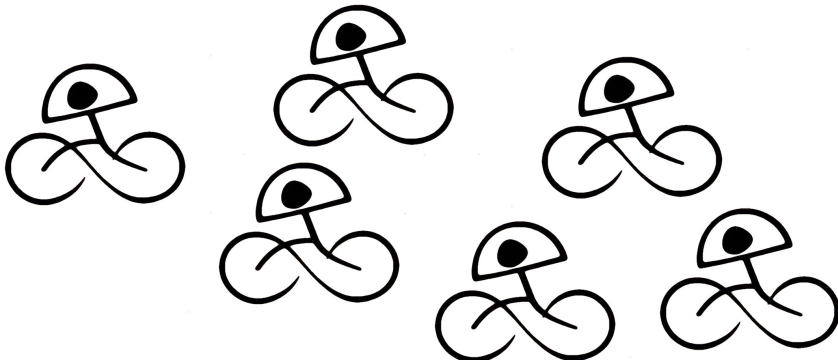


Peloton Formations

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Preface

This is a collection of blog posts, articles and an interview produced between 2014 and 2016.

When I started to explore the topic of *peloton formations*, I was involved in a change programme in an organisation that seemed stuck; weighed down by process, bureaucracy and deference to hierarchy. At the same time, I had joined different communities and online conversations where the possibility and opportunity for doing things differently were being discussed on a daily basis.

My interest in road cycling became a lens through which I looked at these alternative practices but also provided a useful metaphor with which I could translate and communicate ideas to colleagues.

This is the idea in a nutshell:

The world needs responsive organisations. Companies that are agile and adaptive, responding to changes in context and circumstances.

In professional cycling, the peloton is fluid. It moves towards its destination with common purpose. Yet roles shift within the peloton as a whole, and within each team, dependent on terrain, conditions and the individual cyclists themselves.

Each team will have slightly different objectives on each day of racing. This affects the roles each rider takes on. Sometimes they will lead. On other occasions, they will be in service of their teammates.

As in a hierarchical company, the roles may largely stay the same, but the riders in the peloton move fluidly from one role to another rather than being constrained by a single one. They are leaders, followers, technical experts. They are climbers, sprinters, rouleurs, puncheurs and baroudeurs.

This is network working. Your node lights up and people, energy, ideas and leadership responsibilities flow to you. Then another node lights up, and you take on a different role in service of its goals. The network remains a hierarchy, but it is one in a constant state of flux.

The various pieces in this collection walk around the topic, zooming in and out, unpicking the metaphor and examining the various figures and roles within the peloton.

I owe thanks to Neil Usher, Jon Husband, Stowe Boyd and Haydn Shaughnessy. The opening 'Peloton formations' piece started out as a Pecha Kucha presentation delivered at Workplace Trends 2014. It was adapted from verse to prose and subsequently published in *Wirearchy: Sketches for the Future of Work* in 2015. The interview was first published on the *Gigaom Research* website in July 2014. The closing article, 'Ready to jump', was commissioned by and published on the *Hack & Craft News* website in November 2016. Thanks are also due to the many people I have discussed this topic with over the years.

Peloton formations

As I approached my 40s, I rediscovered a love for cycling. Physical activity and rides through the Kentish countryside on a new road bike were quickly followed by an interest in professional road racing. Hours were spent watching the sport, reading about it in voluminous depth, making my first visits to classic races like Paris–Roubaix and the Tour de France. An obsession quickly had established itself. Around the same time I developed a growing awareness of different approaches to the world of work, different ideas about how we might organise ourselves, think about leadership and learning, and the relationship between companies, their partners, suppliers and customers. At some point the interests began to intertwine.

There are many metaphors in business. Many rely on nature: swarms of insects, murmurations of starlings, schools of fish, worker ants, termite mounds. As we are focusing on people, though, I wanted to use a human example. One that also suggested the communion between us, technology and machine: the cycling peloton. For me, this is an example of the responsive, adaptive organisation to which many of us aspire. The peloton is united in common purpose. But there are many different objectives within its confines. Some members aim for the overall victory, some for the different jerseys on offer, some for stage wins on specific days, some simply for television exposure and advertising opportunities for their corporate sponsors.

As with a company, its internal operation and its partnership with external organisations, the peloton is rife with competition, collaboration, cooperation and co-creation. The competition can be at an individual and a team level, just as a corporation may compete with other companies as well as internally for people, money, technology and other resources. On occasion, though, both businesses and members of different cycling teams will partner to mutual benefit. Within a cycling team itself, all work together for a common objective. One person crosses the finish line in first place, but often this is a team victory rather than an individual one.

This mixture of competition, collaboration and cooperation can be seen in the breakaways that often form early on during each day of professional cycling races. It is informed by cooperative effort between team rivals and co-creation as the group pulls away from the peloton, then works together to stay away. The breakaway competes with the peloton, trying to remain out of the latter's reach. Competition within the breakaway

only resurfaces once the finish line is within its grasp. The breakaway is cycling's skunk works. A place of experimentation, frequent failure and constant learning.

Often to be seen in the breakaway is the baroudeur. These are cycling's change agents, the non-conformists, who frequently question and challenge the status quo, rattling cages, ignoring reputations, and stamping their own personalities on the race. A good example is Thomas Voeckler, loved by the fans for his devil-may-care attitude and on-the-bike gurning. He has been responsible for animating many races, attacking at will, trying to shake things up. He is less loved by his colleagues in the peloton, though, because he constantly leads them to the unknown, challenging and stretching them, making them suffer as he innovates and animates.

Another personality in the peloton is the sprinter. These are the accomplished PR men, smooth communicators who understand that it is their jobs to unite their teams in common purpose. The team's goal is to enable them to cross the finishing line, arms in the air, exposing their sponsors' logos. The sprinters take the plaudits and the glory on behalf of the team, ensuring that the victory is savoured and shared by all as they greet their teammates at the finish line.

An efficient, well-organised but responsive sprint train is like poetry in motion. Each member of the team puts in their own effort at the front of a line of riders, taking the wind resistance and providing shelter for their teammates behind them. With 300m to go the last member peels off, leaving the ground open for their nominated sprinter to finish the job. This is like agile project delivery, each member of the team knowing exactly what is expected of them and when, but responding to minor variations around them.

Sprinters like Marcel Kittel, André Greipel and Mark Cavendish are beneficiaries of the work of well-practised sprint trains. They are the ones who cross the line with their arms in the air. But that is the outcome of the high efficiency and continuous improvement achieved by their teams. Collectively, their teams are serial winners. They maintain a high ratio of wins through seeking marginal improvements, and responding to shifting conditions and context in the peloton. At the 2009 Tour de France, for example, Cavendish crossed the line in first place six times. On the final stage, which finished on the Champs Élysées in Paris, so effective were the Columbia HTC team that both the final lead-out man, Mark Renshaw, and Cavendish were far enough ahead of the field to

claim first and second places in the sprint. As a team, Columbia HTC improved stage victory by stage victory throughout the Tour.

Teams tend to operate under loose frameworks rather than minutely detailed plans. Any plan, in this respect, is only ever guidance. The riders on the road have the autonomy to respond to what they observe around them. Crashes. Poor form. Exceptional form. Shifts in climactic conditions. This is decision-making at the edges. Responsiveness and fluidity dominate. There was a good example of this in the 3rd stage of the 2009 Tour. Support staff had driven the stage route earlier in the day, and reported back on spots where opportunists might want to make a move. Michael Rogers, one of the Columbia HTC team, recognised that they could attack the peloton as a group on a particularly sharp bend in the road, which was exposed to a strong cross wind. He called his team members to take action, and a concerted team effort fragmented the peloton and set up Cavendish for a sprint victory.

Even long-term goals, like the Great Britain team's targeting of the 2011 men's world road racing championship in Copenhagen (aka Project Rainbow), can only ever be informed by loose frameworks. Here the goal was to set up a bunch sprint finish, giving Mark Cavendish a chance, as one of the world's fastest sprinters, to cross the line first. Each member of the team had a loosely defined role to help accomplish this, but the freedom to respond to what was happening around them. David Millar was the team captain on the road, but there were other leaders too, requiring some members of the team to protect Cavendish during the day, and others to lead and control the peloton. The goal was accomplished with tactics that were proactive, responsive and fluid, as required. Communication between team members and trust that had been built over a two-year period of preparation were key factors.

The fluidity of roles is hugely important in the peloton. They recall Jon Husband's original concept of wirearchy, which highlights *a dynamic, two-way flow of power and authority, based on knowledge, trust, credibility and a focus on results, enabled by interconnected people and technology*. The peloton is a form of network, but even within the network there is a hierarchy of roles. The difference is that people are not inseparable from a given role. Indeed, they move fluidly between them as context and circumstance requires. When the road is flat, the sprinter leads. When the mountains are high, the climber comes to the fore. At other times, they follow the lead of colleagues, or offer their expertise in different areas. The responsive organisation is similar. At any one

point in time, you can be involved in multiple projects, leading some, following the lead of others on some, advising yet others.

Humility and self-knowledge are essential for such fluidity of roles to be effective. At the core of the cycling team is a form of servant leadership. Members of the team put themselves in service of their colleagues. The leader for the day is determined by context – terrain, weather conditions, form, health, overall objective and day-specific goals. Service can take the form of leading from the front, taking the wind, sheltering the designated protected rider for the day, so that they are in the best condition when the final challenge is in reach. The servant leaders attempt to control the peloton too, selecting who they will allow to get into the day's breakaway, judging when it is time to close the gap between the peloton and the day's escapees.

