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Beyond Technique – The Limits of Books (and Online Videos) in Developing Self-Defence Coaches' Professional Judgement and Decision Making in the Context of Skill Development for Violent Encounters

Mario S. Staller
University of Applied Sciences of Police and Public Administration North Rhine Westphalia
mario.staller@hspv.nrw.de

Swen Körner
German Sports University Cologne
koerner@dshs.koeln.de

Andrew Abraham
Leeds Beckett University
A.K.Abraham@leedsbeckett.ac.uk

Abstract – The depiction and description of body techniques of combat have always been a part of martial arts culture. For example, self-defence techniques of the Israeli system of Krav Maga have routinely been depicted and described in books. More recently, the dissemination of similar knowledge has been presented within emerging modern technologies such as online videos and blogs. We argue, however, that such approaches limit and may even harm the development of professional judgement and decision making of self-defence coaches. By focusing on (a) the distinction between declarative and procedural knowledge and (b) the complexity and non-linearity of self-defence situations, we point out the limitations of the depicted and described knowledge in these media (or channels) of communication. In essence, we argue that the focus on providing procedural knowledge to coaches promotes a view that self-defence skill development is linear. These foci ultimately will limit the adaptability of the coach in creating effective skill development programs for practitioners who need to be able to cope with complex dynamics of real world violence.

Keywords – declarative knowledge, procedural knowledge, self-defence, skill development, coaching, complexity, nonlinearity

I. INTRODUCTION

The depiction and description of body techniques of combat have been part of martial arts culture for centuries.[1] Knowledge about techniques, tactical behaviour, and training activities has been put mainly into book format, but with the emergence of modern technologies similar knowledge is now also conveyed via online videos and blogs. Since coaches regularly use books and online resources for their education,[2] it is essential for the reflective practitioner to critically reflect on the knowledge provided.[3] Therefore, the current paper aims to critically discuss the limits of media in the acquisition of knowledge for coaches. In pursuing this aim, we start by framing professional coaching as a process of forming judgements and decisions that facilitate the achievement of desired outcomes for the athlete. We go on to describe the types of media that convey knowledge about the management of violent confrontations and the format in which this knowledge is presented. Then, we focus on the complexity and nonlinearity of self-defence situations and the associated coaching process, before discussing the distinction of procedural and declarative knowledge in these domains. We conclude by arguing that the focus of instructional media is predominantly on procedural knowledge and a linearity of development, which limits the decision-making of coaches in creating effective skill development programs.

II. COACHING AS A PROFESSIONAL JUDGEMENT AND DECISION MAKING (PJDM) PROCESS

One key limitation identified in the development of coaches has been the lack of a reflection on what coaching is. As Abraham, Muir, and Morgan argue,[4] having an understanding of what is being developed before trying to develop it should be commonplace, but often is not. An approach currently gaining traction in the literature is to consider coaching as a decision making process. That is, coaching is a task undertaken by a coach, and in a carrying out this task, coaches make ongoing decisions that may be about macro strategic goals, meso planning goals, or micro moment-to-moment goals.[5] For example, a Police Use of Force (PUOF) coach may have strategic goals of reducing the number of police injuries caused through physical engagements. To work towards this goal, they develop a long-term training plan to upskill police officers in self-defence. At a day to day level these strategic and planning goals guide coaching tasks and interactions to create effective learning environments. Viewed in this way, coaching is a complex cognitive activity requiring the capacity to solve numerous interconnected problems. Such a level cognitive capacity is

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[1] Burkart, 'Limits of Understanding in the Study of Lost Martial Arts'.

[2] Stoszkowski and Collins, 'Sources, topics and use of knowledge by coaches'.

[3] Schön, *The reflective practitioner: How professionals think in action*, and Körner and Staller, 'Quellen, Themen und Wissenseinsatz von Einsatztrainer*innen'.

[4] Abraham, Muir, and Morgan, *UK Centre for Coaching Excellence Scoping Project Report*.

[5] Abraham and Collins, 'Effective skill development: How should athletes' skills be developed?'.

dependent on having a depth of knowledge across a number of domains (we will return to this in more detail later in this paper) and a capacity to employ that knowledge, through judgement and decision making, to set and solve these real world problems.

