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Organisational perspectives on anti-doping Work in sport

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Abstract
The diverse challenges associated with anti-doping work in sport can result in multiple, competing viewpoints amongst stakeholder groups working to solve the problem. Coupled with the complexity of the problem itself, this has the potential to generate chaotic or disordered work contexts that impede rather than promote progress towards a solution. A visible lack of progress can be magnified to a public perception of anti-doping work as ineffective. We offer the Cynefin Framework, informed by Complexity Theory, as a novel theoretical and methodological lens for sense-making in the changing global context of anti-doping work. The framework's applicability at both individual and collective levels makes organisational sense for managers, professionals working in the field and interested onlookers. This sense-making contributes to an environment where the use of context-tailored strategies, and suitable management and decision-making approaches can emerge. Rather than seeking impossible simple solutions, these can be aimed at the ongoing generation of complementary multiple partial solutions as contexts evolve. In this paper, we describe the Cynefin framework, its application to the global context of anti-doping work in sport and recommend its use in other complex contexts.

Keywords
perspectives, work, sport, organisational, anti, doping

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Introduction

Watched by a concerned public, doping in sport has persisted for many years, posing a problem to sport at its many different levels. There are some who disagree with the dominant view that doping in sport should be eradicated (for example Savulescu, Foddy et al. 2004; Kayser, Mauron et al. 2007). However those who do see doping in sport as a problem and work to solve that problem, find themselves in a multi-organisational, geographically distributed, culturally diverse 21st century workspace enabled by advances in information and communication technologies and modern transport systems. It is that workspace which is the focus of this paper.

Anti-doping work in sport currently involves multiple national governments, issue focused agencies, community groups, the expertise of professionals from many different fields and concerned individuals. As a social problem linked to the public sector, there are other constraints relating to funding, and regulation. Further, the problem continues to change as additional and new aspects evolve. These attributes point towards viewing doping in sport as a 'wicked problem' with complex interdependencies and whose definition has proved to be incomplete because the problem continues to evolve. Understanding a wicked problem comes slowly after probing, formulation and trial of possible solutions (Rittel and Webber 1973; p. 3). Solutions impose changing requirements that are often unique to the local setting of the problem. The way to solve wicked problems is not in a book but in the indeterminate zones of practice and in the 'swamp of important problems and non-rigorous inquiry' (Klein 2004). Wicked problems are not solved once and forever; they must be continuously managed.

Uncovering solutions to wicked problems necessitates seeing things differently and working in new ways. Senge (1990) warns that "from a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay an enormous hidden price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole" (p. 3). Frake (1997) talks of the need for methods that will capture context in a way that "more fully specifies how human behaviour comes to have meaning" (p. 35). To develop an understanding of the whole, there is a need for theories and methodologies that are accessible to those in working in and researching evolving complex contexts. We believe that it is particularly important when the physical and social dimensions of a context have taken on a

global scale and involve stakeholders from many different personal and professional backgrounds. Lack of understanding of the various interpretations of a context can lead to difficult and stressful situations as well as limit the ability to make effective decisions and to develop workable solutions. Analysis and understanding of these evolving contexts is not necessarily an easy task but must be done if the dense webs of relationships are to be understood by individuals whose work contributes to the effectiveness of the whole, and by others interested in the context.

We put forward the Cynefin (pronounced kun-ev'in) framework as a theoretical and methodological lens which effectively makes sense of the dense webs of relationships and complex contexts associated with solving globally shared 'wicked' problems. Sense-making needs to take place at a meta-level (Hasan, Warne et al. 2007) and in ways that support instantiation of the complexity of the system at any point in time. It should support understanding of the changes to the organisation over time and make apparent possibilities for the future. Proposed by Snowden (1999), the Cynefin framework promotes understanding from multiple stakeholder perspectives, offering alternatives to the twentieth century scientific management approaches. Insights resulting from the use of the Cynefin framework support forward thinking about leadership, management, and collaboration in complex evolving contexts. The next section gives an overview of the Cynefin framework. This is followed by a description and analysis of anti-doping work as seen through the Cynefin lens.

