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An application of non-linear learning in Netball: game-sense coaching

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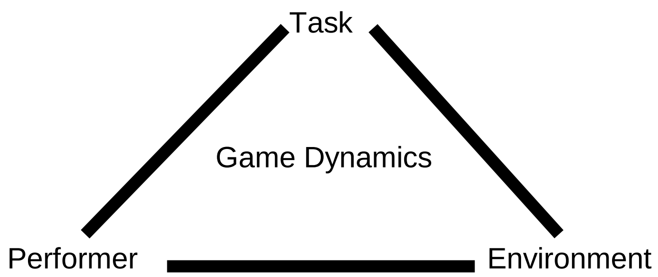
This paper explains the application of constraints-led skill learning theory to performance analysis in netball enacted as the Game Sense (GS) approach. The progressive development of the inter-related dimensions of tactical decision-making and technical models of movement in skilled performance as complimentary pairs will be described.

Constraints-led skill learning theory

Constraints-led skill learning theory acknowledges the emergence of technical and tactical dimensions of movement under the influence of interacting individual, task and environmental constraints (Davids, Button, & Bennett, 2008; Newell, 1986). Individual constraints include physiological characteristics (height, weight, muscle-fat ratio, cognitions, motivations and emotions. Environmental constraints are external variables that exist in nature such as ambient light and weather conditions. Task constraints influence learning more directly, comprising task rules and aims associated with an activity.

Figure 1. Constraints define the system parameters and the possible coordination dynamics between players. Hence, the constraints interact to construct the 'logic' of the game and the 'principles of play' through which the game can be understood.



Constraints-led skill learning theory emerges from a systems perspective that emphasises the need for pedagogical approaches in skill learning that consider the dynamic interactions between constraints (Renshaw, Chow, Davids, & Hammond, 2010) (Figure 1), and how they may be exploited for desired information sources within the game to couple with movement (this is known as perception-action coupling) (Spittle, 2013). To this end, constraints-led skill learning theory direct practitioners to pedagogical approaches that adopt a player and game-centred approach, guiding learners to explore and discover functional movement solutions within modified game dynamics. In other words, pedagogical approaches that teach sport for understanding and the development of what Den Duyn (1997) coined 'thinking players'. This approach acknowledges that game skills shouldn't be practised in isolation from the perceptual environment (i.e. games) in which they are executed (Spittle, 2013). This contrasts traditional progressive-part pedagogies, where 'technical before tactical' approaches (i.e. technical skill competency must be achieved before game-play could occur) are commonly practiced in the broader sport coaching community.

Netball as a complex dynamic system & Momentary Configurations of Play.

Davids et al. (2008) draws upon the work of Clarke and Crossland (1985) to highlight the dynamic systems perspective as framework for studying human behaviour as it recognises complex systems. Applied to team sports such as Netball, a systems perspective provides an operational framework by which complex interactions of game components can be conceptualised within an organisational relationship. That is, coordinated patterns of play undergo phase transitions (Davids et al., 2008) from attack to defence/defence to attack. In this process, system components (i.e. players individual coordination dynamics that result in enacted skills and tactics) link together to shift in and out of synergies that satisfy task constraints (i.e. rules) in a defined performance environment and achieve game outcomes. Each emergent pattern of coordination is a momentary configuration of play (and sub-system in itself), whereby the game system 'self-organises' into attacker-defender relationships (Gréhaigne & Godbout, 2014). As such, the emergence of coordinated game dynamics is dependent upon intra and inter-individual patterns of coordination occurring. We argue that this description of games like Netball is not captured in the traditional mechanistic model of coaching that foregrounds directive and command styles to achieve repetitive technical behaviour mainly by drill based experiences.

