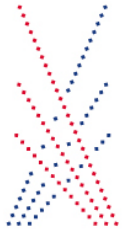

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Craft Knowledge in spatial decision-making in football

ABSTRACT

This paper examines themes in contemporary strategic analysis, the management of complexity and the spatial dimension of knowledge by an extended analogy from Association Football, (Soccer),especially the operation of the offside rule, illustrating how spatial factors influence decision-making in a specific context and skilled knowledge-practitioners operate as knowledge-mediators within communities of practice to reduce uncertainty.

. Learning is facilitated by shared cognitive and material bases, mental models and cultural backgrounds. Congruent communication structures and common experiences of success and failure reinforce performance patterns.

We argue that it is time to place performance in spatial context at the centre of the study of managerial cognition.

1
Spatial knowledge

Knowledge is a vital source of competitive advantage and the organisation's ability to deal efficiently with its own knowledge is a primary source of value creation and development (Grant, 1996, Rumelt, 1984; Nohria and Ghoshal, 1997; Miles and Snow, 2000; Hansen, 2002).).

"The networked organization" (Nohria and Eccles, 1992) advocates what organizations must become if they are to be competitive in today's business environment. (Nonaka, 1994; Spender, 1996; Rolland, 2006). But there are few studies of how networks actually operate in practice and what specialised skills are involved.

There is a general acceptance that these are vital aspects of strategic analysis but little research on how they impact on strategy in practice. The emphasis has been on the macro-structures rather than the processes of micro-structure formation and reinforcement for the methodologies used do not permit understanding of the processual aspects of evolving strategy and outcomes in the organisational sense are complex and the precise weight to be attached to knowledge and network is hard to specify. Space is a key parameter of process.

Case-based reports of complex organisational processes often rely on post-hoc ergo propter hoc reasoning because the outcomes are in fact known. Thus it is hard to understand the epistemological significance of "causal" factors that did not apparently work as expected in particular cases. The denseness and complexity of the materials and data used in case-based explanations and the possibility of such a complex array of variables becoming implicated in explanation militates against the possibilities of creating simple explanatory structure.

"Common knowledge" is conceived as "dynamic and not static which emerges out of the interactions among the firm's parts and context and may evolve or change on the influence of others knowledge and actions (Von Krogh and Roos, 1995; Spender, 2002). The process of change results from discontinuities between common knowledge and elements of organizational knowledge. (Rolland 2006)
Lewin (1951) considers the strategic process as a field of action and seeks disturbances in those fields as the source of understanding of complex systems. Anthropologists also have a professional concern with "Space" and "Spatial Practices" (Clifford 1997,Giddens, 1990).

In this paper we attempt a simplified approach in which the sources of variation are limited by the application of rules in a situation that imposes strong spatial restraints on decision-making. As Rolland has previously remarked "If a firm is to change and create knowledge, it has to operate in a state of bounded instability." (Rolland 2006) We take our examples of the management of bounded instability from a consideration of how the offside law operates in a game of professional association football (soccer).

There are some clear advantages of this kind of simplification.

1 The constraints of *time* impose a limitation on potential complexity.

2 Likewise the *spatial* constraints are quite precise.

3 Outcomes are *decisive* and achieved within the allotted time period.

4 The only *method* of achieving a decisive outcome is by scoring goals.

5 Within these very strict constraints practically any *tactic or stratagem* that is not disallowed within the Laws of Football can be employed.

Thus we have an example of what we may define as *Regulated Complexity with indeterminate outcomes*. While games may follow characteristic patterns, no two games are ever "the same" in terms of actual events.

Professional soccer is intrinsically concerned with space and its management and there are aspects of the internal processes of the game of Association Football relating to what goes on within the spatial parameters of the field of play and the 90 minutes of activity permitted in the normal period of play that have a wider implication for our understanding of social control of skilled processes and in specific terms for the use and management of the parameters of "Space" and "Time" in complex organizational contexts.

