



CREATIVITY IN PRACTICE
An exploration of ecologies of
practice and creativity

ORIENTEERING



CAM 9C November 2018

CREATIVITY IN PRACTICE

COMMISSIONING EDITOR'S INTRODUCTION

In this issue of Creative Academic Magazine (CAM9) we are exploring the idea that when we are involved in a difficult challenge, our mind and body does not just inhabit a physical environment, rather, we are immersed in that environment and we change it through our own participation. From an environmental perspective it does not make sense to talk about the environment in which we are learning and trying to achieve without reference to ourselves as the organism that is perceiving and interacting with the environment.

Proposition 1 : we, our challenges and our environment are indivisible

'Every organism has an environment: the organism shapes its environment and environment shapes the organism. So it helps to think of an indivisible totality of 'organism plus environment' - best seen as an ongoing process of growth and development' ^{1:20}

Learning how to perceive the environment and find meanings in what is perceived, and then act on those understandings in ways that are beneficial, is fundamental to the very existence of an organism and its ability to flourish. The same applies to people. If we focus on the world of a practitioner, learning how to perceive the environment and find meanings in what is perceived and then act on those understandings in ways that are beneficial is at the heart of being an effective and productive practitioner in any field.

Proposition 2: the way we sense and perceive our environment and the problems, challenges and opportunities it contains, is through an ecology for learning

The use of the ecological metaphor to characterize complex practice and performance involving learning and achieving, is an attempt to relate a whole thinking, feeling, acting (performing), person to their circumstances and contexts, their needs, desires and purposes (immediate and longer term), the situations they are dealing with and the particular places they are learning and performing in.² When someone encounters a new situation, problem, challenge or opportunity, they use their senses and their mind's interpretation of the flow of information and context to perceive and comprehend the situation and act in ways that are appropriate. Effectively, they create, inhabit and sustain an ecology that enables them to interact with their environment, which they are co-creating, and the particular things that matter to them in order to understand, act (perform) learn and achieve. (Figure 1).

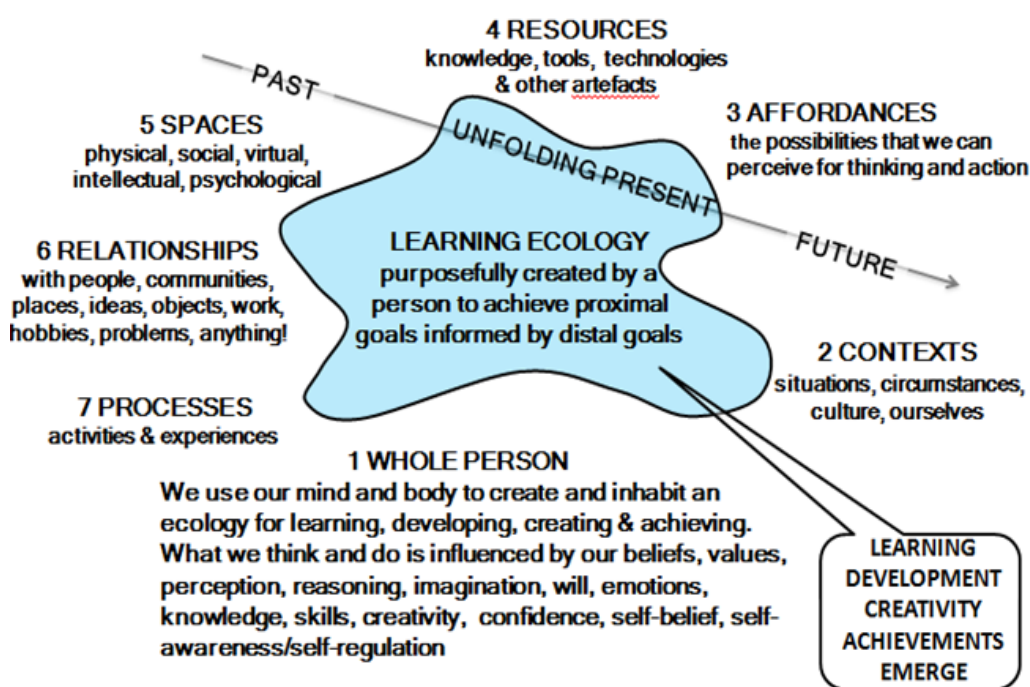


Figure 1 Framework for appreciating the components of a learning ecology²

'An individual's self-created learning ecology grows from the circumstances (contexts and situations) of their life and is established for a purpose that is directed to accomplishing proximal (immediate) goals connected to more distal goals. Their learning ecology comprises themselves, their environment, their interactions with their environment and the learning, development and achievement that emerges from these interactions. It includes the spaces they create for themselves, their processes, activities and practices, their relationships, networks, tools, other mediating artefacts and the technologies they use, and it provides them with

affordances, information, knowledge and other resources for learning, developing and achieving something that they value.'^{17:72}

Proposition 3 : Our ecologies for learning connect and enable us, as a whole person, to physically, intellectually and emotionally interact with a complex environment in order to engage with the problems and challenges we care about.

Our ecologies for learning involve ourselves with unique past histories, personalities and capabilities, unique learning trajectories and unique sets of interests and purposes interacting with complex environments often containing challenges and problems that require unique solutions. It is little wonder that in such circumstances there is considerable scope for personal creativity to flourish.

Here we might draw on the ecological definition of personal creativity proposed by Carl Rogers which he considered to be 'the emergence in action of a novel relational product growing out of the uniqueness of the individual on the one hand, and the materials, events, or circumstances of their life'³. This concept of creativity connects individual, their interests and the problems they care about and the whole environment in which they are participating.

So how does this particular issue of the magazine engage with these ideas?

I have discovered that open invitations, while soliciting interest, rarely result in practical contributions. Inevitably, people contribute when they see a tangible benefit and this usually boils down to having a relationship with someone who sees the value in the idea.

A few months ago I had lunch with a school friend who I had not seen for nearly 50 years! In our early teens we had been members of the school cross-country and athletics team and the local running club - we did a lot of running together. I stopped running in my late teens and he never stopped, taking up fell running and later orienteering. Over lunch he talked with passion about his various roles in the sport of orienteering and I talked about the work I had been doing on learning ecologies and the two things came together in quite an organic way. As we finished lunch I invited him to write an article about his experiences of orienteering as a way of exploring the idea of an ecology of practice. True to his word 2 months later he sent me his article and over a few weeks we worked together to refine it. I learnt a lot about orienteering from this experience and his narrative provided an excellent foundation for developing an ecology of practice. Furthermore, this collaborative writing opened up the idea of an ecology of practice that are geared to performance. So I am grateful to John for taking the trouble to make contact after all these years and delighted with this collaboration that emerged from our reunion.

Citations

- 1 Ingold, T. (2000) *The Perception of the Environment Essays on livelihood, dwelling and skill* Routledge: London
- 2 Jackson, N. J. (2016) *Exploring Learning Ecologies* <https://www.lulu.com/>
- 3 Rogers, C.R., (1960) *On becoming a person*. Boston: Houghton Mifflin

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COMMISSIONING EDITOR



If you would like to contribute an article about your own practices in any aspect of your life be they work, hobbies and interests, or any other activity, please contact the commissioning editor :
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On Being An Orienteer

John Britton



John is a retired software developer/project manager but he admits he was born to run. At school he ran cross-country and on the athletics track joining a local running club when he was 12. In his 20s and 30s he was a competitive road and fell runner. He started orienteering over 30 years ago and since retiring he is a 'fulltime' orienteer, becoming the British Orienteering Champion (M60) in 2014. As well as competing he is involved in coaching the next generation. In this article he shares his experiences and insights and these provide the foundation for a companion article which explores the idea of an ecology of practice for orienteering.

Introduction

In this article I will share my passion for the sport of orienteering which I have been practising for over 30 years and try to reveal the thinking, behaviours and practices that are likely to underlie an ecology of practice for orienteers.

Orienteering is a running sport originating in Scandinavia which combines running with navigational skills as runners compete against the clock over a course that is plotted on a map. To be successful requires a unique balance of physical and mental strength. There is an International Federation, and international standards for the fundamental elements, so you can orienteer anywhere in the world and the rules and most importantly, the maps, will be the same.