Adaptive and flexible movement responses

Acknowledging netball as a complex dynamic system, the ability of players to identify and flexibly adapt to shifting configurations of play becomes a central concern of coaching. This understanding challenges the traditional coaching paradigm whereby consistent repetition of biomechanically optimal 'text-book' techniques has been associated with skilled performance. A linear-approach is therefore employed, compartmentalising game and skill components to be taught separately prior to being reassembled for game-play to occur. This assumes technical aspects of performance have to be mastered before games can be played. In contrast, a dynamic systems perspective is implicit in non-linear coaching, where skilfulness is instead associated with the ability to predict and adapt movements within shifting game dynamics to successfully meet the demands of the game. Smith (2014) suggests that technical and tactical game elements are better thought of as complimentary pairs. This is consistent with descriptions of skilled performance within a GS coaching approach, where skill is described as the technique performed within the game context and coaching is directed towards being "game-centred" rather than "technique-centred" (Den Duyn, 1997).

The skilled performer is not necessary the player with the 'best' technical model but the one with more accurate anticipation and perception-decision making ability (Williams & Ford, 2013). However, this does not mean technical execution is devoid of implicit attention in the coaching/learning process. A tool intended to assist coaches in planning for skill development from a systems perspective is discussed later.

Skilful performance in Netball

Pill (2013, 2014) and Breed & Spittle (2011) have both linked GS coaching with constraints-led skill learning theory. They highlight that attempts by coaches to synergise players with shifting configurations of play require tactical awareness and adaptable technical models for movement skill competency. Similarly, Smith (2014) argues that movement and game skills are inextricably linked, but 'text-book technique' models of skill performance fail to recognise the influence of this relational dynamic on performance.

The GS coaching approach addresses this tactical-technical issue with designer/modified small-sided games that seek to develop technical and tactical competencies in tandem through representative task design (Charlesworth, 1994). Beyond merely engaging in modified games, there is the need for learners to become perceptually attuned to relevant informational properties in the game environment (Chow et al., 2007). This is achieved through deliberate modification of constraints that allow 'affordances'; that is, relevant coupling between desired game information and the learner. The result is that intended technical and tactical competencies emerge under an exploratory process guided by inquiry-based coaching styles.

The complex performance dynamic of netball explained so far is illustrated in Figure 2 with the performance ability of players described as the players "game sense", a phrase analogous with "game intelligence".

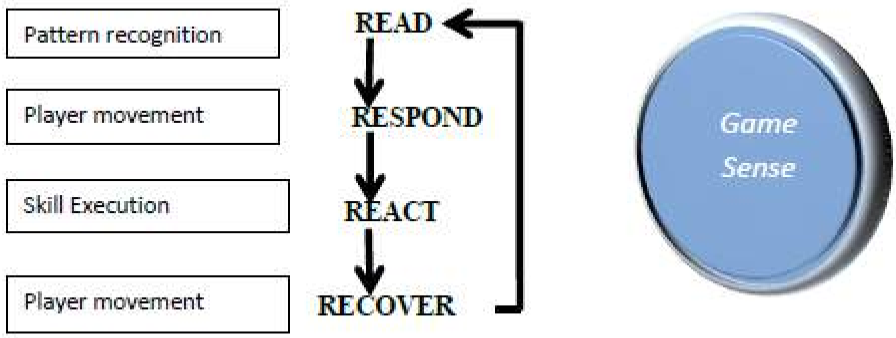


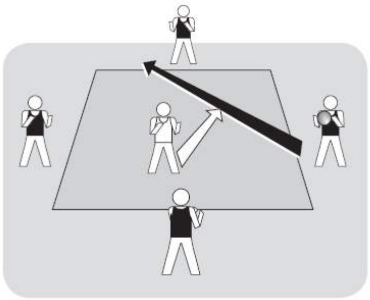
Figure 2. **Anatomy of Netball game performance**. (modified from Hopper 2003 in Pill 2013).

What does this look like in practice? Game Sense Netball Coaching

GS Netball coaching emphasising the manipulation of key constraints by playing with purpose to develop functional movement behaviours (appropriate degrees of movement freedom) is illustrated in the following game designs and practice tasks adapted from Pill (2014), with a focus on developing attacking and defensive structures.

Attacking structures

Figure 3: Four Square 4v1.



