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From the Lesson Tee to the Course: A Naturalistic Investigation of Attentional Focus in Elite Golf

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Abstract

While debate continues on "optimal" attentional focus, little empirical knowledge exists on the way that attention is operationalized across training and performance in elite golf. Accordingly, this study aimed to: (a) explore the attentional foci promoted or used by coaches and players for different types of shots in training, plus their underpinning rationale; and (b) explore the attentional foci promoted or used by coaches and players in competition, plus their underpinning rationale. Our findings revealed that: (a) various foci were used across training and competition; (b) all players used different combinations of foci across training and competition, and within different aspects of training itself (e.g., short vs. long game); and (c) players often used alternative or additional foci in training to those promoted by coaches, and self-generated foci for competition. These results highlight the complexity and practical reality that needs to underpin future advances in theory, research, and practice.

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In the applied domain of golf, as in most self-paced sports, technique plays an important role. Coaching knowledge and empirical evidence tell us that a range of complex factors influence technical development for use during competition; including a player's attentional focus (Wulf & Su, 2007). Indeed, much prior work has asserted that what a player focuses on before, during, and after an execution significantly influences technical form and outcome success (e.g., for tasks such as driving or chipping the golf ball; Singer, 1986). Beyond this general headline, however, academic debate regarding an "optimal" attentional focus continues. Yet, at present, little empirical knowledge exists on the approaches promoted by those who, by and large, influence players the most: coaches. Clearly, this is a significant problem if the attentional focus process in golf is to be considered a sufficiently "well-functioning" *applied* science (cf. Giacobbi Jr. et al., 2005). As such, this study aimed to explore what, when, how, and, most significantly, why, coaches and players use attentional focus strategies. Ultimately, it was hoped that this study would offer a chance to compare and contrast current literature with actual coaching knowledge and practice.

Contextualizing Applied Sport Research: Its Beginnings and Where Are We Now?

To contextualize the necessity of our approach, Christina (1987) commented on and critiqued motor learning and control research. He described how "stimulus-response" investigations had previously (1950s and 1960s) focused on solving applied questions with the aim of improving performance within skill-based professions (e.g., sports and aviation). Following adoption of the "information-processing" approach (1970s and 1980s) however, research focused on the cognitive mechanisms acting on stimuli to elicit responses, with little regard for the type of outcome and how that might translate to real-world performance. While prioritizing theoretical development, applied research was viewed as subordinate and

dependant on basic/fundamental understanding, thus offering little insight or value in its own right. Consequently, studies mainly involved novices executing simple laboratory tasks. Christina's concern was that we knew little about the cognitive processes of highly practiced and/or skilled performances, and that this mattered because:

> we cannot be certain that the cognitive processes involved in learning and performing simple motor responses (a) are the same, (b) operate in the same way, and (c) are affected by the same variables in the same way as those found in learning and performing complex motor responses. (p. 33)

Perhaps controversial, was the idea that applied research could *inform* basic/fundamental theory. Thus, by the late 1980s the field was at a critical juncture in its development on where to turn for a deeper understanding.

More recently (1990s and 2000s), the inclusion of skilled athletes (although rarely true "elites") has been increasingly prevalent within research, however Christina's (1987) concerns, amongst other emergent issues, have remained for some applied researchers (e.g., Bobrownicki et al., 2018; D. Collins et al., 2016; Toner & Moran, 2015). Specifically, many concerns relate to investigations into the influence of attentional focus during motor learning, performance, and refinement (e.g., Beilock et al., 2002; Gray, 2018; Masters & Maxwell, 2008; Wulf, 2013). In terms of these investigations, most fundamental research studies have reported benefits of reduced or no conscious attention towards movement mechanics compared to directing conscious attention towards movement mechanics (see Masters & Maxwell, 2008; Wulf, 2013). One prominent idea is the "constrained action hypothesis" which concerns the use of an external or internal focus during learning and performance. Within this literature, an external focus is defined as thoughts that "direct the performer's attention away from his or her body movements and to the effects that those movements have on the environment" and an internal focus is defined as thoughts "referring to the performer's

body movement" (Wulf et al., 1998, p. 170). Other related frameworks have also been proposed; "reinvestment" (Masters & Maxwell, 2008) and the "explicit monitoring hypothesis" (Beilock & Carr, 2001). Both specifically relate to the phenomenon of "choking" under pressure. The former has been derived from studies of novice performers and suggests that for individuals with a high propensity to think excessively using rule-based knowledge, this tends to underpin a deterioration of performance. The latter hypothesis on the other hand, tested with novices and skilled performers, explains that monitoring of the movement mechanics in a step-by-step manner is only detrimental to skilled performers. While subtly different in their mechanistic underpinnings, all these bodies of literature offer strategies to avoid attention towards the movement (e.g., external focus, implicit motor learning, or dual-task conditions) as a means to prevent negative deautomation effects. Importantly for our applied focus, findings from these experiments have led Wulf (2016) to describe an external focus as a "condition sine qua non for athletes" (p. 1293) and that "continuing to rely on "practitioner wisdom" [i.e., internal focus instructions/foci] and ignoring strong evidence for the advantages of an external attentional focus provides a disservice to athletes" (p. 1294). So, for some at least, the matter is closed: an external focus is best for *any* athlete, in *any* circumstance, and for *any* purpose.

Contradictions with Applied Research Studies: Realizing Contextual Differences

Contrary to these fundamental research findings, however, applied research suggests a more facilitative role for internal foci within training *and* performance settings. For example, Carson and Collins (2011) proposed that a narrow internal focus is necessary when initiating small technical refinements to already well-established and automated skills (e.g., Hanin et al., 2002). Early on during refinement, becoming aware of the erroneous movement is necessary to lower the risk of future regression. In golf, this might mean focussing on the feel of leading with the hip at the start of the downswing or turning the chest to increase the

length of swing. Once the change has been both realized and later (re)automated, using an external focus of attention will be required (at least in part) within more naturalistic training and performance environments, to correctly identify relevant information for the task. Interestingly, the only study to employ implicit methods (so avoiding an internal focus) for technical refinement with elite athletes resulted in the opposite kinematic change intended and poorer performance (see Rendell et al., 2011). Toner and Moran (2015) also explained that performers should deliberately prevent overly automating skills to ensure adaptability in novel environments and/or physical performance requirements. In golf, this might include temporarily adapting technique to an awkward lie in a hazard, or simply when attempting to shape shots. Here, it is important that the golfer has a clear understanding of cause–effect between the ball flight characteristics and movement pattern; a process developed within the *associative* learning stage (Fitts & Posner, 1967). Evidently, contrasting simple tasks used within fundamental research studies with more varied real-world contexts provides a different, more dynamic perspective on the role of attentional focus and its utilization. Notably, while Wulf (2016) is fixed on the view that an external focus is absolute, Poolton and Zachry (2007) accept that implicit motor learning is not always appropriate or feasible within real-world settings. It is, therefore, necessary to further test and develop our ideas in this area.