The 2012 Tour de France offered a great example of servant leadership. Mark Cavendish was the reigning world champion, wearing the coveted Rainbow bands. He was recognised as one of the fastest sprinters in the peloton, as well as the most successful sprinter to have ever participated in the Tour de France since the event began in 1903. Team Sky's goal, though, was to win the overall Tour and secure the yellow jersey for Bradley Wiggins. Cavendish put himself in service of this goal, parking his personal ambitions. He acted as a super domestique, ferrying water to his colleagues in the team and leading them up the lower slopes of the big climbs.

When Wiggins's overall victory looked assured, and the terrain was more suited to the sprinting maestro, roles were reversed. Wiggins, adorned in the race leader's yellow jersey, put himself in service of the day's objective rather than the overall goal. He slotted into Cavendish's sprint train, acting as one of the final lead-out men. One of the great images from the 2012 event is of the Tour de France winner leading out his friend and teammate on the iconic Champs Élysées, setting up yet another victory for the successful Team Sky.

The climber is another of the peloton's great characters. This is the individual around whom myth and fable hang like a cloak. The nicknames acquired by these giants of the road speak volumes: The Angel of the Mountains, The Eagle of Toledo, Il Campionissimo, The Cannibal, The Badger, The Pirate. These are cycling's visionaries. Like some of business's great entrepreneurs, they seem to see and reach out for things that many of us cannot even imagine – until we suddenly find that we have been led there. Despite their apparent physical delicacy, the climber is a driven individual, with a strong will and purpose. When they are good time trialists, as well as outstanding climbers, these are the

people that the team works for to secure overall victory in the big races. Their role is to win on behalf of the team, often leaping away from the comfort of their companions as the most difficult slopes and the highest peaks hove into view. They are both connected and lonely. Leaders and strategists. Not unlike many CEOs.

The time trial is known as the race of truth. It involves either a single rider or a team racing against the clock. There is no hiding place. When performed by an individual, this is the closest cycling gets to the workplace assessment; the combination of measurement, delivery and individual scrutiny. The coasters, the tryers and the high achievers are easy to spot. More interesting is the team time trial. Five have to cross the line before the clock stops. Nine begin the stage and work in unison. All for one and one for all. But the team is only as strong as the fifth strongest member, so the high achievers have to hold themselves in check and serve their teammates. Otherwise their high capability in this form of racing can be harmful to their colleagues. To perform well in an individual time trial, you have to know yourself and your limitations. To perform well in a team time trial you have to know the abilities and limitations of all your teammates as well, and cater to them.

Rouleurs are strong riders, adept in rolling terrain, time trials, sprint trains and chasing down breakaways. These are team people whose primary role is service of others, assuming domestique functions. I liken them to the internal service roles in corporations: the people in finance, facilities, HR, IT, learning and development and KM departments. Occasionally they are set free to pursue personal goals, getting into breakaways, winning time trials. This is not unlike the occasions when somebody from a support function takes on a leadership or specialist expert role in a corporate project. Often rouleurs like Bernie Eisel of Team Sky take on the role of captain on the road. They guide and influence their colleagues and act as the link between the other cyclists and the directeurs sportif in the team cars.

Cycling teams involve not only the riders but a supporting infrastructure. This is comprised of sporting directors, coaches, medical staff, nutritionists, chefs, mechanics and bus drivers. Former cyclists often fulfil the role of sporting directors, helping the team operate within its loose framework and achieve its race objectives. These are the people who drive the team cars, liaise with the riders on the road from their vehicles and via radios, handing out food, drink and clothing. Other former riders travel ahead of the race too, reporting back on weather and road conditions, providing information that can inform decisions taken by the riders themselves.

Beyond the teams of riders and support staff, there is a broad range of interacting systems. Within the context of the race itself are the race organisers and the hosts of the start and finish of each stage. Then there are the media, the police, the publicity caravan, the volunteers controlling crowds and flagging road furniture, the spectators themselves. Not forgetting the roads, the roundabouts, the level crossings, the bridges. The weather is also a huge factor. Intense heat, pouring rain, strong wind, heavy snow all have an impact on the peloton and what it can achieve. Nothing operates in isolation, just like our businesses and the multiple interacting systems they have to navigate – from financial markets to regulation to customer needs. The peloton and the business constantly have to respond and adapt to external factors.

Peloton formations is all about the fluidity and agility not only of modern organisational structures but of the roles and responsibilities of those who work within them. It recognises the need for people who are able to lead, follow, guide, advise, specialise or generalise, adapting to changes in context and circumstances. People who work in small units in synchronicity with and service of a larger whole. People willing to experiment, learn and act on new knowledge. People who can respond and adapt to systemic shifts and changes in their customers' needs.

Peloton interview

This interview with Stowe Boyd was first published on the Gigaom Research website in July 2014.

Richard Martin wrote a series of posts in which he characterized people working together productively as being like the bicycle racing phenomenon of the peloton: the main group of riders that conserve energy by riding close together.

Martin's exposition owes a great deal to Dan Pontefract, who used the analogy in a [post](#) last year, but Martin has intertwined it with Jon Husband's [wirearchy](#) notion, and the thinking of other theorists and practitioners.

I thought I'd ask Richard some questions, and the interchange below is the result.

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Stowe Boyd: I think there is a great deal of depth in the metaphor of new way of work being like the peloton, which is the formation of cyclists in a road race. The cyclists ride in close formation because of the benefits in reducing drag, but of course different teams are trying to win the race even while benefitting from the aerodynamics of being in a pack.

Richard Martin: One of the things that unites the cycling peloton is common purpose. All the teams, all the riders, are trying to get from point A to point B on a designated course as safely and in the shortest amount of time possible. Additionally, day-by-day, in long stage races like the Tour de France, each team will have a slightly different objective. Some are aiming for the overall prize of the yellow jersey awarded to the rider who covers the entire course in the least amount of time. Others target the white jersey of the best young rider, the green jersey of the points classification leader or the polka-dot jersey of the mountain climber's classification. The composition of their team may well reflect these particular goals. Others still may simply target a stage win on a specific day when the terrain and conditions suits their team or, more modestly, may hope for lengthy TV exposure for their corporate sponsors by getting one or more of their riders into the day's breakaway.

Because of this mixture of goals, sometimes you will witness great examples of partnership, collaboration and cooperation between riders and different trade teams. There is also, of course, a lot of competition too. In the latter case, though, it might not just be people competing against one another but against the elements, the terrain or the clock. There is wonderful human drama in evidence in bicycle racing. There is also a lot of camaraderie and mutual respect that transcends the boundaries between trade or national teams. You can get a taste for this by following a few professional riders on Twitter.

In the context of the racing itself, it is evident on the days that the race routes head steeply upwards into mountainous terrain. While TV coverage focuses on the front end of the race, behind it the peloton fragments into many parts. Right at the back a *gruppetto* of riders forms, usually composed of the sprinters, the riders with bigger physiques, the cooked and the wounded. They work together regardless of team affiliation. Their goal is to arrive together as a single unit at the finish line within a time limit calculated on the basis of the stage winner's finishing time. Another example of cross-team cooperation can be seen in the way breakaway riders work together to stay away from the peloton. It is only in the last kilometres of the stage when this cooperation gives way to competition again. The breakaway usually serves as the hare to the peloton's greyhound. Occasionally, though, the hare eludes the hound – especially in cases when the cooperation between the breakaway group persists to within sight of the finish line.

From a business perspective, there is a lot to be said for this notion of common purpose that can help unite multiple divisions and project teams. But also for those willing to partner and cooperate with others, even those outside your own company. I recently read A. G. Lafley and Roger Martin's *Playing to Win*. It is not a book I enjoyed. Nevertheless, there are some good examples in it of when P&G realised they could create more value by partnering and cooperating with companies who were competitors in other fields. I think you witness evidence of this on a daily basis in the cycling peloton.

SB: On top of the manoeuvring of the teams against each other, there is a dynamic interplay among the members of a team, where they switch off in different roles, taking turns leading, sprinting and climbing. That seems to be in perfect alignment with the notion of fluid or emergent leadership: what I refer to as leanership. There has to be a lot of planning and communication for that to work, right?

RM: My thinking about this has been strongly influenced by Jon Husband and his concept of wirearchy. Jon defines wirearchy as: 'a dynamic, two-way flow of power and authority, based on knowledge, trust, credibility and a focus on results, enabled by interconnected people and technology.' What intrigues me about Jon's concept is that he is not denying the existence of a hierarchy, but he recognises that this has shifted from a pyramid to a network model. Do any network analysis, and you will identify nodes of influence and authority. These do not recognise the stripes on the arm or the job titles that we associate with military-industrial ideas about hierarchy. These influential nodes are also in a constant state of flux. Leadership roles may be defined, as in more traditional notions of hierarchy, but what is different here is that people move fluidly to and from these roles, dependent on context and circumstance. So, as I work on multiple projects for my employer, in one situation I may be the leader, in another I will follow someone else's lead, and in yet another I may be acting more in a consultancy capacity, providing specialist subject matter expertise.