FOUR SQUARE 4v1

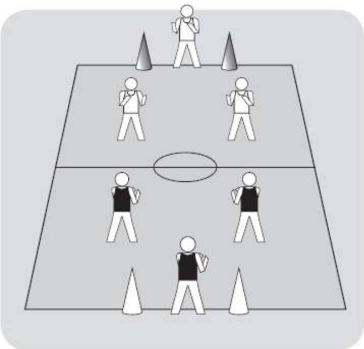
AIM:
- 'IT' (defender) attempts to touch the ball.

INSTRUCTIONS:
- Groups of 5 players with one ball.
- Create a grid 5m x 5m. Four players stand in the middle of each side, forming a diamond, one with a ball.
- One player starts as 'IT' (defender) in the middle of the grid.
- On GO, player with the ball throws to a semi-stationary team-mate.
- If 'IT' (defender) touches the ball, they swap places with the player that threw the ball and the game then re-starts.

CHANGE IT:
- No immediate 'pass backs' to the player who threw to you.
- Players can only throw to a team-mate who calls for the ball.
- Players can only throw to a team-mate who calls and signals for the ball.
- If the ball hits the ground because of a poorly executed throw or dropped catch, it counts as a touch and 'IT' (defender) swaps places with the player who made the error.
- Add a second 'IT' (defender).
- After throwing the ball, the player must run to one of the corners/end of their side line and back to the middle of their line before they can get the ball back again.

Four Square 4v1 (Figure 3) starts with a defender relationship to the attackers. The initial focus is reading defender movements to react to open passing options. Through modifications of constraints, attacker coordination dynamics can be changed to focus on first attacker/second attacker (off the ball support) relationship. E.g. 3v1 so that there is always one side/wall of the square free, emphasising potential leading space. The challenge of the 3 attacking players is to coordinate and maintain an offensive triangle where there are always 2 passing options available. Here, perception-action becomes focused on monitoring teammate leads to maintain possession. This configuration of play may be encouraged through rule modification where mandatory verbal/visual signalling cue creates a perceptual information exchange between attacking players from which a synergised attacking pattern can emerge. Similarly, requiring players to move to a corner after passing the ball emphasises a recovery action, to shift the attacker triangle in adjustment to defender movements. Space parameters may be modified to facilitate or challenge stability of the attack configuration. E.g. reducing court size will decrease 'open' lead space and therefore constrain time allowances for successful passing. Different court space dimensions may impose additional variability whereby different types of passes become necessary, depending on teammate distance (see Figure 1).

Figure 4: 3v3 Go for Goal



3v3 GO FOR GOAL

AIM:
- Score from inside the teams attacking half of the field.

INSTRUCTIONS:
- Create a grid 10m x 10m with a set of goals at either end.
- Form two teams of 3 players. Allocate each team a scoring end.
- One player from each team is nominated the 'goal keeper' and starts the game by standing on the teams' defensive goal line. They are not permitted past the half way line.
- Start the game, and restart after a goal, with teams taking it in turns for a centre pass.
- If the ball goes out of bounds the team that touched it last gives away a free pass from the sideline.

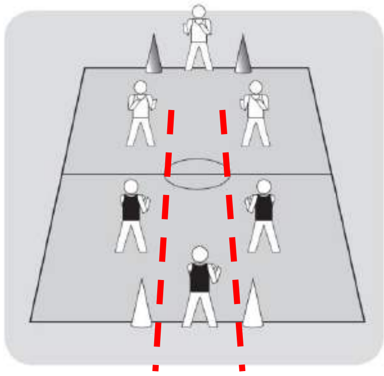
CHANGE IT:
- Increase the size of the grid and add more players to each team.
- Add a goal to shoot at rather than pass to a target player.

3v3 Go for Goal (Figure 4) progresses basic attacker/defender relationships with larger space allowances, permitting greater flexibility in positioning. The game may be altered to outnumber attackers (2v3), focusing learning to support movements off the ball. Specifically, having only 2 attackers encourages players in the support role to read, respond, react, and recover in being the only passing option available;

reading – Identifying free leading space to create a passing option,
responding – Moving to that space,
reacting – Receiving/executing a pass (action), and
recovering – Supporting the ball carrier by providing a follow up passing option.