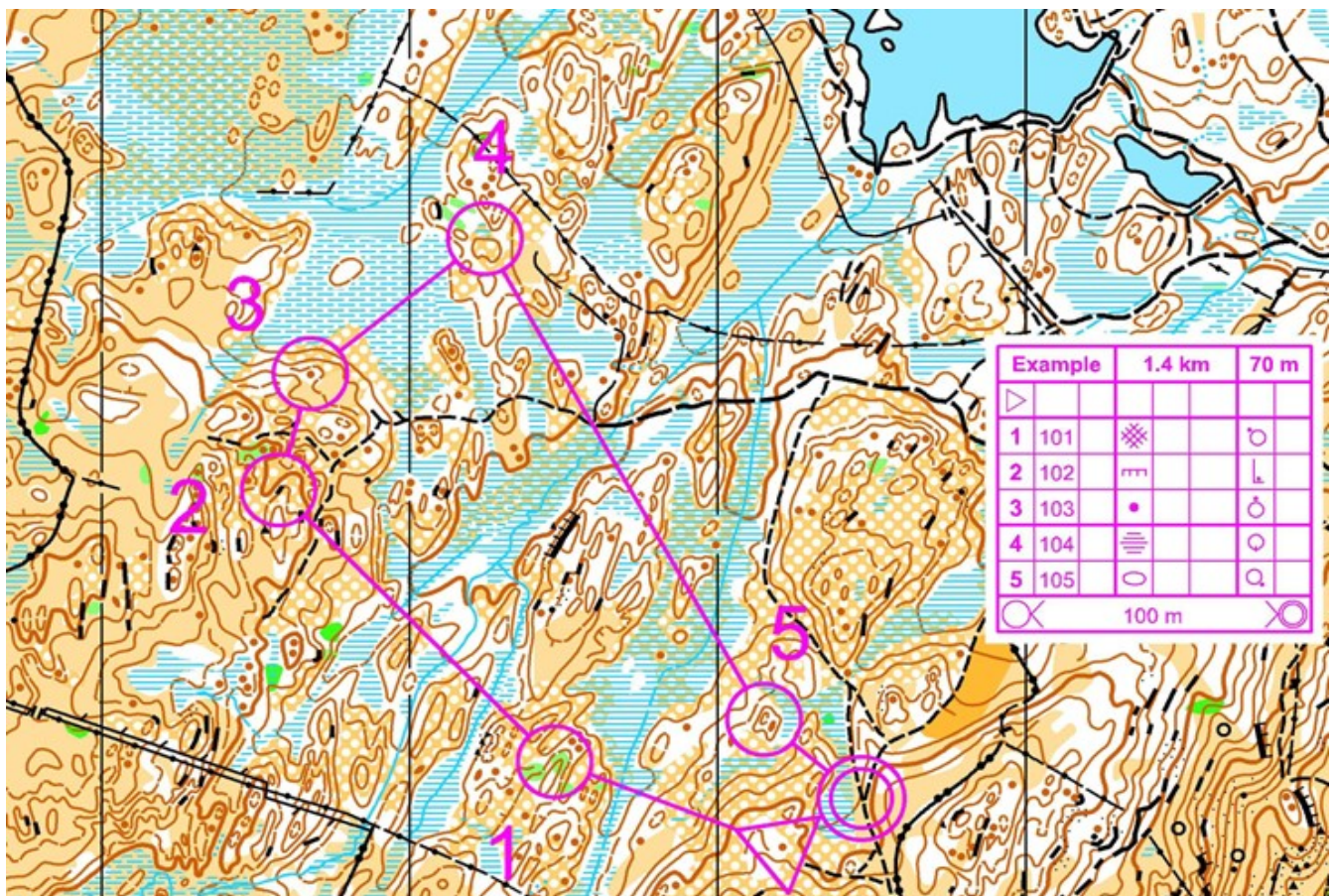


Image credit <https://www.gllsportfoundation.org/fiona-bunn-jwoc-blog/>

The photo shows Fiona Bunn, one of the UK's top junior women orienteers in action at the Junior World Championships. It also shows a control and its feature (1.5m boulder at a guess).

The usual form of orienteering is a "line course". A map of the competition area is overlaid with a purple line which starts at a triangle and goes via a series of numbered "control" circles to finish at a double circle. Each control also has a description. The map is specially drawn for orienteering at a detailed scale (1:15000 for young eyes, 1:10000 or 1:7500 for older folks) using a special symbol set and colours. In the terrain, a control is a small plastic box for recording your time, along with a 1-foot-square orange and white kite on a stake; this should be easily seen when you are at the described feature - orienteering is not meant to be hunt-the-thimble.

Figure 1 Example of a very short course on a good Lake District area. Note the triangle start, sequence of controls and double-circle finish. Also note the table of language-independent control descriptions - for each control there's its number (which will be on the electronic box), a feature symbol (thicket, crag, knoll, marsh, hill) and a diagram of where on the feature to look. And the course has a straight-line length and indicative amount of climb.



One of the distinctive features of this running sport is the way that competitors run alone. They start at different times, pick up their map after their clock has started, choose their own routes between controls, and the winner is the fastest to go from the triangle to the double circle via all the controls only assisted by their compass. Most races should be won in around an hour - as you get older, age-group race lengths get shorter so this stays true; the very best orienteers are likely to be Olympic level 10000m runners.

Competition areas can be any sort of countryside - forests, sand dunes, moorland typically provide the best wilderness and complexity. It is most fun if you've never been there before. For big events, areas are embargoed so no-one can go there until race day.

The journey from where you are to your next control is a "leg" - different legs will test different aspects of strength and skills; a well-planned course will have lots of variety in lengths, directions and types of legs and hence provide as complete a test as the area allows.

Competing in an orienteering event needs some basic equipment - a bespoke map that shows controls and key features of the terrain, a compass to orient the map and yourself, and a whistle in case of an accident or you get lost. You will also carry a 'dibber' - a small plastic wedge that loops over the finger and is part of an electronic system used to record progress around a course and provide personalised results. You also need clothes appropriate for the terrain - running shoes and often protection for legs if you are running through undergrowth.

Why do I orienteer?

Anyone who declares that they are passionate about something is deeply committed and motivated to participate in that something. That particular thing must fulfil one or more needs and/or purposes. For me, I have always had the urge to run, to compete in physical and mental sports, and to be outdoors - and orienteering ticks all the above. Participating in the sport challenges me and gives me a sense of purpose (to create a better version of my sporting self), joy in the moments when I compete, fulfilment and achievement, when I have competed well and run a good race with few mistakes.

Learning to be an orienteer

When considering an ecology of practice it is necessary to understand how such practice is developed. In complex professional roles would-be practitioners serve an apprenticeship through which they learn to think and act. Such apprenticeships usually involve formal study but most importantly they involve working alongside and being supervised by people who are already performing the role. In orienteering there is no formal study but there is a lot of informal study gained through the experience of orienteering (participating with others), observing and talking to more experienced practitioners, mentoring and coaching, and self-analysis.

A significant difficulty is that because the real action is always alone and out of sight, study of expert performers is only possible by inference and anecdote.

Key roles in orienteering

If it takes a village to raise a child, becoming a good orienteer involves participating in all the key roles in the sport in order to fully understand the sport. Such experiential knowledge feeds into the overall embodied knowledge and skill of the orienteer. There are four key roles involved in every race, and experience of all of them will make you a better competitor. Each role offers a different perspective enabling you to understand how events are put together, how the map for orienteering is created, and how the various constraints are likely to affect your race.

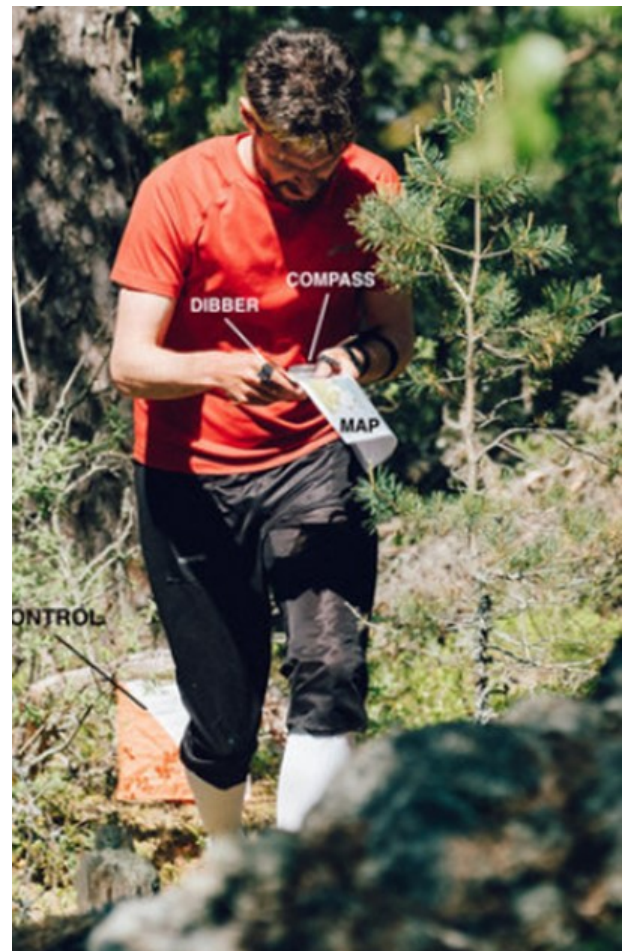
Mapper. Without a map there cannot be an orienteering event so the map maker plays a key role in the sport. Even though there are explicit international standards, surprisingly, there is no such thing as the definitive map of an area - the event map is simply one person's way of representing what they saw and believed to be important when they were making the map. Experiments where top professional mappers have all mapped the same piece of terrain have shown amazing variations, yet all versions were valid and usable. The best way to really appreciate this is to attempt to make your own map - every time you dither over what colour something should be, or whether or not something should be shown (and if so, how?), you admit that many such calls are marginal and could equally have gone the other way. Speaking for myself, drawing a handful of competition maps has given huge insight into how to appreciate and use other people's maps. As a coach, I have blanked out a small patch of the map we are using, and asked the students to fill in the blank bit, often with appalling results - giving them a real appreciation of the significance of the primary tool they are using. If you can't visualise how you would map what you are looking at, matching the ground in front of you to the map in your hand is going to be very tricky!

Image credit - <https://agilescientific.com/blog/2018/5/3/the-geospatial-sport>

Planner. The planner is responsible for everything between the Start and the Finish. There are guidelines and rules to understand and follow. Before the event, everything leads up to the production of the event maps with the courses over-printed; at the event, all the controls must be put out in the right places with the right numbers. As well as the intellectual challenge of how to make the most of the available terrain, the planner has to cope with constraints on access permissions, possible risks to health and safety, number of competitors and where it is feasible to place the Start and Finish - which are usually determined by how to accommodate the shortest junior courses. The British Championships last year involved 32 different courses and 150 control sites. Having planned courses yourself makes you much better placed to quickly assess legs and what they are hoping to achieve.