You certainly observe this fluidity of roles and leadership responsibilities in the cycling team. This can be determined by a number of factors: terrain on the day, weather conditions, the form of the rider, experience. Even on the day itself leadership responsibilities will shift as the race progresses. Usually teams will have a road captain. In most cases this is not the team's main sprinter or climber but one of the support riders or domestiques. This individual will be liaising with the directeur sportif via radios or visits to the team car, but there will also be a high degree of autonomy for the other riders, with each of them responding to what they see around them, assessing risks, seizing opportunities.

Some teams are built around sprinters who come into their own on flatter stages. Sprint trains form in front of the sprinter, with a line of riders following closely on one another's wheel. The front rider punches a hole through the air, takes the wind resistance, and their colleagues ride in their slipstream. When they peel off another comes to the front, and so on until, with about 300m to go, the sprinter comes to the fore. All along, they will have been calling out instructions and encouragement from the rear of the sprint train. On mountainous days, the team puts themselves in service of their climber, who also, if they can time trial too, is often their contender for the overall general classification. The team members aim to deliver their leader to the foothills of the day's final climb in the leading group so that they are in a position to compete for the stage victory or minimise the loss of time to their main rivals.

Cycling, in this sense, is infused with the idea of servant leadership. I think there were a couple of great examples of this from Team Sky at the 2012 Tour de France. Often we would see television images of Mark Cavendish, adorned in the rainbow stripes of the reigning world champion, ferrying water from the team car to his teammates. This, bear in mind, was the world's dominant sprinter at the time, who was putting personal ambitions on hold in support of the team's overall objective: securing the yellow jersey for Bradley Wiggins. On the final stage of the same race, with Wiggins's and the team's victory assured, we then witnessed a role reversal. The final stage is an iconic race for sprinters, one that Cavendish had won each of the previous three years. There in his sprint train, in service of Cavendish and his goal, was Wiggins leading out his friend and teammate.

As for planning, there is certainly a lot of work done. Many teams will visit certain climbs and stage finishes well in advance of the grand tours. On race day itself, they will send former road racing professionals ahead to check conditions (both of the road and the weather) and to communicate their findings back to the team car and the riders. British cycling coach Rod Ellingworth has written an illuminating book called *Project Rainbow*. It describes the collaborative work of backroom staff, coaches and riders in planning for the 2011 men's world road race championships and for the 2012 Olympic Games race. For the GB team, their aim of securing bunch sprint finishes for Cavendish earned victory in the 2011 world championships and nothing at all at his home Olympics. The team rode strongly on both occasions, but others had learned how to counteract their tactics by the time of the latter race.

What emerges in bike racing are loose frameworks rather than detailed plans. This is not racing by remote control. It involves decision making at the edges as well as in team management. Not all variables can be accounted for, and riders need to be able to respond to what they see before them. This is well illustrated in a [video](#) exploring Team Garmin Sharp's targeting of stage 9 of the 2013 Tour de France. Dave Brailsford, one of the leaders behind the recent success of British Cycling and Team Sky, is interviewed in Richard Hytner's recent book, *Consiglieri: Leading from the Shadows*. He makes an interesting observation: 'My approach is as an orchestra conductor, with an absolute recognition that the most important people in our world are the people who win and they're the riders.' Brailsford and colleagues can select the nine-man team for the Tour, but then they have to get out of the way and trust the instincts, expertise and experience of the riders on each day of racing.

SB: You've written about the various roles in a cycling team, and how these roles are similar to archetypes in the new way of work. The climber, for example, has attributes of a driven, high energy visionary. Perhaps you could give a short explanation of the other roles?

RM: When they step into their leadership roles on the flatter ground, sprinters are great salesmen. I mean this in the sense intended by Dan Pink in *To Sell is Human*. They sell ideas, galvanising their teammates, getting them to believe in their objective for the day, building common purpose, and inspiring them to invest effort in delivering them to the finish line, where they will complete the job. It is notable that the first action of the highly successful sprinters like Mark Cavendish, André Greipel and Marcel Kittel is that they greet their colleagues at the finish line to thank them for their efforts. There is also a commercial aspect to the sprinter's salesmanship. They are often great communicators, comfortable in front of the media cameras and microphones. Their job is to cross the finish line, arms in the air, displaying the names and logos of their corporate sponsors. They are mobile, high velocity advertising hoardings.

Rouleurs are strong riders, adept in rolling terrain, time trials, sprint trains and chasing down breakaways. These are team people whose primary role is service of others, assuming domestique functions. I liken them to the internal service roles in corporations, the people in finance, facilities, HR, IT, learning and development and KM departments. Occasionally they are set free to pursue personal goals, getting into breakaways, winning time trials. This is not unlike the occasions when somebody from a support function takes on a leadership or specialist expert role in a corporate project.

Baroudeurs are among my favourite riders. These are the change agents, the chancers and experimenters. They constantly challenge the status quo, making things up as they go along, taking risks, testing their colleagues in the peloton. There was a great example of this in Tuesday's Tour de France stage this week. A strong group of baroudeurs – people who can climb but not overall contenders for the Tour win – had formed an impressive breakaway. As they hit the final climb they began challenging one another, comfortable in the knowledge that one of their number would win the stage. Two riders from Team Europcar were working together, taking it turns to attack. They could not shake loose Michael Rogers from Team Tinkoff Saxo, though, and in the end he chose his moment to attack and just rode away from them. His post race interview was brilliant, demonstrating a cool, calculating mind, mental fortitude, a tolerance of risk and an

acceptance of possible failure. If you do not try things out, how will you learn if they are going to work or not?

That covers the riders, but we must not forget that a role is also played by the tour organisers, the local government for the towns that play host to the start and end of each stage, the police, the backroom staff for each team, the directeurs sportifs, and the riders' coaches, not to mention the crowds that line the route. These are the policy makers, the regulators, the landlords, the suppliers and customers that are all involved to varying degrees in a company's business.

SB: It's the fluidity and near flight of the peloton that makes it such an inspiring image. In one of your pieces you call it '*humankind's answer to the murmuration of starlings*'. How can we transcend the poetic and aspiration of the peloton into concrete learning for the business, today?

RM: The reason I am so drawn to the metaphor of the cycling peloton as a model for organisational structure is because it is suggestive of responsiveness, fluidity, agility and adaptiveness. I like the idea of small pods or teams loosely joined, which respond and cater to their customer needs. This can mean the rapid forming, disbanding and reshaping of teams to deliver different projects. These can extend beyond organisational boundaries too, suggesting the permeability of the modern, responsive company. A project team can be comprised of your own employees working in partnership with people not on your payroll. It can include your customers and suppliers too.

The other thing I take away from bike racing is this idea of multiple systems being interdependent on one another. On any given day you could have a route that covers 200-plus kilometres, travelling through numerous towns and cities, over railway crossings, bridges and roundabouts. Agreements have to be drawn up with these communities, crowd control needs to be put in place, and the roads closed for a period of time. Then there is all the infrastructure of the race itself, the catering vehicles, publicity caravan, the media, the gendarmerie, the team cars and support vehicles. There are the huge crowds too, who on mountainous stages will be spilling on to the road, and who have to be trusted not to interfere with the riders as they pass by. On top of all that there are the meteorological conditions and the state of the roads to be traversed too. A huge spaghetti soup of complex interlocking systems. No one of these systems can be treated in isolation. Just like the different systems that shape and inform the operation of any other business.

I get frustrated when I hear people talking about work as an ecosystem operating in splendid isolation from everything else – government policy, financial markets, customer needs. As a counter argument I'm inclined to use an example that affected me earlier this year: we experienced heavy rainfall in Kent where I live. When the rain stopped our streets were lightly dusted with sand from the Saharan desert. What a great example of how different ecosystems connect and are dependent on one another.

Richard's expansion of Pontefract's peloton metaphor is rich and illuminating. The interplay between different roles in the teams is captivating, and so is the manner in which individuals lead at the front – to break the air for the peloton and their teammates in it – and then fall back into the pack as another – often a competitor – presses forward to take a turn at the front.

Martin draws our attention to the image of 'small teams, loosely joined' – an allusion to David Weinberger's *Small Pieces Loosely Joined*, I'm sure. I've written on the distinction between different social scales, and the way that the interplay differs in small sets of people – networks of a few or a handful of people – versus the louder and less intimate interactions of social scenes, where dozens or hundreds may be connected.

I've made the claim that we live our work lives in our sets, although businesses may want to treat us as scenes, thinking that it is easier and more efficient. But we are more at home and at ease when working as a sprinter or climber on a team, jostling for position in the peloton, signalling and pushing the team ahead, one of the loosely joined.

The baroudeur

Earlier in the day six riders had each pulled away from the peloton. Representing different trade teams, five of them eventually had cohered into a cooperative group; a small, dynamic pod sharing responsibilities, with each rider fluidly moving from leader to follower and back again. It was a challenging ninth stage of the 2011 Tour de France, from Issoire to Saint-Flour, featuring eight categorised climbs. These tended to have an elastic effect on the group with riders dropping away as they tackled the ascents and descents at their own pace, then putting in great efforts to regain contact with their breakaway companions. Nervousness and tight roads were also contributing to crashes back in the main peloton. Some of the teams encountered misfortune, seeing their general classification contenders exit the race after one particular body-damaging, bone-breaking pile-up on a treacherous descent. Up the road, the breakaway group continued to cooperate establishing a lead of over seven minutes while the peloton regrouped after the crash.