Complexity of learning can be progressed by adding an extra player to both teams with the objective of maintaining a triangulated attack configuration. Initially, players can be assigned to corridor zones which they are not permitted to leave (Figure 5). This secondary rule may help attack triangulation to explicitly emerge as the boundaries force players to remain spaced. In this way, the boundaries provide an information source upon which the desired attack configuration self-organises. The corridors may eventually be replaced with the rule that attacking players must remain 5 meters from each other at all times. Unlike corridor introduction, this rule adopts an implicit approach upon which players are encouraged to monitor the ball carrier and the 3rd supporting player. The intended outcome is the triangulation attack configuration is maintained as the designer game progresses closer towards traditional netball rules.

Figure 5:



Adapted from (Pill, 2014)

Defensive structures

Figure 6: Defensive Balance

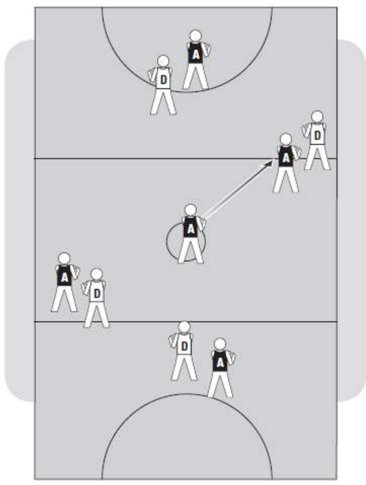
DEFENSIVE BALANCE

AIM:
- To introduce the concept of zone defence.

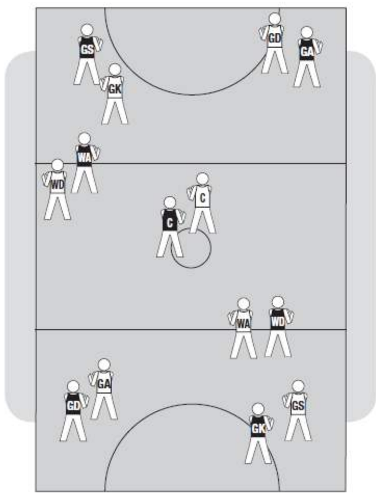
INSTRUCTIONS:
- 5 attacking players and 4 defenders set up as shown.
- Defenders stay in their allocated quadrant.
- Attackers start with one player in each quadrant, but are permitted to move anywhere once play commences.
- One attacker starts with the ball in the centre and from the first pass the attacking players attempt to move the ball anti-clockwise around the court without the ball being intercepted or knocked away by a defender.

CHANGE IT:
- Start with a pass from an attacking player from the sideline.
- Full court 7 person zone defence (7v7) as per version 2 diagram. Attacking team attempt to work the ball down the court from the defensive 'D' to score.

Version 1



Version 2



This game introduces a defensive zone structure via an explicit approach whereby game variability and complexity are limited (but not removed) for novice learners. Initially, defenders are allocated to quadrants, preventing clustering around the ball whilst establishing a structure to guard space. The predictable anti-clockwise path of the ball restrains the perceptual load on reading the play by providing an attack pattern with limited variability. This allows defenders to focus on reading and responding to attacker positioning within a pre-identified ‘dangerous space’ (likely location the ball is to move to). Complexity may be increased by allowing attackers to change passing direction (anti-clockwise/clockwise).

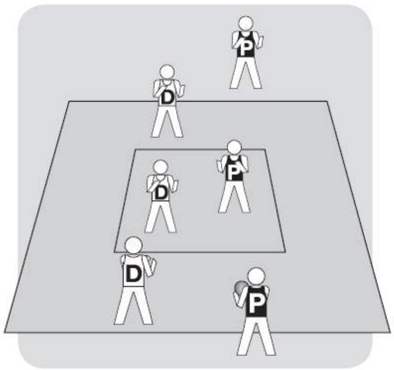
Figure 7: Pass to a marked team-mate.