Our addition of "professional" to the judgement and decision-making view of coaching reflects work in similar domains, such as sport psychology practice in cricket and adventure coaching, the argument being that if a depth and breadth of knowledge is required to deal with complex cognitive tasks a level of professionalism is being inferred.[6] Such an inference carries with it a need for the practitioner to be able to draw on theoretical and practical expertise.[7]

We argue that taking this view on "what coaching is" has implications for developing coaches. It also offers a reflection point to examine current approaches to coaching development. How well are coach development methods developing theoretical and practical expertise?

III. SELF-DEFENCE KNOWLEDGE IN MEDIA

Key sources of knowledge for many self-defence coaches are the various forms of media. Techniques are depicted and described in many books of different martial arts, for example in judo,[8] jiu-jitsu,[9] krav maga,[10] and other so-called "reality-based self-defence systems".[11] Besides knowledge about the execution of self-defence techniques, books about self-protection also cover other domains of knowledge such as tactical behaviour,[12] mindset,[13] and training drills.[14]

While images and written descriptions have been used for centuries, the use of videos for the dissemination of self-defence knowledge has only been possible due to the invention and spreading of systems allowing for watching of videos on demand (VHS, DVD, Blu-ray, etc.). With increasing bandwidth of internet services and the invention and rise of smart phones, online videos, and apps, self-defence content is easily available and just one click/tap away. As such, explicit self-defence knowledge is now also transmitted via online

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[6] Collins, Collins, and Carson, "'If it feels right, do it": Intuitive decision making in a sample of high-level sport coaches'; Crowther, Collins, and Holder, 'What you think – What you do – What you get?'; Martindale and Collins, 'A professional judgment and decision making case study'.

[7] Carr, 'Professional education and professional ethics'.

[8] Linn, 'Judobezogene Selbstverteidigung'.

[9] Heim and Gresch, *Ju-Jutsu 1: Grundtechniken - Moderne Selbstverteidigung.*

[10] Lichtenfeld, and Yanilov, *Krav Maga - How to defend yourself against armed assault*; Levine, and Whitman, *Complete Krav Maga.*

[11] Dzida, Hartunian, and Santiago, *The ultimate guide to reality-based self-defense.*

[12] Wagner, *Reality-based personal protection.*

[13] Asken and Grossman, *Warrior mindset.*

[14] Miller, *Training for sudden violence.*

videos,[15] online video platforms like YouTube, social media, and apps. The convenience of access to these knowledge bases is valued by coaches working in different contexts.[16] In the area of self-protection, a study about the sources and use of knowledge in police use of force training revealed that coaches obtain coaching knowledge through books and the internet.[17] Convenience of access was stated as a main reason for choosing a specific route of knowledge acquisition.

It is worth noting that knowledge about self-defence is not only gathered via instructional media but also by oral tradition. Our knowledge about the world in general, however, is heavily influenced by the media.[18] Popular culture particularly seems to convey a lot of knowledge about the practice of martial arts.[19] A deeper analysis of knowledge structures that are conveyed implicitly via popular culture is beyond the scope of this paper, since we focus on instructional media aimed explicitly at the delivery of skills for self-defence training and real-world application.

The formats of the content delivered explicitly over various forms of media relate to two different environments. The first of these is the criterion environment, where self-defence performance takes place in the real world, and the second is the learning environment, where skills are acquired and developed in order to become able to be performed in the criterion environment.[20] In both environments, the general format of explicit instructional media about self-defence can be described as an "if-then" format. For the criterion environments, media describe the use of a technique or a specific action (X) if a specific situation (S) occurs. S can be a specific cue, like the drawing of a knife or a specific attack, such as a punch to the face. For learning environments this format can also be observed regarding training activities. While the emphasis is on describing the drill or the exercise (Z), there is an underlying assumption of a specific situation where this activity is located in the training regimen. For example, if somebody wants to improve decision-making capacity in a training situation (T), the trainee has to engage in training activity Z.[21]

The "if-then" format thus describes a linear relationship that is an underlying assumption of the structure of violent encounters and the associated training. In order to help the reader to understand the problematic nature of this assumption, we briefly describe the nonlinearity and complexity of real world violence and their implications for self-defence training.

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[15] MaxKravMaga.com.

[16] Stoszkowski and Collins, 'Sources, topics and use of knowledge by coaches'.

