

**TARGET ARTICLE****GABRIELE WULF ON ATTENTIONAL FOCUS AND MOTOR LEARNING****ERNST-JOACHIM HOSSNER<sup>1</sup> & NICOLE WENDEROTH<sup>2</sup> (EDS.)**<sup>1</sup>LIVERPOOL HOPE UNIVERSITY, <sup>2</sup>KATHOLIEKE UNIVERSITEIT LEUVEN**Editorial**

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## COMMENTARY ON WULF

**OPTIMAL ATTENTIONAL FOCUS IN PRACTICAL SPORT SETTINGS: ALWAYS EXTERNAL OR TASK SPECIFIC?****STEFAN KÜNZELL**

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*In diesem Kommentar werden Wulfs empirische Befunde, die eine Überlegenheit eines externalen Fokus nahelegen, der zusammengefassten Meinung deutscher Spitzentrainer/innen gegenüber gestellt. Im Gegensatz zu Wulf schlagen die Trainer/innen einen aufgabenabhängigen, funktionalen Aufmerksamkeitsfokus vor. Anstelle einer generellen Regel könnte die in Wulfs Studien gefundene Überlegenheit eines externalen Fokus auf aufgabenabhängige Funktionalitäten zurückzuführen sein.*

Schlüsselwörter: Aufmerksamkeitsfokus, Hochleistungssport, subjektive Theorie, Bewegungsaufgabe, funktionale Kopplung

*In this comment, I compare Wulf's empirical findings suggesting the superiority of an external focus with the summarized opinions of Germany's elite athletes' coaches. Contrary to Wulf, the coaches rather suggest a task-dependent, functional attentional focus. The superiority of the external focus in Wulf's studies could be due to its task-dependent functionality and not due to a general rule.*

Keywords: attentional focus, elite sport, subjective theory, movement task, functional coupling

In the closing words of her article, Wulf (2007) emphasizes the relevance of attentional foci for practical settings such as sports. She suggests that changing the wording of instructions or of feedback inducing a more external focus of attention in the athletes leads to a more effective practice. In my commentary, I concentrate on the practical implications of attentional focusing. To this end, I compare Wulf's research with a thorough investigation that was carried out by a group of colleagues among Germany's leading head coaches about 10 years ago (Roth, 1996). In half-standardized focused interviews, we surveyed the implicit theories of skill training among 31 expert coaches (Szymanski, Hossner, & Künzell, 1996). Their opinions were summarized into 10 principles (Hossner, 1996). In a questionnaire, these principles were validated by 152 federal coaches (Künzell & Schipke, 1996).

Indeed, the focus of the athlete's attention is one of the coaches' major concerns. The coaches follow an "optimal attention principle". They claim that it would depend on the circumstances what the optimal focus of attention is. 88% of the 152 coaches agreed that it is important for the athlete to focus on the "key points of the movement" in

skill training. Key points are movement features that are necessary for the successful achievement of the movement's goal. However, in competition, this focus is disputed. 41% of the coaches suggested not to focus attention on anything but just to execute the movement in an automatic way, while 36% still recommended to focus on the key points. The rest advised an individual solution.

The coaches' advice "not to focus on anything" in competition and Wulf's advice to focus on external events share the same underlying considerations: The automaticity of the movement should not be disrupted by focusing on aspects of the movement itself during skill execution. However, in the coaches' opinion this should be done only in competition, but not in training. Both, the coaches in our investigation and Wulf in her article, do not define automaticity, but it can be inferred that they mean something different. In the coaches' opinion, automaticity is acquired by hundreds of repetitions in skill training, whereas Wulf argues that novices who practice the task for the first time have an automatic control mode that will be disrupted by an internal focus.

Strictly speaking, the coaches do not distinguish between an internal and an external focus. Though the focus on "key points of the movement" suggests an internal focus, this may not necessarily be the case. A "key point" could be a specific joint configuration at an important phase of the movement, but it could as well be a specific distal effect that is to be achieved (e.g., in skiing "bending the knees curve-inward" vs. "anchoring the edges of the skis in the snow"). Instead of distinguishing between external and internal focus, expert coaches emphasize the functionality of instruction and feedback. Instructions and feedback have to be given in a way that guides the athletes to focus on the part of the movement that is crucial for its function. The movement's function is to achieve the intended effect. So, to follow an example given by Wulf (2007, citing Zachry, 2005), it is crucial for the function of an American football place kick to hit the ball exactly central underneath

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its midline. It is not so crucial with which part of the foot the ball is hit. In her master's thesis, Zachry compared group A, which is being provided with less functional feedback ("focus on the part of the foot that would be contacting the ball", Wulf 2007, p. 7), with group B, which is being provided with a more functional feedback ("focus on the part of the ball that they would be contacting with their foot", Wulf 2007, p. 7). This example will not prove the superiority of an external vs. an internal focus, but it proves the superiority of a functional vs. a non-functional focus. In all tasks where an object has to be hit, thrown, or manipulated in a predefined way, it is of functional importance to put attentional focus on the object, i.e., an external focus. In hitting a moving object such as in volleyball, tennis, baseball, or many other sports it is obvious that the focus of visual attention must be at least for some time on the moving object, otherwise it is impossible to hit it correctly and to fulfill the ultimate movement goal. Wulf's finding of a superiority of an external focus might be confounded by the different functional importance of the external and the internal focus for performance.

It is obvious that Wulf deals with an important aspect of athlete's skill training. Summarizing my comment, I would suggest that an external focus might not generally be superior, but that the optimal focus of attention depends on the task at hand.

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