With 36km of the day's stage remaining, the lead was down to five minutes. Still a healthy advantage. It was looking like it would be a day of glory for one of the breakaway riders. One of those days that produced more than just extended television airtime for the corporate sponsors whose names and logos adorn the riders' clothing. A day that would result in podium celebrations. Some of the breakaway group had their eyes on bigger prizes too. Thomas Voeckler (Europcar) had a chance of becoming the overall race leader, getting his hands on the coveted yellow jersey for the second time in his career having worn it previously in 2004. Johnny Hoogerland (Vancansoleil-DCM) was looking a likely contender for the polka-dot jersey, which is awarded to the leader of the mountains classification. Niki Terpstra (Quickstep), an early member of the escape group, had faded away on the day's first climb. But Sandy Casar (FDJ), Juan Antonio Flecha (Team Sky) and Luis León Sánchez (Rabobank) were all strong riders and in the mix for the stage win. For two of the riders, though, disaster was about to strike.

A car carrying personnel from French television accelerated alongside the breakaway group. Suddenly it swerved to the right to avoid a tree on the verge of the road, thereby triggering a domino effect. The car, still travelling at high speed, clipped Juan Antonio Flecha sending him sprawling to the floor. As he hit tarmac, Johnny Hoogerland hit him and was catapulted through the air on to a barbed wire fence. Voeckler and the others accelerated away to contest the stage victory, the Frenchman taking over the overall race leadership and Luis León Sánchez winning the day. Remarkably both Flecha and

Hoogerland would remount their bikes and complete the stage, over 16 minutes after the winner. The Dutchman, whose kit had been shredded on impact with the fence, and bearing deep wounds on his legs that would require multiple stitches, even went on to participate in a delayed podium ceremony at which he was awarded the polka-dot jersey.

I share this tale not to marvel at the dangers encountered by the professional cyclist, nor to rubber-neck at a particularly gruesome incident in the recent history of the Tour de France. Rather, in developing the metaphor of peloton formations and its application to the workplace, I want to take some time to look at the different character types that make up the peloton. What distinguishes them from the others? Do they have counterparts in the modern office? Are there any lessons we can learn from them? In future posts, I will have a look at the sprinter, the climber and the rouleur. Possibly others too. Today it is the turn of the baroudeur, epitomised by the likes of Thomas Voeckler and Johnny Hoogerland.

The baroudeur is beautifully described by Paul Fournel in *Vélo*, his poetic collection of cycling essays published by Rouleur. Baroudeurs are adventurers, opportunists and chancers. They do not seek the love of their colleagues in the peloton, but strain at the leash, pushing against convention, experimenting and taking risks. They are generalists and polymaths, adept at multiple disciplines. As Fournel puts it:

There is no set format for a baroudeur. Neither a true sprinter, nor a true climber, nor exactly a rouleur, the baroudeur is all of those at once. He is capable of all of it, but in his own time. He knows that he will not beat the sprinters at the finish and so he has to set off beforehand. He knows that he will not beat the climbers in the high mountains; he makes his kingdom in the medium mountains. He knows that he will not drop everyone on the first push so he puts in a second.

The baroudeurs remind me of the rebels on the edges in today's business world. The workplace baroudeur is the one likely to challenge the status quo, to seek out new ways of doing things, to experiment and play, accepting many failures, learning from them and, occasionally, enjoying success. A group of baroudeurs, willing to cooperate with one another, are the ideal advance party. The experimental pod assembled for time-bound, financially-constrained exploration and testing. The skunk works team not afraid to indulge in trial and error and the tolerance of risk as they head into the unknown,

The baroudeur

operating under a loose framework but with common purpose and a shared vision. These are the people who will act now and, if necessary, apologise later. They will not be held back by bureaucracy or industrial tradition.

The workplace baroudeur, then, is often the catalyst to change. Having blazed a trail, others will follow, new pods forming to lead the company into the future, putting new ideas and theory into practice. The original breakaway will often get absorbed back into those embryonic pods, their lessons captured, their knowledge shared with others in a continuous cycle of progression and refinement.

This is not a new story. There are many examples from 3M, Apple, Google, W.L. Gore, Semco and others. There is a spirit of entrepreneurialism, disruption and innovation about the baroudeur.

The climber

It is a damp and miserable March day on the island of Corsica. The third and final stage of the Critérium International 2013 is building to a conclusion. The peloton began the day in Porto-Vecchio and are now on the lower slopes of the Col de l'Ospedale. Richie Porte (Team Sky) wears the race leader's yellow jersey having won the previous day's time trial and safely negotiated the opening stage bunch sprint. His friend and teammate, Chris Froome, is fourth in the overall standings. Froome is the designated leader of Team Sky for this race, building and testing his form prior to the Tour de France later in the Summer for which he will be one of the favourites. The mountains are the territory in which he comes into his own. As the road begins to ramp up, it is likely that today's stage will enjoy an explosive finish – if Sky can successfully implement their race plan.

One by one Joe Dombrowski, Jon Tiernan-Locke, Xabi Zandio and Kanstantsin Siutsou put in efforts that help control the peloton and limit the number of escapees, before themselves slipping back into the ranks. There follows a huge turn at the front by Vasil Kiryienka, stretching out and fragmenting the bunch, leading it into the foothills of the day's final climb. By the time Froome floats to the front, there is only a select group of riders, all accomplished climbers, left chasing the last of the escapees. Froome puts in a dig and Porte stays back allowing his teammate to build a gap between himself and the group. Froome checks over his shoulder then accelerates away. Within moments he has caught and overtaken Johann Tschopp (IAM Cycling), towing Jean-Christophe Péraud (Ag2r-La Mondiale) with him. He pauses, assesses the condition of the other two riders then dances on the pedals again. Neither Tschopp nor Péraud can stay with him. Back down the road Porte bides his time, not leading the chase but monitoring the actions of those remaining in the group.

With 2km remaining, Froome has established an unassailable lead. It is at this point that Porte launches an attack of his own, catching and leaving all those who were chasing Froome. Sky have executed their plan to perfection, catapulting Froome to overall victory and enjoying first and second placings with Froome and Porte on both the day's stage and the general classification. This will serve as a platform for greater things later in the season, with Froome going on to win the Tour de Romandie, the Critérium du Dauphiné and, the ultimate prize, the yellow jersey of the Tour de France. Common purpose, a shared vision, planning, practice and the magic dust of the climber freed

from constraint will all contribute to this second successive season of stage racing accomplishment for Team Sky.

As we continue our exploration of the peloton metaphor, then, it is to the climber that we now turn. This is the individual around whom myth and fable hang like a cloak. The nicknames acquired by these giants of the road speak volumes: The Angel of the Mountains (Charly Gaul), The Eagle of Toledo (Federico Bahamontes), Il Campionissimo (Fausto Coppi), The Cannibal (Eddy Merckx, who was in truth the master of all terrains and all road cycling disciplines), The Badger (Bernard Hinault, another accomplished all-rounder) and the drug-addled but nevertheless mesmerising Il Pirata (Marco Pantani). The stories that swirl around them speak of immense feats, defiance of the natural order, resistance of gravity and overreaching to the point of personal destruction. It is the stuff of comic books; dreams made reality, visions made manifest. These are people set apart from their companions in the peloton. As Paul Fournel puts it in *Vélo*:

From the first accelerations on the early slopes of a col, the peloton splits and transforms itself into a contest of grimaces and every man for himself. The climber dances, plays with the slopes and the hairpins, sometimes sitting, sometimes standing. Whereas the average cyclist opens his mouth wide and looks for a steady pace as protection against deadly accelerations, the climber takes up the pace of his kind and casts stones before taking off for good. Setting off at high speed, the small motor of the climber doesn't seem to suffer from the lack of oxygen of Alpine altitudes. The climber hides a big secret in his little torso.

There is a great, perhaps apocryphal, tale about Spanish climber Federico Bahamontes racing ahead of the peloton up the climb of the Col de Romeyère in the 1954 Tour de France. The first to reach the summit, many minutes ahead of the next rider, he then wheeled his bike over to a metal cart and stopped to eat an ice cream. Bahamontes then bided his time waiting for his competitors to catch up. As a metaphor, I love this. The visionary trail blazer, showing the way, striking out ahead, leading his people to the summit. Then waiting for them to follow, in their own way, learning much about their personal abilities and potential. When the descent begins, he is happy for others to take the lead, following the wheels of fellow riders, reintegrating himself into the pack, seeking the protection and nurture of his teammates, who will again follow his lead when the next slopes are attained.

The climber

When I think of both the apparent physical delicacy, the single-minded vision, strong will and purpose of the climber, I cannot help but draw analogies with similarly driven business leaders like the late Steve Jobs or Pixar's Ed Catmull. Such people seem to be able to see things that many of us cannot even imagine until we suddenly find that we have been led there. Think the iPhone. Think the iPad. Think different. While we're coming to terms with yesterday's ideas, technology, entertainment and working practices, they're busy laying the foundations for new cathedrals, building the future for our grandchildren to enjoy. They're resting on the summit, looking for the next peak to climb, while we're back with the gruppetto in the foothills.

Every company needs a climber. Someone to paint a vision of the future, forcing us to reach for the ineffable. Their energy and drive is what keeps entropy at bay.