Naturalistic Applied Research in Sport: A Dynamic and Complex Picture

Empirically, research has also investigated attentional focus use within naturalistic settings and across a range of different sports. Within judo, Bahmani et al. (2019) explored the attentional strategies of experts following competitive bouts using simulated recall. "Technique" constituted the most frequent focus, sometimes in a narrow direction (e.g., focussing on leg position) and sometimes holistically (e.g., exploding, being fast). Overall conclusions were that attentional foci were complex, dynamic, and multidirectional,

integrating psychological states, strategies and tactics, situational awareness, and extraneous sources. Within boxing, Halperin et al. (2016) explored the verbal feedback statements of coaches between competition rounds. Feedback before successful rounds was generally (but not exclusively) external, less controlling, and more positive in nature; the opposite was true for unsuccessful rounds. Despite a lack of manipulation checks, this study benefits from the rare addition of performance outcome information.

Turning towards closed and self-paced sports, within elite field athletics, athletes report using internal foci to regulate their actions, by focusing on the action's entirety through its rhythmic temporal (i.e., timing) and/or kinaesthetic (i.e., feel) characteristics (e.g., MacPherson et al., 2008). In pistol shooting, a coping strategy has also been reported in the form of consciously stabilizing important but insufficiently automated action components (Bortoli et al., 2012). Finally, in a survey by Porter et al. (2010), 85% of national track and field athletes reported that coaches provided internal focussing instructions, but only 69% reported using these in competition. So, reflecting diverse applied contexts, research shows that attentional strategies differ and are not *always* congruent with what is being coached.

Within the golf coaching/performance context, relatively few studies have been conducted within naturalistic settings (cf. Christina, 1987). Bernier et al. (2011) characterized experts in training and competition. In training, golfers were filmed and interviewed on one specific skill (e.g., putting), whereas in competition, golfers were filmed and interviewed regarding the first three holes. In training, focus was mainly on "process" with visual and kinaesthetic senses, whereas a competition focus was mainly on results with a visual sense. In short, attentional foci of expert golfers appeared more diverse and more nuanced than simply internal/external foci, for instance. Reflecting this diverse application of foci, following observations of practice sessions, semi-structured interviews, and focus groups, participants reported a dynamic focus of attention between internal and external depending on the type of

golf shot and demands; what Diekfuss and Raisbeck (2017) termed a "situational focus", with an internal focus reported more for long drives and short putts. In support, Diekfuss and Raisbeck (2016) found no Division 1 golfer to report using *only* an external focus of attention in their survey. More recently, Oliver et al. (2020) employed a think-aloud protocol with seven club golfers ($M_{\text{handicap}} = 14$) on six different holes of their own golf course. Data revealed a range of attentional strategies, notably categorized as both internal and external. Specifically, golfers focussed on a visual point of reference when lining up their shot (e.g., a tree in the distance) followed by an internal focus towards a specific technical instruction (e.g., shoulder turn; see Loze et al., 2001). Therefore, consistent with research outside of golf, and in contrast to the fundamental research described earlier, applied researchers have found that performers both use—and perceive benefits of—different foci in various contexts and with different aims. Accordingly, we suggest that an understanding of attentional focus within performance domains, including elite golf, is incomplete and warrants further investigation into its operationalization from a playing and coaching perspective.

To reconcile this discrepancy between fundamental and applied research, it is useful to note several methodological oversights. Firstly, an imbalance of instructional information between conditions in fundamental research studies has presented questionable comparison groups, raised issues with working memory capacity, conflicted with current coaching practice (e.g., Schempp et al., 2004), and thus has limited relevance and generalizability (Bobrownicki et al., 2018). Secondly, the extent to which a performer might be impacted by their level of familiarity with a particular technical focus as part of their normal routine *and* the usefulness of such a focus relative to the executional demands (e.g., an explosive whole body movement will not be facilitated by a focus solely on a finger's movement, whereas the feeling of proximal–distal acceleration driven by core body muscles would be; Carson et al., 2013), are often underconsidered (D. Collins et al., 2016). Thirdly, tasks have been overly

simplistic and failed to represent dynamic real-world performance conditions (Christensen et al., 2016). Therefore, while it is plausible that an externally (or internally) focused, fully (and not fully) automated execution might bring benefit for *some* performers executing *some* skills in *some* contexts, there needs to be further study to explore the process in an applied context if research aspires to have the greatest impact on real-life practice and performance.

"Applied Theory" to Reflect Applied Challenges

Having identified these limitations, several noteworthy attempts have already been made to advance theory in a way that explains inconsistencies in attentional focus literature. Reflecting Christina's (1987) recommendation not to isolate cognitive and motor response processes, there has been a growing interest in interdisciplinary research, to understand real-world challenges and to drive an innovative applied service; a recognized need to go "back to the future" (Collins & Carson, 2017, p. 13). Indeed, recent proposals of a motoric dimension to interpret attentional processes during anxiety-impacted performances (see Carson & Collins, 2016), the multi-action plan (see Bortoli et al., 2012), and the theory of meshed control (see Christensen et al., 2016) all provide multi-factorial and contextually-dependent accounts of how different attentional foci can influence skill outcomes. In short, the suggested answer to whether an internal/external focus of attention, or implicit/explicit learning works best, is "it depends" (i.e., not ruling out the possibility of a single strategy or multiple strategies depending on the desired outcome, performer needs, and contextual factors). Notably, these approaches explain experts as *proficient* in switching between internal/external/skill/dual-task foci in response to the interactions between performer (e.g., their technical needs, physical state and/or level of arousal), environmental (e.g., importance and type of context/situation), and task (e.g., simple–complex) demands; so, in contrast to many fundamental research studies that emphasize *efficiency* as a criterion for successful performance (i.e., low/no conscious processing and high performance success; Beilock &

Carr, 2001; Masters & Maxwell, 2008). Successful and elite-level performance is characterized by different levels of pressure within a performance and therefore requiring different types of attentional states.

Accordingly, research in elite golf would benefit by taking an even closer look at performance issues, beyond group comparisons, and, ideally, consider more complete and ecologically valid skill sets; for instance, consideration beyond the first three holes of a competition and only for one type of skill under training conditions, as reported by Bernier et al. (2011). Additionally, research should include the perspective of both players and coaches. Indeed, while much research has been conducted on attentional focus effects (e.g., Bell & Hardy, 2009; Wulf & Su, 2007), there is little empirical evidence to examine how attentional focus is operationalized in the coaching process; particularly with elite performers (Carson et al., 2013). Since effective coaching is dependent on sound judgment and decision making (L. Collins et al., 2016), there is a need to explore what, when, how, and, most significantly, *why* coaches and players use attentional focus strategies in the real world. Therefore, the objectives of this study were to: (a) explore the attentional foci promoted or used by elite-level coaches and players when executing different types (i.e., long- and short-game) of golf shots in practice, as well as the *rationale* for this; and (b) explore the attentional foci promoted or used by elite-level coaches and players in competition, as well as the *rationale* for this. It was anticipated that the findings would illuminate the actual practices of elite-level golf coaches and players plus, to facilitate the potential for future progress, *why* coaches and players operate in this way.

