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Jumping together: apprenticeship learning among elite trampoline athletes

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Background. Elite athletes often take part in-group trainings and use teammates as learning resources. Despite this, research on the training and learning of elite athletes tends to characterise this training and learning as primarily individual.

Purpose. This study, explores interrelated learning processes among elite athletes by exploring the performance-related learning that takes place between elite trampoline athletes in their training environment. The case will be made that such learning may be described most accurately as apprenticeship learning.

Participants. The research focuses on a case study involving two Danish synchronised trampoline jumpers, Daniel and Peter, and their training as part of the Danish national trampolining team.

Data collection. The data were generated through participant observation. During 10 days of observations, the principal researcher held informal talks with the athletes and the coach and took descriptive field notes. At the conclusion of the observation period, each athlete submitted to an individual, semi-structured interview.

Data analysis. A theoretical reading of the data was carried out to facilitate interpretations that went beyond observations and the athletes' own descriptions, in order to reach a deeper understanding of how practice facilitates learning.

Results. We encircle the athletes' interrelated learning processes by introducing the training environment of the national team and situations in which the athletes guide each other verbally or by jumping together.

Discussion. We argue that the practice of the Danish national trampolining team can be considered a community of practice. Taking point of departure in our theoretical perspective we discuss how verbal and tacit bodily exchanges between athletes become opportunities for learning.

Conclusion. In a practice containing varied resources for learning, we show that athletes can be each others' performance analysts, guiding each other through the use of metaphors and cues which disclose the practical meaning of how to overcome specific practical challenges. We also show that the athletes can be each others' sparring partners when they perform their sport together. In this form of interaction they directly feel and impact the other's performance, which means that both athletes encounter opportunities for learning.

Keywords: elite sport; trampoline; apprenticeship learning; embodied skills; guided rediscovery; scaffolding; community of practice
Introduction

An important factor in the development of elite athletes is the training group. The less experienced athletes learn from the more skilled, and those who are pushing to get to the top challenge the more skilled athletes on a daily basis. (T. Brisson, quoted in Starkes and Ericsson 2003, 293)

This quote from Therese Brisson, Olympic gold medallist and World Champion in ice hockey, implies that elite athletes use teammates as learning resources in apprenticeship-like interactions. Despite this, research on the training and learning of elite athletes tends to characterise this training and learning as primarily individual (Ericsson 2003). A few studies have explored apprenticeship learning in sports at the elite level, with such studies often examining either mentoring in coach education (Culver and Trudel 2006; Cushion 2006; Jones, Harris, and Miles 2009), or the athlete-coach relationship (Loquet 2011). A smaller group of studies has addressed the learning processes, which occur within athlete-athlete interactions. This is examined, for instance, within university sports teams (Galipeau and Trudel 2006), elite youth football teams (Christensen, Laursen, and Sørensen 2011), and an elite sailing milieu (Henriksen, Stambulova, and Roessler 2010).

The majority of research into apprenticeship learning takes as its point of departure contexts other than elite sport (Lave and Wenger 1991; Barab and Plucker 2002; Kirk and Kinchin 2003; Rovengo 2006; Standal and Jespersen 2008). In order to further clarify how the athlete-athlete relationship facilitates performance-related learning in an elite sport setting, we have studied the training of two synchronised trampoline jumpers in their elite training environment. Our aim is to shed light on these athletes’ inter-related learning processes and clarify how the athletes become each others’ resources for learning. Furthermore, the case will be made that this learning may be accurately described as apprenticeship learning.

We concentrate the analysis on performance-related learning, and specifically focus on how the athletes develop their jumping technique when interacting with each other. This form of learning includes working with the ability to adjust their technique to the
performances of their sync-partner when practicing synchronised jumping.

**Theoretical framework**

We adopt an embodied and socially situated learning perspective, which is used to facilitate interpretation and discussion of the findings presented in this study. According to this perspective, learning is a two-way undertaking, in that it is both embodied and social. Learning is embodied insofar as learning changes the individual's embodied dispositions and skills – what can also be conceptualised as the *habitus*.

An agent's habitus is an active residue or sediment of his past that functions within his present, shaping his perception, thought, and action and thereby molding social practice in a regular way. It consists in dispositions, schemas, forms of know-how and competence, all of which function below the threshold of consciousness. (Crossley 2001, 83)

At the same time, learning is social insofar as the individual is always socially positioned and oriented, which means that certain forms of learning are facilitated, while others are inhibited (Hodkinson, Biesta, and James 2008).