Organiser. The Organiser is responsible for every other aspect of the event - permissions, parking, toilets, timings, entries, results, food and equipment traders, budget. The constraints the organiser has to live with are likely to affect the planner, and hence the courses. A bit indirect, but still some context for your race that you should be aware of.

Controller. The Controller is an independent (eg. not same organisation) quality assurance official whose role is to ensure that the planner and organiser are delivering an appropriate event of the chosen level. So all the planner's courses must be vetted and approved, the printed maps checked, and the placing of all the controls checked on the day. Both planning and controlling involve spending significant time in the competition area, checking for usable features, correcting the map, and giving the equivalent training value of umpteen line-walks.



What's it like to orienteer?

Going for a run along roads, or across fields you know, does not require a lot of thinking. In fact it's such an automated process that this type of running activity liberates you to think about all sorts of other things. This type of automated activity is well known for stimulating creative thoughts and some of my best insights at work came while running home at the end of the day.

Orienteering is completely different in that it forces you to think about what you are doing and what you are trying to accomplish all the time you are running. Your mind has to stay focused on the task in hand and there is no space for entertaining other thoughts. The objective is to complete the whole course as fast as possible with as few navigational errors as possible.

In running on a track you know the route before you start. But in orienteering you can only appreciate the route when you get the map at the start of the race with the control points indicated. For each leg of the race, you look at your map, assess the terrain and form an efficient and realistic plan to get to the next control point, which you execute as quickly as you can. The skills lie in good evaluation and judgement leading to the plan, and in executing the plan well, all the while under time pressure. A plan is a very personal thing - the best plan for me won't necessarily be the best plan for someone else.

All beginners, and even more experienced orienteers, plan one leg at a time. There's enough to think about and if you're not overly confident, you don't know for sure you're on track till you actually see the kite marking the control. It is natural to scamper to it and then say right, what's next? So, quite often a control will be given away by someone standing there planning their next leg.



Anybody aspiring to greater things will know they should plan ahead. There are two aspects to this, certainly you look enough at the next leg to get quickly away. That's enough for most, but the next level is also to look for particularly interesting legs and think about them as soon as it is convenient. I really struggle to peruse the map while running other than on road or very good track, so "whenever convenient" may be when obliged to walk up a steep slope, or when you need a slight breather. Otherwise you have to persuade yourself to take a minor timeout on the current leg, which is undesirable.

Image credit <http://www.o-france.fr/2016-foot/>

Your plan will often identify an "attack" point - somewhere near the control which you can reach quickly and where you will be completely confident of where you are. You may consider "aiming off" - deliberately going slightly off-line so when you hit the target path or wall or whatever you'll know for sure which way to turn. You may look beyond the control for "catching features" which will stop you if you run past the control without seeing it. You will try to make the route to your attack point as foolproof yet as simple as possible - ticking off two or three big features will be a lot easier and faster than picking your way through a dozen smaller ones - so there's a real skill in "simplifying" the map to ignore unhelpful complications. You may use "handrails" -

linear features that you can keep close to, or in sight of; in this context a contour can be considered as a linear feature you can follow. You will pick routes to suit our current strengths - maybe a long path route if you believe you are quick, or up and over if you believe you are strong. You will know how accurately you can follow a compass bearing in that type of terrain - it is much easier in open moorland than dense forest! "pace-counting" is a way of introducing some objectivity into judging how far you have travelled. Many orienteers fold their map up to make it easier to focus on the current leg. Tactically, you will keep things defensive early in the race, while you get yourself into the mapping, and again towards the finish as you mentally and physically tire. I think of all these techniques as tools for my tool bag - options for my plans, and my goal is to apply the right tools on each leg of the race.

Executing your plan requires rapid and continuous matching of what the map shows and what you can see. "map-to-ground" asks whether something you can see on the map can also be seen on the ground - "ground-to-map" asks whether something you can see in the terrain matches something on the map. Your plan is formed from the map, so you begin a leg map-to-ground looking around you for your selected tick-off features; should you have misgivings, you will have to switch to ground-to-map and from what you can see, try to work out if you've strayed left or right or simply gone too far or not far enough. Contour intervals are usually 5m - lumps mapped as knolls or single-contour hills have to be picked out from lumps not big enough to be mapped. Often it is more revealing to look for negative shapes - in sand dunes in particular, the flat low bits are much easier to identify than lots of knobbly lumps. In rocky areas, the mapper will only show "significant" rock features - again you have to decide which is which. Colouring of areas shows how quickly progress can be made through the terrain (white means flat-out runnable forest, increasingly deep shades of green go through slow run, walk and fight) - and the darker shades of green will have lower visibility as well as slower movement. "Traffic lighting" is about running the easy bits really hard and slowing down when accuracy is essential.

“Relocation” is the technical term for working out where you actually are when misgivings on a leg turn into a definite case of not knowing where you are. You first have to acknowledge that your perfect run has gone, and then decide how to minimise the damage. Techniques vary from the drastic - eg. set your compass and head west until you hit the road/fence/stream - to simply standing very still and studying everything you can see, or maybe running to the top of a nearby lump to see what you can see from there. Relocating quickly and minimally is an expert skill that can be practiced - eg. you are led into terrain by someone with a map, who then hands it to you and asks you to point to where you are.

Extra skills that are worth thought and practice include reading the map while running through terrain, and then (“head up”) - reading the map AND looking around you while running through terrain. Furthermore, if you can be planning a future leg while executing this one, you’ll save considerable time - good “control flow” is about being able to run into and out of a control without a pause. Courses often have one or two legs noticeably longer than others, and these legs may involve big strategic calls or lots of intermediate tick-offs; middling length legs may involve choosing between fairly similar options; very short legs are typically run on your compass. Early in your race it is a good idea to check out the whole of the course and look for the legs that will need thinking about ahead of time. And there’s more in the terrain than just the countryside - it is extremely easy to be distracted rather than assisted by seeing other runners. You need serious self-confidence to avoid such “distraction” (if other people are going where you’re going they are irrelevant, if not, they can be ignored because they are wrong) but this flies in the face of human nature and curiosity.

Physically, the better runner you are, the faster you might be able to orienteer. Terrain running most closely resembles fell-running in terms of uneven ground and variety of gradient. Good core strength helps you keep going while dodging trees and hurdling brushings. However, a pitfall for runners starting to orienteer is the overwhelming temptation to charge about (because it is a race) before you’ve done enough thinking to know where, why and how you should be running. One excellent coaching book suggests you can expect to take a minimum of 7 years to become an orienteer, but I think this is a tad optimistic.



Image credit <https://orienteering.org/wp-content/uploads/2016/11/WC-lang-Arosa004.jpg>

But none of this technical stuff conveys the adrenalin rush of the actual race - the completely addictive feeling of hurtling through countryside you’ve never seen before confident of where you are and what you will find round every corner. It is a bit like running fast downhill in a fell race - you are operating right on the edge of all your abilities. Racing is an exercise of controlled risk - if one look at the map will do, why lose time with another one? - do I even need to look at, or physically set my compass? am I good enough to minimise distance travelled by following the purple line? if I think two options are more or less equal, why waste time thinking further - just pick one and get on with it.

Becoming a better orienteer - improving my ecology for practice

In orienteering you do not run against other people as in a conventional cross-country race so it is not possible to evaluate how well you are performing while you are racing. It is only after everyone has finished and the times are published that you know how well you have performed compared to others. But knowing how your overall time compares with others is only the tip of the iceberg as far as self-evaluation is concerned. Results of a race include the time taken by every runner on every leg - making it easy to work out which legs you did well and which went wrong (and by how much). Soon after you run, you should draw a line on your map showing where you believe you went - this can be very instructive by itself, as you will see options you didn’t consider at the time, see how you drifted off your compass, missed things in various ways, and swear you won’t be such a muppet next time. As a beginner, often you will not be able to draw your line because you simply won’t know what happened between the last time you knew where you were and the moment you “relocated” on something you could recognise.

I run with a GPS watch to keep track of time and the route I have taken. Many events offer a website where you can upload your track onto the competition map, and see the tracks that everyone else has taken. This is fascinating in two ways - first, it enables you to compare how closely your actual track matches your drawn line? Second, it reveals how your choices compare to the choices made by the fastest people? In order to make better decisions next time, you need to work out how better decisions might have been made this time.

Explicit coaching sessions, should you have access to any, will typically concentrate on the individual skills and work on them separately. With a group, you can watch other people orienteering and compare yourself - for example, how often and for how long do people look at their map? How often do they stand still? One excellent way of self-teaching if you have access is to put yourself in a good place for orienteering, draw a wiggly line round parts of it (1 or 2km, say), and then try to walk exactly along your line - you very quickly get the feel for sizes of things and meaning of colours. Most people should be able to get themselves around an orienteering course, given long enough - that is navigation rather than orienteering. Obviously we're interested in how fast it can be done - but if you can't walk confidently through the terrain you stand absolutely no chance of running through it. And as well as receiving coaching - at some stage in your personal development, you should consider giving some coaching - what have you learnt that is important enough to want to pass on? And very specifically, how would you coach yourself?



You can't get field judgement from a book. The only practical way to work on your decision-making skills, your terrain and map interpretation, simplification and refinement of your processes ... is to get out there and race or train. In as many types of terrain as possible. In as many countries as possible. As often as possible. In the dark, if you dare - night events can be found through the winter. There are now urban races in town centres, sprint races in university campuses, middle-distance races in small areas, adventure and fell races involving navigational skills - an endless variety of ways of stretching your body and mind at the same time.