PASS TO A MARKED TEAM-MATE

AIM:
- Team in possession of the ball to maintain possession with short and long passes.

INSTRUCTIONS:
- Two teams of 3v3.
- Set up a grid 15m x 15m, and then create a smaller grid inside it approximately 5m x 5m.
- Possession team (P) set up with one player initially in the centre of the 5m x 5m grid, and two players outside the large/main 15m x 15m grid on opposite sides. The outside players are not permitted inside the 5m x 5m grid. The inside player must start inside the 5m x 5m grid.
- Defending team (D) set up with one player inside the 5m x 5m grid and two players in the space between the 5m x 5m grid and the 15m x 15m grid. The inside player must stay inside the 5m x 5m grid, and the outside players are not permitted into the 5m x 5m grid or outside the 15m x 15m grid unless the coach/teacher calls ‘play on’ as the player has taken longer than 20 seconds to make the pass.
- Play commences with an outside possession player passing the ball to a team-mate.

CHANGE IT:
- Add extra players into the 15m x 15m grid.



This practice task may be employed in association with the previous designer game to develop defender positioning in order to guard leading attacker space towards or away from the ball. This is primarily achieved by reducing the amount of dangerous space 5x5 grid in which attackers score a point for every successful pass into the box. Having the scoring space centralised provides an informational directive for defenders to monitor the space while simultaneously reading attacker movements around the outer boxes. In other words, this set-up positions defenders between attackers and the scoring zone which may encourage positioning in a ‘half-half’ orientation (figure 8) whereby ball movement and dangerous space can simultaneously be monitored.

Figure 8:

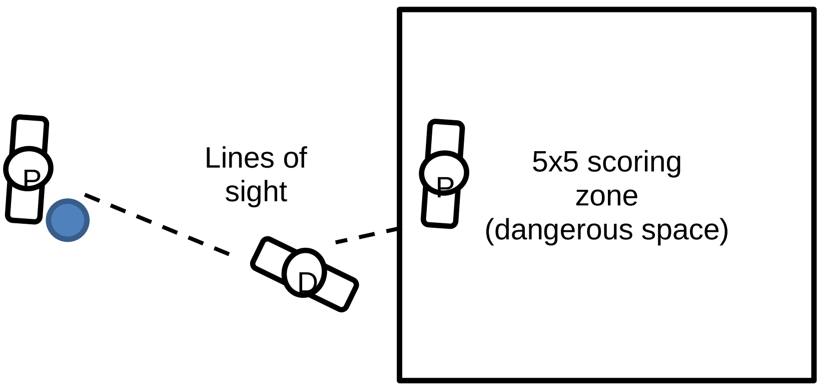


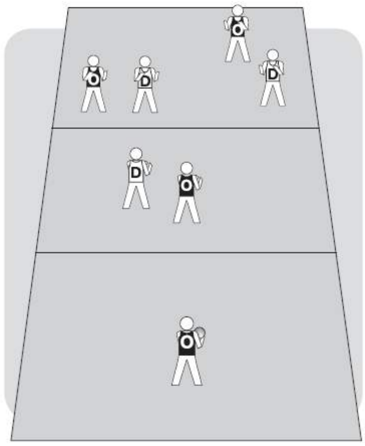
Figure 9: 3v3 with support from behind.

3v3 WITH SUPPORT FROM BEHIND

AIM:
- Offensive players attempt to keep possession.

INSTRUCTIONS:
- Create a grid 10m x 5m, divided into three equal size zones.
- 7 players set up as 3 defenders (D) and 4 offensive (O) players.
- 3 players from the offensive team are only permitted in the 'front' two thirds, and the fourth is only permitted in the back third.
- The 3 defenders can go anywhere.
- If the ball goes out of bounds, the offensive team brings the ball back into play with a pass from outside the side-line over the 'mark' where the ball went out.