Methodology

Research Philosophy and Design

Informing both the rationale and purposes outlined in our Introduction, this study was driven by a pragmatic research philosophy. Pragmatism is focused on building solutions to

specific practical challenges (Denzin & Lincoln, 2005; Giacobbi Jr. et al., 2005) and, while other paradigms prioritize ontological and epistemological matters, pragmatism has, as its' central focus, research questions and appropriate ways to answer them. Reflecting this, a qualitative strategy was used to explore our aims. Qualitative research has its roots in phenomenology and social action (Jupp, 2006) and suits work that aims to understand what people perceive, believe, and do in the world in which they operate (Strean, 1998). More specifically, and consistent with an ongoing shift from examining focus of attention in laboratories to naturalistic settings (Diekfuss & Raisbeck, 2016), it was decided that a directly observed coaching session and follow-up, semi-structured interviews with coach–player pairs would shed some useful light. As such, data collection was approached from the interpretivist side of the epistemological continuum (Chowdhury, 2014); designed to gather rich data on the subjective experiences, practices, and rationale of those involved; or, more specifically, what type of foci they promoted or used and why (Elster, 2007; Whitley, 1984). It was also approached with an awareness of the pragmatics of the research process, in that high-level participants would be more inclined to take part in a single observation plus interview than any longer-term commitment at this stage (Goldkuhl, 2012).

Participants

Data were collected from 10 coach–player pairs ($N = 20$). Each coach was purposively selected through the personal contacts of the corresponding author and had to have significant experience of working with high-level or aspiring high-level players. Specifically, coaches had to be PGA qualified and working, at a minimum, across county or regional level in the UK (where the research team had best access to coaches and players). Furthermore, each coach had to have a track record of developing national level amateurs and/or tournament professionals. Subsequently, all coaches were either regional or national coaches (or coaching players in these squads), with the majority of coaches ($N = 6$) also

coaching players on the professional European Tour, Challenge Tour, or Europro Tour. Overall, coaches were all male, aged between 31–54 years (M = 40.2; SD = 6.38), and had coached for 11–30 years (M = 18.1; SD = 5.87).

Player recruitment was supported by the coaches, with each coach asked to identify an appropriately high-level, competitive player with whom they coached and had an established relationship with (> 1 year). In terms of selection criteria, any junior players (i.e., those under 18 years old) were required to have a maximum handicap of 3, which mirrored regional-level standards set by UK governing bodies (e.g., this equated to the best 80 juniors in England). For senior players (i.e., those over 18 years old), these individuals were required to have a handicap of 0 or better if an amateur, or to be on one of the aforementioned professional tours. Overall, the player group consisted of 10 males, aged between 16–32 years old (M = 22.4; SD = 4.79). Six were elite junior or senior amateurs, with the other four professionals who had played at this level for between 2–7 years (M = 3.9; SD = 1.91). Regarding the latter, one player was currently on the European Challenge Tour and the other three were on either the PGA Europro Tour or Alps Tour. All six amateurs had represented their country with full international honours and won national titles.

Procedure

All procedures were approved by the lead author's institutional ethics committee. As the first step, conversations were held with a selection of coaches known to meet the selection criteria, with players subsequently invited to participate on the suggestion of the coach. All participants were provided with information sheets and signed consent forms before taking part. Once all had agreed to take part (after considering the study information separately), lesson observations and interviews were arranged at each coach's workplace and at a time convenient to each coach–player pair.

All data collection procedures were undertaken by the lead researcher. The first phase involved observing the coaching lesson. All sessions took place in the off-season between December–March, due to it being the easiest time of the year to get a coach and player together, since the golf season from April–September is highly congested. All observed sessions also centred on the long-game rather putting or short game, for instance. This approach was taken to acquire a sufficiently detailed data set from the observation element, as technical training is most common in long-game and therefore where many technical discussions between coach and player tend to take place. It also enabled consistency across the data collected (i.e., the same type of session was observed rather than lots of different types of sessions to help us to draw out some general patterns across coach–player pairs).

We should also stress that the observed long-game session provided us with *part*—and not all—of our data set. To clarify, our remaining data were collected via the subsequent interviews; which also elicited information on the focus adopted in short-game practice and competition (as detailed below). To support recall during the interviews, the coaching sessions were filmed on camera (iPad Pro, Apple) and recorded on a Dictaphone. Recordings also supported the accuracy of the ultimate analysis (by coding data against a live account of the session). In practice, this resulted in the researcher and participant engaging with the recordings during the interview process to identify important points of reference and to fully comprehend the context being discussed.

Based on the study objectives, all interviews (also recorded on Dictaphones) were supported by a guide that explored: (a) the focus used by the coach to achieve the session goal as well as their rationale for this; (b) the consistency of the coaches' actions with their goal in the session; (c) how the coach would change the focus for equivalent sessions on short-game shots, if at all, as well as their rationale for this; and (d) how the coach would help the player transition to a competition from an attentional focus perspective. Prompts and

probes were used to further explore areas of interest. Finally, an equivalent interview was conducted with the player (with all questions exploring what focus *the player* adopted, or would adopt, and why). Importantly, all interviews with players were conducted separately from the coach to limit the potential influence of power, bias, and impression management in responses (e.g., players feeling they had to agree with their coach; and vice-versa).

Preceding all of the above, a pilot study was conducted involving two coach–player pairs, which helped to shape the clarity and coherence of the interview guides in particular. For example, the need to prepare a breadth of probing and specific questions to understand the coaches' rationale became clear (i.e., decisions on what to do in a session came from multiple sources, such peer influence, experience, education, and norms in golf).

Data Analysis

All interviews were transcribed and read several times by the lead author to increase familiarity and understanding of the participants' accounts. A similar process was also undertaken with the video data. Primarily led by the first author and supported by the second and third authors (see Trustworthiness section below), data from the videos and interviews were then coded deductively using the headings listed in Table 1 (long-game) and Table 2 (short-game and competition). For clarity, all data on *long*-game shots were coded according to whether they referred to: (a) the nature of the foci intended to achieve the session goal; (b) the rationale for using these foci; and (c) the match between these intended foci and the actual foci deployed in the session. Secondly, all data on *short*-game shots were coded according to whether they referred to: (a) the nature of the foci intended to achieve an equivalent goal in short-game practice; and (b) the rationale for these foci. Finally, all data on competition were coded according to whether they referred to: (a) the nature of the foci intended; and (b) the rationale for these foci. Following this, a separate inductive analysis was undertaken to generate labels that summarized the actions or perceptions of the coach or player in each

aspect. This process followed the steps outlined by Côté et al. (1993), whereby conceptually similar data were progressively grouped to capture the participants' overall perceptions and actions. Similar to the deductive element, and consistent with our pragmatic philosophy (Giacobbi Jr. et al., 2005), the inductive analysis also reflected an iterative and collaborative process, during which all three authors engaged in regular discussion and debate on the most appropriate coding until agreement was reached across the full team.