The Cynefin Sense-Making Framework

'Cynefin' is a Welsh word that signifies "the multiple factors in our environment and our experience that influence us in ways we can never understand" (Snowden and Boone 2007, p. 70). The Cynefin framework has five domains: Chaotic, Complex, Complicated, Simple, and Disorder reflecting the natural diversity, ambiguity and paradox within human communities. The first four of these are knowledge domains, reflecting the relationship between cause-and-effect in each. Movement occurs between the domains, reflecting the changing nature of existence. The framework supports examination of activities and the tools, practices and conceptual understandings appropriate for each domain. The domains are described in the next section.

The Cynefin Domains

Activities in the **Simple** or **Known** domain are ones where the relationship between cause and effect is credible and obvious to all. There is visible order and legitimate best practice as

robust validated knowledge of cause and effect enables repeatable, predictable outcomes. This domain suits a centralised bureaucratic way of working. Decisions can be made using a *Sense - Categorise - Respond*. Heavily processed situations, such as processing passport applications and renewals, fall into this domain. Managers rely on process being followed.

Activities in the **Complicated** or **Knowable** domain are ones where the relationship between cause and effect requires expert analysis or some other form of expert investigation. This domain is the site of research that tests and refines previous discoveries or ones emerging from the Complex domain, developing them into robust, validated techniques that can be later moved to the Simple domain for everyday implementation. For example, expert scientists develop robust processes that enable high-volume testing in an analytical laboratory. Work in the Knowable domain relies on expert knowledge that is invisible to non-experts and the public. Decisions are best made using a *Sense - Analyse - Respond* approach followed by the application of *good* practice. Since knowledge here is still open to challenge, managers rely on expert knowledge.

In the **Complex** domain, the relationship between cause and effect can only be perceived retrospectively. Experts must investigate the context further to allow its underlying patterns to emerge through a *Probe - Sense - Respond* approach that allows *emergent* practice. Possible solutions are hypothesized, tested and outcomes assessed for success – patterns are managed. Order and knowledge are invisible to the public. The development of prototypes is an example of an activity that takes place in the Complex domain.

In the **Chaos** domain there is no relationship between cause and effect. There is often a perception of crisis, of a need for quick, decisive action that will impose order and "staunch the bleeding" (Snowden and Boone 2007, p. 74). Contexts are turbulent and unconnected. No one is put in charge, rather someone takes charge. Decisions are best made using an Act - *Sense - Respond* approach that discovers *novel* practice. Contexts that exemplify the Chaos domain are the very early days of the outbreak of the Sudden Acute Respiratory Syndrome (SARS) in 2003, the immediate aftermath of the Boxing Day Tsunami in 2003 and Hurricane Katrina in 2005.

The fifth domain, **Disorder**, is not a knowledge domain, rather it is the destructive state of not knowing which way of working is best, a domain where past experience is the only reference people have (Mark 2006). Unfortunately, this experience is often inappropriate for the context at hand. The harmfulness of contexts in the domain of Disorder indicates that this

domain should be kept as small as possible through encouraging decision makers to achieve consensus about the nature of, and the most appropriate response to, a problematic context.

Figure 1 is a visual representation of the Cynefin domains and the overall sense of movement in both clockwise and anti-clockwise directions.

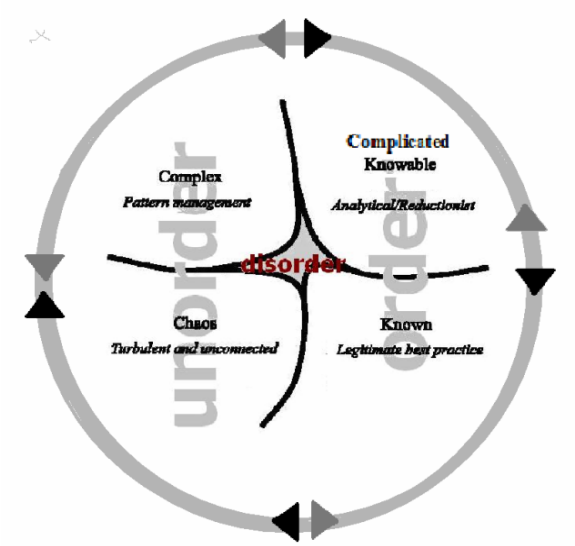

Figure 1: The Cynefin Domains and Natural Movement between them (Adapted from Kurtz and Snowden 2003)