They constitute "spatial practices" in the sense recommended by Clifford. (op.cit.) Football represents a form of embodied knowledge because it is "created in the unity between subjects and objects that is the direct result of having a body and is knowledge in the hands, which is forthcoming only when bodily effort is made, and cannot be formulated in detachment from that effort"» (Merleau-Ponty 1962, p144)

For Senge (1991), competitive advantage depends upon experimentation, the continuous exploration of opportunities. This experimentation requires generative rather than adaptative learning. Adaptative learning accepts the world as it is. Generative learning involves recreating the world in terms of the strategic content and the conditions that create logics of managerial thought. This dominant logic is relative to managers' mental maps that they have developed through years of experiences (especially when they have worked in industries with specific rules of competition). When they are faced to new situations they are able to answer successfully. But this answer is in relation with this dominant logic. To be successful, managers have to ignore existing rules of competition in the creative destruction of new rules (Starkey, 1996) and they have to develop a general management logic that is both a knowledge structure and a set of management process (Grinyer and Spender, 1979; Prahalad and Bettis, 1986).

In turbulent environments managers have to learn new beliefs to create new dominant logic. One of the characteristics of the managerial knowledge learning is that it can be realized through behavioural (incremental) learning (Kuwada, 1998). Leaders learn without unlearning and learn tacit knowledge through a behavioural change or simply reproductively (Nonaka, 1994).

At a dispositional level, the game of football and its practices constitute a framework of *habitus* as recognised by Bourdieu who expresses this as a set of dispositions that one learns and can use given the right social context. Our social relationships *create* habitus, and we perform within the relationships thus defined. (Bourdieu,1990)

Many recent writers have concurred that knowledge is intrinsically contextual and situated in practice (Lave and Wenger, 1991; Brown and Duguid, 1991; Orlikowski,1996; Wenger,1998; Gherardi,2000; Dougherty,2001)

Our notion of Space is thus different from that of Boisot whose concept of Information Space centres on how information is transformed within an organisational framework. In Association Football space is one of the core parameters of decision in that a concrete, juridically-defined boundary sets limits to decision but within those constraints practically any spatial manouevre, whether planned or spontaneous, is permissable.

Football embodies practices and performances that are "ecologically embedded" in the sense used by Whiteman and Cooper. (Whiteman and Cooper, 2000). Despite the increasing commercialization of association football, and its incorporation in a global world of media, branding and spectacle the essence of the game as it is played remains recognisably the same over the one hundred and fifty years of its existence, to the extent that it constitutes one of the relatively few communities of practice that would be instantly recognisable to skilled practitioners of an earlier era

2

The Spatial Organisation of Association Football

The modern game of soccer is of relatively recent origin though "histories" of the game note its medieval origins (sometimes earlier) Its development and rise to international precedence as the competitive team ball game of choice in the global market parallels that of Scientific Management as taught in Business Schools and its codification and regularization parallels that of similar tendencies in other sectors of business.

From its origins in the industrial mill-towns of Northern England in the late C19 Soccer has become "The World Game" just as the industrial management that was codified and scientized in the steel mills of Pennsylvania by Frederick Taylor started its historical journey to global hegemony over the same period .

The basic definitions of "space" and "time" regulating football are contained in the Laws of the Game which are codified and readily available. Many of these rules appear un-contentious, as that the game is normally a contest between two sides of equal forces of eleven players each. But however *"*obvious" these rules appear to be they have all been the source of contention and conflict in the past. They represent a statement of a "Negotiated Order" in the sense familiar from the work of Strauss. (Strauss 1963). The discourse of negotiated order can apply to formal organisations but also to emergent structures. As Thomas expresses it "Negotiated order is the consequence of give-and-take interaction. within settings predefined by broader, and usually more formal, rules, norms, laws, or expectations, in order to secure preferred ends (Thomas, 1984).