Addressing Trustworthiness

Reflecting our pragmatic philosophy, we considered ourselves to be co-constructors of knowledge within this study; building knowledge, filtered through our own experiences, from the participants' interpretations of their own reality (Orlikowski & Baroudi, 1991). In this regard, a key principle of the pragmatic philosophy is that the applied experiences of researchers can facilitate novel and innovative insights. In short, an understanding of the realities of practice can help to generate practically meaningful knowledge (Bryant, 2009). In this vein, our aim to generate practically meaningful insight was enhanced by our prior and ongoing roles in coaching, educating, and supporting elite golfers and coaches (i.e., the first and third authors are PGA qualified golf coaches and the second author a Chartered Sport & Exercise Psychologist who supports elite golf coaches and players; Giacobbi Jr. et al., 2005). Of course, however, our experiences and biases had to be appropriately managed to enhance the accuracy and fairness of our interpretations; covering both the data collection and data analysis procedures.

In terms of data collection, the decision to recruit coaches known to the lead author was taken with respect to the pragmatics of the research but also due to the advantage of pre-existing rapport (a key factor in shaping the quality of outcomes from interviews; Sparkes & Smith, 2009). Significantly, this rapport with the coaches—as well as the lead researcher's experience of coaching at the elite level—also supported rapport with the players (through an

understanding of the nature and challenges of high-level golf, and the specific areas that were being worked on with their coach). Efforts to optimize rapport were also made by gaining an understanding of each player's history and progress in the previous season. As evidence for the levels of rapport, several discussions continued on contemporary playing and coaching issues after the interviews had terminated. Additionally, six coaches subsequently contacted the first author to ask for feedback on the overall results from the study.

Regarding data analysis, member reflections were acquired to support accuracy, fairness, and balance in the findings presented. Specifically, participants were asked to review their data and highlight gaps or offer further insight as desired (Smith & McGannon, 2018). Brief reflections were provided by five coaches and three players, with no major changes made to the original text. Beyond member reflections, the second and third authors acted as critical friends throughout the analysis, helping the lead researcher to reflect on their assumptions and biases (and vice-versa); for example, by challenging the first author's interpretations in the deductive element and suggesting alternative coding in the inductive element (Faulkner & Sparkes, 1999; Smith, 2018). As part of this, the lead author repeatedly shared versions of the developing results to enhance transparency in the analysis, with a reflexive diary and conversation log kept across all authors to provide a trail of the rationale behind the various evolutions in the findings and the perspectives of the research team (Smith & McGannon, 2018). Regarding the latter—and to support further reflexivity in our account (Culver et al., 2012)—the first author approached this study with a preference to use an external focus of attention in all circumstances—these thoughts are well known and documented within the golf coaching industry. However, through the data collection and analysis process, this position has been unsettled by a deeper consideration of the demands on players at this high level, consequently opening up to the possibility of a need for a more nuanced and less dichotomous perspective.

Results

The results of this study are presented in two parts. First, an overview on the actions and perceptions of the coaches and players, as developed through the deductive analysis procedure, are presented in Table 1 and Table 2. A narrative structured against these tables and the purposes of the paper, drawing on direct quotes from participants, is then presented below. For each of the study's purposes, consideration is given to the attentional foci used and the rationale for this from both the coaches' and players' perspective. Percentages are provided for each findings, however these are simply to express the commonality of a response and should not be interpreted as an indicator of their significance.

Table 1 and Table 2 Here

Long-Game Training: Attentional Foci Used and Their Rationale

As evident in Table 1, coaches used numerous cues when working on long-game shots, covering body components/position, club components/position, outcome of the skill, and feeling, rhythm, and timing. In this respect, six coaches (60%) used a combination of cues within the session rather than one cue explicitly (see Coaches 1, 3, 4, 5, 7, 9 in Table 1). However, coaches had a clear preference for certain cues. More specifically, in all but one session, coaches (90%) used body components/position to explain the desired technique. Moreover, four coaches (40%) focused *exclusively* on these cues. For example, in some cases these cues were used for postural changes at address, such as "set up and balance" (Coach 3) and "weight more on left side at address" (Coach 4). They were also used for dynamic movements, such as "connection" (of upper arm to body: Coach 3) and "pressure in the right foot longer" (Coach 9).

Notably, personal experience as a coach and/or player was reported as the rationale for cue selection among eight coaches (80%). For example, one coach said that performing well was a rationale for coaching his player in the same way:

> I've tried to get . . . my players to focus externally. This extends to what I did. When I played really well, I thought about what I needed the golf club to do…. I always try to get [Player 3] to stay external and remind him the game is played out there.

Additionally, knowledge of the player was also highlighted as a key factor in deciding which cues to promote on the part of the coaches: "Every player is different" (Coach 6); "[The goal is to] reacquaint him with the things he was doing when he was playing well" (Coach 6). In this vein, this coach acknowledged that his exclusive promotion of body components/position was grounded in what had seemed to help the player in the past: "[Player 6] is more internal rather than external. He is better with internal cues. This could be because of how he has been coached [by me] since he was 11 years old". Two coaches (20%) also referred to nonspecific research to inform their rationale. Coach 5 expressed his preference for using external cues because he felt: "The more you focus on the micromovements, the internal movements, it becomes too difficult. It doesn't work". Coach 9 expressed: "Research suggests that external cues may be more effective". However, Coach 9 did not explicitly state in what way they were more effective, nor the research source.

From a player's perspective, the attentional cues employed reflected those promoted by their coach (Table 1). As such, the nature of the chosen focus was predominantly (80%) body components/position, for both address posture and dynamic movements. Of the few exceptions to this (20%), Player 9 discussed "[club]face stability on the way back, less flippy on the way through". Another player identified "missing the alignment stick on the follow-through", which was a task the coach had set him to promote the correct downswing club path. However, as previously noted, a focus on club components, the outcome of the skill,

and feeling, rhythm, and timing were limited and greatly outweighed by body component cues.

Moving from what they did to why they did it, the rationale that all players reported for their chosen focus was to follow the coach's directions. Indeed, the coach seemed to be an influential agent in this process. Additionally, from observations and analyses of the sessions, it was clear that the coach was consistent with what they said and did (see column 5 in Table 1). In contrast, however, and despite stating that their focus was driven by the coach, golfers were inconsistent with applying what the coach had recommended. For example, despite being consistent in the type of focus (body components) only two players were highly consistent in terms of the specific attentional foci promoted by the coach and the attentional foci adopted by the golfer. Specifically, many of the golfers (80%) would use cues beyond those that the coach was asking them to use. For example, Coach 1 asked their golfer to focus on club components and general set up positions (body components); however, the player reported focusing on their 'left shoulder, left foot, hands facing downwards, and trunk rotation' as well, which was not mentioned by the coach in the session. As another example, Coach 7 asked his player to focus on club components (awareness on strike location) and the outcome of the skill (ball flight); however, Player 7 reported an entirely different type of focus and content (transition of the club/legs more stable/flatten left wrist). Therefore, in this example, it was clear that the focus promoted by the coach and focus applied by the player was notably different (i.e., the coach asked the player to focus on club components, but the player focused on body components exclusively). This inconsistency was further highlighted when, despite the coach stating that "positional instruction doesn't fit in with him", the golfer stated areas to work on as "left foot flared, hands face down, arm length on backswing".

