## Clutch or Choke: The Role of Attention in Optimal Performance.

Attention (attentional focus, attention, concentration) is essential, indispensable, and requisite for performing one's best, for enhanced skill acquisition, and expert-performance (or reaching the level of expertise) (Tedesqui & Glynn, 2013; Williams, Nideffer, Wilson, Sagal, & Peper, 2010). Tedesqui et al. (2013) further described three types of "attention": attentional focus or the ability to "direct and sustain focus"; attention as being able to shift focus as needed; and concentration as "the ability to focus on performance-relevant aspects of the attentional field" (p. 123). Further reference to "attention" will refer to the general, umbrella definition.

Under pressure, athletic performances may be described as "clutch", "choking", or "as expected". A "clutch" performance describes a case where an athlete performs significantly/exceptionally better than usual (as per their abilities) under pressure/duress; for example, it may be the defining moment of a game--the winning shot (Gray, Allsop, & Williams, 2013; Otten, 2009). An athlete's performance may also be "as expected"--neither worse nor better than usual. An athlete may also choke during performance. "Choking [under pressure]" describes a high-stakes performance where the athlete performs well-below his/her "normal" abilities or skill level--an exceptionally poor performance under high pressure; choking is comprised of both psychological and physiological processes (Belletier et al., 2015; Gray et al., 2013; Koekijker & Mann, 2015). Two dominant viewpoints in research both have merit in relating attention to choking--distraction and self-focus theories.

Self-focus (skill-focus of attention) theories generally explain choking as a result of the athlete's attention shifting (e.g. increased anxiety, increased perceived stress, poor coping skills, negative self-talk) towards the internal, process-orientation, and the "deautomatization" and regression of mastered skills--expertise becoming "disrupted by re-instantiation of explicit skill-monitoring and control mechanisms" (Koedijker & Mann, 2015, p. 334; Oudejans, Kuijpers, Kooijman, & Bakker, 2011). The athlete's attention shifts from outcome-orientation to the stepwise mechanics of motor skill execution--from the autonomous back to the cognitive phase (Koedijker & Mann, 2015; Coker & Fischman, 2010; Tedesqui & Glynn, 2013). Reverting back to a more novice learning-stage from an expertise-stage interferes and detracts from the performance of those well-learned skills (Tedesqui & Glynn, 2013). However, internal focus for a novice learner (cognitive stage) seems to be helpful (Coker & Fischman, 2010; Tedesqui & Glynn, 2013).

Gray et al. (2013) examined 13 expert golfers' (11 males, 2 females, average of 20.7 yrs of competitive experience, recruited from the Applied Golf Management Studies degree at University of Birmingham) putting kinematics (distances of 2, 2.5, and 3m to a target 1.03m from the end of the putting area) and their respective response to performance pressure. Gray's et al. (2013) study had 3 phases: practice, pre-presure, and pressure. In the practice phase, each golfer putted 24 times (8 putts per distance progression of 2m, 2.5m, 3m, 2.5m, 2m, ...) (Gray et al., 2013). The distance from the marker to the ball was recorded after each putt (Gray et al., 2013).

After a 10 minute rest, the golfers proceeded to put in similar manner for the pre-pressure phase; and after another 10 minute rest, the golfers putted in the pressure phase (Gray et al.,

2013). In order to induce pressure, a script was read to the golfers notifying them of points, prize money depending on their performance, and a public display of their ranking on the school leader board (Gray et al., 2013). For the pressure phase, a 16.5 cm diameter ring was placed around the target and fictitious scores were posted on the leader board. At the completion, the golfers completed the Intermediate Anxiety Measures Scale (IAMS) which assessed the intensity and direction of cognitive anxiety, somatic anxietym, and self-confidence (Gray et al., 2013).

Gray et al. (2013) found that the golfers' used a "smaller range of stroke amplitudes to putt over the same range of distances" (p. 401), and this was similar to the difference between skilled and unskilled golfers (downswing amplitude/distance relationship, also greater putting errors). Gray et al. (2013) also found that the closer the golfer was to being in the lead on the leader board, the larger the choking effect.

Distraction theories relate choking to attention being shifted away from task execution and towards worries/thoughts/negativity about the performance under a pressure situation or "outcome pressure" (hence "distracted athlete") (Oudejans et al., 2011). Oudejans et al. (2011) surveyed 70 elite athletes (41 males, 29 females) from 19 different sports in order to examine to what degree "skill-focused attention as well as distracting thoughts and worries spontaneously occur in high-pressure situations" (p. 61). Oudejans et al. (2011) noted that distracting thoughts/worries occurred more often in relation to choking than skill-focused induced choking.

In reality, choking during a performance may also be a blend of theories and dependent on the individual, the type of task/performance (as well as the motivational climate), and the type of pressure. It would seem that in order to decrease the probability of "choking", it would be prudent to train (psychological skills) the athlete to increase self-awareness, mindfulness, and other "attention-recovery" skills once the athlete "catches" him- or herself off-track.

## References

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