The field of play is relatively fixed and its dimensions can vary between 90 and 100 yards in width and between 110 and 140 yards in length. It is possible for clubs to alter the dimensions of their pitch for tactical reasons for a particular engagement, to constrict the field of play to advantage their defenders against an opposition's skilful attackers who prefer to run wide on the wings and pull defenders out of the middle of the field. The reasons for taking these decisions relate to the centrality of the spatial dimension in the organisation of knowledge.

The rules about time are even stricter though subtle and deliberate variation is possible. The length of a "match" is restricted to 90 minutes of elapsed time. Within this overall envelope the game is only in an active state when the "ball is in play". It may be out of play for a number of reasons of which the principal ones are that the ball has been propelled "out of play" by one of the players and has to be returned to play via a throw-in, goal kick, corner or dropped ball. Putting the ball out of play may be either a deliberate or an accidental performance. Time is varied when play is stopped by the referee. It is common when one team is leading and the end of the match is in sight for tactical introduction of substitutes to "eat up precious seconds".

Time may also be allowed when a player has been injured in. This is controlled by the referee but the information is regulated by a "Fourth Official" who feeds back to the participants how much time has been added by the referee. This decision is communicated by a visual display. By strict counting of these periods of "in play" and "out of play" the effective duration of periods of continuous activity is much less than 90 minutes. All these decisions are made by the referee who, in these matters is sovereign for the duration of the game, though he may be

severely questioned by players, managers, media, press and public afterwards. (In the following discussion the masculine case is used throughout for simplicity although of course soccer is a game played by women as well as by men).

Within the organisation of a soccer team on the pitch there are specialised roles but in principle any player can be called on by his team to undertake any task. Although only goal-keepers are permitted to handle the ball within the defined goal area, even goalkeepers can score goals, take penalties or free kicks.

From the standpoint of the internal observer or protagonist, all is action, all is flux, all is strenuous and effortful. But to the external observer there are long periods of stasis, frequent interruptions punctuating frenzied and apparently unpredictable explosions of activity. The interruptions are occasioned by the perceived breach of a structural regulation as decided by the referee.

One of the most important of these regulations is the offside rule. This is a mystery to the uninitiated observer: yet its purpose is worthy and simple. As the game of flow and action is designed to terminate in the scoring of goals, an obvious defensive ploy would be to attempt to interpose as many attackers as possible on the goal line. However such an outcome only occurs in practice at very specialized times such as corner kicks or free kicks within the penalty box.

The offside rule specifies that an attacker may legally receive the ball from a player behind him so long as there is at least one defender between him and the defenders' goal at the time the ball is passed. This rule has been modified since its first introduction but in essence it remains one of the most important influences on the development of the modern game.

In respect of an offside decision, the referee's decision is binding as is the case for other decisions as to foul play and the award of free kicks and penalties. But in practice the judgement that a player who receives the ball from one of his team mates further away from the opponents' goal was in an offside position when the ball was last kicked and passed to him is made by a "referee's assistant" and is marked by the raising of the flag he carries .It is one of the most contentious rules in the game regularly giving rise to severe criticism and dispute

There are several reasons for this. The actual judgement is extraordinarily difficult to make, involving actions at two successive time intervals and two distinct and possibly widely separated fields of vision. There are in fact not two but twenty-two players whose relative and absolute positions in relation to the ball may be considered. These may be all in motion simultaneously. Their movements may also impair the official's field of vision and obstruct his view. The operation of visual parallax makes it possible for attackers who are closer to the linesman to appear to be onside when in fact they are not. Conversely attackers on the opposite side of the playing area may appear to be offside when in fact they are on-side.

Several studies have out that the decision may be impossible to make as the law-makers intended, and that the strict requirements of the law may not be capable of being met by normally sighted humans.

The positions of the referee and his assistants on the same level as the players are less optimal than those in the stands higher up, giving a more panoptic perception of the flow of the game Television evidence and action replays and repetitious micro analysis can " prove" that specific decisions were in fact "wrong".