Theories on apprenticeship learning offer a means of understanding how people learn without being formally taught. The relationship between a skilled performer (e.g. the teacher) and a less-skilled performer (e.g. the learner) is a fundamental feature of apprenticeship learning. For example, the concept of *guided rediscovery* (Ingold 2001; Downey 2005) describes how an observing learner can be drawn in and guided by a skilled performer’s example. The learner’s observations can facilitate learning when they influence his perspective during his own attempts to imitate and rediscover the exemplified skills in his own actions. The skilled performer can also actively support learning via pedagogic *scaffolding* – that is, the teaching techniques a skilled performer might use, to enable a learner to engage in practice (Ingold 2000; Downey 2008b). In the course of inter-acting with the learner, the skilled performer can scaffold the learner’s
actions, supporting them by extending the learner’s scope of opportunities for action. The metaphor of scaffolding emphasises how the functional apprenticeship relationship is a mutual process of adaptation insofar as the skilled performer is sensitive to the learner’s needs and supports the learner’s performance with adapted actions.

Lave and Wenger’s (1991) concept of situated learning is based on analysis of several studies into apprenticeship learning. They found that learning opportunities emerge from various sources. Rather than perceiving learning as being a unidirectional process, Lave and Wenger emphasise the reciprocity of social learning with their term communities of practice (CoP) (1991; Wenger 1998). A CoP is a group of people who share a passion for a given enterprise, and who develop their expertise in this area by interacting on a frequent basis. The participants in a CoP learn from sustaining (1) mutual engagement in their (2) joint enterprise and negotiating meanings through use of their (3) shared repertoire (Wenger 1998).

(1) Mutual engagement means that participants in the CoP actively engage with one another. In this way, the participants continuously develop their mutual relationships.

(2) A joint enterprise is the common goal the participants share while participating in the CoP, and they continually negotiate the goal of the community.

(3) A shared repertoire includes the practices, discourses, stories, routines, tools, and symbols that develop through the sustained negotiations of those participating in the CoP.

But learning from participating in a CoP may not be as neat and tidy as it might seem (Culver and Trudel 2008). CoPs, as well as apprentice learning-relationships should not be regarded as symmetrical and homogenous social settings. These practices are saturated with power relations that shape what the participants learn (Hodkinson, Biesta, and James
2007, 2008). Some participants have more experience in participating than others; therefore they might be better at *exemplifying* how to operate in practice. Often this gives these participants greater authority and power in setting the standards for the practices, knowledge or values that emerge and are perceived as valuable and normal (Barker-Ruchti et al. 2012). Hodkinson, Biesta, and James (2007) further emphasise that learning within a CoP does not occur in a vacuum, but is affected and enabled by forces emanating from structures operating beyond the specific CoP, as these forces are mediated by the actions of the participants.

Consequently, the experiences of participations will vary among the participants in the CoP depending on their disposition and relations within the group. The characteristics of participants’ dispositions and relations in-turn will impact their individual opportunities and barriers for learning (Cushion 2008; Hodkinson, Biesta, and James 2008).

This theoretical framework provides a lens through which we will explore the learning processes among the elite trampoline jumpers in the training environment of the Danish national team.

**Method**

Our investigatory method is generally characterised as being qualitative and explorative. Our aim has been to be sensitive to and make sense of the athletes’ learning experiences, while also examining events and interactions transpiring between the athletes, and particularly between the athletes during practice.

We have adopted the case study as our methodological framework (Flyvbjerg 2001). As Flyvbjerg emphasises, ‘The case study produces the type of context-dependent knowledge that research on learning shows to be necessary to allow people to develop from rule-based beginners to virtuoso experts’ (Flyvbjerg 2006, 221).

**Participants**
The study focuses on two athletes, Peter and Daniel, participating in the training environment of the Danish national trampoline team. Peter, age 31, is regarded as the best and most experienced trampoline athlete in Denmark. He has more than 10 years experience competing at an international level, having participated in several World Cups, European and World Championships, as well as the Olympic Games in 2004 and 2008. Daniel, age 19, is Peter’s synch-partner. He is regarded both as the second best trampoline athlete in Denmark, and as someone who is still up and coming. Together, Peter and Daniel were runners-up at two World Cups in 2010. In addition to Peter and Daniel, the national team consists of their coach and 4 – 5 other athletes around the same age as Daniel, who participate in the daily training regimen.