[17] Körner and Staller, 'Quellen, Themen und Wissenseinsatz von Einsatztrainer*innen'.

[18] Luhmann, *Die Realität der Massenmedien.*

[19] Körner and Staller, 'Es kommt drauf an: Zur Komplexität des Kämpfens'.

[20] Staller, Zaiser, and Körner, 'From Realism to Representativeness'.

[21] Miller, *Training for sudden violence.*

IV. COMPLEXITY AND NONLINEARITY

Complexity and nonlinear dynamics are crucial for the understanding of behavioural and social phenomena.[22] In chaos and complexity research, as well as different types of dynamical systems theory, a system's behaviour is characterised by nonlinearity.[23] Nonlinear behaviours can be observed in social systems such as economics, law and politics,[24] psychotherapy,[25] violent encounters,[26] coaching in general,[27] and self-defence coaching in particular.[28] Within these systems nonlinearity appears as a trait of complexity.[29] These types of systems are complex because they consist of interdependent elements and element relationships that interact with each other through competitive nonlinear collaboration, leading to self-organised, emergent behaviour.[30] The available number of possible elements and events exceeds the internal capacity of linkage. As such, a complex system cannot be fully explained by an understanding of its component parts.

Complexity leads to a relativisation of the weak and strong assumptions of causality that are present in the context of linear systems.[31] Weak causality states that the same causes lead to consistent results. Strong causality states that similar causes produce similar effects, i.e., weak changes in the initial conditions result in slight deviations in the results. Both cases are based on the assumption of a proportionality of cause and effect. In linear systems, effects of the changes to the state of the system are additive and proportional to the magnitude of the changes (Wilkinson, 1997).[32] Changing multiple parameters simultaneously is simply a superposition of the change in each individual parameter. Consequently, the different parameters of the system may each be studied separately due to the additive nature of changes to the system. As such, linear systems are time-reversible and predictable. The linear nature ensures, that "past and future may be deduced with arbitrary precision from the present state".[33] The behaviour of such systems is calculable. In contrast, nonlinear contexts are characterised by a double nonproportionality:[34] the nonproportionality of cause and effect in the sense of (a) strong causality (minimal/maximal changes can cause

[22] Schiepek, 'Komplexität, Berechenbarkeit und Big Data in der Psychologie'.

[23] Simon, *Einführung in Systemtheorie und Konstruktivismus*.

[24] Luhmann, *Die Realität der Massenmedien*.

[25] Schiepek, 'Komplexität, Berechenbarkeit und Big Data in der Psychologie'.

[26] Jensen and Wrisberg, 'Performance under acute stress'.

[27] Cushion, 'Modelling the complexity of the coaching process'.

[28] Körner and Staller, 'Es kommt drauf an: Zur Komplexität des Kämpfens'.

[29] Ibid.

[30] Sengupta, 'Chaos, nonlinearity, complexity: a unified perspective'.

[31] Simon, Einführung in Systemtheorie und Konstruktivismus.

[32] Wilkinson, 'Nonlinear Dynamics, Chaos-theory, and the "Sciences of Complexity"'.

[33] Ibid., p. 3.

[34] Körner and Staller, 'Es kommt drauf an: Zur Komplexität des Kämpfens'.

maximal/minimal effects) and (b) weak causality (state A can be the cause of effect B, C, or D, etc.). As such, the effects of changing individual parameters cannot be studied separately as in linear systems. Past and future are not deductible from the present state of the system. Randomness is part of its mechanics.[35] In essence complexity is characterised by a limited predictability.[36] With regards to the decisions that have to be made in the context of a complex system (e.g. coaching or physical conflict situation), determining the "right" course of action is clouded by the level of complexity. The more complex a situation gets, the harder it gets to determine the "right" decision.[37]

In order to formally describe situations of different complexity and the associated decision options, researchers in the sport domain have proposed using graphs (Raab 2003) that represent the decision options from the perspective of the acting individual and the attributes that influence this decision. The complexity of a situation can then be calculated "by counting the number of components (options and attributes) and the number of connections between them".[38] Hence, the complexity of a situation increases when (a) the number of decision options increases and their detectable differences decrease, and (b) the number of attributes used to define a situation and the relation between situations and decisions increases.