Consequently most officials interpret the rule conservatively so that legitimate attacks may be ruled out of order because of the belief by the linesman that an attacker receiving the ball with only the goalkeeper to beat "must" have been in an offside position *when the ball was played*.

This penalizes the attacking side and their most skilful players and this penalization of the very skills that the game is designed to encourage inevitably causes dismay on the terraces amongst fans who on the whole prefer to see goals than to applaud defensive play, however skilled.

Nonetheless the rule has become an essential aspect of the modern game and its influence stretches into every aspect of play on the pitch and conditions the strategies and tactics of managers and coaches.

The offside rule is difficult to circumvent and in practice successful plays are quite limited. The most obvious method is for the player with the ball at his feet to aim directly for the goal, run directly at the opposing defender and hope to beat him for speed or deceive him as to which side of him he plans to pass by. If the defender mis-times his tackle and commits a foul a free-kick or penalty kick may ensue. But defenders now are equally speedy and expert at timing their tackle and direct attack seldom pays off. Nonetheless in any class of soccer defenders do not care for attackers who run directly at them.

Another method is to beat the defender in areas where there is more space for speed and deception on the wings and to cross the ball from as close to the goal line as possible thus rendering all the other attackers by definition onside. Another is the "One-Two" (in earlier times known as the "Wall Pass"). In this routine, the ball is quickly passed forward to an attacker who is faced by a defender marking him tightly. But instead of controlling the ball, holding it up and either trying to turn and beat the defender or passing it to another attacker, he lets it rebound sideways from his body as if from a wall into the stride of the player who has passed the ball to him and who has continued his run into the vacant space alongside. Unless another defender has anticipated this move and has run back with him the first player is now clear of the defence and can menace the goal.

All of these plays demand exceptional skill and this must usually be displayed by at least two players simultaneously. Sometimes the skill of the other participants is displayed far from the actual location of the ball in such ways as "running off the ball" and "keeping the defender tied up" or in "making a dummy run" but these skills are noticed and appreciated by the players themselves who know how difficult these skills and synchronised performances in complex interactions really are.

But within these tightly controlled limitations, all plays are possible unless they are specifically ruled out by the laws of the game. Sometimes these have to be re-specified and redefined to take account of innovation. The discourse of players and coaches emphasizes the spatial dimension. Good players are praised for "finding space" and "reading the game." These skills are highly valued. To manage the game as it progresses, teams must manage space creatively. Within the game itself among professional players, most respect is accorded those whose vision and perception (usually operated from the midfield area) creates the opportunities which are then converted into goals by others. They share a specialised vocabulary of acclaim also and may be described in the press as "Playmakers" or "Midfield Generals" and their performance dignified by such epithets as "Cultured" or "Perceptive". Frequently they are praised for their "Vision" and abilities to "Change the Shape of the game". Sometimes they are seen by commentators to be "in the right place at the right time" or to "deliver a telling pass" or to "spot the run" of a colleague.

These players perceive the general shape of the game and the relative positions and potential of other players and can pass the ball accurately and with the appropriate weight and spin so that it arrives where their own player will be but the defender will not. But they may do their most effective work “off the ball.”

Their skill and experience enables them to make correct judgements about the use of space. They also contemporaneously have to make informed decisions about the most effective use of time. Informed commentators will note that such players “always seem to have more time than the players around them”. Einstein has taught us that Space and Time are obverse faces of the same reality. So it is in Soccer. Of course all of this is predicated on these players’ mastery of the more fundamental skills of the game, such as controlling the ball, dodging, feinting and evading the onrushing tackler, and shielding the ball from a defender with their body. They have to be able to strike the ball consistently and accurately, and it is no surprise that it is from this group that the specialists in dead ball kicks, corners, free kicks and penalties are often chosen.