Movement between the Domains

Movement between the domains occurs naturally. There is a natural drift in a clockwise direction over time: from the visibly unordered Chaotic, to Complex where the patterns of cause and effect are identified retrospectively, to Complicated where the patterns of cause and effect are tested for reproducibility, to the visibly, ordered Simple domain where the stabilized knowledge of cause and effect are harnessed as known solutions as part of everyday ritual. In everyday terms this happens as people live together, share mutual concerns and experience, then as ideas emerge, "convenience leads to stabilization and ordering of the ideas; tradition solidifies the ideas into ritual" (Kurtz and Snowden 2003, p. 479). Simultaneously counter-clockwise movement occurs as the forces of the future counter those of the past at times disrupting what seemed to be settling into a predictable, manageable space. Counter-clockwise forces include obsolescence and forgetfulness, the arrival of new challenges, and the curiosity and energy of new generations or outsiders who break the rules, question the current order of things or validity of established patterns, radically shifting the

power and perspective. Just as there is benefit in the taming of chaos through the natural clockwise movement between the domains, there is benefit when counter-clockwise movement leads to new knowledge, new perspectives and better, though different, ways of knowing and working. Both directions of movement are captured in Figure 1.

The Cynefin framework provides a set of lenses with which to examine the different activities systems that comprise these evolving complex multi-stakeholder organisational contexts. It support examination of the context at hand, of acknowledging the appropriateness of diverse perspectives brought to decision making, knowledge management and mobilization, and of recognising contested situations where clarification and improved understanding is needed.

The paper now demonstrates the use of the Cynefin framework to provide an analysis of anti-doping work in sport. The section begins with a description of the research context.

Research Context

The study investigated the activities of expert scientists in the non-profit, global context of anti-doping work. The study's qualitative design integrated methods from the case-study approach (Eisenhardt 1989), grounded theory methods (Strauss 1990; Fernández 2004; Glaser 2004). Data for the study was collected through surveys and interviews conducted between 2002 and 2004, from public documentation, and from observations of and feedback after presentations of interim study findings at scientific meetings between 2002 and 2006 and on public documentation between 2007and 2009. The forty three study participants were drawn from the population of scientific directors of accredited anti-doping laboratories situated around the world and representatives of other anti-doping stakeholder groups, including national and international anti-doping agencies, sports organisations, sports physicians and lawyers, coaches, as well as journalists and scientists with an interest in anti-doping work. Documentation was sourced from English language media and from the websites of organisations associated with anti-doping work. Thematic analysis of individual responses to open ended survey questions, interviews and documentation and reporting of findings to participants and stakeholder groups (Kazlauskas and Crawford 2004; 2005; 2006; Kazlauskas 2007; Kazlauskas and Crawford 2008) in the style of Developmental Work Research (Engeström 2005) led to co-construction of the study's findings. The analysis was informed by the extant literature as a data stream in the manner of Fernández (2004). Participants' responses to written commentaries and presentations provide a mechanism to ensure that the researcher's interpretation of the participants' data was open for comment

from the community, and to build trust between the anti-doping community and the researcher. The resultant approach to theory building was thus grounded, iterative, and participative.

An Overview of Anti-doping Work

Eradicating doping in sport has proved a wicked problem whose solution is sought by multiple national and international organisations and expert professionals with diverse perspectives, knowledge and skills. Whilst sport and doping in sport are ancient practices (Houlihan 2002), efforts to control doping in sport are a recent and changing activity. Doping scandals at recent Olympic Games and international competitions testify to the problem's ongoing nature. Doping methods used by athletes have become highly sophisticated and harder to detect and the involvement of both athletes and non-athletes in doping has been recognised. Both public and stakeholder perceptions together with the history of doping in sport suggest that making better sense of the anti-doping work will benefit both anti-doping practitioners and the public.

Anti-doping work began in the first half of the twentieth century with the promulgation of rules prohibiting doping by a small number of international sporting organisations, notably those for athletics and cycling. Since then many different professions have become involved in anti-doping work. Lawyers act in cases where an athlete has been charged with doping, scientists test samples looking for evidence of doping, educators inform athletes about the dangers of doping, why doping is unacceptable behaviour and what substances they should not take, doctors address the medical aspects of the doping problem, governments develop and implement anti-doping programs at a national level, international agencies coordinate anti-doping work in the global context, investigation and policing agencies look for evidence of doping and the trafficking of substances for doping in sport. The general sports-loving public is unaware of the multi-faceted nature of the doping problem and how anti-doping work is organized and administered.