The capacity to cope with complex situations varies individually.[39] As such, in order to cope with complex situations and to operationalise decision making, complexity is regularly reduced.[40] For example, in pursuance to describe optimal decisions in sport situations for specific combinations of situational variables, combinations of the representation of the situation and the possible options can be defined as "if-then" rules.[41] However, there is a major problem of reducing complexity: using a reductionist representation of a complex system may lead to a reduced understanding of the system by individuals who use the reductionist representation.[42]

For example, the underlying logic of "if-then" rules is a linear causality,[43] an assumption that is not necessarily true for complex systems. Individuals learning to understand a complex system like violent confrontations or coaching within this context may lack understanding of the complexity of the system if learning only via dualistic "if-then" rules. Even though the limits of "if-then" rules have been accounted for in decision making in

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35 Wilkinson, 'Nonlinear Dynamics, Chaos-theory, and the "Sciences of Complexity"'.

36 Schiepek, 'Komplexität, Berechenbarkeit und Big Data in der Psychologie'.

37 Luhmann, 'Zur Komplexität von Entscheidungssituationen'.

38 Raab, 'Decision making in sports', p. 409.

39 Schiepek, 'Komplexität, Berechenbarkeit und Big Data in der Psychologie'.

40 Luhmann, 'Zur Komplexität von Entscheidungssituationen'.

41 Johnson, 2006 and McPherson & Thomas, 1989 not in the bibliography and

42 Luhmann, 'Zur Komplexität von Entscheidungssituationen'.

43 Schöllhorn et al., 'The nonlinear nature of learning'.

sports,[44] in coaching[45] and self-defence training,[46] "the use of 'if-then' rules still appears to be the dominant framework that guides training".[47]

Likewise, conceptualising violent encounters as linear systems for coaching purposes has a plausible appeal. Having certain rules makes that acting individual feel safe when thinking about coping with uncertain situations. Furthermore, this format is easy to capture on pictures, describe in texts, or explain on video: if somebody attacks you like A, then do X; if somebody attacks you with B, then do Y. The same is true for the coaching process: the vast amount of available drill books and online videos about drills and training activities suggest the prominent status of the "if-then" framework in self-defence coaching: if your trainees lack A, then do training activity X; if you want to develop B in your trainee, then practice Y.

Complexity theorists have argued that reducing complexity for short periods in time within the learning process is not necessarily a bad thing.[48] For example, it is argued that many nonlinear systems can be approximated by linear systems to such a degree that there is no need to solve the more complicated nonlinear form.[49] So, using and relying on "if-then" rules in self-defence training and coaching may have its benefits, but also has its limitations.

In both environments, the format has some similarities with gastronomy. The "if this, then that" format is like a recipe book. A cook who does not have a large amount of knowledge about why different ingredients taste like they do, and how different approaches to cooking change the final flavour of the dish, simply buys a recipe book and recreates the dish. This, however, only works under the assumption that (a) the basic situation is the same and (b) nothing goes wrong in practice (due to their own mistakes or a changing situation). If, for example, an ingredient is out of stock (a) or two more guests confirmed their attendance after cooking has begun, the cook is confronted with new or different problems and does not have a solution for the arisen problem. To complete the analogy in self-defence, this means that techniques of drill books (and media) are problematic if you don't know the specific situation and why the technique or training activities work in that situation.[50]

For those trying to develop competencies to cope with physical conflict situations, this means, that (a) functional variability from a psycho-motor point of view and (b) adaptive flexibility based on sensemaking informed recognition primed decision making from

[44] Johnson, 'Cognitive modeling of decision making in sports'.

[45] Abraham, Collins, and Martindale, 'The coaching schematic'.

[46] Körner and Staller, 'Es kommt drauf an: Zur Komplexität des Kämpfens'.

[47] Abraham, Collins, and Martindale, 'The coaching schematic', p. 634.

[48] Luhmann, 'Zur Komplexität von Entscheidungssituationen'.

[49] Wilkinson, 'Nonlinear Dynamics, Chaos-theory, and the "Sciences of Complexity"'.