They are in a real sense the strategists of the game as it unfolds on the field of play. Their chief role is to change the status of the game at a particular point in time. They are honoured as superior contributors and as wizards of the craft. Their presence or absence from the tribe can create positive and negative expectations and raise or lower collective morale.

The admitted maestro of these skills is the French captain Zinedine Zidane, whose presence in the World Cup of 1998 and whose absence in 2002 was equally decisive. These players can move the game from a period of relative stagnation in which the ball has apparently to the uninformed observer simply been pushed repetitiously sideways in a succession of lateral passes to a situation where there is an opportunity for one of the strikers to shoot at goal by one accurate through ball to a front-runner. Conversely they can “shut the game down” after a goal by “keeping the ball tight” with a succession of “give and go” passes in which the skilled midfield player always seems to be able to obtain the free space that other players find so hard to obtain.

Sometimes the ability of a player making up ground quickly into a lethal position in the opponents’ penalty area can upset the odds and unsettle the defenders and make them unsure of whom to mark. Zidane possessed the spatial judgement to make these devastating incursions and “arrive late” in the box. A game of Real Madrid versus Barcelona in season 2002-3 gave him a classic opportunity to demonstrate these skills of “reading space” when he ran for 50 yards without the ball and deceived the covering defender by a readjustment of his body weight to give himself space. He then controlled the ball on his body before taking only one touch on the ball and beat the on-rushing goalkeeper with a precise chip into the corner of the net. He had touched the ball only twice in the complete series of movements but his reading of the space had implicated the movements of almost all the other players on the field. Plays like these may be wasted if his fellow attackers do not “read” the situation in the same way and fail to deliver the ball into his stride.

3

"Holding the Rope": the defensive use of space

Skills in the use of Space and Time occur in defensive play for while scoring goals is the objective of the game, one goal scored suffices provided that the opposing team can be prevented from scoring at all.

Many successful teams have been built around mastery of successful defensive strategy like the Catenaccio tactics of Inter Milan or the Arsenal team managed by George Graham. who is credited with coining the phrase "Holding the Rope". This identifies an apparently simple approach to the collective approach to defensive tactics, that depends on good spatial perceptions, decisive leadership skills and consistent application of routines learned through intensive training.

The essence of the tactic is to play one or more of the attackers offside by creating a spatial configuration in which when the ball is played up to an attacker, there is no defender between him and the goal apart from the goalkeeper. This sounds easy but it is in fact not at all so. The "Rope" in question is an imaginary band linking all the defenders from right back through the two centre-backs to the left back extending across the whole field of play enabling the whole line to move forward as one unit. If any one player fails to respond to the move a situation of great potential danger is created for the defence.

The successful execution of the move depends on a *combined recognition* of the fact that an attacker has the ball and is likely to launch it forward imminently to one of his colleagues. One of the defenders takes responsibility for giving a signal, either audible or visual for the whole back line to move forward as one. The spectators may hear a shout or see an arm raised. Arsenal relied on the leadership of centre backs David O'Leary and Tony Adams to undertake these responsibilities. But amongst defensive colleagues who have long experience of playing together no such signal is apparently given. The defenders "know" the signs of an impending dangerous situation and move forward together.

But in what does this "knowledge" inhere and how is it communicated? Why do some players "see" what they have to do and others do not? It is not simply a matter of experience or of knowledge of how the game should proceed in principle. For the actual situation at any specific instant is always new.

Mastery of this tactic is not a simple matter. It depends on a recognition of a *potentia*l danger not one that has already been crystallized. Most teams can defend against a player who is in possession of the ball; it is defending in advance against just one of a series of potential outcomes that demands the skill and intelligent precognition of imminent danger.

It is not commonly appreciated how complex these kind of judgements are. They depend on the capacity to process complex information rapidly changing by the instant relating to the relative position of 22 individuals moving freely in 2-dimensional space, and a ball which is capable of moving in 3-dimensional space, for it may be played not merely along the ground but in the air and may be controlled by any part of the receiving player's body excepting his arms and hands.