**Data generation**

The empirical data has been generated through participant observation (Spradley 1980) and semi-structured interviews with the two participants (Kvale and Brinkmann 2009). The observations were made over 10 days of practice attended over the course of one year. During these sessions, the principal researcher was engaged as a ‘passive participant’ (Spradley 1980, 59). This means he was present at the training sessions as a bystander, taking part in several informal conversations with the athletes and the coach before and after sessions and between training intervals. Field notes were taken at the time, mostly in the form of cues and short sentences, and these were further developed into more detailed descriptions within hours after having made each observation. The notes include both descriptions of transpiring events, conversations, and preliminary theoretical reflections.

The interviews covered topics relating to the athletes’ feel for timed and mistimed jumps, how this was learned during individual and synchronised practice, and their relationship. The observations made during training contextualised the interviews and gave the principal researcher some actual and shared situations to reference during the interviews, and to have the athletes elaborate on.
The principal researcher audiotaped the interviews. However, as he wanted to keep the athletes’ turn of phrase present in the analysis he chose not to transcribe quotations from the interviews right away. Inspired by the alternative method of data management suggested by Halcomb and Davidson (2006) the principal researcher listened to the interview recordings several times in order to develop notes about the themes being raised in the interviews. This phase was followed by content analysis used to elicit common themes in the interview data and the themes were discussed with the other research team members. The final stage of data management involved a thematic review and relistening to the audiorecordings to ‘identify illustrative examples with which to demonstrate the meaning of the themes from the participants’ perspective’ (Halcomb and Davidson 2006, 42). These examples were transcribed verbatim in order to present the data in papers. The interviews were conducted in Danish. The principal researcher translated the excerpts provided in this paper into English.

Data analysis

How and what the athletes learn did not directly manifest itself at the moment during which the observations were made. Furthermore, the athletes were not able to describe fully how their learning came about. It thus required interpretation on the part of the researchers to make sense of the observational and interview data. In this sense, the analytical process can be regarded as hermeneutical.

The principal researcher analysed the data through a theoretical reading (Kvale and Brinkmann 2009), which means that the theoretical framework was used to facilitate interpretations of the data and discussions of the findings. He attempted to interpret what might go beyond the observations collected and the athletes’ own descriptions in order to reach a deeper understanding of how practice facilitates learning.

To be thoroughly versed in all aspects of the case has proven to be of great importance. Following data collection, the principal researcher repeatedly reviewed field notes and
listened to the interviews to obtain a close familiarity and overall feel for the case. In reviewing the data, the principal researcher identified situations and themes that characterised certain aspects and processes of learning within the athletes’ practice sessions, such as the exchanging of knowledge through verbal cues, feeling each other while jumping together. Throughout this process, the principal researcher played the devil’s advocate (Kvale and Brinkmann 2009) by looking for disconfirming data, questioning his own reading, and developing and testing interpretations in dialogues with co-researchers.

**Sporting background**

The sport of trampolining is based on a gymnastic tradition, in which the aim is to standardise and homogenise complex movements (Barker-Ruchti 2006). In its competitive form, elite trampolining athletes perform short routines of ten different rotational skills, such as somersaults and twists, while bouncing on a trampoline. The trampoline bed is rectangular, 4.28 by 2.4 m in size, and enables elite athletes to jump as high as 9 – 10 m in the air, depending on the elasticity of the trampoline bed.

In synchronised trampolining, two athletes perform identical routines simultaneously, on adjacent trampolines. Performance of the full routine takes approximately 20 s. The athletes’ performances are judged and scored based on synchronisation, aesthetics, execution and the degree of difficulty. The most important criterion of judgment is that the athletes are synchronised in their actions. Fewer points are deducted for a lack of synchronisation and individual errors if the pair continues to bounce at the same height and in rhythm. Thus the task demands that athletes develop an ability to perform as a homogenous social body during the routine.

Trampoline is a relatively small sport in Denmark. There are approximately 2500 active athletes and about 500 of these athletes participate in national trampoline competitions.
Results

In an attempt to avoid divesting this case of its rich complexity we have chosen to present the results as a comprehensive description divided into three major sections, which encircle the athletes’ interrelated learning processes: (1) An introduction to the training of the national team, (2) Guiding each other, and (3) Jumping together. Our intention is that the richness of the descriptions will allow the reader to discover their own path inside the case and interrogate our interpretations of it (Flyvbjerg 2006).