[50] Abraham and Collins, 'Effective skill development'.

conflict and conflict avoidance situations are needed.[51] Given how hard this is to develop, coaches need to have a capacity to solve the problem of developing a person over a long period of time through designing effective learning programs. Based on the described observations with regards to self-defence media, we currently feel that the opposite is happening. Rather than developing the coaches' adaptability to develop adaptable self-defence practitioners, online material is offering a simplistic view of the problems facing self-defence practitioners and compounding this by offering coaches simplistic measures of developing these practitioners. The problem underlying these limits refers to the difference between declarative and procedural knowledge, the inherent complexity of violent encounters[52] and coaching situations[53] and the associated decision-making.

V. DECLARATIVE AND PROCEDURAL KNOWLEDGE

In order to understand decision-making in the criterion and learning environment it is worth understanding knowledge and how it is acquired and used in these contexts. A theory about the use of knowledge content, structure, and development was first put forward by Anderson.[54] According to the theory, knowledge content can be split into declarative and procedural knowledge. The first, declarative knowledge, refers to the accumulation of a propositional network of facts.[55] It represents the "why" knowledge or the knowledge of understanding. The second, procedural knowledge, can be viewed as the "doing knowledge" or knowing how to do something.[56] The separation of these two knowledge structures explains how one can exist without the other.[57] The self-defence practitioner who does something (procedural) without knowing why (declarative), or the self-defence researcher, who knows why something works (declarative) but cannot apply that knowledge practically.

Anderson further divided procedural knowledge into broad procedural knowledge and specific procedural knowledge. While broad procedural knowledge enables the individual to approach similar problems in a standard way, specific procedural knowledge is specific to very few situations (or even just one). Regarding violent encounters, self-defence coaches could provide the general procedural rule that practitioners should not move between multiple attackers, but there may be situations where not moving between the attackers could be negative for the overall outcome of the situation.

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51 Staller and Zaiser, 'Developing problem solvers'; Boulton and Cole, 'Adaptive flexibility examining the role of expertise'; and Preddy, Stefaniak, and Katsioloudis, 'The convergence of psychological conditioning'.

52 Körner and Staller, 'Es kommt drauf an: Zur Komplexität des Kämpfens'.

53 Bowes and Jones, 'Working at the edge of chaos' and Cushion, 'Modelling the complexity of the coaching process'.

54 Anderson, 'Acquisition of cognitive skill'.

55 Ibid.

56 Abraham and Collins, 'Examining and extending research in coach development'.

57 Abraham and Collins, 'Effective skill development'.

One of the key principles to come from this theoretical analysis is to consider what form of knowledge facilitates adaptability since this is a key goal coming from the non-linear view of development and practice. Two answers are presented below.

In general, humans are able to adapt to day-to-day or moment-to-moment uncertainty by the use of heuristics.[58] Heuristics are developed implicitly through everyday interactions with the world. They work by offering shortcuts to finding solutions to everyday problems. For example, in an initial confrontation with a potentially violent person, a police officer may have a heuristic of trying to relate with that person through a calm and friendly interaction. While typically implicit, heuristics operate in similar ways to broad procedural rules which are far more explicit. Formal education often offers broad procedural rules to students as tools to help make sense of and structure complex problems. For example, Abraham and Collins offer three broad procedural rules to facilitate the planning of practice settings:[59]

1. Make the content as personally relevant for your player as possible – for example, does it tie in with their development plan?
2. Promote player understanding whenever you can, especially when working towards long-term development. For example, does the player know why they are doing what they are doing? Do you need to check?
3. For rapid short-term results make the session (mentally) easy for your player, for long-term development make it harder.

Both heuristics and broad procedural rules offer ways of dealing with relatively complex social situations. In short, they facilitate adaptability.

While broad procedural rules do facilitate adaptability, they are eventually limited by a person's understanding of why they work and in fact why they do not work. One of the key determinants of complexity and non-linearity is uncertainty. Eventually, if humans want to cope with uncertainty they have to have an understanding of why it is happening so that coping strategies can be developed. In short, declarative knowledge is key for adaptability, perhaps not in the moment, but definitely a later debrief, reflection, and planning time.[60]

The only form of knowledge that we have not discussed as related to adaptability is specific procedural knowledge, the reason being that specific procedural knowledge is formed to answer specific questions. It is almost by definition not adaptable. Another way of looking at this is to consider specific procedural knowledge as recipes. We can deliberately give people recipes to get to a predefined answer and this may be a useful confidence boost, but it doesn't make that person a chef.[61]

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[58] Gigerenzer and Gaissmaier, 'Heuristic decision making'.