All of these positionings, repositionings and potential positionings are occurring *relative* to each other. It is like n-dimensional chess, with the additional complication --for soccer is a game of physical contact-- that errors in one's spatial positioning relative to another player are likely to be rewarded by a punishment in terms of physical collision with another player's body and the likelihood of possibly severe and incapacitating pain and real injury.

4

"Making Space" in corporate strategic decision making

There are similarities between the "game" of soccer and other types of organisation where processes operate in a rigidly defined space and time controlled by inflexible and publicly-knowable rules, strict rules of engagement, arbiters and procedures for conflict-resolution and determinate outcomes that modify the future chances of both sets of protagonists, like a competitive business relation between two enterprises or conflicts between tribes (see for example Evans Pritchard 1940).

Professional soccer has much in common with the corporate world. Both have their origins in a much less structured, indeed relatively free- for- all of collective aggression towards an almost unlimited objective. In the medieval games from which football emerged a ball was carried or propelled from one village to another simulating a warfare in which the aim was the recovery or taking possession of territory.

The ability to command space is a chief weapon of the strategist, in the world of corporate business as well as of soccer and the intuitive strategist senses where space is available in markets and possesses the craft to make a move before others.

In both cases the action takes place within a spatially and temporarily constrained structure of regulation, with clearly defined outcomes. The games of business and football also require innovation. These innovatory skills may be the subject of legislation retrospectively. The skills of the innovator may be both admired and deprecated.

Innovative decision-making that stretches the boundaries is unusual and often suspect. Successful strategists understand the limitations set by the absolutes of the game, operate with the same number of players as the opposition, keep the ball on the pitch and command and control forces by employing superior tactics more appropriately conditioned to the playing realities on the pitch. They are not disembodied puppets acting at the behest of controllers located off the field of play.

Managers are often moved to outbursts of frustration and anger at the inability of their teams to follow a predetermined plan, thus "losing their shape" or "allowing the opposition to dictate the pace of the game". On-field strategists are not totally enfranchised free agents either. They must constrain their creative impulses in the interests of the general team plan and recognize not merely the strengths but also the incapacities of their own colleagues as well. So imaginative and highly skilful plays that fail because their colleagues do not "read the game " as they do and which permit the opposition to profit from the resulting confusion are likely to be severely censured by the manager in the post-match review and critique of events.

Those who have worked with great organizational managers in the day to day creation of strategy and its implementation throughout a period of changing events, hostile attacks, and unpredictably alternating periods of adversity and prosperity that mark the onward progress of innovation and corporate growth, know that it is the mastery of Space and Time that lies at the heart of the contribution of these exceptionally skilled practitioners that marks them out from the merely competent.

7

The Organisation as a knowledge network

The organisation strives for temporary mastery of the contingencies that affect performance and management of organisational space attempts to reduce complexity and avoid chaos. As Rolland has argued "firms should understand the space and the architecture of their organization to act on the places which are potential places for chaos-reduction implementation." (Rolland, 2006)

In creating this mastery of organisational space, firms may have as much need as soccer teams of the skilled practitioners who possess a more refined and better-experienced vocabulary of the spatial dimension and can mediate the spatial dimension for their fellow-players.

Skilled exponents like Zidane act as "mediators" enhancing the possibilities of knowledge maximisation by "making the other players play better." When companies focus on mediators they leverage the development of organizational knowledge. Complexity theory can characterise these skilled exponents as "attractors", who create patterns within the bounded instability of the system. (Covey, 1994) Discovering an attractor in an organization can create a commonality of purpose that is shared by individuals. These attractors may be understood as mediators.

Organisational learning is diffused by mediators who reach beyond their originating networks and transfer knowledge learned in face-to-face meeting. Learning is facilitated by shared cognitive bases (e.g., similar mental models and cultural backgrounds) and congruent communication structures.