An introduction to the training of the national team

Training takes place in a high-ceilinged gymnasium in a large elite sports complex in the southern part of Copenhagen. The gymnasium is divided into two parts. In one, four large trampolines take up the majority of the gymnasium floor. The edges of the trampolines and the floor around them are covered with safety mattresses, implying that the athletes do not always land in the red square in the middle of the trampoline mat.

Each training session lasts two hours, and training takes place three days a week; on the other days, athletes practice at their respective clubs. The training is led by the Danish national team coach, who has been in that position since 1986. Prior to assuming this role, he was an elite trampoline athlete himself.

Peter is more than 10 years older than the other athletes, and he holds a distinctive status within the national team. Being the most experienced athlete, and having achieved the best results in national, as well as international competitions (the last 15 years) positions him at the top of the hierarchy in the team. He also maintains this position by continually showing that he is the best, for instance, by practicing routines that has a higher degree of difficulty than what is practiced by the other athletes in the actual training. Daniel has been considered the next best jumper for a number of years, and is thus the natural first choice to be Peter’s synchronic partner.

The coach has devised a general training plan, which takes into account the
competitions the athletes will participate in during a season. He does not explicitly dictate the substance of a given training session, as each largely follows routines and relationships ingrained in the athletes, which he has helped to establish over the years. The athletes themselves often take the initiative to complete the warm-up and start training their routines. This part of the training usually takes place on just two of the four trampolines. The athletes are split into two smaller groups around the two trampolines, and take turns jumping. The athletes either practice their individual routine, their synchronised routine or shorter combinations of specific jumps. The athletes decide the order in which they will practice their jumps during training, the only stipulation being that they must complete a certain number of jumps in the course of a given session.

The number of athletes makes it impossible for the coach to evaluate each jump made by each athlete. This does not mean, however, that these unobserved jumps go unevaluated. The athletes emphasise the fact that they are immediately aware of how they are performing while jumping. They are able to feel and take notice of where they hit the trampoline, their height, and the ease or unease with which they make the rotations. Daniel described how he can feel how much energy he is able to transfer from one jump to the next, which in turn allows him to identify whether or not his take-off is optimal. Furthermore, all of the athletes’ jumps are recorded by a stationary camera and replayed on a video screen, with a delay which allows the athletes to watch and evaluate their jumps immediately after having performed them. There is also a mutual expectation that the athletes help and advise one another. Our data suggests that this mutual expectation and willingness to help each other can be considered a routine that the coach has helped implement in the training. This way the athletes are encouraged to gain from each other’s expertise, and at the same time it creates better opportunities for the coach to work concentrating with one or two athletes at the same time.
Although the athletes have various training histories and training routines of varying degrees of difficulty, they have developed a certain repertoire of comparable practical know-how. This enables them to carry out complex movement patterns on the trampoline. As an example, Daniel explained that he performs each jump by ‘just starting it’, whereupon the jump is carried out by what Daniel referred to as his ‘habits’.

The practical know-how of the athletes seems to have conditioned them with a certain means for valuing the jumps. The principal researcher observed that the athletes sometimes spontaneously agreed, applauding certain performances. In this way, they demonstrated a shared and culturally conditioned practical sense for correct technique, rendering them sensitive to the types of details often overlooked by the uninitiated (including the observing principal researcher). The training thus seems to be permeated by certain aesthetic and technical ideals. As was explained by Peter, this means that the athletes train in relation to the same ‘standard’, because they are being judged according to the same aesthetic and technical criteria.

The athletes’ sense for the correct technique, conditions them with a background of shared knowledge. This shared knowledge enables them to then discuss performances and experiences, a common habit among the athletes in between their exercises on the trampolines. Athletes thus make themselves understandable to each other, and can offer applicable suggestions for how a jump can best be corrected. The coach deliberately allows the athletes to guide each other; as he pointed out, doing so gives him the opportunity to concentrate on an individual athlete for a longer period of time.

Due to his experience and expert power, Peter has assumed the role of unofficial and informal coach during training. Peter fulfils this role by commenting, correcting and guiding the performances of the other athletes. At the same time, the other athletes signal their acceptance of his status by continually seeking Peter’s advice.