[59] Abraham and Collins, 'Effective skill development'.

[60] Pennington, Nicolich and Rahm, 'Transfer of training between cognitive subskills'.

[61] Abraham, Muir, and Morgan, *UK Centre for Coaching Excellence Scoping Project Report.*

The link between the different domains of knowledge in coaching decision making has been described and validated in the coaching schematic.[62] In Figure 1 and Figure 2 we adapted this model for self-defence coaching (Figure 1) and performance in violent encounters (Figure 2). According to Abraham et al. the coaching schematic was built on the premise that the design of effect coaching environments is based on an ongoing series of "pros and cons".[63] The model was categorised in two ways. The first categorisation (columns 1 and 2) reflects the separation of declarative and procedural knowledge. The second categorisation is reflected within the columns, splitting knowledge into that which helps the coach to understand (a) the athlete, (b) the sport, and (c) the learning environment. The set of arrows displays the need to seek and consider link and different domains of knowledge.

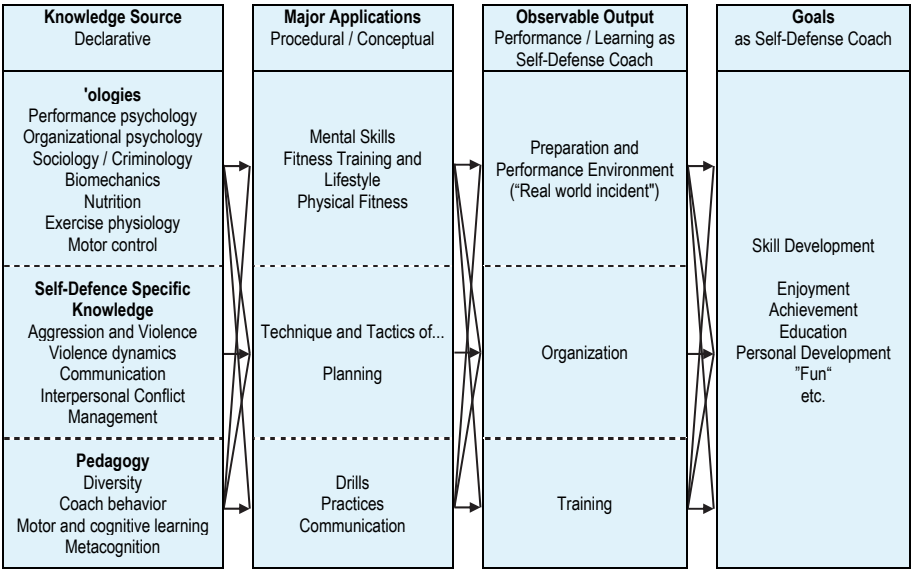

Figure 1: Coaching Schematic for Self-Defense Coaches

For performance in violent encounters the schematic has been informed by a Delphi study with self-defence expert coaches.[64] The categorisation within this schematic is also twofold: while declarative and procedural knowledge is split into columns 1 and 2, the knowledge is split horizontally, helping the practitioner (and the coach) to understand (a) oneself in the context of potential violent encounters, (b) the self-defence situation, and (c) how to act optimally in learning environments in order to foster effective skill development.

[62] Abraham, Collins, and Martindale, 'The coaching schematic'.

[63] Ibid.

[64] Staller, Abraham, Poolton and Körner, 'Experten-Konsens in der Selbstverteidigung'.