CHANGE IT:
- Create an offensive advantage by playing 3v2.
- Do not allow defenders into the back third zone.



Once perceptual and positioning competencies have been introduced, defensive learning activities may be progressed by permitting greater variability in the game experience. However, perception-action coupling should remain focused on perceiving attacker positioning and acting to defend dangerous space (repetition without repetition). The 3v4 scenario is intended to signal the need to read and defend dangerous space rather than direct player-on-player defence. Confining attackers to allocated thirds further emphasises this whilst providing a constraint upon which spreading to guard space becomes implicit, discouraging natural tendencies to bunch around the ball. Court-space and ball speed movement are two primary variables that can be modified to ease or increase the information-processing burden placed on defenders. If defenders are struggling to keep up with ball movement, attackers may be prohibited from skipping the centre third when passing. This reduces the amount of space needing to be read and defended at any single time to a single court third. Alternatively, attackers may be forced to wait 3 seconds after receiving possession before another pass can be made. This provides extra time for the defensive zone to gain stability before the configuration of play is shifted by another pass. This time interval can also be used as a 'pause' moment whereby play is frozen by the coach. Questioning may then be used to prompt defenders to reflect on their own decision making in each configuration of play. Alternatively, an extended five second window could be permitted for the defensive zone to set up. In this interval, verbal feedback can be provided to students by the coach to readjust the zone appropriately in real-time. The expectation that the ball will be passed at a particular time eases the speed of the information-processing burden placed on defenders.

Recognising the functional bandwidth of movement performance

The GS learning activities provided above demonstrate how tactical development may occur under the influence of constraints. An applied tool designed to assist coaches in planning for technical development within such examples will now be discussed.

Recognising fundamental movement and game skills as inextricably linked (Smith, 2014) 'text-book technique' models of skill performance fail to recognise the influence of relational dynamics on performance. These have often been highly deterministic and cross-sectional in nature, capturing optimal performance in a vacuum devoid of learning stages or fluctuating game conditions. Teacher directed skill-drill pedagogies have been congruent to these models, whereby technical practice is situated within stable and predictable contexts. We propose the 'Functional Bandwidth of Movement Performance' (see Figure 10) as a planning tool that may assist coaches to scaffold skill development from a DST perspective across all stages of learning. Three key principles are highlighted and discussed in colour coded reference to Figure 10. Goal shooting is used as the game skill example, drawing upon a learning activity from Pill (2013).