Peter’s distinctive status is also evident in his partnership with Daniel. Daniel explained that he admires Peter’s flexibility and stability, which enable him to correct his jumps in
very difficult situations (e.g. when landing at the edge of the trampoline). Peter assists Daniel with developing his stability by standing next to the trampoline as Daniel jumps and providing short cues to guide Daniel’s jumping:\(^2\)

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\ldots \text{He just shouts} \ldots \text{‘Arms up!’ and ‘Up with your toes!’ and ‘Look down!’} \ldots \text{‘Push it forward!’}, \text{‘Tighten the hip’ and ‘Down with the arm!’} \ldots [\text{The shouts are}] \text{typically made} \\
\ldots \text{in the phase from when I straighten myself and land in the trampoline again. (Daniel)}
\]

But not all of the advice Peter offers to Daniel is followed. Against Peter’s advice and unlike the other athletes, Daniel has gained several kilos of muscle mass in his upper body, a result of bench press-training during the last year; this despite both Peter and the coach having told him that this might not be conducive to the flexibility, stability, and the rotational abilities needed on the trampoline.

As already indicated, the athletes seem to possess a finely-tuned sense of what constitutes correct or improper technique, but this does not mean that every detail of the techniques is outlined and that the training comes down to merely following the detailed technical rules to the letter. Peter recounted an event, which transpired during a training camp with the French national team, during which he entered into discussion with one of the French athletes about a specific jump. The French athlete argued that, instead of ‘blocking his shoulder’, Peter ought to ‘flying his arm’. Peter was intrigued by the phrase and worked with the concept for a while. It improved his jump, and he shared this new and valuable description of a technique with the other Danish athletes, even though he maintained that it was ‘completely non-technical’, meaning that this way of thinking about the jump was against what was seen as correct technique.

It is in the above described training environment that Peter and Daniel train their synchronised routine again and again. Below, we describe how the two athletes engage and interact during the short amount of time it takes to perform the routine.
Jumping together

The key element in the athletes’ training is repeating and working with different routines. The coach, Peter and Daniel emphasised that frequently repeating their synchronised routine enhances Peter and Daniel’s practical understanding of the other’s jumping style; furthermore, it contributes to a shared understanding which, under optimal conditions, enables them to perceive and respond to the other’s movements in a more immediate manner. This is what the athletes refer to as having a ‘sixth sense’ for each other. Peter clarified:

... We land on the trampolines together and take off together [but] I know that I will be below him in the next jump. I just know it. And this is when it is perfect. So I land a little before [him]
... Then I try to jump higher ... and he may try to come down a bit. And already in the take-off we know if [our jumps will] match again ... It is rather strange. [But] it is something about being able to sense the dynamics in some way. (Peter)

During synchronised training, the individual athlete must pay attention to not only his own jumps but also to the jumps of his partner, and especially to the sounds of the two trampolines. The athletes explained that when two trampolines sound like one, then they know that they are synchronised.

Peter always leads the way to begin the routine. He takes the first jump and shouts ‘Yes!’ when the athletes have reached the appropriate height to begin their rotations. If Daniel does not respond, the athletes will begin to rotate upon the next take-off. If Daniel responds with a ‘No!’ the athletes will jump straight up-and-down once more before Peter makes another call. The coach explained that Peter makes these calls because he has the better feel for the right height at which to initiate the rotations.

While making observations at practice sessions, it became obvious that good timing cannot be pre-planned despite the fact that the order of jumps is set in advance. Sometimes the athletes had to abort their routine halfway through or make sudden adjustments. In other instances, the athletes completed their routine with no noticeable
difficulties. There is an undeniably delicate point between well-timed and mistimed performances. Daniel indicated that trampoline jumping is a continuous act of ‘compensation’, and that ‘trampolining is also about making errors. Everyone makes errors. So it is about hiding these in the best possible way, and getting through it as well as you possibly can’. It seems to be easier, however, to make the needed compensations when jumping individually. When jumping together, the athletes have to agree on the compensation in order to maintain their timing. For this reason, the athletes devise a pre-arranged series of shouts, which they use to retain a shared understanding, should the timing be broken or the athletes feel they might lose their mutual timing in the next jump.

One reason the athletes might lose their timing can be traced back to Daniel’s struggles with maintaining stability, meaning that the height of Daniel’s jumps can vary quite inappropriately. He explained that he sometimes loses focus, and becomes inattentive to the dynamics created by his and Peter’s simultaneous movements.

Sometimes Daniel’s instability leads him to lose height on his jumps compared to those of Peter. In these situations, Peter seems to be particularly adept at ‘regulating downwards’ (i.e. giving at the knees during his take-off to lower the height of his jump), thereby quickly evening out the discrepancy between himself and his partner. This can be a physically demanding task, and it often makes the following jumps more difficult. Daniel explained that his awareness of Peter’s efforts to regulate down often lead Daniel to regain his focus and resume attentive monitoring of the connection between their actions; Daniel added that ‘often, this improves my jumping’.