Short-Game Training: Attentional Foci Used and Their Rationale

When discussing short shots around the green, coaches emphasized a notably different focus compared to coaching long-game shots (Table 2). While body components/positions were the main type of cue utilized in long-game, nine coaches (90%) used either skill outcomes, club components, or a combination of both in short-game practice, with only one coach (10%) using body components exclusively. Regarding skill outcomes, coaches encouraged a focus on aspects such as the ball's flight, landing spot, and finish position. Regarding club components, they also emphasized club mechanics; such as how the club releases, the up and down movements of the club, the clubface angle, and how the club strikes the ball.

In an attempt to rationalize this change in focus from long-game shots, eight coaches (80%) discussed short-game shots as being smaller, simpler, more skill based, and more varied. For example, Coach 6 suggested that there is "less impact on the body" and so less need to focus on this compared to full shots. Coach 1, who promoted focus on club components or position, also noted the greater variability in short-game and the need to come up with more solutions: "there is more freedom and wider boundaries in short game. No two shots are the same".

Moving from coaches to the golfers, the preferred type of focus largely changed from primarily body components/positions to club components, outcome of the skill, and feeling, rhythm, timing, with only one player focusing exclusively on body components. When describing the outcome of the skill, seven golfers (70%) specifically described either the shot itself, the landing spot of the ball, or where they wanted the ball to finish as being important. When describing club components, four golfers (40%) described changing elements of the club, such as the loft on the face or shaft angle at impact to produce the desired ball flight. When describing feeling, rhythm, and timing, players discussed a reduced mental load, and the need to be able to sense and feel the required shot.

In terms of the players' explanations, this change of focus in short compared to long game was typically related to less need for technical information and also that these types of shots were more "feel based". Player 1 rationalized this need for less information as: "These shots are 90% feel…I don't need as much detail here as full shots". Player 3 explained this difference from the perspective of the importance of feel: "These shots are massively different. For me, short game is all about feel and visualization. I practice with four [different] irons…it's feelings and reactions…less systematic, more reaction."

Competition: Attentional Foci Used and Their Rationale

In contrast to the input on long-game practice, coaches seemed to play a minimal role during competition, with players largely deciding what to focus on. Indeed, all players (100%) reported "experience" as the main determinant of their focus, with a minority (20%) incorporating coaching advice into their focus for events. From the coach's perspective, directions became broader, such as advice to focus "on the process rather than the outcome" and "focusing on what the player can control 100%". Also, a common desire by coaches was for the player to "have no swing thoughts". Coach 10 explained the transition between training and competition foci as requiring the player to "park the technical bit". Some coaches (40%) were explicit about not transferring foci from training into competition, acknowledging that these cues may not be effective; although this view was not universal, as Coach 1 explained: "Because [player] doesn't practice much it's important to be able to give him something he can take onto the golf course and play with".

Ultimately, it was clear that all coaches (100%) passed responsibility of cue selection to the player as they transitioned from the lesson tee to competition. That is, none of the coaches were directly responsible for informing a player's attentional strategy for competing, nor did they train specific cues to achieve the desired outcomes mentioned. Coach 3 said:

> I would give the reigns to him. I would ask him questions so that I can understand firstly what he is putting his focus on. Get him to qualify it. If it set an alarm bell off, I might question it…I think with good players a lot of it has to be their ideas.

Similarly, Coach 4 added: "We agree what that [focus] is but he would come up with it and then run it past me". Coach 6 also highlighted: "I wouldn't bring that [i.e., focus for competition] up. I would let the player bring that up. I haven't advised him what to focus on. I've never advised him against or for a certain thought". Finally, Coach 9 spoke of the player telling him about choice of focus "after he played. He could use me as a sounding board. What he thinks about comes more from him".

This stark contrast in the coaches' role and influence on players' foci (i.e., high in training but low in competition) was corroborated by most of the (80%) golfers. Player 5 described this process of focusing for tournaments as: "I tended to figure this out myself. That this is the best way for me . . . we don't discuss what I focus on in tournaments". Player 6 described a similar experience in preparation for tournaments; "We wouldn't discuss beforehand what I focus on. There is no discussion". Player 10 also noted: "My coach and I chat about things, but it is more through experience of what works in the past that I choose to think a certain way. This mindset isn't something that I work on massively".

Furthermore, the players' view was a shared desire to focus on different areas to that which they focused on during the training session with the coach. A clear preference of players was a focus categorized as "outcome of the skill". In fact, only Player 2 and 6 (20%) also discussed body components as a target focus, while Player 4 was alone in expressing a preference for holistic "feeling, rhythm, timing" sources of information. Player 3 highlighted the desire to move his thoughts away from what he focused on during a coaching session:

> The stuff I'm working on just now I wouldn't ever want to be thinking about in a tournament…when I'm in playing mode it would be seeing the flight and reacting to

> the flight. I can't think of a tournament where I've ever played well thinking of body movements.

This same golfer even spoke about the difference between working on technique with his coach to playing in tournaments as feeling like "two different sports". In this vein, another golfer highlighted the difficulty of performing while focusing on body positions: "When I have been thinking technically on what my body is doing, I lose the ability to hit the shot, especially in windy conditions".

Counter to these two experiences, another golfer did say that: "I like to have swing thoughts otherwise I lose a sense of where I want the ball to go"; however then contradicted himself somewhat by reporting similar findings to the previous two quoted golfers: "We [player and coach] are working hard on technical stuff so we don't need to think about it so much in tournaments . . . feel the club, focus on where the ball needs to go, see the shot through the air". Other golfers (90%) also discussed this desire to shift their focus to the feel or outcome of the shot, with Player 4's goal to, "not [be] thinking about where my body should be but how to produce the shot". Player X also spoke of the swing being a "reaction rather than a movement where the body is answering questions that is being asked of it". Notably, several players (40%) even spoke of a desire to have no thinking while hitting the golf ball. One player said that "I don't like to have thoughts on the golf course at all"; and another stated "I try not to think because the books tell me that's right".

Discussion

To bring an applied perspective to work on attentional foci in elite level golf, this study addressed the following objectives, to (a) explore the attentional foci promoted or used by elite-level coaches and players when executing different types (i.e., long- and short-game) of golf shots in practice, as well as the rationale for this; and (b) explore the attentional foci

promoted or used by elite-level coaches and players in competition, as well as the rationale for this. Regarding our first objective, the findings ultimately revealed that:

- various attentional foci were promoted by coaches and used by players in relation to long- and short-game training (i.e., club components/position; body component/position; outcome of the skill; feeling, rhythm, and timing);
- the general type of foci promoted or used in short-game training (i.e., more outcome- and club-related) was different to the general type promoted or used in long-game training (i.e., more body- and club-related);
- coaches had a significant role in shaping the attentional foci of players, yet players often used alternative or additional foci to those promoted by their coach.