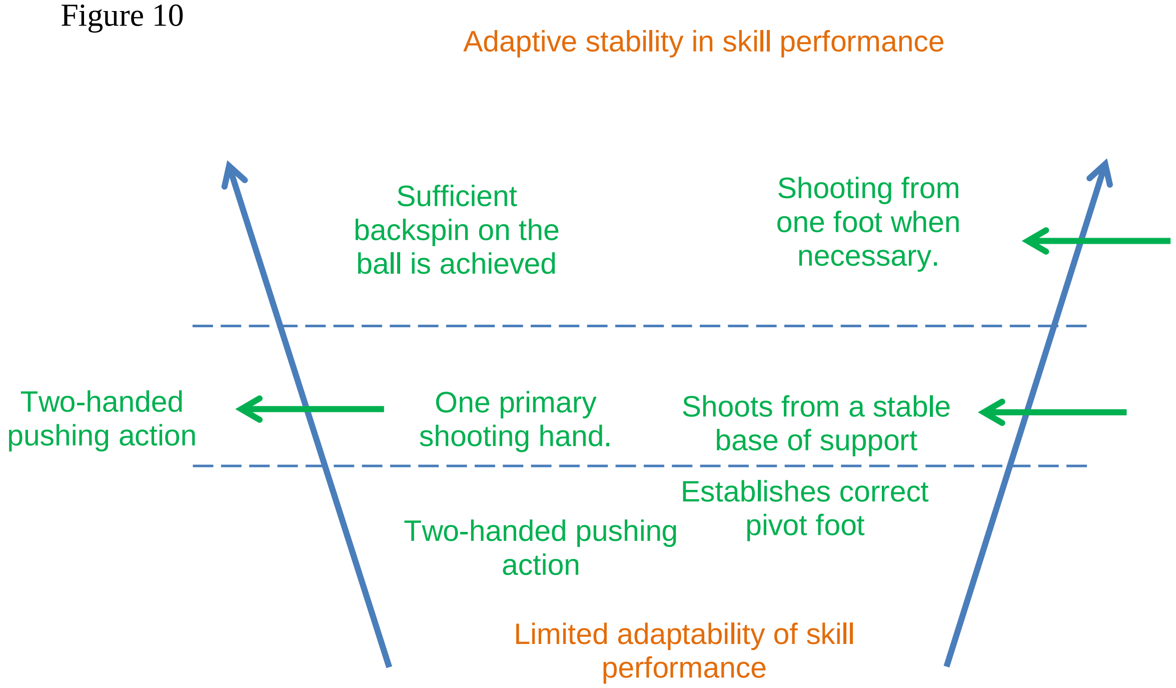
1. **Functional variability:** understood here as the spectrum of movement possibilities that satisfy game objectives within fluctuating dynamics. As indicated by the blue vertical lines in Figure 10, as skill development progresses, variability increases whereby the learner progressively assembles a greater range of Degrees of Freedom (DoF; indicated in green) into the movement performance. Davids et al. (2008) acknowledges DoF as the independent components of a complex system such as the learner, constitutive of muscular-skeletal and neurological components. For the purposes of this paper, the game skill itself is also conceived as a complex system, comprising multiple discrete movement possibilities. Increasing DoF into a movement acknowledges the dynamic nature of netball and the need to flexibly adapt with a variety of movement solutions as learning progresses. This contrasts traditional ideologies where variability is considered 'noise', interrupting consistent skill repetition (Davids et al., 2008). This is usually reflected by practice activates that remove variability from the performance (i.e. closed skill drills) and prescriptive technique checklists.

2. **Scaffolding morphing skills:** through the exploratory learning process, it is expected that shooting technique will continually morph whereby DoF are integrated and removed from skill performance. The success or functionality in satisfying game constraints ultimately dictates whether a DoF will remain part of the shooting performance. Although designer games should represent specific tactical/technical dimensions of traditional netball, their modified nature inherently means that 'dead-end' techniques may arise across various learning stages. Launder (2001) describes dead-end techniques as those that enable initial game-play participation but are not functional as learning complexity increases. An example of this is a two-handed

pushing action, which may satisfy demands of a designer game for beginners where restrictions on defensive movements have been imposed (e.g. shots cannot be blocked). However, as learning progresses and the designer game is deliberately advanced, defensive restrictions are released rendering the two-handed pushing action unsuitable as it may be easily blocked. Biomechanical expertise and working knowledge of the complete Netball game become important for coaches to identify 'dead-end' techniques at this earliest stage of learning. It may be prudent that constraints inhibiting movement variability are relaxed at the same pace that dead-end techniques are phased out of a performance.

3. **Adaptively stable skills**: consists of both 'non-negotiable'or fixed techniques and functionally variable movements. For example, backspin imparted on the netball from a downwards rolling or flicking motion of the fingers when shooting, finishing with the hand and arm in a swan neck position is a non-negotiable technique. From a biomechanical perspective, backspin may cause the ball to spin downwards into the nett upon contact with the back of the ring, relative to the shooters position. Conversely, functionally variable movements differ from player to player but still successfully satisfy game constraints. Here, individual/physiological constraints influence how each player may optimally perform a given type of movement or technique. An example of this is the extent of knee bend within the shooting motion. Shorter players or those with shorter arms may rely more on generating kinetic force into the ball with a larger knee bend. Taller players may have a reduced knee bend but use a slightly greater range of motion with the extent to which their arms move to generate force behind the shot.

Figure 10



At each vertical level of the Functional Bandwidth, learning may be progressed or introduced to promote/discourage DoF within netball goal shooting. Biomechanical expertise can assist coaches to classify DoF for a given skill as functional variable (as influenced by individual constraints) or largely fixed.