In past years, Peter had been the stronger athlete of the two, and was capable of jumping higher. This gave him the time necessary for regulating his jumps to ensure synchronicity. In the interim, Daniel has improved his jumping technique and increased his strength, which has pushed the balance of power towards the middle, with Daniel occasionally out-jumping Peter. Daniel does not yet appear to be fully capable of
controlling his newly improved strength, however, which introduces insecurity to the athletes’ relationship, as Peter is uncertain of what to expect from Daniel during any given routine. In certain instances, Daniel’s increased and unregulated power has forced Peter to conduct the routine at heights greater than what he finds to be appropriate. On the one hand, this often causes the pair to lose their timing, which has a huge negative impact on their overall score in competitions. On the other hand, Peter feels they still have the potential to exceed their past achievements, if at some point, they are able to smooth out their timing when performing routines at unfamiliar heights because, as was previously mentioned, height is one aspect on which the athletes’ performances are judged.

Discussion

In this section, we discuss how the description of the athletes’ practice relates to our theoretical framework. This will in turn allow us to explore how the athletes become resources for each others’ learning in the course of training. We propose that the Danish national team’s practice can accurately be described as a CoP (Wenger, 1998). Using Peter and Daniel’s practices as a point of departure, we will discuss how verbal and tacit bodily interactions between the athletes become opportunities for learning, and why these exchanges can most accurately be described as a form of apprenticeship learning.

As described previously, a CoP exists when participants engage each other and negotiate how to make sense of their actions. Similarly, the athletes of the Danish national trampolining team not only share the same gymnasium, they actively engage with each other, for instance, when observing each other’s jumps, discussing jumping technique or jumping together as part of synchronised routines.

The athletes also share common goals, such as improving their trampolining skills and posting good results in tournaments. Mutually they engage in negotiations over how to take part and create meaning in these joint enterprises. This can involve making sense of
technical details and negotiating the expression of techniques by interpreting them through one’s personal style of jumping. Additionally, while engaged in practice, the athletes adopt and reproduce a shared repertoire, developed over time by the athletes’ ongoing mutual engagement with and negotiation of the joint enterprises of practice. Aside from the actual performance of jumping techniques, the shared repertoire consists of a common language and shared aesthetic norms, which render the athletes understandable to each other in technical discussions and when performing jumps that the other athletes can recognise as a certain technique, even when technique is coloured by an individual athletes’ style.

Wenger (1998) provides persuasive descriptions of the dynamics and interactions, which occur within CoPs, and of how these contribute to the learning of the participants. Less attention is given, however, to the role that the participants’ embodied skills and dispositions play in this process. Wenger emphasises that ‘Practice does not exist in the abstract. It exists because people are engaged in actions whose meanings they negotiate with one another’ (1998, 73). Having established that the practice sessions of the Danish national trampolining team constitute a CoP enables us to apply CoP theory in interpreting specific interactions, which were observed between the athletes. Doing so will allow us to discuss precisely how the athletes created opportunities to learn while talking with each other or jumping together.

**Being each others’ performance analysts**

Our study reveals that the athletes guide their own performances through their feel for their immediate jumping situation. Our study also indicates that this feel is influenced by the athletes’ articulations of practice – the verbal guidances they provide one another and the opportunities for learning that this creates. This effect is apparent in different situations, such as when Peter is encouraged by the French athlete ‘to fling his arm’, and
when Peter coaches Daniel while Daniel performs the jumps. The athletes’ articulations of their practical understandings often consist of just a single word, and not a full-bodied abstract description of how to complete a jump; even though the comments might consist of just a single word, they can be seen to contain greater practical meanings (developed as part of their shared repertoire).

The conversation between the French athlete and Peter exemplifies how these two participants of different local CoPs share general norms and repertoires of skills. These commonalities form the basis for their subsequent negotiation of the practical meaning of one specific jump. These negotiations are guided, on the one hand, by continuity (Wenger 1998), because both jumpers share a general understanding of what it means to perform the jump, and are guided on the other hand by discontinuity (Wenger 1998), because each jumper has a personalised means of performing the jump, and of articulating how they would do it. The French athlete’s metaphorical description of how he experiences the jump is a form of verbal guidance that directs Peter’s feel for the jump in his training. The metaphor seems to strike a nerve for Peter, generating an experience, which transforms Peter’s relationship to his body in regards to the specific jump. Downey’s (2005) descriptions of how a metaphor can shift one’s corporeal understanding of one’s own movements, and how it becomes ‘a form of applied phenomenology: an analysis of how things are experienced that may facilitate a shift in an athlete’s perceptions’ (2005, 48), may be applicable to the learning process Peter experienced in this situation.