From a competition view, our findings revealed that:

- in comparison to training, attentional foci strategies were typically determined by the player rather than by, or with, the coach;
- differences existed between strategies for competition (i.e., mostly outcome-related) and those engaged in long- and short-game training (i.e., more body and club-related).

Finally, across all areas, it was clear that coaches and players used prior experience, rather than specific theory (or practices aligned to specific theory), to inform their approaches.

Overall, our results revealed a complex picture of attentional foci in elite golf that corroborates, contradicts, and challenges different aspects of current fundamental theory; and raises some important considerations for coaches and players. Reflecting our translational aims, we now discuss these main findings in relation to current theory and applied practice. In doing so, we should stress that the design of this study precludes us from inferring whether the patterns and strategies reported by the coaches and players are more or less effective than others. As such, we highlight similarities and differences to previous research only, against

our aim of promoting a greater applied perspective in attentional focus literature within elite golf.

Foci in Training

Addressing the long-game, most participants reported using internal foci related to body positions/mechanics, which supports previous research on the preference for internal foci by athletes and coaches (e.g., Carson et al., 2013; Porter et al., 2010), and, therefore, would contradict advice from the constrained action hypothesis research to *always* employ an external focus of attention (Wulf, 2016) and would not be aligned to the proposed implicit learning strategy by reinvestment theory for those learners with a high propensity for reinvestment (Masters & Maxwell, 2008). In a few instances, however, participants reported a more complex combination of different foci in the same session; for example, body components, skill outcome, and/or club mechanics. In the view of Collins et al. (2016, p. 1290) "various combinations of external and internal focus . . . will be appropriate, for different tasks, different purposes, with different individuals, [and] at different levels". Accordingly, while all participants were engaged in technical training, differences in the nature and need of foci promoted could have been due to varying session objectives (see Table 1). For instance, some players were clearly in the process of making refinements to their technique whereby an internal focus has been explained as necessary during the early stages as a means of deautomating the targeted kinematics (Carson & Collins, 2011), while others required clarity or confirmation. Indeed, Carson and Collins (2020) explain that technical training can be administered for reasons beyond technical improvement, such as: increasing confidence ahead of a competition, to "prime" combinations of moves ahead of a specific challenge (e.g., golf course style), reassure a performer when returning from injury, or to raise the social status of a player by demonstrating prowess in front of competitors. As such, the relative emphasis on different process components would seem reasonable because

583 an understanding of what is required (i.e., how the club should move, desired ball flight) can
584 be achieved much more readily than mastery over how to do it (i.e., executing the technique).
585 At the very least, the use of multiple foci in a sport with a long coaching history and
586 established body of community knowledge suggests a need to better understand attention as a
587 dynamic process.

588 Extending this finding, attentional focus in golf might also need to be considered as
589 dynamic across the time course of a single trial. By comparison, expert pistol shooters switch
590 from *attending* externally on the target to a state of internal *intention* on the trigger pull
591 during the seconds preceding successful and *not* unsuccessful shots; as determined by an
592 increase in EEG alpha-power in the occipital cortex (Loze et al., 2001). So, a player might
593 *attend* to the desired outcome initially (e.g., "this is where I want to hit and the ball flight to
594 get there") and then *intend* on the process (e.g., "to achieve the outcome I need to swing like.
595 . ."), which reflects an underconsidered methodological approach in current research (see
596 earlier review of, Oliver et al., 2020).

597 Considering the general use of internal foci for long-game training—and turning to an
598 underexplored area in other golf research (Bernier et al., 2011; Diekfuss & Raisbeck, 2016)—
599 it was notable that this type of foci was not typically transferred to short-game training (at
600 least as reported by coaches and players). Indeed, short-game shots were *generally* executed
601 with a more outcome (or external) focus. This is a critical distinction, which emphasizes that
602 certain shots under certain contexts may benefit from different types of attentional cues.
603 According to participants, this was due to the variable, but relatively simple nature of short-
604 game shots; an interpretation that, when combined with our data for long-game shots, is
605 consistent with the theory of meshed control (Christensen et al., 2016), which explains that
606 success on a task is not dependent on a single attentional control style, but is influenced by
607 the task complexity. For simple, well-established skills, fundamental theory shows there to be

608 little performance benefit when consciously focussing on body positions since this has
609 disrupted automaticity within these experiments (Beilock & Carr, 2001; Masters & Maxwell,
610 2008; Wulf, 2013). Whereas, mesh control theory would explain that for more complex tasks,
611 the performer can achieve success by utilizing more adaptive or problem solving attentional
612 styles directed towards strategic, situational, and implementation levels. Although, even when
613 a task is simple and highly automated in one context (i.e., stepping at ground level), this is
614 not always facilitated by not thinking when the consequences of failure are very severe (i.e.,
615 stepping at height; Collins et al., 2001). In short, these data support our contention that
616 *applied* studies on attentional focus have the potential to shed deeper (or at least different)
617 and more *practically* meaningful light than prominent fundamentally-driven studies,
618 especially when considering the goals within both training and competition contexts.
619 Regarding the interaction between coach and player, another notable finding was the
620 extent to which the coach acts as an influential agent in the attentional focus process. While
621 this study showed that players were only partially consistent in applying the cues offered by
622 the coach, there was a clear intention to follow the coaches' instructions. This finding aligns
623 with Diekfuss and Raisbeck (2017), who found that "esteemed individuals", such as coaches,
624 were influential in shaping Division 1 golfers' attentional strategies; a finding also mirrored
625 in high-level tennis (Toner et al., 2020). This suggests, therefore, that technical training needs
626 to be considered as an interactive biopsychosocial process, in that the player's focus (i.e., the
627 psycho) is influenced by the physical skill being performed (i.e., the bio – long-game vs.
628 short-game technique) and who is telling them to focus in a specific way (i.e., the social); not
629 just simply a matter of what a player ultimately focuses on (Carson & Collins, 2017) that is
630 prioritized by theory from laboratory studies alone.
631 Reflecting the apparent complexity of this biopsychosocial process, it was notable that
632 players in this study also often replaced, added, or elaborated on the coach's cues. While this

633 *could* be interpreted as an issue of confidence or interest in the coaching provided, a more
634 recent motoric view provided by Carson and Collins (2016) would suggest that this may
635 reflect a more natural search by the player to find greater resonance with their *personal*
636 representation of the task requirements. In other words, what the players focussed on perhaps
637 made more personal sense in terms of activating the correct movement pattern. On this basis,
638 work has stated the need for collaboration when developing attentional cues, whereby
639 coaches not only address what the performer *is* doing, but also what the performer *thinks they*
640 *are* doing (Carson et al., 2020). In contrast to laboratory-derived theories, these would
641 typically provide a standardized set of instructions to all participants, regardless of their
642 importance or meaning to the participant and their technique (e.g., Wulf & Su, 2007). Against
643 this backdrop, it is important to understand the rationale for a particular focus being
644 employed before any judgment is passed on its appropriateness. However, coaches and
645 players in this study did not seem "mechanistically aware" when it came to rationalizing their
646 foci. Indeed, most coaches drew on prior experience, either as a player themselves or in their
647 work with a particular player in the past, as attesting to a focus that worked; a finding which
648 could reflect limited knowledge in this area of the game, *or* a more tacit knowledge-base.