The sprinter

It is Sunday 4 May 2014. 5km remain of the eighth and final stage of this year's edition of the Presidential Cycling Tour of Turkey. A line of Orica-GreenEDGE riders leads the peloton at a high tempo. A bunch sprint finish looks almost certain to determine the outcome of the day's stage. The focus of the Orica-GreenEDGE riders, however, is elsewhere. The stage victory is not their goal. One of their number, Adam Yates, is wearing the race leader's jersey. If they can usher him safely to the 3km-to-go marker, they know their job will have been successfully accomplished. Should any rider in this leading bunch crash during those last 3km they will be awarded the same time as the stage victor. In other words Yates's overall victory will be assured.

The Orica-GreenEDGE team hit their marker and drift back into the peloton. As they do so, the red-clad Lotto Belisol sprint train pulls to the front. They have one of the world's best sprinters, André Greipel, in their number. Lotto Belisol is one of several teams who have perfected the art of the sprinter's lead out. Other masters in the 2014 peloton include Giant-Shimano, who are not taking part in this event, and Omega Pharma-Quick Step, who are and have already won three stages during the week with their dominant sprinter, Mark Cavendish. Lotto Belisol appear to fancy their chances today but remain alive to the dangers presented by some of the other teams who are also beginning to form their lead-out trains.

This technique was popularised in the 1990s when Mario Cipollini was in his pomp riding for the Saeco team, and going on to win an unprecedented 42 Giro d'Italia stage victories. To see this performed well is like watching a shoal of fish or flock of birds in motion. Everything is performed with speed and fluidity. A line of riders line up one behind the other, wheels almost touching. At the back of the line is their protected rider, the designated sprinter for the day. Occasionally this individual will call out instructions, particularly as they observe threats from other sprint trains or solitary riders who are improvising their finales to the race without the support of their teammates. The rider at the front of the line, provides protection for those behind them, taking the wind and air resistance, punching a hole through it. One by one the riders at the front of the line peel off until, finally, with usually 200-300m remaining of the stage, the sprinter jumps from the slipstream of their final lead-out man and launches themselves at the finish line.

A dark shadow looms behind the Lotto Belisol team. Wearing this season's black and white jerseys, the Omega Pharma-Quick Step train of Gianni Meersman, Alessandro

Petacchi, Gert Steegmans and Mark Renshaw begins to make its presence known. At their tail is Cavendish adorned in the green jersey of the race's points competition leader. All five are highly accomplished sprinters in their own right. But today, and for much of the season, they have recognised Cavendish as their leader and put themselves at his service. Victory for Cavendish is a victory for the team. Victory for the team pleases its commercial sponsors, which often equates to continuity for the team and new contracts for the riders next season. All for one and one for all.

With just over 2km remaining, Omega Pharma-Quick Step's sprint train moves to the front of the peloton. Each member of the team executes his role perfectly, maintaining a high speed, safely negotiating the street furniture, seeing off the threats from the other well-organised lead-out trains. The last man drops Cavendish off with less than 200m to go. The Manxman stamps on his pedals and, from the apparent chaos of a swarm of sprinters throwing themselves towards the finish line, the team's fourth victory of the week is duly delivered. Planning, camaraderie, leadership and trust have all contributed to the team once again successfully negotiating the apparent complexity and chaos of the bike race.

This is the latest instalment in a series of peloton formation posts. Others have focused on the general idea of the peloton formation, as well as the characters of the baroudeur and the climber. Today it is the turn of the sprinter – and not just as the individual who blasts their way through the last few hundred metres of the bike race. The sprinter both leads and is led. They are the protected 'child', wholly dependent on the kindness and nurture of others. They are the leader who guides, directs, cajoles and inspires others to ensure that the team is in the best possible position to contend for the stage victory. They are also the team's David sent forth to combat the Goliath of the peloton. They are someone who is able to find moments of clarity and cool judgement while riding out the emotional roller coaster of the highly volatile sprint finish. Again, Paul Fournel captures the sprinter beautifully in *Vélo*:

The sprinter

He is putting the tools of his trade to the test. Torsion on the handlebars, squashing of the tyres and rims, torture of the bottom bracket, efforts to drop the chain, destruction of the pedals. Going off at a patently unreasonable speed, he knows he is guilty of a folly but he has confidence. Confidence in himself and confidence in the privileged few who still fight it out with him and barge him with their shoulder, brushing against his spokes with their pedals, zigzagging on the road in front of him. When he is finally sure of his victory and when the finish line is his, he lifts his head and then his arms in a beautiful unfurling which resembles taking flight. At that moment of glory, he smiles at his strength and the logos inscribed on his jersey are perfectly readable. He's a good salesman, the sprinter.

As Dan Pink has observed, to sell is human. There is no doubt that the sprinter is an excellent salesperson, the perfect advertising hoarding. Often you'll see them crossing the line pointing at their chests, not as a bravura statement of their own excellence but drawing attention to the names of their corporate sponsors. This extends to great communication skills too, with many of the sprinters proving to be engaging personalities comfortable in front of the media cameras and microphones. While there is no doubt that in the adrenaline-fuelled finale of a race, the confidence that Fournel alludes to can translate into the inflation of ego, there is another dimension to these sprinting supremos. Watch the first actions of a Cavendish, Greipel or Marcel Kittel after a stage victory. What you see is them greeting, embracing and thanking their teammates one by one. There is a form of servant leadership in play here, evidence of that versatility so necessary in the modern organisation. People who can lead, follow and exercise their own specialisms as required.

This was illustrated fantastically by Cavendish during the 2012 Tour de France. Riding for Team Sky at the time, Cavendish was required to put his personal ambitions on hold as the team rode in service of a different goal: a yellow jersey for Bradley Wiggins. Cavendish, himself wearing the Rainbow-striped jersey of the reigning world champion, was to be seen working tirelessly for the cause. He often led the peloton into the foothills of climbs, and was to be observed trekking back and forth from the team car, ferrying water bottles to his teammates. With Wiggins's overall victory assured, the efforts of Cavendish were recognised and rewarded by his friend. One of the great sights from that Tour was that of Wiggins in the yellow jersey playing a key role in the lead-out train that would result in Cavendish's stage victory on the final stage on the Champs Élysées.

The sprinter

There is something here that reminds me of the 20% time at Google and other organisations. Companies have their own objectives to meet, strategies that span several years, products with time-bound life cycles, multiple projects to deliver. Nevertheless, some of the more enlightened companies also recognise the importance of their people and giving them the space to develop both personally and professionally. As such, a percentage of the working week, sometimes as much as 20%, is allotted to staff working on personal projects. The individual builds competency and broadens their range of interests, while the company derives benefit from a contented, well-rounded workforce. Sometimes even from the output of the side project too; the post-it note at 3M and Gmail at Google being well-documented examples.

The sprinter demonstrates great skill and awareness, knowing when to assume the lead and push for the delivery of their personal project, and when to put themselves at the service of others and their objectives. In the apparent chaos of the peloton, they are surprising sources of insight and logical calm; more chess masters than frenetic athletes until they are called into action in the bunch sprint. They seek patterns in complexity, helping their teammates react to and navigate subtle shifts in their circumstances and environment. As the occasion requires it, the sprinter and their train respond with flexibility and agility. Humankind's answer to the murmuration of starlings.

The rouleur

April 2011. The 109th edition of Paris-Roubaix is in full flight. This is one of the great one-day challenges in the cycling calendar. It is the Queen of the Classics, one of several one-day races held in France, Belgium, Italy and the Netherlands during March and April. Also known as the *Hell of the North*, it covers many cobblestone sections of road in northeastern France. It is a race that has been dominated in recent years by Tom Boonen and Fabian Cancellara. But an upset is on the cards. Some of the favourites have suffered mishaps on the road, while others have been marking one another out of the race. With only five sections of cobblestones remaining before the finish in the Roubaix velodrome, a group of four riders have pulled away. The move was initiated by Lars Ytting Bak (HTC-Highroad). He has been followed by Grégory Rast (RadioShack), Maarten Tjallingii (Rabobank) and Johann Van Summeren (Garmin-Cervélo).

As the group closes in on the velodrome, Van Summeren attacks and pulls away. He will ride solo to victory. Behind the remnants of the breakaway, Fabian Cancellara (Leopard Trek), the previous year's winner, puts in a huge turn, demonstrating his skills as a multiple world time trial champion. He catches the group and takes second place. Tjallingii takes the third spot on the podium. Our focus, though, is on the man who comes in fifth and instigated the breakaway, Lars Ytting Bak. A former Danish road and multiple time trial champion, Bak has just put in a performance that will earn him a place in the HTC-Highroad team at the 2011 Tour de France. It will be the first time he has participated in the race. He won the young riders equivalent, the Tour de l'Avenir, back in 2005. He is now 31 years old.

Despite his domestic championship triumphs, much of Bak's professional cycling career has and will be spent in the service of others: sprinters like Mark Cavendish and André Greipel; climbers and general classification contenders like Jurgen Van Den Broeck. He carries out domestique duties. He fetches food, drink and clothing from the team car for his teammates. He protects them from the wind. He chases down breakaways. He helps control the peloton, either ensuring a bunch sprint at the close of the stage, or the launch of the team's climbers up the final peak of the day. When required, he forms part of the sprinter's lead-out train. Occasionally, as at Paris-Roubaix, his role is to get into the breakaways, riding with the baroudeurs, either aiming for the win himself, or disrupting the flow of the breakaway, enabling his teammates behind to catch them. Either way, this ensures exposure of his team sponsors for the many hours he will be visible on television. It can also enhance his personal palmarès. In 2012, for example,

The rouleur

he will win stage 12 of the Giro d'Italia, attacking other members of the breakaway group he has been working with when there are only 2km of the stage remaining.