The French athlete, however, does not transmit just unvarying knowledge to Peter, enabling him to immediately actualise this metaphor. Peter has to rediscover (Ingold 2001; Downey 2005) what the metaphor means in relation to his own actions. This is accomplished by practicing the jump, while having this metaphor in mind. As a result, Peter’s exercises are seen to be guided by his foretaste of what flinging one’s arm is supposed to feel like.

The situation in which Peter is standing next to the trampoline and providing Daniel
with short cues as he jumps exemplifies how verbal guidances can have an immediate effect on a jumper’s performance. Being the more skilled practitioner, Peter seems to sense and anticipate what Daniel must improve on, and this guides Peter in offering Daniel verbal guidances. For Daniel’s part, his experience-based practical understanding of what the verbal guidances mean allows him to shift his practical relation within the situation and make instantaneous attempts to correct his actions.

From a CoP theory perspective, Peter and Daniel jointly facilitate Daniel’s learning by being actively engaged in the joint enterprise of improving Daniel’s jumping, and by negotiating meaning around a shared repertoire of certain jumps – performed by Daniel – and certain verbal guidances – provided by Peter.

Daniel seems to be actively engaged in discovering the meaning of Peter’s guidances, because he wishes to perform with greater stability. Daniel’s enterprise does not come from nothing. Different processes of normalisation (Barker-Ruchti et al. 2012) within and beyond the CoP seem to have influenced Daniel. In part, his enterprise is shaped by experiencing Peter as a master of what it means to be stable on a daily basis. Peter exemplifies what Wenger describes as a ‘paradigmatic trajectory’ (Wenger 1998, 156) – that is, a living testimony to Daniel of what is possible, expected and desirable in performing the synchronised routine. In part his enterprise is formed by experiencing how his instability is detrimental to the performances of the two athletes during competitions, and in part his enterprise is formed because an authority figure – the coach – articulates the fact that Daniel’s instability is the main problem the team faces. These relations of power and normalising processes thus seem to have conditioned Daniel to perceive stability as valuable and desirable, and have thus, oriented his learning process.

As highlighted in this section the athletes can act as a form of performance analysts (Downey 2008a) when relating to the performances of their peers by emphatically placing themselves in the others’ shoes, aiming at experiencing what they experience. On this basis, they can use verbal guidances, such as metaphors and short cues to stimulate a shift
in the perceptions and actions of others, thereby creating new opportunities for the other athlete to learn. Comparably engaging the other’s doings emphatically also seems pivotal when learning to jump synchronised.

**Being each others’ sparring partners**

Our study indicates that Peter and Daniel’s ability to maintain synchronisation is developed when the athletes actively engage each others’ movements while jumping, for instance, by listening to the sounds of both trampolines. The benefit of entering into an empathic relationship like this seems to be that the athletes’ engagement in the routine is guided not only by the feel for their own doings but also the doings of the other. Thus they become sensitive to the changing meanings, which flow in the other’s movements, and constantly let the match between this and the way their own jumps feel guide their actions. The tacit interaction itself thus, orients the two athletes’ actions and becomes a resource for learning for both athletes to draw upon. This can be described as an ongoing and reciprocal process of scaffolding (Ingold 2000; Downey 2008b), in which both athletes attempt to adapt to and support each others’ actions. In this reciprocal learning process the opportunities for learning are never fully determined by a prescription or by any individual participant, but are instead continually negotiated. The learning of both jumpers comes to be defined by the participating athletes in the process of pursuing synchronisation. In this training situation the athletes seem to be each others’ sparring partners – like two boxers, they immediately feel and impact each others’ performances.

Over time, both athletes seem to improve their feel for their partner and develop a shared understanding of how the routine should be performed if they sustain this above described mutual engagement in their practice. More specifically, they learn to recognise the parts of the routine which might trouble their partner, to make sense of the other’s sounds on the trampoline and how best to react, and how the calls must be made to properly alert the other at the appropriate time. Optimally, this shared repertoire develops
into a sixth sense for each other, meaning that the athletes’ mutual timing is maintained under the threshold of consciousness through immediate bodily adjustments in response to the athletes’ on-going monitoring of their dynamic relationship.