Image credit <https://orienteering.org/wp-content/uploads/2016/11/WC-lang-Arosa004.jpg>

Good orienteers tend to be good most of the time, in most types of events - how to achieve such consistency seems to be a matter of evolving a reliable process that works for you, and building a bank of experience to support it. In this way practitioners become more expert.

Expert orienteers

One of the ways that expert orienteers can be distinguished from their less expert peers is in the way they prepare. Let's say you are targeting an event in a region of forested karst limestone. You will want to perceive the race area in the way the planner and mapper would. So you'll want to know who the Mapper and Planner are, and see how many examples of their work you can find. You'll arrange trips to similar

areas, preferably on maps drawn by the Mapper. I know of two internationals who have achieved great success after making up their own maps from Google Earth and other resources, and loading them into an orienteering simulator called 'Catching Features' and giving themselves interesting legs to run repeatedly. [Unfortunately Catching Features doesn't run on my current computers.] In short, you will do everything you can to feel familiar with the target map and forest without ever having been there. This is all about creating contextual, situational (place-based) knowledge. You are effectively creating a relationship with a particular place and the landscape and materials in that place.

As an accomplished orienteer you will gear your training to the type of landscape you will be racing in and try to tune your physical condition to the chosen date, with appropriate blocks of strength and speed training; you will probably concentrate more on technical training as the day looms.

Prior to the race you will have already spent time in similar landscapes to provide your senses with as near as you can get to the likely experience of running through it. On the day, you will eat and drink appropriately, warm up properly and present yourself at the Start ready for your personal allocated start time wearing the preferred clothes and shoes for the terrain, and carrying the complete set of necessary kit - compass, watch (preferably with GPS tracker for later analysis); whistle (a safety requirement); dibber (aka timing chip); control description holder (a little plastic case you usually wear on a forearm); and specs or magnifiers as you get older. You may go through some routine mental exercises to declutter your mind to enable full concentration during the race. You will want to feel that physically and mentally you are in the best possible shape at the start of the race.

When you pick up your map and find the first leg, your standard operational process should kick in - quick plan for this leg, quick assessment of the physical and technical demands of the whole course and identification of tricky legs, quick look at the next leg so you can flow straight into it. And as everything falls into place you will naturally speed up ... until something unexpected brings you momentarily back to basics and your "relocation" skills have to be brought in.

My story of becoming an orienteer

I was born to run and have been involved in competitive running for most of my life. I ran cross-country and on the athletics track at school joining a local running club when I was 12. I spent my 20s and 30s as a competitive road and fell runner, with squash, football and cricket mixed in. The lunchtime runners at work were a mix of traditional and running-boom road and cross-country runners, including some very fast people. A couple of orienteers joined in but didn't make any headway with their invitations. Then my job moved to Manchester and the lunchtime group there included a current orienteering international. I had been a serious runner for a quite a while but personal bests were becoming increasingly unlikely as age crept up. I was far enough up the field in long fell races to be totally isolated some of the time, and I'd started to enjoy mountain-marathon events where you really had to be able to read the map, but I was conscious of being seriously deficient in navigational skills. All these things came together at this point in time, and hence, I accepted the challenge of an initial couple of events (at Eccleshall Woods in Sheffield and the Roaches in Staffordshire). I loved the charging about side of it, but results were disastrous - they took me almost 3 hours and the winner took only 45 minutes. I was extremely fit at the time - to quote Bob Dylan, something was happening and I didn't have a clue what it was! Inexplicably I chose to fight rather than flee and embarked on a mission of fixing things - trying to become the better version of myself that I wanted to be.

Image credit <https://orienteering.org/wp-content/uploads/2016/11/WC-lang-Arosa004.jpg>

I saw no reason why I couldn't be as good navigationally as anyone else - my thinking was that I wanted to get as close to the British Champion as I was behind the top runners in 10-mile race, as I would then be able to claim equal brain power in an inferior body. And I could see that not many people were actually that good.

So that was the target I set myself and over the next few years progress was slow but tangible. I was fortunate in having a gentle, patient and expert mentor (my international orienteer colleague). I would try to run the same events as him and compare the lines I had drawn on my map with his. At the beginning there was absolutely no resemblance, but after 3 years or so they would regularly be fairly similar. The "mistakes" I made in executing a route when I first started would each cost me 20-30 minutes, but over time they came down to 10 minutes, then 5 and now I feel grumpy about losing 2 minutes on any leg. When you first start, finding a control where you expect it feels almost orgasmic - a buzz that can be repeated about 20 times in a course. However, a sign you are making progress is when the reverse becomes true - if there is no control where you were expecting it you get cross!

Getting a daughter into the regional junior squad gave me my first sight of coaching exercises and methods. As a newbie parent helper, being sent out to hang controls for the exercises was a daunting challenge - in very limited time you had to place the controls perfectly in position for fear of public embarrassment, and find them again afterwards. This simple act of participation improved my confidence and aspirations no end.

At first, the most relevant incentive scheme for my level of orienteering was "badges" - if you were within double the winner's time it counted as bronze; within 1.5 times counted as silver; within 1.25 times counted as gold. The initial struggle to get a bronze somehow turned into occasional silvers and then occasional golds. At this point, I started to be interested in the championship events and wondered about my national ranking. Early efforts found me well outside the top 100 of my age ... soon to be aiming at top 20 and eventually being ranked top for a while, though by this stage what actually matters more is positions in the top races and medals for the sideboard.

Orienteers love to compare routes and consequences after an event. Groups gather round the results displays, comparing split times leg by leg and marvelling at unique choices which have proved successful. This process is very useful - you see who is running fastest, how other people think, and what levels of risk you need to embrace. Some would say we're all searching for the perfect run (ie. all controls nailed at speed) but one world-level performer told me that if he didn't have a couple of minutes of mistakes in a run, he can't possibly have been running hard enough - to avoid all mistakes would cost far more time than the odd small miss. I'm still thinking about that one!



I'm now well into my 60s so 30 years after I started, why do I keep doing it? One reason is that I don't believe I've finished improving - my process is definitely not as robust as it should be, and I am very easily distracted both by other people and by trying to multi-process planning ahead along with executing the current plan. Another reason is that the sport's set-up is very age-friendly - competition is in 5-year age-bands all the way up to 95. This is necessary as cognitive decline is probably more serious than physical decline, so every year you get slower in two ways rather than one. The main reason though is that it remains hugely enjoyable. I especially enjoy travelling to places I would otherwise not dream of visiting, to run well-planned courses on good maps, at well organised events. Top experiences to date include racing round the streets of Venice; a week-long event in Swedish forests with 25000 participants; World Masters events in Norway, Austria, Hungary, Germany, Estonia, Denmark; summer holiday events all over Scotland and the Lake District; some superb British Night Championships; London City races; helping on summer training camps for top 14-yr-olds. The beauty of it is that every day is different and on every day the perfect run is a possibility, and even if it was not possible memories of the experience are always useful - all experiences can be valuable when we need to draw on them.

Looking back over my orienteering career I can see how I progressed from being a novice to becoming more expert through the things I did to learn and improve myself. I learnt about the sport from coaching books with lists of the skills and how to practice them. I talked to fellow orienteers - any conversation about a race will be about alternative plans and how well they worked or not. I observed other runners. I experienced running and navigating and learnt that if one type of plan regularly goes wrong (eg. follow a bearing for 200m) you will be less and less likely to choose it. I also developed deeper insights into the way map makers think when creating a course by making my own maps.

How is orienteering creative?

This series of articles to explore the idea of ecologies of practice is considering how creativity features in the ecology based on the proposition that creativity emerges through the relationships and interactions of a unique person with their unique environment and situations. One dictionary definition of creativity says it is the ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations etc; originality, progressiveness or imagination¹



Given the sport of orienteering has rules, frameworks and guidelines, that competitors and officials must comply with, you might wonder if creativity is possible or desirable. I'd assert that there's plenty of scope for creativity within some of the roles outlined above. Firstly, in the creation of maps - finding the most elegant way of representing the terrain; finding the most efficient ways to achieve the necessary surveys. Secondly, in organising events, there have been some innovative solutions to logistic issues like restricted parking possibilities. And planning would normally be thought of as a creative process - you start with a relatively blank page and create an entire event's worth of controls and courses. Planning in an area that's been used before you will be trying to do something different [innovative]. You might be hoping to take the competitors by surprise in some way, though I think the main thing is to find legs that have choices enough to make people fret about what to do. Not sure any of this transcends tradition - the tradition is the variety of it all.

Image Credit:

<http://slow.org.uk/events/wimbledon2014nov/>

As a competitor, during a race you are faced with about 20 unique problems and have to use your perceptions, judgement and imagination to create solutions in a hurry. These would normally be firmly rooted in your own routines developed through past experiences, and as I indicated previously, the development of such routines is often benchmarked against the best orienteers in the field. Implying that optimal solutions - arguably the most creative on the day in that particular terrain, are the solutions created by the best orienteers. But in any race there is always the opportunity for any competitor to be original in some way. In such circumstances creativity is embedded in the performance ie the act of making an imaginative plan and executing it in the most perfect way to achieve the best possible time.