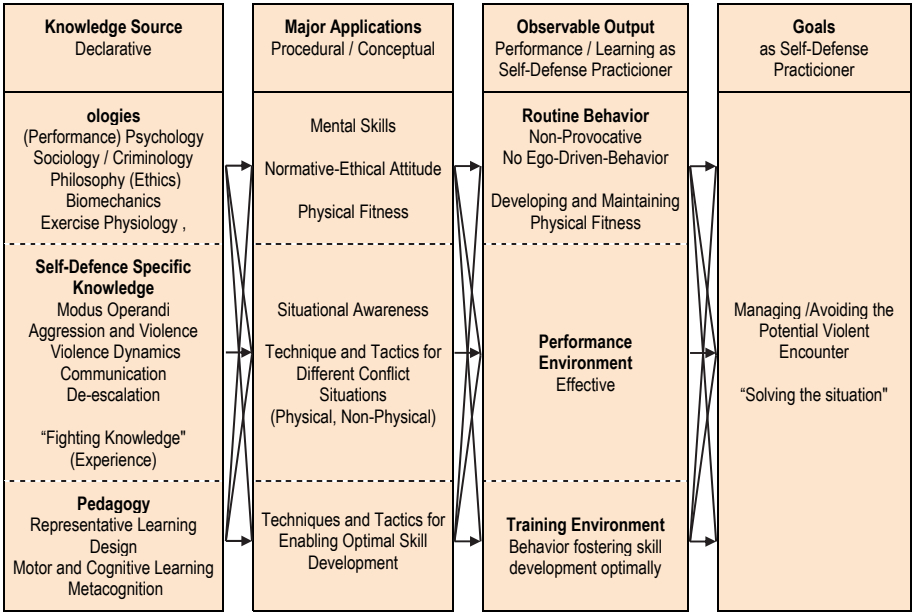

Figure 2: Performance Schematic for Self-Defense Practitioners

When comparing the schematics (Figures 1 and 2) with the content of instructional media about self-defence (techniques and coaching), it is noticeable that mainly procedural knowledge (column 2) is conveyed.

For the self-defence situation itself, techniques and tactics are in the spotlight of most media, representing procedural knowledge; this suggests a linear relationship between real world violence and training as well as between teaching and learning. Of course, instructional media also conveys declarative knowledge, providing the reasons why someone should do X if threatened with S. However, this declarative knowledge is based on the questionable assumption of linearity and non-complexity of violent confrontations and the associated learning process.

In developing a declarative basis of knowledge and a deep understanding of how violent confrontations may unfold, it is necessary that the individual (practitioner or coach) knows how the dynamics may be influenced and why techniques in specific situations work or why they do not. Declarative knowledge of how and why individual characteristics influence behaviour in specific situations cannot be solely conveyed via media. Experience in representative simulations help to create the individual self-defence specific knowledge base ("fighting knowledge") that is needed in order to solve new

problems or allow for creative solutions of similar problems. Motor and tactical creativity[65] seem to be essential features of dealing with real world violent encounters.[66]

In order to allow for this knowledge to emerge, knowing how to practice optimally is equally crucial; this aspect is depicted in Figure 2 in the bottom row over the columns. Following rules of how to act in simulations (procedural knowledge) may be sufficient in the beginning, but declarative knowledge is key to autonomously designing and adapting simulations with the partner.

Regarding the coaching process in self-defence training, Figure 1 depicts most of the media-conveyed knowledge (techniques, tactics, drills) in column 2 under the umbrella of procedural knowledge. Again, without the knowledge of why certain techniques work in specific situations and why certain training activities are suited to a specific situation for a specific individual, the coach is not properly prepared for problems, disturbances, and the individuality of trainees. In order to make informed decisions and judgements about the coaching process, the coach needs a declarative knowledge base containing knowledge about pros and cons of (non-)linear dynamics in self-defence training.[67]

VI. CONCLUSION

Instructional media, especially books and videos, play an important part in the cosmos of self-defence training. Our analysis has shown that knowledge about techniques and tactics, as well as training activities, is regularly conveyed through an "if-then" format underpinned by the assumption of a linear transfer from media content to private learning. This format reduces the inherent complexity and nonlinearity of violent encounters, the associated coaching process, and the nonlinear relation between (the non-interactive type of) teaching and individual. While a reduction of complexity may be beneficial for short periods of time in the development process, it limits the understanding of the self-defence practitioner and self-defence coach. In order for this process to reach its full potential, declarative knowledge about the nonlinear nature of violent encounters is needed so that it can cope with these complex and nonlinear situations.

[65] Orth, van der Kamp, Memmert and Savelsbergh, 'Creative motor actions as emerging from movement variability' and Memmert, *Teaching tactical creativity in sport*.

[66] Preddy, Stefaniak and Katsioloudis, 'The convergence of psychological conditioning' and Staller, Zaiser, and Körner, 'From Realism to Representativeness'.

[67] Abraham and Collins, 'Effective skill development'.

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