From a Cynefin perspective, each sport doping scandal threatens to return the public's perception of doping to a situation that is out of control, in disorder or chaos. A perception that athletes or non-athletes involved in doping will be identified and either sanctioned or prosecuted situates anti-doping work in the Simple domain. A perception that many athletes and non-athletes who are involved in doping are not being "caught" threatens to situate the entire context of anti-doping work in the Chaos domain. There is little sense of the complex

and complicated challenges that doping in sport presents neither to its various anti-doping stakeholder groups, nor of the strategic diversity necessary to tackle this wicked problem. For the public, the lack of a suitable strategy to address one particular aspect of the doping problem leads to an overall perception of anti-doping work as ineffective and doping in sport as chaotic.

Analysis of the spatial and temporal dimensions of this increasingly dense organisational web with the Cynefin framework makes sense of the evolution of the dynamic nature of anti-doping work and provides insights into the challenges doping presents anti-doping professionals.

Making Sense of Anti-Doping Work with the Cynefin Framework

Our Cynefin informed sense-making analysis of the data led to the identification of seven strategies concurrently used to address the problem of doping in sport. New strategies evolved as further aspects of the problem were identified and then addressed by framing an aspect of the problem of doping in terms that a particular stakeholder group could address, providing another partial solution to add to those already in place. The strategies and their interpretation in Cynefin terms are described below.

Strategy A: Sporting Organisation Rules and National Laws Prohibiting Doping in Sport

In the early twentieth century, the sporting public knew about doping in sport and that nothing was being done about it. A few sporting organisations and governments saw doping as counter to the spirit of sport, cheating and medically dangerous behaviour that needed to be stopped. In Cynefin terms, the subsequent promulgation rules and laws, the first anti-doping strategy, attempted to impose order on this visibly unordered, chaotic situation to move it to the visibly ordered Simple domain. As doping techniques and anti-doping work evolved, regulators were presented with situations which in Cynefin terms would be located in the Complex or Complicated domains. Examples include acceptance of the presence of metabolites but not a doping substance as evidence of doping, or failure of a prosecution because of a loophole in the regulations.

Strategy B: Scientific Detection of Doping

In the absence of a means of determining whether or not an athlete had doped, athletes continued to dope. Anti-doping workers were in Disorder, they did not have an effective strategy to combat doping in sport. Publicly, doping in sport was out of control – in Cynefin's Chaos domain. Framing anti-doping work as the scientific detection of doping introduced a second strategy. The need to identify the underlying patterns that would enable detection of doping substances initially situated this anti-doping activity in Cynefin's Complex domain. Newly uncovered knowledge was refined in the Complicated domain to generate robust legally defensible methods that could be used routinely in the Simple Domain. Confirmation of the presence of a banned substance would enable the rules of strategy A to be acted upon. As scientific research and legal scrutiny pointed to problems with the methods, scientific anti-

doping work doping moved to the Complicated domain for additional refinement. As doping techniques advanced eg blood doping or erythropoietin (EPO), scientific anti-doping work in the Complex domain searched for the underlying patterns that would enable detection. With strategies in place that regulated against doping and detected athletes' use of doping substances, the need for organized anti-doping programmes soon became apparent.

Strategy C: National and Sport-based Anti-doping Programmes

Following 100 metre sprint gold medallist Ben Johnson's disqualification for doping during the 1988 Olympic Games, doping in sport was once more seen by the public as out of control. Anti-doping workers were again in Disorder as existing strategies had proved ineffective at the highest level. Framing doping in sport as a social problem resulted in the third anti-doping strategy. Government and sporting organisations resources were directed towards the development and implementation of organised regular testing and athlete education programs that would ensure that samples would be collected from competing athletes for analysis and that all athletes would be educated about the health dangers of doping, the ethical reasons why it was unacceptable, and what substances and techniques constituted doping. The visible success of these programs aimed to restore public credibility and trust in the anti-doping efforts. Doping would be visibly under control in the Simple domain, brought about by anti-doping work in Cynefin's Complicated domain that drew on experiences in public health and sport education programs. Since the introduction of this third strategy, anti-doping workers involved in this strategy worked in Cynefin's Complicated domain to address problems relating to management of the analytical results generated by the laboratories, therapeutic use exemptions and unannounced out-of-competition testing of the elite athletes. Continuing use of drugs by some athletes has raised questions about the underlying causes of doping and the need to base anti-doping programs on these causes. The research to answer these psychological and social aspects is situated in Cynefin's Complex domain.