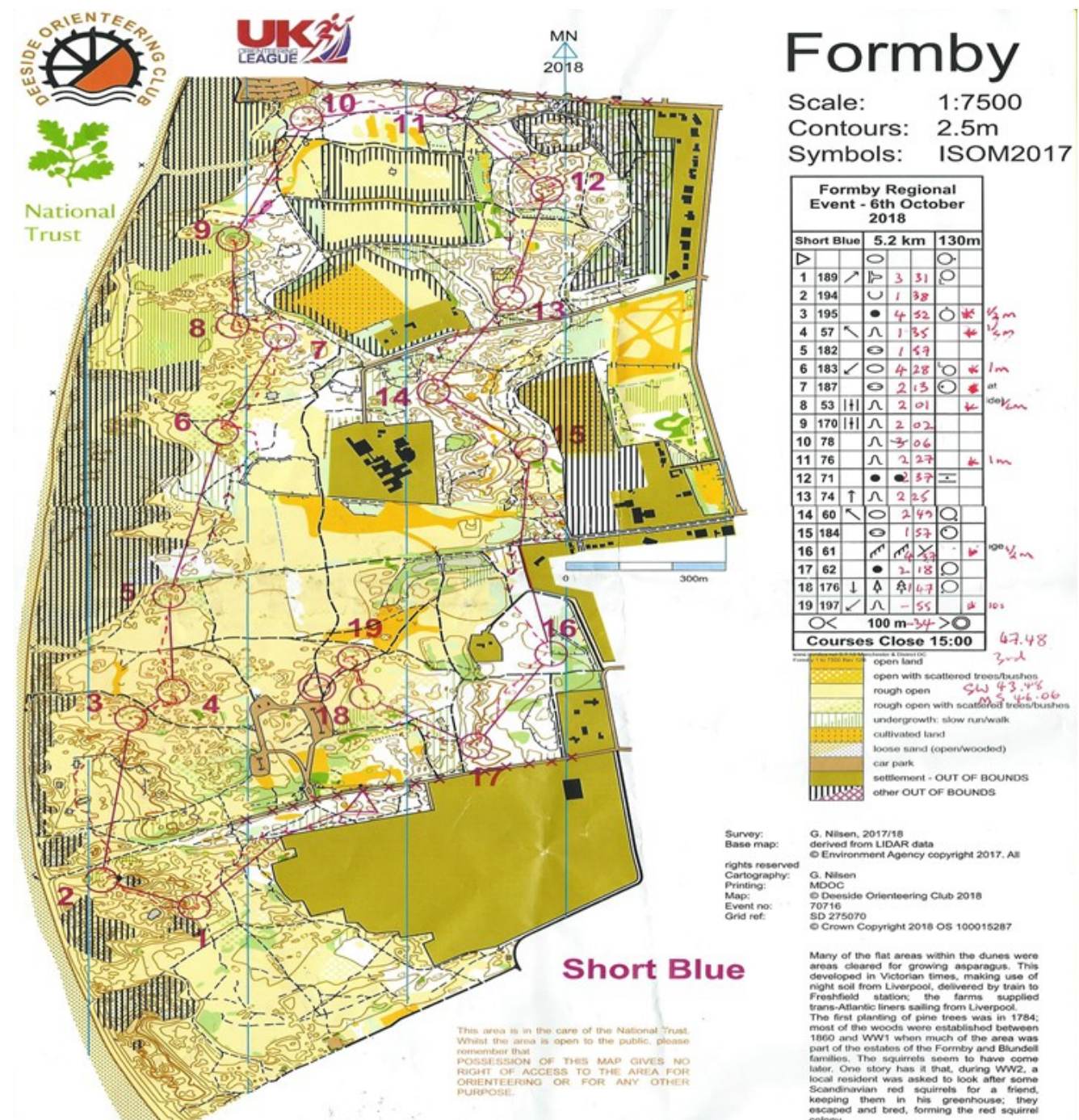
Reflecting on a race and learning from experience

Reflecting on the experience of a race, trying to understand what happened, why I did the things I did is an important part of the learning process, and essential in order to improve. After ever race I engage in a process of self-critical analysis using my map and times to evaluate my performance.

Here is an example of a recent post-race analysis which provides insights into how I thought and acted during a race in the UK Orienteering League. The race took place on the sand dunes at Formby, and the map (Figure 2) shows my route over the course annotated with my times for each leg.

Formby is one of a series of sand dune locations along the coast north of Liverpool, which are used for races once every few years. I've raced there a couple of times before, plus once in the dark. The open areas are mostly runnable albeit hard work in soft sand; the wooded areas are utterly beautiful - well spaced mature pine trees with soft needles to run on and red squirrels to watch out for. Dunes move around over time - the map for this event was redrawn using up-to-date LIDAR data.

Figure 2 The map I used in the race at Formby showing the route I took.



Discussions with my travelling companions just before the event and reading the event Final Details meant that I knew the approximate shape my course would be. The details provided by the organiser warned me that the undergrowth hadn't died back much so I chose to wear "bramble bashers" lower leg protection. I wasn't expecting any really long legs as the area is mostly smallish patches of detail to thread between. Also, when I reached my Start I knew it was in a finger of wood so the first couple of hundred metres would be simply getting to the end of it.

#1 - picked up the map, quickly confirmed expected shape and no long legs, ran hard along the path by the fence deciding to attack from the path bend. Got a bit confused, as from the end of the fence it wasn't clear what was a mapped path and what wasn't. Dived off left a bit early but soon picked up the required path without any drama. Looked up from the path bend and thought I could see the spur the control was tucked behind, but ticked off a clear depression on the right just to be sure.

#2 - no choice here but go straight through the dunes. Up and over from the control and hang on, what's that metal mast I can see? Hiding on the map on the edge of the circle ... so just run straight for the mast and drop onto the control from there. So far, so good.

#3 - head North onto the first path, but what to do then? The easiest attack on the control would be from the major path behind it, but that's a very long way round, and the dunes are runnable enough to go straight. Decide to take a chance on a long-range attack from the fence corner - the map shows a single knoll fairly isolated so surely it should be visible from the ridge. Straight over the lump and hit the next path more or less smack on the junction. Now get dragged off-line to the left as the running was very fast and the slope to the right was definitely not going to be quick. So cross the fence below the corner, cross the depression and pause when crossing the ridge. Quickly looking at the compass and the terrain, pick out a promising lump and head straight for it. Oh dear, no control - what has gone wrong? Quick glance to the right sees the major path, bending, and it feels a bit too close. Quick glance to the left and there's a control on a very small vague lump, so I must have chosen the wrong lump from the ridge. At most half-a minute lost, so not a disaster.

#4 - no choice but to aim the compass and hope to read all the bits. Get dragged a bit right as progress was easier and get onto the expected horseshoe dune, but a bit surprised by the orientation of the horseshoe, so lost time dithering before running round the top and onto the control. Would have been better going for a left-hand-side approach.

#5 - how brave are we feeling? Ignore all the detail and hack North to the path - emerge pretty much halfway between the two junctions. See the bushes on the slope ahead, but not the free-standing lump to the left - never mind, just get up there on the compass, and there's only a few things mapped so they should be easy to sort out. And hit it smack on, by now with a plan ready for the tricky-looking #6.

#6 - want to get quickly to the path near the fence, but getting confidently any nearer to the control looks impossible. The white woodland is lovely, the paths come up as expected ... so now where to leave it? Decide that as the white was fast, and distinct, I'll attack from the finger just east of the control. Goes a bit awry when this wood has quite a few nettles and other undergrowth, so come out slowly and not exactly sure of position and look for a promising lump. Again, Oh dear, no control, but just to the left there's another lump with my control on. The splits indicate I lost a minute or so on this leg, but I'm not sure I see a better plan, so I think that was dithering time and not being aggressive enough in the undergrowth.

#7 - again a long path option but there's only a few features in the white patch so we can use the fenced enclosure to line up a due-North approach to the forest bit and sort it out on arrival. Reach the forest edge and straight onto the control. Yes, clever boy.

#8 - somehow the tiny amount of looking ahead I'd been able to do had implanted the leg to #9 in my head, which began with a simple hack North to path and along fence. So I hacked North, bit surprised how far it was, saw a surprising combination of fences and paths and luckily realised I was busy executing the wrong leg! Fortunately little damage was done, as attacking from the path was easy enough though the vegetation felt a bit wrong.

#9 - OK, now we need to hack North and along the fence, but what to do from the fence corner? I pick out quite a big lump with thick forest behind it and a knoll on the near corner, and run straight in.



#10 - trivial from either path junction, but how to get onto a path? It looks such a long way round the mid-green blob that I feel obliged to take it on. After about 30m of crawling, ducking, pushing, I break through the worst of it, feel that was the right choice and run hard and happily onto the control.

#11 - with the white forest being so runnable, I foolishly decide to ignore the path and stay in the trees until I see the semi-circular slope, which should be a nice attack point. And then I get a bit confused by the spur before it which I thought might be it but was the wrong shape ... and end up losing time on what should have been an easy leg. Give myself a stern talking to.

#12 - easy and fast to get to the path junction North of the control, and see the yellow depression halfway which will be a decent attack point. Crest the hill slightly to the left but no time lost.

#13 - decide the round the hill option is way worse than up and over, so decide to attack from the hilltop guided there by the fenced clearing and undergrowth. First have to swoop down the hill, join a couple of paths together and find as much running up the next hill as possible.

#14 - decide to attack from the path at the fence corner to the NW, and quickly join up the paths and road to get fairly close, but somehow things don't feel right ... so leave the path early and climb straight up and see the control to the right as expected.

#15 - chose to hang right of the very lumpy ridge and keep the green fenced chunk below me on the right. Just a tad surprised when the control was in a valley rather than up a spur - I hadn't spotted that the contours would now be going down rather than carrying on up. No problem, saw the sandy bit and the path and straight in. Starting to feel tired.