649 **Foci in Competition**

650 In comparison to the relative influence of the coach in training contexts, and pointing
651 again to the biopsychosocial nature of attention, it was notable that the coach became less
652 influential when the player transitioned to competition; a finding which suggests a potential
653 void in the coaching process (i.e., assisting players in the formation of effective focus
654 strategies for tournament golf). Indeed, while some evidence suggests that there are benefits
655 from adopting external foci during competitive performance (e.g., Halperin et al., 2016), the
656 coaches in this study did not seem to adopt any directive approach for supporting tournament
657 preparation. In this respect, the desire for the golfers to focus externally may be in line with

findings from Marchant et al. (2007), which showed performers opting for an external focus when given choice of cues. However, it is also in contrast with Porter et al. (2010), in which athletes reported predominantly an internal focus for competition. Either way, there seems to be an absence of coaches working with golfers to appropriately "embed" techniques into skills for competition within the coaching process (Carson & Collins, 2020).

Limitations, Strengths, and Future Directions

Although we have contributed to further our understanding of attentional focus in elite golf practice, we recognize certain limitations. Low participant numbers limit the study's generalizability in a traditional sense; although we ask the reader to consider other generalizability's that have been achieved, such as naturalistic generalizability (i.e., the extent to which our findings resonate with the reader's experiences) and analytical generalizability (i.e., the links we have suggested between our findings and established theory; Smith, 2018). As other shortcomings, participant recall may have also been subject to common biases in the interviews and not observing participants in short-game training and competition limited our triangulation of the interview data in these areas. Finally, participants in this study were all male (not as a result of our selection criteria). In a study by Diekfuss and Raisbeck (2016), data suggests that there might be differences in the instructional strategies and application of attentional focus when comparing male versus female sports participants. However, the sample size within this aforementioned study was small (16 males and 15 females), so we propose that this may warrant further investigation using a biopsychosocial lens.

Despite these limitations, the study strengths can be seen in the level of all participants and our attempt to understand a complex process in a naturalistic environment; factors which distinguish this work from prior laboratory studies with less skilled performers. Additionally, methodological coherence has been demonstrated through the consistency of our approaches with our pragmatic philosophy; with a range of methods adopted to enhance

683 trustworthiness in the data collection and analysis procedures. Finally, we also ask the reader
684 to apply the "so what?" principle to evaluate the quality of this work.

685 In this respect, we note that the findings listed at the start of the Discussion point to a
686 practical reality and biopsychosocial complexity in elite golf that much prior work has either
687 overlooked or underconsidered. Indeed, although there still seems to be a significant
688 disconnect between what many scientists advocate and what coaches actually do, this can
689 also be said for what many coaches advocate and what scientists actually research! For
690 example, far more focus has been placed by researchers on what attentional focus strategies
691 can offer to technical execution, without much consideration of how or why technical
692 demands on performers might necessitate differences in attentional focus strategies (e.g.,
693 following injury, changes to equipment regulations, or planning for different course
694 conditions). It is, therefore, incumbent on applied scientists to consider if the most important
695 factors *relative to practical reality* are being studied. At the very least, researchers need to
696 work from *why* coaches do what they do if they are to facilitate the significant jumps that
697 many would argue are possible. From an applied view, our main findings also challenge golf
698 players, coaches, and coach educators to move beyond a tendency to focus, sometimes
699 exclusively, on technique and consider the extent to which principles from motor control and
700 sport psychology research are accounted for and applied in their practice (cf. Steel et al.,
701 2014; Williams & Ford, 2009). In this study, it was notable that no player and just one coach
702 stated that their practice was influenced by research on attentional focus; however, they did
703 not expand on exactly how or in what way it was applied. While two other coaches also used
704 the terms "external focus" and "internal focus" in their descriptions, the "what to/when
705 to/how to/where to/why to apply" part of their understanding was not immediately clear. For
706 example, despite a general desire across the coaches to not promote conscious processing,
707 this appeared to be in conflict with reality, where the majority of cues encouraged a focus on

movement and body parts. Taken with our other findings, this suggests a level of dissonance between what coaches might want and how to achieve it; or more specifically, between the mindset that coaches wish to promote in competition and the one generated on the lesson tee. In summary, it is not clear whether an internal focus of attention was often used because this is more effective in these situations, whether it is because that is the way instructions are typically delivered in golf, or whether researchers and practitioners have not been able to disseminate the attentional focus research findings effectively in this sport.

Concluding Comments

This practice-focused study with elite level golfers, has revealed that: (a) various attentional foci were used by coaches and players in relation to technical work; (b) different combinations of foci were used across training and competition, and within training itself (i.e., long- versus short-game differences); and (c) players often used alternative or additional foci in training to those promoted by their coaches, or largely self-generated foci in competitive events. While we cannot state that any approaches are more or less effective than others (as our study was explorative rather than evaluative), these results emphasize the *biopsychosocial complexity* and *practical reality* that needs to be respected and understood for future research to optimize its value for those operating in the front line of performance. Future work should therefore seek to understand the use of attentional strategies by elite-level players and coaches against these considerations, including their interactions across training and competition as a longitudinal process (e.g., over the course of a season and beyond).

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911

912 Table 1. *Foci Promoted and Used for Long-Game Shots in Training Session*

Coach - Player Pair	Session Goal(s)	Nature and Target of Foci Promoted by the Coach to Achieve the Session Goal(s)	Coach Rationale for Promoted Foci (Why)	Consistency of the Coach's Actions Within the Session	Nature and target of Player-Reported Foci Used in the Session	Player Rationale for Foci Used	Consistency of the Player's Foci with that Intended by the Coach
1	Check set up tendencies: Ball flight control	**Club Components / position**: *(general* club positions) **Body components / position**: (Set up positions)	Coaching norms in golf	Consistent	**Body components / position:** Left shoulder / left foot / hands facing down / arm length / trunk rotation **Outcome of the skill**: Start ball on the correct line	Following coach direction	Partially consistent
2	Wedge play Club knowledge.	**Club components /position**: (Club face angle)	Experience	Consistent	**Club components / position:** Length of swing / Swing shallower through impact. / face control **Body components / position:** Rotate body	Following Coach direction	Partially consistent
3	Clarity and direction on technical points.	**Body components/position:** Connection/Set up and balance. Arms and body working together **Outcome of the skill:** Ball flight **Feeling, rhythm, timing**: tempo and rhythm	Experience Peer influence Constrained Action Hypothesis	Consistent	**Body Components / Position**: Arm hang /Posture / Balance / stability / Setting up left, shoulders too open / connection	Following coach directions	Partially consistent
4	Pitching – improve face angle and launch angle Full swing- Not moving head off the ball	**Body components / position**: Weight more left side / butt of club rotating with sternum / quiet legs **Outcome of the skill:** Hit ball over sticks	Peer influence Experience	Consistent	**Body components / position:** Left leg lead out then snap back through impact / Upper body rotate on top through impact / Squarer stance at address / Improved sequencing	Following coach directions	Partially consistent
5	Improve strike	**Body components / position**: Better hand path, weight shift / Rotating body through ball better	Peer influence Experience	Consistent	**Club components / position:** Miss the stick **Outcome of the skill**: Feeling the strike	Following coach directions	Partially consistent