As these strategies took effect, the general movement of anti-doping work was in the clockwise direction from Chaos towards the Simple domain as the work of various anti-doping strategy stakeholders addressed the multiple facets of doping problem. However, a steady trickle of high profile sports doping cases highlighted the lack of consistency between the ways in which sports doping cases were handled by different countries and various sports. The threat of a public perception that anti-doping work was ineffective and chaotic persisted. In Cynefin's Disorder, anti-doping workers recognised the limits of their expertise and looked to an additional anti-doping strategy.

Strategy D: International Harmonization

In the late 1990s, doping in sport was framed as a international problem whose solution required global cooperation. Response to this perspective would require international diplomacy to achieve agreement to and ratification of policy documents by governments and sporting bodies around the world to harmonise strategies to deal with doping in sport. The World Anti-Doping Agency, WADA, was established in late 1999 to being about the desired inter-governmental agreements, including the 2003 UNESCO convention, oversee the development of, and agreement to, the World Anti-Doping Code, strict international standards for laboratories and testing, and models of best practice for those involved in doping control work. WADA's efforts in Cynefin's Complicated domain moved the perception of anti-doping work from that of a globally-visible, inconsistently chaotic context to one whose standard rules and operating procedures could be applied consistently in Cynefin's Simple domain to all elite athletes whatever their sport or nationality.

National and sports programs continued to experience difficulties with unannounced out-of-competition testing because of the highly mobile elite athlete population who trained and competed anywhere in the world. At the same time, WADA needed an efficient means to monitor adherence to its Code and Standards. Framing these problems as one of information management led to the development of the fifth anti-doping strategy, one that called for expertise in the field of information management and associated support systems.

Strategy E: International Anti-doping Information Management

Information management to support unannounced testing, Code and standards' adherence has undergone a process of incremental improvement since its inception. Initial use of phone, fax and email by athletes, laboratories, sports' national anti-doping organisations has been replaced with the web-based Anti-Doping Administration Management System (ADAMS). Drawing on our earlier work (Hasan and Kazlauskas 2009), the development of ADAMS can be placed in Cynefin's Complicated domain.

Recognition that anti-doping workers had neither the expertise nor authority to address non-athlete facets of the wicked problem of doping, the "doping underground – the traffickers, the entourages, the 'upstream' organizers of doping on a broad scale" (Pound 2007), generated the two most recent anti-doping strategies: investigations into athlete entourage involvement in doping activity, and trafficking of doping substances.

Strategy F: Investigation, Identification and Prosecution of Non-athletes Involved in Doping

The doping scandals of the 1998 Tour de France pointed publicly to the involvement of the athletes' entourage in doping activity. International meetings about how non-athlete involvement in doping could be addressed led to awareness that the necessary expertise required investigative skills and greater cooperation between anti-doping and law-enforcement agencies. The Australian Sports Anti-Doping Authority (ASADA) is an example of this type of investigatory anti-doping activity. Whilst the generation of this additional strategy occurred in the domain of Disorder, much of this strategy's investigative activity takes place in Cynefin's Complex and Complicated domains.

Strategy G: Trafficking

The discovery of athletes' use of designer steroids made by the Bay Laboratory (BALCO) (Catlin, Sekera et al. 2004; Ritter 2005) led to the framing of a new facet of anti-doping work: trafficking. Identifying and prosecuting traffickers of sports doping substances takes place in the Complex and Complicated domains where international agencies, such as Interpol, and customs and policing agencies in various countries use their publicly invisible expertise in drug trafficking to address the problem of trafficking sports doping substances.