#16 - coping with the contour misread meant I'd not got an exit plan from #15, though I did know the second half of the leg was easy. Mistakenly I thought if I went back up to the path there'd be a decent way through, but it turned out very up and down and a bit complicated and too weary to want to sort it out, ended up baling out onto the path along the fence that I should have chosen in the first place.

#17 - saw the north-south ridge shape with kinks and knobbles so after ticking off the green blob, aimed off a bit right. Crested the ridge a bit early and a bit surprised by how far there was still to go.

#18 - no real attack point other than somewhere along the path. Here goes, set the compass, round a few bushes and there's the significant trees and the control alongside.

#19 - very tired now. Hope that north on the compass will hit the path near enough for all to be obvious, but it's not as runnable as it might be and get dragged a bit left. Cross the path, see a depression left and a hill straight ahead so swing right and onto the control.

All in all, I considered it a respectable performance - quite a few little mistakes, but nothing expensive, which on a renowned tricky area is pretty good going. However, 4 minutes down on Steve Whitehead, who is the benchmark for consistent top-level performance in my age group, is nothing to be overly smug about. My evaluation shows me I can be better and whatever I have learnt through this experience has the potential to be drawn upon in future races.

Sources

1 <https://www.dictionary.com/browse/creativity>

An Orienteer's Ecology of Practice and Performance

Norman Jackson

Introduction

Competing against the clock, other competitors and oneself (ie previous performances) is a domain specific challenge for orienteers. In his companion article¹ John Britton (JB) describes what it means to participate in the sport and practice as an orienteer based on his own experiences of orienteering and his own development as an orienteer. Through his narrative we can begin to appreciate the complex web of relationships and interactions that an orienteer will develop and participate in as he prepares for and competes in, an event. We also gain a sense of the entangled nature of the cognitive, physical and emotional when participating in an orienteering event. In this article I will use the ecological metaphor to explore the connections and interactions of the orienteer's thinking, feelings and doings in order to perform in a race through the idea of an ecology of practice^{2, 3}.

The use of the ecological metaphor to characterize complex practice and performance involving learning and achieving, is an attempt to relate a whole living, thinking, feeling, acting (performing), person to their circumstances and contexts, their needs, desires and purposes (immediate and longer term), the situations they are dealing with and the particular places they are learning and performing in.² When someone encounters a new situation, problem, challenge or opportunity, they use their senses and their mind's interpretation of the flow of information and context to perceive and comprehend the situation and act in ways that are appropriate. Effectively, they create, inhabit and sustain an ecology that enables them to interact with their environment, which they are co-creating, and the particular things that matter to them in order to understand, act (perform) learn and achieve.

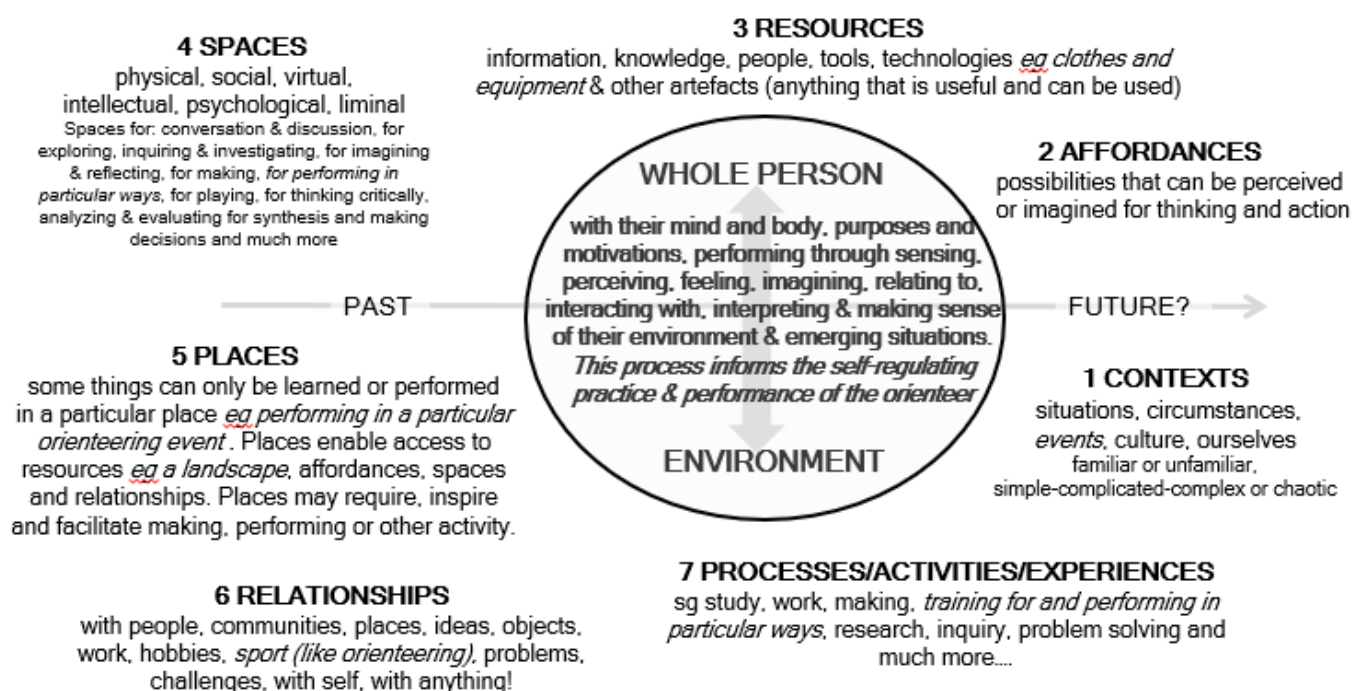
In the words of anthropologist Tim Ingold, *"Every organism has an environment: the organism shapes its environment and environment shapes the organism. So it helps to think of an indivisible totality of 'organism plus environment' - best seen as an ongoing process of growth and development"*^{4:20}. The orienteer's environment is the landscape he trains and competes in and the ecosocial system that comprises the sport, how its organized, the rules and regulations and the culture, activities and ways of being it promotes. He participates in this environment and through these interactions he undergoes a process of growth and development. Through his participation he contributes to and changes his environment and himself. This generative process of personal growth brought about through an individual's purposeful interaction with their environment is what Ingold^{5, 6:124} calls 'undergoing', *"every practitioner has to improvise his or her own passage through the array of tasks the performance entails..... the wellsprings of creativity lie, not inside people's heads but in their attending upon a world in formation. In this kind of creativity, undergone rather than done"*^{6:124}. For the orienteer, a world in formation is his unfolding present during a race, where he is making decisions under complexity, uncertainty, and time pressure, while exerting and regulating his physical resources, as depicted in the latter part of JB's narrative.



Image credit: <https://commons.wikimedia.org/wiki/>

Figure 1 provides a heuristic to reveal some of the complexity involved in significant acts of learning and performing in an unfolding present - a world in formation.

Figure 1 Learning ecology heuristic to reveal some of the complexity involved in significant acts of learning and performing in an unfolding present (adapted from Jackson^{1,2}). The labels (1-7) explain aspects of the ecology they make reference to the performance of the orienteer.



An orienteers ecology of practice and performance

An orienteers ecology of practice is lived in his unfolding present but connected to his past experiences of not only engaging in the orienteering element of the sport, but also the non-competing aspects of the sport, like the making of maps that provide the key navigational information to those who are competing, and the planning and organizing of events. Furthermore, in his immediate past, prior to a particular orienteering event, he might have 'undergone' particular training and other forms of preparation specifically for the event.

His ecology of practice is also an ecology of performance. Its primary purpose is to enable him to accomplish his proximal goal of competing as an orienteer and performing well in orienteering events. But this practical near future objective is connected to the more distal goal of becoming the 'better version of himself, the improved athlete he wants to be'. Whenever he enters an event, which we might view as a personal project, how he prepares for and competes in the event will provide him with opportunities to use and develop his knowledge and skills as an orienteer.

His ecology of practice for performance comprises himself, his environment, his interactions with his environment and the learning, development and achievement that emerges from these interactions. As he begins his project he is, in effect, entering a liminal space⁴ with all the uncertainty, perplexity and ambiguity of not knowing what lies ahead in his immediate future for performance. The ecology he creates is his means of preparing himself and then performing (racing and navigating) in this liminal and physical space.

His ecology of practice includes his training activities aimed at reaching peak physical fitness and mental readiness for the particular orienteering event he will perform in. Each orienteer will have developed his own training and dietary regime to achieve this readiness to perform goal.

*An accomplished orienteer.. will gear [their] training to the type of landscape [they] will be racing in and try to tune [their] physical condition to the chosen date, with appropriate blocks of strength and speed training; [they] will probably concentrate more on technical training as the day looms. Prior to the race [they] will have already spent time in similar landscapes to provide [their] senses with as near as you can get to the likely experience of running through it. On the day, [they] will eat and drink appropriately, warm up properly and present [themselves] at the Start ready for [their] personal allocated start time wearing the preferred clothes and shoes for the terrain, and carrying the complete set of necessary kit - compass, watch (preferably with GPS tracker for later analysis); whistle (a safety requirement); dibber (aka timing chip); control description holder (a little plastic case [worn] on a forearm); and specs or magnifiers as [they] get older. [They] may go through some routine mental exercises to declutter [their] mind to enable full concentration during the race. [They] will want to feel that physically and mentally [they] are in the best possible shape at the start of the race.*¹

An orienteers ecology for performing in the race (Figure 2) involves him in acquiring and processing lots of visual information as he runs, including perceptions of the terrain and the map he is holding with the controls marked on it. With this information he makes important decisions as to how to run the leg - from the many affordances (opportunities for action) available to him he chooses which route to take. Having made his decision he must run the leg and find the control point as quickly and efficiently as possible, while attending to the terrain he is running through searching for features he believes he will expect to encounter on his route. All the time he is mentally processing information, making best guess judgements about what lies ahead and what he should be attending to in the landscape, and adjusting his mental map and direction when the feedback he gains tells him his efficiency on task could be improved. Such judgements cannot be made in advance, they must be made in the moment in the particular place and time in which he is immersed.