Accordingly a necessary task for proponents of the knowledge-based organisation is to understand that there are considerable differences in the capacities of individuals to function well in such environments and that not all members of communities of practice are equally competent. They may know the words but not when to say them; they may know the tunes but not the keys appropriate for a particular combination of instruments. They may know the plays but not when to call them. Thus there is both a need to understand the skills involved in dealing with organisational knowledge and also the skills required to mediate this knowledge to others.

These skills can be summarized as the exercise of strategic and tactical *judgement.* But what does that consist of actually and how may its skills be developed? Spender has analysed managerial judgement, and with Brownlie has shown that the classical approaches to judgement in marketing build on rational models that celebrate exceptions rather than normal processes. Interestingly their paper kicks off from a spatial analogy as they aim to "delineate and explore the terrain of mainstream literature on strategic marketing management" (Brownlie and Spender, 1995)

As Spender says « to make a judgement is to deal directly with the absence of knowledge » (Spender, 2006). But merely invoking « tacit » knowledge as a fig-leaf to cover the embarrassing fact that as academics we observe the skilled performances of exponents of techniques of which we are ignorant from a world that we are not able to enter is not satisfactory. We have to enter the realm of specialised content and consider the skills of

knowledge-sharing and –transfer. "The term « tacit » has helped us see skill as an important kind of knowledge going beyond mere data. » (Spender, 2006)

Gourlay « notes the contradictory uses of 'tacit knowledge': as personal, a property of groups, or 'embedded' in artefacts; and as codifiable, uncodifiable, or merely difficult to codify. » and argues that many writers have ignored the fact that in his formulations Polanyi was concerned with a process, tacit knowing, not a form of knowledge » (Gourlay, 2004) His reformulation of « knowing as sign-process or semiosis is persuasive. The point is that most of these embedded uses of knowledge are only accessible to those who can master the processes. All of this kind of knowledge may in fact be context-specific and practice-dependent.

Sporting encounters are often analysed as clues to or signifiers of other levels of meaning, such as tribalism, social class, youth culture and the like. But these stories have little to do with "football" as it is known to footballers themselves. Football is a "life-world" in Schutz's sense that is a nearly universal form of activity across many cultures and contexts. But most of the analysis has come from the outside rather than from inside the game itself so its special character and unique rewards have not been specified. The internal integration of this field of knowledge is available to its practitioners who characteristically note their judgements by short-hands, codes and subterranean jargon from which the uninitiated are excluded.

Gourlay, following Baumard, has argued that « tacit knowledge is important because expertise rests on it and because it is the source of competitive advantage » (Gourlay, op.cit. p) but we would propose a stronger version of this argument, that in fact, to separate « knowledge » and « expertise » in this way risks omitting or obscuring the performative nature of this knowledge that is essentially manifesting expertise in practice.

So what exactly may be transferable from the skill-bases of skilled footballers to those of strategic management ? We essay some suggestions and deal with each of these in turn.

A short list includes Pattern-recognition, Timing of Decisions, Complementary Skill-Sets, Mental/Physical Acuity, Collective Empathy and Physical Robustness.

Pattern Recognition is defined as the classification of data patterns based on a priori knowledge or on judgements about statistical information extracted from data patterns. A common example is the Binomial distribution. All who deal with complex multivariate data such as those complex matrices that can be subjected to factor or cluster analyses know that some skilled exponents « see » patterns in the data.

