
- Furley, P., & Dicks, M. (2012). "Hold your head high". The influence of emotional versus neutral nonverbal expressions of dominance and submissiveness in baseball. *International Journal of Sport Psychology*, 43, 294-311.
- Furley, P., Moll, T., & Memmert, D. (2015). "Put your hands up in the air"? The interpersonal effects of pride and shame expressions on opponents and teammates. *Frontiers*, 6(1361), 1-20. doi:10.3389/fpsyg.2015.01261

### Contact:

Kirstin Seiler  
kirstin.seiler@ispw.unibe.ch  
+41 31 631 51 03

### Address:

University of Bern  
Institute of Sport Science  
Bremgartenstrasse 145  
3012 Bern  
www.ispw.unibe.ch

u<sup>b</sup>

UNIVERSITÄT  
BERN