Figure 2 Synthesis of an orienteers ecology of practice while competing in a race



Tim Ingold has much to say about the ecology of making of cultural artefacts that grow through a unique person interacting in a purposeful and goal directed way with their social, cultural and physical environment. Perhaps the same is true of the orienteer as he makes his route through the landscape and connects up the control points in his own unique way. In this way the decisions he makes to plan his route, the way he uses his body to execute his plan in the most efficient and effective way, creates his performance.

'what people do with materials [eg the material world of the orienteer's landscape]..... is to follow them, weaving their own lines of becoming into the texture of material flows comprising the lifeworld. Out of this, there emerge the kinds of things we call buildings, plants, pies and paintings'^{7:92}

In our example, the orienteer's interaction with his material world enables him to make a cultural artefact that is relevant to his sport namely a unique map of his journey through the landscape that is unknown to him as he plans and executes his plan during a race.

Psychological journey

At the heart of the orienteer's ecology of practice is the cognitive process which enables him to perform - to move himself with effort at speed through the landscape of a place he has yet to know in a self-motivated and self-determined way. This ecology of practice has been attuned, over years of training and participating in events to perform in this particular race. Unlike an athlete who knows that he must complete four laps of a perfectly laid track to complete his race, the orienteer starts his race without knowing how far he needs to run or in what direction or over what terrain. All these things must be worked out during the performance. The race he plans and executes is the unique process he will create for himself in this ecology of performance and through it he will form a relationship with the landscape and the control points that are hidden in it. This is not just a strenuous physical activity it also demands significant cognitive and emotional activity. These are the psychological spaces he will inhabit in this ecology of practice: his race is as much a psychological journey as a test of his speed and endurance.

It's clear from JB's article that there is a lot going on in the mind of an orienteer during a race. Not only is he trying to regulate his running and his breathing, avoiding obstacles, and making sure he places his feet safely, he is also holding in his mind an imagined map of the terrain and the route he anticipates taking through it, while seeking visual clues in the immediate landscape to locate himself, and monitoring the direction and time of travel while searching for the next control. In this way his actions and cognitive attention are lived out in the present while his imagination anticipates his immediate future. Alongside this integrated mental process he is also regulating his emotions eg trying to control the effects of the adrenalin pumping through his body and trying not to panic when navigational errors are made. All these things require attention and the points at which they require attention are only known in the moment as he interacts with his environment as he performs.

'But none of this technical stuff conveys the adrenalin rush of the actual race - the completely addictive feeling of hurtling through countryside you've never seen before confident of where you are and what you will find round every corner. It is a bit like running fast downhill in a fell race - you are operating right on the edge of all your abilities.'^{1:8}

'Decide to take a chance on a long-range attack from the fence corner - the map shows a single knoll fairly isolated so surely it should be visible from the ridge. Straight over the lump and hit the next path more or less smack on the junction. Now get dragged off-line to the left as the running was very fast and the slope to the right was definitely not going to be quick. So cross the fence below the corner, cross the depression and pause when crossing the ridge. Quickly looking at the compass and the terrain, pick out a promising lump and head straight for it. Oh dear, no control - what has gone wrong? Quick glance to the right sees the major path, bending, and it feels a bit too close. Quick glance to the left and there's a control on a very small vague lump, so I must have chosen the wrong lump from the ridge. At most half-a minute lost, so not a disaster.'^{1:13}

Research has demonstrated⁸ that endurance performers, like long distance runners, control cognitive activity to optimise performance. Theoretical approaches, such as grounded cognition recognise the interaction between perception, action, the body, and the environment during goal achievement⁹. Amongst elite performers, task-relevant, self-regulatory cognitive strategies have been shown to facilitate performance improvement, while distractive thoughts may result in non-optimal pacing.

Schunk and Zimmerman's elegant and powerful model of a self-regulating human system relates and connects a person's thinking, actions and performance in a particular situation, to their planning for their actions and their reflections and evaluations on their actions and their results. A person who adopts a self-regulating approach to their own learning and performances will be involved in a continuous process involving 1) forethought 2) action/performance 3) self-reflection operating within a context specific environment that is structured by the learner to provide resources for learning and achieving specific goals^{10, 11}. Figure 3 summarises the key features of this theoretical model.

Experienced/elite athletes are known to develop strong self-regulatory habits to enable themselves to train, prepare and improve themselves for competing in their sport. They plan carefully, focus intensely on the task when they perform, monitor and seek feedback on their performance and engage in serious retrospective analysis aimed at identifying aspects of their practice and performance they can improve on.

Research into expert performance in orienteering events shows that cognitive processes are characterised by rapid decision making under conditions of complexity, uncertainty, and time pressure.¹³ In other words forethought involves the rapid appraisal of the task - from all the information available to find the best route to the next control. He is effectively perceiving the affordances in the situation and deciding which of the many possible affordances he can perceive, he will take. Once he has set his goal - *I will take this route*, he believes in his own decision and capability to achieve this goal and this motivates him to complete the task as efficiently and effectively as he can.

Figure 3 A model of self-regulated learning^{11:226} coupled to notions of reflection¹²



But the orienteer does not run unthinkingly in the direction of the control. In his ever unfolding present, he integrates and regulates his running with his awareness of where he is in the landscape. The material world that forms the landscape is his most important resource. He senses the materials using sight, sound, touch even smell and integrates all this sensory information with his mental map of the landscape, and the features drawn on the physical map in his hand. He can see the direction of travel and is aware of the time he is taking and therefore the approximate distance he has travelled at the speed he is running. From all this information he has a pretty good idea when he should expect to see his next control. He continually relates his perceptions of the features in the landscape with the mental map in his head and checks this from time to time with the physical map in his hand.

Eccles et al.¹⁴ developed a theory of cognition in orienteering and showed that successful performance during an event requires attention to three main sources of information: the map (to know the control locations and where one is located in the terrain); the surrounding environment (to compare it with its mapped representation); and travel (watching where one is going while running to avoid hazards). Owing to finite attentional resources, the orienteer cannot attend simultaneously to all three sources of information and thus must switch attention between the sources leading to trade-offs in attention between them. For example, trading off too much attention from travel to attend to the map can lead to collisions with hazards or slips leading to injury.

More skilled orienteers develop strategies to circumvent these attentional limitations. They use cognitive strategies such as simplifying the information provided on the map to the minimum required to navigate¹⁴. Specifically, skilled performers reduce the map information required to navigate by selecting features from the map that are easy to locate visually in the terrain such as large boulders. They also strategically schedule their attention by using “quiet periods” of navigation to attend to the map to plan ahead¹⁰.

Macquet et al¹³ present the results of a research investigation into the cognitive activity of a highly elite orienteer over the course of two international competitions. The participant wore a head-mounted video camera throughout performance to enable the capture of an events record from the participant's perspective. During a post-performance self-confrontation interview, the participant was played the video and asked to describe his activity in relation to the events observed. The interview data were used to identify the orienteer's concerns at each point in time during the races. These “local” concerns were then compared and subsequently classified to characterise the typical concerns of the participant ie the most important things he was attending to during the course of the race.^{13:2}

Results showed^{13:2} three typical concerns that drew his mental and physical attention: (a) finding the controls faster than opponents; (b) optimising running pace throughout the race; and (c) reflecting on actions undertaken during performance. The researchers concluded that the performer used a range of knowledge-driven strategies that enhanced the efficiency of task performance, and flexibly switched between strategies and decision-options in the face of changes they encountered while immersed in the task. The expert orienteer also engaged in various reflective processes concurrent with performance that augmented the use of these strategies. These sorts of features in the self-regulated ecology of performance of an elite orienteer are also manifested in JB's narrative of a race he was involved in.¹



Image credit: <http://www.kristianjones.co.uk/>

After the performance the orienteer continues to think about the race he has run. Reliving the memory of his performance, tracing the route he took for each leg, examining the times he took and the navigational errors he made and making judgements about his performance. Such, post event, reflective thinking involves both self-judgements and self-reactions to those judgements^{10,11}. The two key self-judgement processes are self-evaluation and attributing causal significance to the results. Self-evaluation involves comparing our perception of our performance with a standard, criteria or goal - *How well did I achieve my goal of finding the control?* It might also involve comparing own perceptions of performance with the performances of others. Attributional judgements are pivotal to self-reflection because attributions to a fixed ability discourage efforts to improve. By contrast attributions of poor performance to inappropriate strategies or errors sustains perceptions of efficacy and motivations to engage in different ways in similar situations in future.

Self-reaction includes judgements on self-satisfaction involving perceptions and emotions regarding one's own performance. Courses of action that result in satisfaction and positive effect are pursued. Whereas actions that produce dissatisfaction and have negative effects are avoided. Self-regulated learners condition their satisfaction on reaching their goals, and these self-incentives motivate and direct their actions.