Table 1: An example of a Game Sense Netball coaching session for novice players

Tactical problem	**How do you force a turn-over via zone defence?**
Focus	Develop awareness of ball movement in conjunction with off-the-ball attackers to identify and defend dangerous space.
Modified game **Examples of developmental questions**	Defensive Balance (Pill 2008). • Where is dangerous space? • How can defenders position themselves to see the ball carrier and dangerous space? • What should you do if an attacker gets the ball near you? • Who should we prioritise defence to if we're split between two attackers (split too far to guard both)? • Where should you try to force the ball to?
Practice task	Pass to a marked team-mate (Figure 7: Pill 2014) with passive defence.
Return to modified game	Defensive balance (version 2).
Conclusion	How did you work together to defend dangerous space?

Table adapted from (S. Pill, 2014)

Conclusion

We advocate a shift from conceptualising skilled performance as static, deterministic configurations that fail to recognise the influence of perception-information coupling. The second imperative is to create learning opportunities that deliberately encourage learners to assemble functional DoF that meet task demands. However, far from simply engaging in game-play, deliberate scaffolding must occur to link specific information sources within game play practice with the player (Chow et al., 2007). In this coupling process, GS coaching promotes the exaggeration, control or elimination of player behaviours in association to specified information sources of focus through designer games. To assist in managing the perceptual information load, designer games are created that focus learning on a specific component of the game-play system.

References

Charlesworth, R. (1994). Designer Games. *Sports Coach*, *17*(4), 30-33.

Chow, J. Y., Davids, K., Button, C., Shuttleworth, R., Renshaw, I., & Araújo, D. (2007). The Role of Nonlinear Pedagogy in Physical Education. *Review of Educational Research, 77*(3), 251-278.

Clarke, D., & Crossland, J. (1985). *Action systems: An introduction to the analysis of complex behvaiour* Londen: Methuen.

Davids, K., Button, C., & Bennett, S. (Eds.). (2008). *Dynamics of Skill Aqusition: A Constraints-Led Approach.* . Stanningley. : Human Kinetcs. .

Den Duyn, N. (1997). *Game Sense: developing thinking players workbook*. Canberra: Australian Sports Commisson.

Gréhaigne, J.-F., & Godbout, P. (2014). Dynamic Systems Theory and Team Sport Coaching. *Quest, 66*(1), 96-116. doi: 10.1080/00336297.2013.814577

Launder, A. G. (2001). *Play Practice: The Games Approach to Teaching and Coaching Sports*. United States: Human Kinetics

Newell, K. M. (1986). Constraints on the development of coordination. In M. G. W. Wade, H.T.A. (Ed.), *Constraints of the development of coordination*. Dordrecht, Netherlands. : Martinus Nijhoff.

Pill, S. (2013). *Developing theoretically informed practice: the forward press in Australian football as an example of the dynamics of a complex system.* Paper presented at the J Quay & A Mooney, ed. A Defining Time: Health, Physical Education, Sport & Recreation. 28th ACHPER International Conference, Melbourne, Victoria. .

Pill, S. (2014). *Developing Netball Game Sense: Teaching Movement and Tactical Skills.* . Hindmarsh, South Australia. : ACHPER.

Renshaw, I., Chow, J. Y., Davids, K., & Hammond, J. (2010). A constraints-led perspective to understanding skill acquisition and game play: a basis for integration of motor learning theory and physical education praxis? *Physical Education and Sport Pedagogy, 15*(2), 117-137. doi: 10.1080/17408980902791586

Smith, W. (2014). Fundamental movement skills and fundamental games skills are complementary pairs and should be taught in complementary ways at all stages of skill development. *Sport, Education and Society*, 1-12. doi: 10.1080/13573322.2014.927757

Spittle, M. (2013). *Motor Learning and Skill Aquisition: Applications for Physical Education and Sport*. South Yara: Palgrave Macmillan