The interactions between athletes during synchronised jumps are subject to certain constraints. Norms and relations of power seem to influence the athletes’ interactions, and thus their opportunities to learn. To be actively engaged in their synchronised routine means that the athletes submit themselves to being influenced by the movements of the other, to the composition of their routine and the aesthetic and technical norms of their sport. Furthermore, the athletes are ascribed specific functions in their pursuit of synchronisation: Daniel has to submit himself to the directions of Peter early in the routine and deliver a stable and controlled performance, while Peter’s primary task is to ensure synchronicity. As already indicated, Daniel’s performance is not well-suited to this role, but expectations of his functioning seem to affect him, and to be an important aspect of how he makes sense of his performance during and after the event, and whether he feels his performance was successful or not.

It is debatable whether performance-related learning in this situation is as strong for Peter as it is for Daniel. Our data gives no clear answer in this regard, but the data suggests that Daniel’s instability and strength places unusual demands on Peter, which might develop the adaptability of Peter’s performance competences.

As highlighted in this paragraph the athletes can act as each others’ sparring partners when they actively engage each others’ movements while jumping together. They immediately feel and impact each others’ performances and the interaction itself becomes a continually negotiated resource for learning for both athletes.

**Conclusion and implications**

An embodied and socially situated perspective of learning has proven useful in understanding the interrelated learning processes between elite trampoline jumpers. The
athletes become each others’ opportunities to learn in a variety of ways, although we have primarily focused on two.

First, the athletes look to each other as discussion partners and performance analysts. Their use of verbal guidances can disclose the practical meaning of how to overcome specific practical challenges. Being conditioned by some of the same culturally elaborated habits, the athletes can analyse the performances of their peers by emphatically placing themselves in the other athlete’s shoes. On this basis, they can use metaphors or short cues to stimulate a shift in the other athlete’s perceptions and actions, thereby creating new opportunities for the other athlete to learn – in other words, they can lead the other athlete in a process of guided rediscovery.

Second, the athletes can serve as each others’ sparring partners when they choose to actively engage in a reciprocal process of scaffolding during synchronised performances. In this form of interaction they immediately feel and impact the other’s performance. The athletes are tacitly inhibited from completing certain movements, but stimulated to perform others. No individual athlete is able to completely steer this process, so the interaction itself orients the two athletes’ actions and both athletes encounter learning opportunities. Frequent engagement in the on-going and mutual process of scaffolding leads the athletes to develop a shared understanding at the level of embodied habits, and to become better able to maintain and reinitiate synchronisation.

These insights into athletes’ learning processes, which the coach deliberately allowed room for, contribute to a more nuanced understanding of the ways in which apprenticeship learning between elite athletes is carried out, and offers some insight into the benefits of nurturing such apprenticeship learning processes. Against this background, it may be suggested that the orchestration of elite athletes’ training could draw inspiration from the following recommendations:

- Apprenticeships between athletes seem to be efficient learning resources for both
skilled and less-skilled athletes, on the condition that the athletes actively engage in each other’s actions and are not left with the expectation that the benefits to be drawn from apprenticeship learning processes will or can be realised regardless of the way they interact.

- Apprenticeships between athletes seem to be efficient learning resources because the athletes share a practical know-how and understanding of aesthetic and technical norms, which enables them to be each others’ performance analysts by placing themselves in the other athlete’s shoes, and experiencing what this other athlete is experiencing.

- The use of sparring partners seems to be a highly efficient training method, because being engaged in their interactions has the effect of co-determining the individual athletes’ actions. Both athletes, thus, receive feedback about their relationship in a way that is more immediate and constant than what can be conveyed via verbal guidances from a coach or an athlete standing on the sideline.

However, these interrelated learning processes might only be effective and even possible in situations in which the athletes are working for mutual benefit and have a high level of expertise.

In so far as this study is based on an exploration of one particular elite sport setting, it would be an exaggeration to claim that the study presents a representative picture of how elite athletes can use each other as learning resources. Future research will have to show whether these interrelated learning processes also might represent important characteristics of other CoPs within elite sport environments.

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**Notes**

1. The real names of participants’ have been used. The participants have allowed the publication of their real names. In accordance with guidelines laid out by the Danish Data Protection Agency, their consent was obtained with the signing of a statement of consent.

2. Words and expressions in quotation marks and not accompanied by a citation are the words and expressions used by the athletes or their coach during observations or interviews.

**References**


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