We offer Figure 2 as a visibilisation of this expanded Cynefin-informed understanding of anti-doping work. The situations referred to in each of the strategies described above have been made visible through their situation in appropriate Cynefin domains. Whilst there is an overall clockwise movement of each existing strategy as its effectiveness takes hold, there are many "dances" along the way as various anti-doping stakeholder groups bring their expertise to bear on the frequent diverse challenges and unexpected problems associated with the wicked problem of doping in sport.

Conclusion

Doping in sport is one of many problems that beleaguer societies around the world. The general public wants this and other wicked problems such as climate change, poverty and biosecurity solved, Societies rail against what they perceive as the ineffective attempts of national and international organisations that leave the problems unsolved. Recognising these problems as 'wicked' problems enables organisations, stakeholders and the public to view them differently. The use of the Cynefin framework allows the invisible to be made visible (Linger and Warne 2001) through modelling the processes that have contributed to and continue to contribute to the viability of a dynamic global public sector multi-stakeholder organisation and the complex task it performs. This paper's analysis of anti-doping work presents the organisation of anti-doping work as a dynamic response to the wicked problem of doping in sport. Both the compound evolving nature of the problem and the temporal and spatial dimensions of work directed towards solving that problem have been made visible. Whilst anti-doping's diverse stakeholders are united by a shared motive: "a vision of the world that values and fosters doping free sport" (WADA n.d.), their dissimilar histories and knowledge backgrounds have the potential to weaken their understanding of, or perhaps lead to a clash between, stakeholders' perspectives. This visibilisation allows stakeholders to make sense of the kaleidoscope of current approaches and the complexity of the environment within which they work. By making normally invisible expert stakeholder work visible, the Cynefin lens makes apparent the ordered / unordered and the simple / complicated / complex contributions of each stakeholder group. It highlights the manner in which newly recognised and/or ongoing aspects of the problem of doping in sport have triggered new anti-doping strategies. In anti-doping work, we see the trigger for the involvement of an additional stakeholder group as a public perception that doping in sport is rampant and existing strategies are not working: that anti-doping work is in Chaos but a private recognition by existing stakeholders of their lack of the necessary skills to address a newly recognised facet of the doping problem.