Bak's value to the teams for which he rides lies in his strength, power and consistency. He is a rouleur. He thrives in the race of truth against the clock of the time trial and on the cobbles of the one-day classics. This is where he displays his specialism and expertise. Otherwise he demonstrates his generalism in the service of others. In the 2011 Tour de France, for example, Bak will often be seen leading the peloton. His role is to help manage the time gap to the breakaway, ensure it is not closed too soon, prevent new attacks from being launched, and perfectly set up a sprint finish. Cavendish will win five stages for the team, with Bak and his teammates making significant contributions. He is the embodiment of the rouleur that Paul Fournel describes in *Vélo*:

The rouleur has long-lasting majesty. His talent consists of a statuesque position: the rouleur knows how to stay in an impeccable (and unbearable) position for hours, body bent in two, arms at right angles, face lowered, the top of his head open to the breeze. He manages the wind like a bass manages the sea. He rides gears as heavy as anvils while having the elegance never to show it.

The rouleur, then, leads in service. He is the foundation block for his team. What Fournel describes as 'the indispensable base of the trade of cycling'. In a business context, I see the rouleur as the equivalent to those people who make up business services functions – HR, learning and development, knowledge management, finance, IT, facilities, communications. If an organisation exists to meet its customers needs, then the same applies in its internal operation. There is a supporting infrastructure in place, where certain roles and functions are intended to service internal customers. The HR or IT professional work as domestiques for colleagues who are themselves delivering products and services to external people. Their role is to enable and support. They take the wind, fetch the water bottles, so that their colleagues may excel to the benefit of all. Occasionally they get to exercise their own specialisms, guiding on policy, deploying new technologies, ensuring the smooth running of the company.

The rouleur is the bedrock and the organisational spine. They are the first follower, putting in place the foundations that will result in the corporate vision being achieved.

The puncheur

6 July 2015. The peloton is taking a literal and metaphorical buffeting in the 102nd edition of the Tour de France. The race started in the flatlands of the Netherlands and is now into the terrain of the Spring classics in Belgium. The first nine days have been designed as a series of unique one-day challenges. This is a departure from previous starts to the race. It means that the teams participating in the Grand Tour, especially those with ambitions for the general classification, have had to give careful thought to the diversity and skill sets of their riders.

To show up with nine lightweight climbers who will float up the Pyrenean peaks and effortlessly ascend the Alps will be to place yourself on the back foot. Such riders will struggle in the coastal winds of Zeeland and the cobbles of northern France. They may be suffering an extreme time deficit by the start of the second week when the first mountaintop finish comes into view. Conversely, to fill the team with sprinters and rouleurs may provide dividends with the odd stage win and time spent in the classification jerseys during the first week. However, when the terrain tilts upwards, such teams will find that they are severely hamstrung.

A balance is required, including not only climbers, sprinters, rouleurs, time trialists and general classification contenders, but a type of rider that we are yet to explore in this peloton formations series: the puncheur. While much of the three-week race will be spent in service of others, with the purpose of achieving both day-specific and overall objectives, each type of rider nevertheless is likely to enjoy a moment in the sun. So varied is the type of racing and the daily parcours for this edition of the Tour, that there will be stages when riders with different preferences and capabilities will be required to assume time-bound leadership of the team.

Today – stage 3 – is the turn of the puncheur. Another opportunity will follow on stage 8 too, when the Tour takes on the challenges of the Mûr de Bretagne. These riders are specialists in rolling terrain that is punctuated with short climbs of 1-2km in length, characterised by extremely challenging gradients of 10-20%. Their domains are the hilly one-day classic races like La Flèche Wallonne, Liège-Bastogne-Liège, the Tour of Lombardy and the UCI Road World Championships. They count among their number riders like Philippe Gilbert, Peter Sagan, Simon Gerrans, Joaquim 'Purito' Rodríguez,

The puncheur

Tony Gallopin and Alexis Vuillermoz. As well as a few climber-puncheur hybrids like Alejandro Valverde and Dan Martin.

Wind has been a feature of stages 2 and 3. Crashes too, including a mass, high-speed pile-up earlier in the day, which has already removed three potential contenders for today's stage from consideration: Fabian Cancellara, Simon Gerrans and Michael Matthews. So severe were some of the injuries, that the stage was brought temporarily to a halt by the race organisers as there were not enough medical crews available in the event of any further incident. As the race gets underway again, the puncheurs find themselves on familiar territory. The route takes in some of the same roads and climbs as the Spring classic, La Flèche Wallonne, finishing on the steep ramp of the Mur de Huy.

The nervousness of the peloton is evident, even for the television spectator. The first week is always a nervy one, as teams attempt to hold position on narrow roads. The wind and the crashes have exacerbated this. General classification contenders are concerned too about losing time to their potential rivals. Too many people, too little space, narrowed even further by exuberant crowds and road furniture. The teams work to protect the leaders, to ensure that they are in a good position as they turn on to the lower slopes of the final climb up the Mur.

Team Sky have done an exceptional job for Chris Froome. He is at the front not so much in an attempt to win the stage as to keep out of trouble and avoid either crashing or losing time. Clearly, he is peaking at the right time, maintaining a high tempo up the climb. Surging past him, albeit temporarily in some cases, are the puncheurs. Foremost among them is Rodríguez, chased by Gallopin, Vuillermoz (who will win in Brittany a few days later), Sagan and Martin. With Froome eventually regaining position, taking second to Rodríguez, the others will make up the top five riders for the stage. They have fulfilled their leadership responsibilities for the day.

There is something about the temporary moment in the spotlight for the puncheur that reminds me of the directors who make up the executive teams in the world of corporations, public bodies and non-profit organisations. These are highly accomplished individuals. They are leaders when they need to be, but are adept at following the lead of others too. Unlike the rouleur, for example, who tends to assume domestique duties, only occasionally venturing up the road to victory, or the baroudeur who tends to embody the qualities of the maverick, the puncheur is meant to both lead the team and chase the win – in the right context. When it is not their time, however, they step back into the shadows, supporting the general classification contender, sometimes taking on a

The puncheur

mentoring responsibility, the role of the consiglieri. Think Valverde and Nairo Quintana in the Movistar team.

The puncheur, then, is like a George Harrison in The Beatles. Or a Jonathan Ive at Apple. Or, until recently, a Yanis Varoufakis in the Greek government. They stand in the shadow of the CEO, building rapport with their team, serving others with humility. But when the need arises they can take possession of the stage, mesmerising and inspiring others with their knowledge, experience and skills.

Road captain

It is 28 July 2012. The peloton is on the ninth and final circuit of the Box Hill climb in the London Olympics men's road race. This is a gold medal target for the GB team, who are riding in support of one of the world's top sprinters, Mark Cavendish. A breakaway has formed ahead of the peloton, and one of the main threats to Cavendish's ambitions, Fabian Cancellara, takes this opportunity to attack and bridge across to them. As Cancellara makes his move, Cavendish seeks to follow him. But he is called back by his road captain, David Millar. Millar has judged that they are still too far out from the finish line, and that they have a strong chance of reeling the breakaway in during the remaining kilometres. He does not want Cavendish to expend unnecessary energy on the chase now and have nothing left for the sprint finish they hope to set up.

As things transpire, however, the victor and other medallists all emerge from the breakaway. The GB team's attempts to control the peloton in the same manner that they did in the previous year's World Championship, admittedly with a larger team, will prove ineffective. Other teams have learned from 2011 and know that if they work with the GB team to close down the gap to the breakaway, there is every chance that they will be helping set up Cavendish to add a gold medal to his World Champion's Rainbow jersey. There is no cooperation today. While Millar's seemed the right call to make, in retrospect it backfires on the team.

The point here is not to highlight the wrong decision made but two other factors. First, the autonomy of the cyclists on the road. The Olympics road race title was a long-term objective for GB cycling, one element in their *Project Rainbow*, which included the 2011 success. It involved several years of collaboration between coaches, administrators and riders from competing trade teams. Both events had Cavendish as their nominated leader – the sprinter the others were riding to protect and to position for the race's finish – and Millar as the on-the-road captain. For all the planning and training, the riders have to respond to conditions and context on the day. Both the Worlds and the Olympics are races that do not allow for radio communication between team support cars and the riders. Trust therefore has to be placed in the experience and decision-making of those on the bikes, in particular the road captain.

Trust is the second factor to highlight. Cavendish's trust in Millar is unwavering. While they have a history of competing against one another for their respective trade teams, with Millar working for one of Cavendish's great rivals, Tyler Farrar, they have established

a burgeoning friendship. This is a consequence not only of *Project Rainbow* and the occasional training ride in one another's company, but also of shared experiences at the 2010 Commonwealth Games in Delhi. Millar is the elder rider who has experienced both the highs and lows of the sport, including a ban for doping. He is knowledgeable and experienced, nearing the end of his career, but still able to deliver moments of adventure and panache. He is not unlike some of the player-managers that enjoyed success in the top flights of football in the 1980s.

The road captain is most definitely not a position of command and control. There is a nurturing aspect to it. One founded on service of others; the team as a whole, the cyclists on the road, the directors in the team car, the protected rider for the day, the climber, the sprinter. Bernie Eisel is another close friend of Cavendish who has emerged as a natural road captain at the trade teams in which they have ridden together, including HTC Highroad and Team Sky. The supportive nature of his role is often hidden from the television cameras. As the action happens up the road on the high peaks, towards the back of the race, Eisel can be seen coaxing his sprinters up the long climbs. In 2012, he also was instrumental in organising the team on the road in support of Bradley Wiggins's pursuit of the race leader's yellow jersey in the Tour de France.