. In football, players can « see the defence opening up ». In business, managers « see when the market is going to change ». Behavioural psychologists have produced interesting results in the laboratory on these skills but there is little ethnographic work building on these understandings. (Guastello, Craven, Zygowicz and Bock, 2005)

The importance of pattern-recognition is demonstrated in a study of professionals in the chemical industry interacting within different physical settings while developing new chemical technology is provided by Yli-Kauhaloma who identifies six characteristic types (Yli-Kauhaloma,2006)

Timing of Decisions is perceived as crucial in investment decision-making, giving an intuitively comprehensible explanation of the accumulation of wealth. Famously the first Rothschild when asked how he had become so wealthy replied « by selling too soon » implying privileging of practice over theory. In football and in business it is not always clear

to outsiders when the « right time » is going to occur. In every sport, individual or collective, the « art » of performance is that of « peaking at the right time ». In Business and management decisions timing is everything. The skills of Effective Time Management are central to the toolkit of competences of managers at all levels.

Complementary Skill Sets is a more complex skill but it is one that is highly regarded by practitioners. It consists of being able to comprehend the skills in the rest of the team and the sense of which specific aspects of one's own game to emphasise so as to maximise collective outcomes. Skilled practitioners have their own skill set well developed as well as understanding when to move from one type of performance to another.

Mental/Physical Acuity relates to the sense of capability expressed in such verbalisations as « being sharp », « staying sharp », and « being at the cutting edge ». It is expressed in performative terms like « follow through », « making the pressure count » in other words in translating capability into results.

Collective Empathy is a different kind of skill that depends on some understanding between the more skilled and the less skilled of what the latter are «up for» and of «how far they can be pushed». It is based on relatively intangible aspects of performance that are often seen in accounts of military contests. Montgomery on taking over the British Eighth Army in the Western Desert understood that he needed to show himself to his troops by regularly visiting advanced positions, by advising his army that he « would not fight until he was ready », by taking questions that « were generally about letters from home or the state of the latrines ». He was identifying with the concerns of the Poor Bloody Infantry as a good General should do, but Montgomery was himself a soldier, had been under fire, had served in the desert as a young man, had lost his own wife tragically and he knew that soldiers do not want to die but will fight to defend their loved ones. In short his heart beat in time with those whom he commanded. That is collective empathy.

Footballers, soldiers and managers understand in real-life situations who is on their side and who is using them to show results and obtain a better berth. "Teambuilding" and other banal training activities as used in executive training situations also superficially seem to owe something to football: but usually these depictions operate only at the level of metaphor, and are not based in the practices of the sport itself. Nor are these training scenarios and exercises always compiled by those with expert experience in the relevant fields of practice.

Physical Robustness is an asset in any form of competitive endeavour and is often underrated in academic accounts. Perhaps its clearest realisation lies in being able to perform well while feeling or being in less than top physical condition. The grandmother of one of us was prone to remark « Kindly remember, young man, that most of the work of the world is done by people who are not feeling very well. »
These skills can be defined as managerial knowledge which relates to the way things are managed or are coordinated and which implies systemic, strategic, organization-wide knowledge. Knowledge transfer is a prerequisite to learning, but requires effective networks and appears difficult across different units of an organization if pre-existing relationships are absent.

As scholars of management we need to discard much of the apparatus of explanation based on the rational and in particular the economic models of behaviour in favour of more reliance on the analysis of *performance.* In many cases style is of more interest than overt substance, intangible abilities and expressive behaviours of more significance than their post-event rationalizations. Some managers are better than others in being in the right place at the right time and in "knowing" when to run hard and when to stay put. We should observe what skilled practitioners of organisational space actually do and thus develop a rhetoric of

performance rather than of economic theory. Then we would discover what it is in the dip of the shoulders that leaves the defender grasping at thin air and in the sudden unseen intervention into the penalty-box to "get on the end of a speculative through-ball" that makes soccer the beautiful game. Some of these visual and spatial acuities may be learnable and transferable and some may mirror what it is that makes business management such a fascinating, if at times bloody, sport.

Enough said. Action speaks louder than words. For the actual situation at any specific instant is always new. As Eliot puts it, "The knowledge imposes a pattern, and falsifies, for the pattern is new in every moment and every moment is a new and shocking valuation of all we have been" (Eliot,1944)

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