		Club components / position: Club path and better contact	Constrained Action Hypothesis		**Body components / position**: Rotation of upper body / Hip to pole to move weight		
6	Neutral ball flight Patterns Improved movement	**Body components / position:** Address in tailbone / What happens in his midsection / Right arm/shoulder function.	Experience Peer influence	Consistent	**Body components / position**: Core engaged / Keep body down in backswing / Right shoulder sitting back / Paint wall with hips	Following coach directions	Consistent
7	Keeping the swing neutral	**Club components / position**: Awareness on strike location and its effect **Outcome of the skill**: ball flight focus **Body components / position:** Keep arms more neutral, less behind on backswing	Experience	Consistent	**Club components/position**: Toe / heel awareness / Keep clubface square through the ball / transition of club **Body components / position**: Keeping my legs more stable gets club on plane / Flatten left wrist	Following coach directions	Partially consistent
8	Connection between club and body – flatter plane Set up	**Body components / position:** £10 and headcover note under arm for connection / Pinch shirt together	Experience Peer influence Constrained Action Hypothesis	Consistent	**Club components / position**: Clubface at address / More from inside at impact **Body components / position**: Keep shirt tucked on backswing / **Outcome of the skill:** Understanding how to read ball flight	Following coach direction	Partially consistent
9	Weight shift Plane	**Club components / position:** Pressure in the right foot longer / Turn chest faster than lower body **Body components / position**: Not too bump into umbrella with hip	Experience Coaching norms in golf	Consistent	**Body components / position**: Stabilise right side in transition – Right knee and right foot / Turn chest through more through impact / Piece of cardboard under right foot **Club components / position**: Face stability on way back and less flippy on way through	Following coach directions	Partially consistent
10	More stability in transition	**Body Components / position**: Turn body rather than hyperextended left arm / Something in between his shoulder blade to keep in place	Theory Peer influence	Consistent	**Body components / position**: Shoulders back on ribcage / fuller turn of shoulders / Holding something between my shoulder blades.	Following coach directions	Consistent

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914 Table 2. *Foci Promoted and Used for Training Short-Game Shots and Foci Promoted For Competition*

	Coach Responses				Player Responses			
Coach-Player Pair	**Foci promoted for the same session goal but with short-game shots**	**Rationale for Foci promoted with short-game shots**	**Foci Promoted in Competition**	**Rationale for Foci promoted in Competition**	**Foci used for the same session goal but with short game shots**	**Rationale for Foci Used for short-game shots**	**Foci Used in Competition**	**Rationale for Foci Used in Competition**
1	**Club components / position:** (Varied lies / Club angle of attack / Ball and strike location)	Philosophy Experience	An awareness cue not a body feeling.	Experience	**Club component / position:** Allow the face to rotate open a little bit / Less lean forward in the shaft)	Experience Following coach direction	**Outcome of the skill**: Zone in on target	Experience
2	**Outcome of the skill:** Focus on where you want the shot to finish **Body component / position:** Setup / posture	Experience	**Outcome of the skill:** Routine is important / strike	Experience Education	**Outcome of the skill:** Landing spots – where I want it to land / focused on the outcome	Experience	**Outcome of the skill:** Landing spots / start lines **Body components / position:** Rotation.	Experience
3	**Outcome of the skill:** what the ball is doing	Experience Peer influence	Foci preferred by the player	Experience	**Feeling, rhythm, timing:** Feel, visualise, more reaction	Coaching Experience	**Outcome of the skill:** What the ball has to do / seeing and reacting to the flight.	Experience
4	**Body components / position;** More set up related	Experience	**Body components / position:** One set up thought. **Feeling, Rhythm, Timing**: one swing feeling	Experience	**Body components / position** Lower body stable **Club components / position**: clubface square / Ball position	Experience	**Feeling, Rhythm, Timing:** I play best when I have feelings rather than thoughts. Turn a thought into a feeling.	Experience
5	**Club components / position:** Release club, club leans forward a little too much, rotation through impact /	Experience Constrained Action Hypothesis	**Outcome of the shot**: More about shots rather than movements / Shot shapes / I like	Experience	**Outcome of the shot:** Ball flight / Run out / Landing spot	Experience	**Outcome of the skill** Outcome of shot / How far it goes / Shot shape	Experience / I tended to figure this out myself.

	More club based on short game	Education	visualisation on the course.					
6	**Club components / position** how golf club is delivered, different lies	Experience Peer influence Education	Foci preferred by the player	Experience	**Outcome of the shot:** See where I want to land it / **Club components / position:** I focus more on the clubhead and not the body and the arms	Experience	**Body components / position:** One or two things – core and arms come down before my hips fire / Posture – don't get slumped **Outcome of the shot**: Picturing the ball flying off with a draw or fade.	Experience Coaching influence
7	**Outcome of the shot** shot and club for situation / landing spot	Experience	**Feeling, rhythm, timing:** tempo **Outcome of the shot**: target	Experience. Never plays well with internal thoughts	**Outcome of the shot:** I focus on the end result	Experience	**Club components / position:** legs stable, wrist flatter	Experience: Reduces pressure. Mind off result
8	**Club components / position:** more set up references	Education	No specific focus preferred	Experience Education Theory Peer influence	**Body components / position** Set up thoughts a lot	Experience	**Outcome of the shot:** Target	Experience .
9	**Outcome of the shot:** Into the shot **Feeling, Rhythm, timing:** Feeling the shot more	Experience	Foci preferred by the player	Experience Knows the player well	**Outcome of the shot:** engaged in the shot / picture the shot	Experience	**Outcome of the shot:** Initial thought is where I want the ball to finish	Coaching Experience
10	**Outcome of the shot:** Work on more shots rather than technique	Experience Philosophy	**Outcome of the shot** We are working more on flight of the ball	Experience Education Peer influence Theory	**Outcome of the shot:** Flight of the ball / Landing spot	Experience	**Outcome of the shot**: The shot and flight	Experience

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