In other situations, the road captain, often themselves adept rouleurs, good time triallists and occasional one-day race contenders, assumes the role of teacher. They are tutor, guide and friend in a master-apprentice relationship with upcoming stars. This comes across strongly in Beatrice Bartelloni's description of her friendship with and respect for two-time Road World Champion Giorgia Bronzini at the Wiggle-Honda women's team. On other occasions, teams contract with grizzled veterans like Roger Hammond, Alessandro Petacchi, Juan Antonio Flecha, George Hincapie and Michael Rogers to take on leadership roles in support of riders who were formerly their competitors and peers. Petacchi's role in support of Cavendish at Omega Pharma-Quick Step during the 2014 season is a case in point. At Team Katusha, in another example, Luca Paolini, still a hugely accomplished rider in his own right, uses his craft, experience and decision-making skills to enable sprinters like Alexander Kristoff and general classification contenders like Purito Rodríguez to achieve podium success.

What cycling illustrates constantly is that leadership can come from anywhere. At the heart of the peloton formations concept is the notion of fluidity; fluidity of organisational structure, as well as fluidity of roles and responsibilities. The road captain is not a hierarchical role but more an articulation of the knowledge and mastery that are necessary for success on the road. The role is taken on by different people on different

days. Context is important, as is the individual's relationship with the designated protected rider. The road captains mentioned here share a strength of character, conviction in their own decision-making, mutual trust with their teammates and a willingness to share their experience. They are great tacticians and excellent communicators.

As Millar's Olympics story suggests, the road captains do not always get it right. Nevertheless, they invariably enjoy the loyalty of fellow riders and support staff for whatever decisions they make. This is not a blame game. Trust is all. This is built over time through shared experiences. Evidence that their on-the-road guidance to teammates can often make the difference between failure and success only serves to strengthen that trust. Reigning Commonwealth Games champion Lizzie Armitstead recently described the effect of her trade team road captain, Chantal Blaak, during the third stage of the 2015 Tour of Qatar. Blaak recognised the over-eagerness of her teammates, coaching them and keeping them calm, guiding as they organised themselves for the stage win. Her actions and encouragement of teammates helped secure the overall victory for Armitstead and the Boels-Dolmans team the following day.

Like a good project manager or internal consultant in the corporate world, the cycling road captain can lead from the front, from behind, from the side or from the shadows. They coach, mentor and enable others, serving as social connectors between riders on the road and the support teams behind the race. They are master craftsmen, big-picture thinkers who improvise strategy on the fly. They are decision-makers who unite teammates in common purpose, maintaining that unity through both failure and success. They are champions of the framework within which the team operates, the glue that holds the team together.

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Social movements and civil unrest. Popular challenges to long-established institutions. Border-crossing networks of informed crowds seeking to exercise their rights. Whether focused on fiscal policy, corporate corruption, inequality or the overthrow of dictatorships, these have formed the backdrop of world affairs over the past decade. They have been the subject of endless hours of media footage, reams of print, digital comment and observation. The emergence of what Manuel Castells has termed *Networks of Outrage and Hope* has raised a challenging question that continues to perplex traditional media outlets and the machinery of the state. Who leads? It was a question that greatly taxed the journalists as they interviewed the tent-dwelling protestors of the Occupy Wall Street movement. Was the answer no-one or everyone or it depends?

Strong, trust-based relationships are the genuine currency of networks. This was as true of the salon-era communities that we associate with the political and artistic movements of yesteryear as it is today. The difference now is that digital and mobile technologies foster and enable the speed and scale at which networks can be established and grow. A physical meeting strengthens a bond established online but it is not essential for the overall health of the network. People on different continents, in different time zones, can still connect on shared interests, fuelled by either hope or outrage, adding their voices and energy to the greater whole. What characterises the network in these situations is a fluidity of knowledge, roles, responsibilities and authority. Leadership is in motion, governed by context.

Networked partnerships, shaped by either collaboration or cooperation, are increasingly evident in business too. As Nicholas Vitalari and Haydn Shaughnessy argue in *The Elastic Enterprise*, this can happen between organisations, with certain enterprises like Alibaba, Google, Github and Apple creating platforms or ecosystems; spaces for partnerships with an array of other businesses both large and small. It can also happen within a single organisation. In *Creativity, Inc.*, for example, Ed Catmull outlines the leadership responsibilities not only of the figurehead triumvirate of himself, Steve Jobs and John Lasseter at Pixar and Disney, but also of writers, directors and animators too. Leadership here can be a form of service, enabling others, guiding and advising.

It is also necessary to respond to context, recognising when it is your turn to take the initiative, to put your expertise or specialism at the service of others. This is not a case of

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telling, but of opening up a conversation, making others comfortable contributing too. Former rugby international Phil Greening has enjoyed success recently coaching the US seven-a-side team. In a *Guardian* [interview](#), he discusses how he and his colleagues had to overhaul a command-and-control culture. Leadership has to come from within the team, from anywhere on the playing field. It is not the case of a coach simply instructing players on what to do. Instead it is about developing a partnership, recognising the skills and mastery, the autonomy, of each individual. As Paul Rees put it in a recent *Guardian* [article](#), 'The very best teams harness individualism, not exile it.'

In peloton formations, I use the professional cycling peloton to illustrate the responsiveness and flexibility that is necessary in the modern organisational structure. The metaphor also serves to highlight the absolute fluidity of roles and responsibilities within a cycling team itself and across the peloton as a whole. There is a constant need to adapt to context. Cycling is a sport in which competition, collaboration and cooperation are frequently in tension. Networked relationships across the peloton underpin time-bound partnerships on the road – the flight of the breakaway from the main bunch, for example – which eventually dissolve as the finish line nears. Within each team trust is essential, so too the fulfilment of specific roles on designated days – whether that is leading the pack up a climb, chasing down a breakaway, or taking your place on a fast-moving sprint train.

Cycling is an anomaly. It is a team sport in which, with the exception of the team time trial, a single person crosses the finish line to win and enjoy the plaudits on the podium. But it is a sport that also covers hugely varied terrain – rolling hills, flatlands, mountainous ranges. The composition of a cycling team, therefore, is an exercise in diversity. With diversity as an organising principle, there is a requirement to embrace a range of different but complementary skill sets, determined in part by the team's overall objectives in the race. Is it chasing stage wins? The general classification? The climber's prize? The sprinter's? It is a sport that, because of its very nature, is always raising the question: *Who leads?*

In 2012, Team Sky entered a squad of nine riders: Christian Knees (GER), Richie Porte (AUS), Chris Froome (GBR), Edvald Boasson Hagen (NOR), Bradley Wiggins (GBR), Mark Cavendish (GBR), Bernhard Eisel (AUT), Michael Rogers (AUS) and Kanstantsin Siutsou (BLR). The overall objective for the squad was to win the general classification, earning a yellow jersey for Wiggins. His role as team leader was suggested overtly by his positioning in the centre of publicity images.

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However, this was a squad full of leaders. Standing next to Wiggins was Cavendish adorned in the jersey of the reigning World Champion. Boasson Hagen would also wear his national champion's jersey during the race. Froome would follow in Wiggins's footsteps as a multiple stage-race winner in 2013. Porte too would go on to develop as a general-classification contender. Something already achieved by his national compatriot Rogers, who was a three-time world champion against the time-trial clock. Throughout the Tour, as well as in many other races, Eisel would fulfil the role of road captain.

Often, during the race, Sky could be seen at the front of the peloton with Wiggins, in the race leader's jersey, protected both in front and behind by his teammates. But who was leading at such times? Was it Knees who was at the front of the peloton, taking the wind, punching a hole through the air, clearing the way for others to follow? Or Eisel who had organised his teammates into this protective pace line? Or Cavendish, who also was sheltered, waiting to compete for the sprint stage win later in the day, the last wagon on a runaway sprint train?

The organisation of a sprint train is an art form that illustrates the notion of rotating leadership. It is executed at high speed, in complex conditions, surrounded by other riders, variable weather, huge crowds and road furniture. The members of a team ride in formation, wheel-to-wheel. They are streamlined for air resistance and maximum velocity. One-by-one they assume leadership of the train, until finally the sprinter is alone, launching themselves towards the finish line, uncoupling themselves from the pilot fish instincts of their lead-out man.

<https://www.youtube.com/watch?v=em7E4kstIss>

This video, from the 2015 Tour of Dubai, captures the work of Cavendish's new team Etixx-QuickStep. It is also well worth searching online for footage of stage 21 of the 2009 Tour de France, which illustrates the decision-making and lead-out work of Cavendish's Team Columbia-HTC teammates George Hincapie and Mark Renshaw.

To answer the question Who leads?, one has to understand the importance of trust, autonomy and context. It is as relevant in the encampments of Occupy as it is on the roads of the Grand Tours, the corridors of government and the open spaces of the modern workplace.

The apprentice's craft

For all the innovations and dominance of different materials in their manufacture, the shape of the racing bicycle frame has remained remarkably consistent since the latter years of the 19th century. The road bike diamond is familiar to all, regardless of whether you express an interest in the sport or not. The production of these frames transcends the hazy line that separates bespoke artisanship and craft from large-scale industrial output. Indeed, just as professional cycling is inextricably connected to the evolution of mass media from the late Victorian period onwards, so too does the history of the bicycle in the same period reflect in microcosm shifting attitudes towards industry and craft. The revival of interest in cycling and the emergence of the maker movement has prompted increasing curiosity about the skills of the master framebuilder.