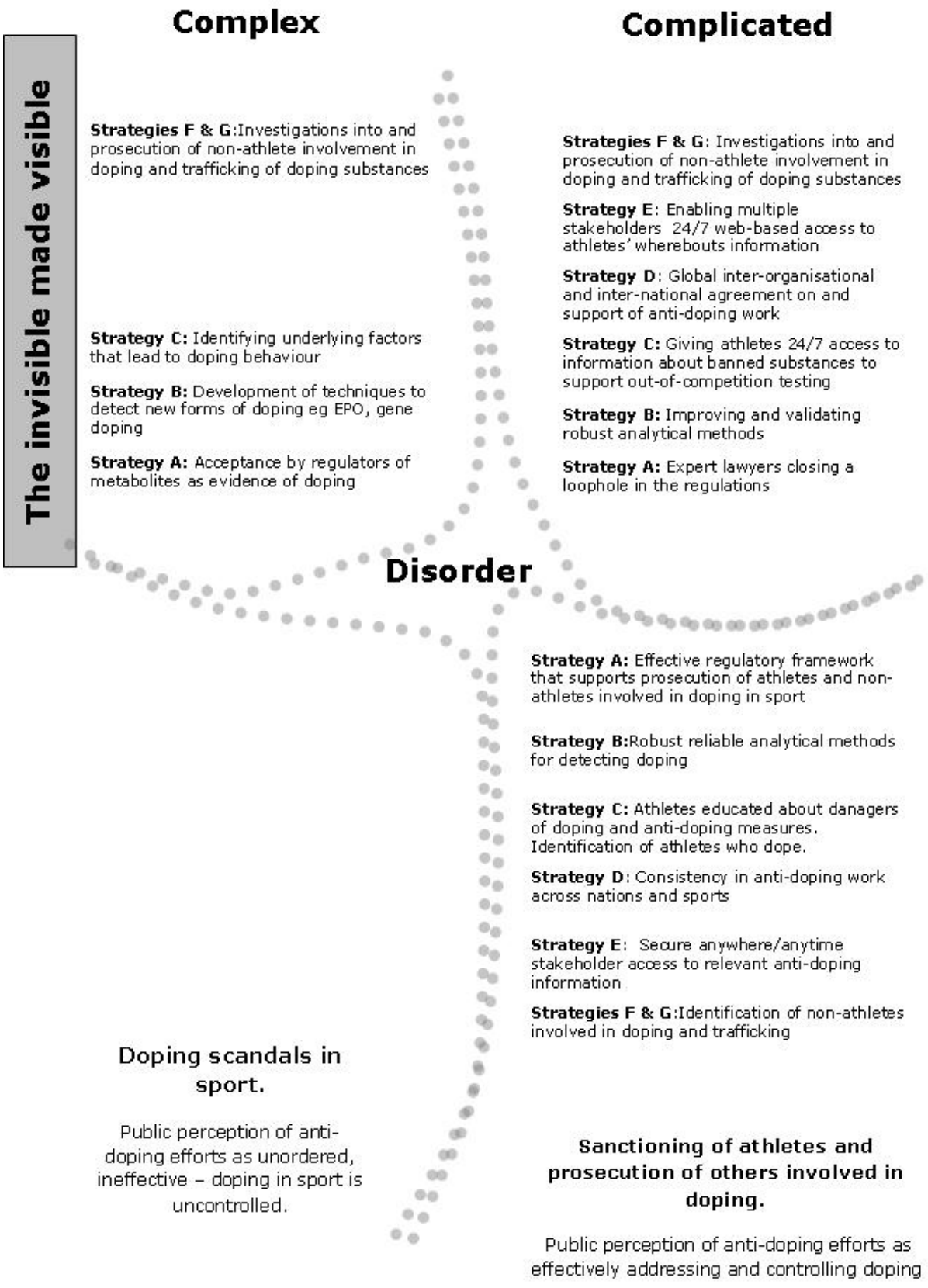

Figure 2: A Cynefin-informed Visibilisation of Global Anti-doping Work

The Cynefin framework compels "communities of practitioners to recognize the need to introduce requisite levels of variety into their thinking, and avoid single models of practice and strategy" (Snowden 1999, par. 1)**.** A Cynefin informed model of a complex evolving context can also increase stakeholders' self-awareness and understanding of biases and potentials, both their own and those of others. Stakeholders develop the ability to recognise the need for additional expertise and to expand their strategies. When presented with an earlier Cynefin informed model of anti-doping work (Kazlauskas 2007), anti-doping scientists commented that this model provided them with a new way of looking at their work and contributions to anti-doping efforts. Others participants commented on the dynamic nature of the context and that description of the anti-doping context at that time would need revision in the not too distant future as new stakeholder groups were integrated into anti-doping work. Making sense of the nature of knowledge, visibility, order and movement in their own and other stakeholders' workspaces untangles, or deconstructs, anti-doping work and its evolution. The Cynefin framework enhances all stakeholders' understanding of the difficulties faced by particular stakeholder groups and clarifies the most appropriate Cynefin domain for addressing the problem. Further, the framework enhances stakeholders' abilities to view problems as being able to be addressed by a particular stakeholder group with the appropriate, as ones in need of collaboration between stakeholders, or one ones where new expertise and new collaborations are required.

The Cynefin framework also has the capacity to inform non-stakeholders, the public, and to change their perceptions of wicked problem solving in contexts such as doping in sport by making visible the diversity within the context and its increasing dependence on the efficient and effective management of knowledge within the context. This is particularly important as the pressure for an ordered definition of the discipline usually comes from others external to the area mainly our institutions associations and funding bodies. The Cynefin frameworks provides external others with the opportunity to assess which aspects of a wicked problem have been addressed and now lie in the Simple domain and which stakeholder group's Simple domain that is. It provides a way of acknowledging those aspects of a problem solution that are in need of refinement and which stakeholders have the expertise to achieve that refinement, of recognising those aspects that are in need of further probing and in whose Complex domain that might best take place and finally those aspects of a context that lie in the Chaos domain and are in need of framing by experts both within and outside the community of those currently working on the problem.

We recommend the Cynefin framework to managers, other professionals and stakeholders working in this and other non-profit contexts as a tool that provides insights that will improve their ability to mobilize knowledge, to make better decisions and to manage in complex evolving contexts by making the invisible visible for all to see.

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