Reflecting on and articulating the key lessons learned from experience, boosts self-efficacy, which in turn has a positive effect on learning and our motivations to deal with similar situations in future. Reflection also aids the process of making explicit what has been tacit ie knowledge that was embodied in dealing with the situation¹⁵. By extracting deeper meaning from the situation we are able to create new personal knowledge to guide their future planning and actions and also refine or generate self-theories of why certain things happen in certain situations. Such high level abstraction helps us transfer what has been learnt from one context to another and one time to another. In this way lessons learnt during the implementation of one ecology of practice can be brought to bear in a future ecology.

Concluding Thoughts

Self-regulation is a powerful theory that explains the relationship between a person's willingness and desire to learn and perform, their ability to set themselves goals, create and implement strategies and activities to achieve their goals, monitor and evaluate their progress towards what they want to achieve and adjust their

strategies if necessary. It also enables them to recognize and make use of new affordances (opportunities for action) as they emerge, make judgements about their performance and draw deeper meaning / learning from their experience through reflective processes. All these dispositions, ways of thinking, capability and behaviour are involved in the creation and maintenance of a complex ecology of practice in which learning and performing in order to achieve desired goal are embedded.

Orienteers provide excellent examples of people engaged in interest-driven learning. No-one makes them participate in the sport. Neither does anyone insist that they have to improve. They do these things because they want to do it and they are interested in challenging themselves to learn more about themselves and how to improve their own performance. Orienteers provide excellent illustrations of people involved in self-motivated, self-directed projects for learning how to perform better- each race being effectively a new project. JB's narrative¹, which provides the basis for this analysis, illustrates this fact and these behaviours very well.

One way of viewing this dynamic is from the perspective of 'making'. In participating in an event an orienteer makes a map of his tracks through the landscape. This map is a cultural artefact formed during and in order to perform. An orienteer also trains to compete in the sport of orienteering and each event offers a new opportunity to make a better version of himself through his training and other preparations and through participating in the event and learning from the experience.

Anthropologist Tim Ingold offers two perspectives on the idea and process of making namely ^{16:20-2} making as a project, "we start with an idea in mind, of what we want to achieve, and with a supply of the raw material needed to achieve it. And it is to finish at the moment when the material has taken on the intended form", or, making as a process of growth".

"....in undergoing, the relation of temporal priority between mastery and submission is the reverse of what is assumed in the cognitive or intentionalist account of doing. Here submission leads and mastery follows..... Rather than a commanding mind that already knows its will trailing a subservient body in its wake, out in front is an aspirant imagination that feels its way forward, improvising a passage through as yet unformed world, while bringing up the rear is a prehensive perception already accustomed to the ways of the world and skilled in observing and responding to its affordances." ^{5:137}



Perhaps both of these senses apply in orienteering to. The making of a performance and an artefact during an event can be framed as a project that is completed when the race has been run. But there is a deeper process going on in which the participant 'undergoes' through their participation in an uncertain, dynamic unfolding, process of the making of a performance. Perhaps it is this undergoing that holds the deeper significance to the orienteer and it is this that motivates him to sustain his involvement over many years.

You can gain a real sense of what it is like to participate in an orienteering event from this 3min clip from the BBC's Adventure Show <https://www.bbc.co.uk/programmes/p06kl8m2>

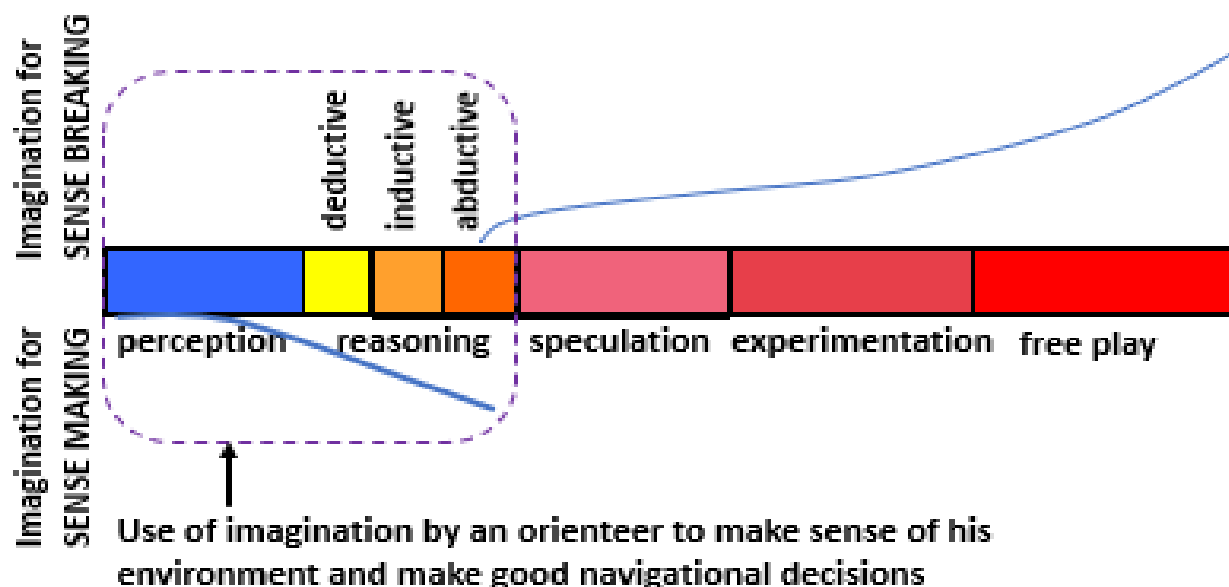
So where does an orienteer's creativity lie in his ecology of practice & performance?

In CAM9 we are considering how creativity features in ecologies of practice based on the proposition that creativity emerges through the relationships and interactions of a unique person with their unique environment, situations and challenges. The possibilities for how creativity might be involved very much depends on how you understand and define it. In his narrative JB chose a definition which was framed around abilities and ideas ie *the ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations etc; originality, progressiveness or imagination*¹. If, on the other hand, we adopted a process-based definition of creativity such as that proposed by Rogers¹⁷ namely, *'the creative process is the emergence in action of a novel relational product growing out of the uniqueness of the individual on the one hand, and the materials, events, or circumstances of their life'*, and we substitute 'performance' for product, we can see how the idea of creativity might be more relevant to the orienteer. Furthermore, this is an ecological view of creativity emerging from a person's thinking and actions as they are performing in real-time in a particular environment and context.

From the descriptions above the orienteer's cognitive journey is one of continuous problem solving involving the rapid acquisition and processing of lots of information flowing from the landscape to make rapid, pragmatic decisions on the routes that will afford him the quickest access to the next control. In such circumstances there is no time for deliberation through which novel solutions might emerge.

This 'pragmatic' use of imagination¹⁸ (Figure 4) integrates imagination with perception and reason to create mental images of routes through an unknown landscape and then navigate them to the next control, is deeply embedded in his planning process and any improvisations he makes during his run. In other words, creativity is not something that can be easily recognized or indeed separated from his expertise as an orienteer.

Figure 4 Pragmatic Imagination and the Cognitive Continuum' Ann Pendleton-Jullian & John Seeley Brown^{18 p68-9}
The orienteers cognitive spectrum involves the integration of imagination, perception and reasoning to create mental models of his track through the landscape and make good navigational decisions.



Champion orienteers are more expert in their practices. They are able to focusing on the most relevant information from all the information that is flowing into their consciousness and process it quickly to create mental maps of the terrain and make good navigational decisions. But they are also fitter and faster than their competitors. Research has shown¹⁹ that creativity and innovation are important to Olympic athletes enabling them to develop new strategies and skills for training and competition to give them an edge on their competitors. The same is probably true of champion orienteers. But the extent to which orienteers use their imagination in an integrative cognitive process as depicted in Figure 4 to create novel solutions to their navigational challenges, remains a matter of speculation.

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Hello everyone! For those of you with an interest in digital learning and teaching, myself and +Chrissi Nerantzi are hosting a Wildcard event this afternoon (1:30-3PM UK time) called the #101creativeideas challenge.

It is part of the ALT Winter Conference and the idea is to create and share ideas for creative digital practice in learning and teaching!

You don't need to register, just go to <https://altc.alt.ac.uk/online2016/sessions/101creativeideas-challenge-71> . . .



+1 1

Chrissi Nerantzi: Thank you Ellie. Join us if you are around. Thank you for all your wonderfully creative ideas so far.

Chrissi Nerantzi Owner • General stuff, announcements ▾ 7d

Hello everybody,

Nassi (15) has created an advent calendar for some daily inspiration. Please access <http://www.celt.mmu.ac.uk/advent/index.html> to unlock your daily star.

Feel free to share with others. Thank you.

Chrissi from the #greenhouse

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+1 5

francisco j. santos: Nice and inspiring. Thank you Chrissi.

Sandra Sinfield Moderator • General stuff, announcements ▾ 2w

#lovelid - loving this invitation! Thanks #cdmooct

Originally shared by Kevin Hodgson

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CREATIVE PEDAGOGIES OPEN COLLABORATION

We have just published our first newsletter .. why not join us in our quest for new understandings for improving our educational practices <http://www.creativeacademic.uk/2016-17-programme.html>

The next #creativeHE conversation October 30- November 4 will explore the idea of creative pedagogies and learning ecologies. <https://plus.google.com/communities/110898703741307769041> . . .



Norman Jackson Owner • General Information ▾ 3w

NOVEMBER ISSUE OF CREATIVE ACADEMIC MAGAZINE #7 HAS BEEN PUBLISHED

It contains a number of articles drawn from the recent #creativeHE conversation including a synthesis of the Little Boy Story.

We are intending to publish several more articles in the December update and welcome further contributions on the theme of Creative Pedagogies for Creative Learning Ecologies. Special thanks to contributors +Jennifer Willis +Simor . . .