In *Open*, David Price observes that 'Efficiency, standardisation, elimination of waste, were key drivers in the shift from craft production to mass production.' Bicycle manufacture was no exception. Early on, craftsmen had mastered the manipulation of steel tubing, shaping it into attractive frames with ornate lugs. However, the incessant search for lighter, cheaper, stiffer and stronger parts and frames, particularly in professional cycling, led to experimentation with other materials too, including titanium, aluminium and carbon. The development of carbon moulds, as well as alternative methods for manipulating carbon-fibre-reinforced polymers, opened the way for outsourced mass production in Asian factories. Designed in Italy. Made in Taiwan. The names of famous brands plastered over uniform products lacking any idiosyncrasies.

Off-the-shelf bicycles flooded the market to suit all riding styles, body shapes and sizes, not to mention wallets. But they lacked the personal touch. It was at the fringes of cycling culture, among the messenger community, for example, and the fixed-wheel enthusiasts, that something a bit more distinctive could be seen. Famous old marques and steel steeds were dusted off and repurposed. Artisans of the past were sought out, their knowledge and craft highly valued again. Steel and titanium frames offered romanticised memories of things past, a different feel on the road, a ride that appealed to those less interested in haste. Measurement here related not so much to speed, distance covered, calories burned and heartbeat, as to bespoke fit for your own body. In his *It's All About the Bike – and Ride of My Life*, the documentary film that complements it – Rob Penn enthusiastically describes the experience of having crafted for you, by an experienced artisan, a frame that fits you like a glove. Bella Bathurst, in her *The Bicycle Book*, goes further still, describing the experience of making your own frame under the

watchful eye of a master framebuilder. The journey to knowledge mastery starts with both conversation and action.

It is intriguing to see how the professional cycling teams have carried over the notion of the master–apprentice relationship into the sport itself and not just in its supply chain. In peloton formations there is always a fluidity of leadership, roles and responsibilities that is governed by context. The passage of time comes into play too. For example, many successful professional cyclists at career's end as practitioners on the road move into advisory or management roles off it, serving as sporting directors, coaches and mentors. At the other extreme is the space created for promising, young amateur riders towards the end of each professional cycling season. Stagiaires are given the chance to gain experience competing in professional races as short-term members of established teams. This gives both the rider and the team the opportunity to assess readiness, attitude, aptitude and team fit. It is an immersive learning experience, where callow youth rubs shoulders with and performs alongside seasoned veterans of the road racing circuit. For some it is the launching pad to a successful career. Mark Cavendish, for example, was a stagiaire with the T-Mobile Team in 2006, having spent time in one of their feeder squads. The following year he was riding his first Tour de France with the same team.

The novice is exposed to the knowledge and expertise not only of the master but of the colleagues with whom the master interacts. Skills are acquired through observation, imitation, enquiry, internalisation, deed and subsequent repetition. It happens in the cycling team with the annual introduction of new team members and constant access to veterans of the sport. It happened in the medieval monasteries, as suggested by *The Name of the Rose*; Adso learning not only in the moment alongside Brother William, but years after the fact as he reflects back on past events and filters them through decades of subsequent experience. It happened with the blacksmiths, bakers, cobblers and masons of old too. It happens still on a daily basis, in workplaces large and small, in both the office filled with knowledge workers and the artisan's workshop occupied by the few. It is personal knowledge mastery made manifest. A perpetual exercise in curiosity, acquisition and application of learning. Both master and apprentice continuing to learn together.

Where recognition and reward for one's expertise is the end goal, there is always the danger of stagnation. An organisation comprised only of a team of deep specialists is not unlike a bank of elevators, separated from one another, loosely serving a common purpose but only occasionally pulling in the same direction. The tendency towards hyperspecialisation fosters a blinkered perspective. The knowledge and personal

experience of the individual gradually becomes valued above all else, curiosity fades, self-promotion escalates, expertise loses its currency and evolves into empty rhetoric without foundation in the market it is intended to serve. The craftsman as the incomplete, always evolving learner is a useful countermeasure to this. By remaining open to new ideas – including those introduced by their own youthful apprentices – the craftsman allows themselves to blend new knowledge with traditional practices, to experiment and tinker at the edges.

Some of the great innovations in cycling equipment, including the quick-release wheel, have resulted from such Trojan Mice initiatives. So too some of the nutritional and training practices adopted by cycling teams open to the influence of newcomers experienced in other disciplines. Many of the great masters of painting have also shown themselves to be receptive to new influences and ideas. Picasso's career, for example, is one marked by many sudden deviations and experiments in form and style, co-opting and personalising, cycling constantly between the role of master and apprentice. Maybe what our modern offices need are a few more neo-generalists, who can both span as well as mine specialisms, an injection of artisanship and a greater emphasis on learning while doing.

It is a rewarding, stretching venture. The quest for a mastery that can never quite be attained. What Harold Jarche calls life in perpetual beta.

Race day

July 2013. Stage 9 of the Tour de France is under way. It is a challenging, mountainous stage from Saint-Girons to Bagnères-de-Bigorre, taking in a number of Pyrenéan cols. Chris Froome is already in the leader's yellow jersey, and Team Sky's role is to protect and consolidate his lead. Teammate Richie Porte is second on the general classification at the start of the day. But lurking behind them are a number of dangerous riders, including Alejandro Valverde and Nairo Quintana from Movistar, Bauke Mollema and Laurens Ten Dam from Belkin Pro Cycling, and Alberto Contador and Roman Kreuziger from Saxo-Tinkoff. Team Sky, who put in a dominant mountain display the previous day on stage 8, are about to be seriously tested, prompting Froome at day's end to observe that it has been one of the hardest days he has ever experienced on a bike.

Teams enter stage races with different goals. Some target overall victory, others solo or team time trials. Some are sprint specialists, while others are on the look out for opportunistic stage victories, putting riders into breakaways. Choices are determined by the composition of their teams, the route chosen by the race organisers, the weather conditions on certain days, the health of riders during the course of the race, and, naturally, race plans devised by the backroom team in collaboration with the cyclists. A well-documented example of the latter, covered in Rod Ellingworth's book, *Project Rainbow*, is the extensive planning the British Cycling team put into the winning the Men's UCI Road World Championships in Copenhagen in 2011. Stage 9 of the 2013 Tour was to see a different example of unconventional ideas getting beautifully executed by a team.

Dan Martin of Garmin Sharp lies in thirteen place on the general classification at the start of the day's stage, some 2 minutes 48 seconds behind Froome. He has lost most of that time on the previous day's stage as Froome and his Team Sky colleagues delivered a tour de force securing victory atop Ax 3 Domaines. Martin's team has narrowly missed out on securing the leader's yellow jersey on the opening stage of the Tour. They have also failed to achieve one of their pre-race objectives: winning the team time trial on stage 4. Their focus now shifts to a more disruptive, high-risk goal. Operating within a loose framework, informed by data analysis, but with decision-making delegated to the directeur sportif in the team car, as well as the riders on the road, they opt to do away with cycling tradition and attack the race as a collective.

This is a challenge to the status quo; change agency in action. As a team, in only the ninth stage of a 21-stage event, they are prepared to sacrifice riders and harm their chances of placing well in the overall race. Instead they adopt an all-or-nothing strategy, placing their trust in Martin, their designated leader and protected rider for the day. As the peloton climbs one col after another, the Garmin Sharp team attacks in waves, until Martin recognises an opportunity and launches an attack of his own. Even then, having traversed 169km and climbed five categorised cols, he will still need to beat Jakob Fuglsang (Astana) in a two-up sprint finish into Bagnères-de-Bigorre. By the end of the day Martin has raced into the top ten on the general classification. In the process, while not dislodging Froome from the race lead, Martin and his colleagues have exposed Team Sky's vulnerabilities. Porte's chances of finishing on the podium now lie in tatters.

Martin's victory, though, is not so much the product of team tactics, as of a number of interdependent factors that favoured them on the day. Certainly team spirit and common purpose are both features, as are Martin's own intuition, decision-making and athletic capability. But so too are the route chosen for the stage, the favourable weather conditions, the temporary dip in form of the Sky team, the concerted effort of other teams, especially Movistar, to take the race to Team Sky, and the early isolation of Froome himself. Serendipity and luck play their role too. These are not things you can plan for. Indeed, the racing aggression and risk taking displayed by Garmin Sharp and Movistar, in comparison with Team Sky's more conservative approach on the day, illustrate the misguidedness of conventional planning. As Ian Sanders and David Sloy argue in *Mash-up!*, 'Most plans are rubbish, written by people who are guessing the future based on what has happened in the past. The past is exactly that, the past; it has gone, and even though it has a habit of repeating it can't be used as an absolute map for the future.'

Grand Tour bike races are great examples of the interconnectedness of multiple systems. That applies within the context of the race itself and the actions of the cyclists, as demonstrated by Martin and his fellow members of the peloton. More broadly, it also applies to the organisation of the races and their impact on the numerous communities that host the start and finish of each stage, as well as those that lie on the day's route. This was really brought home to me yesterday as I stood by the roadside next to London's Olympic Park as stage 3 of the 2014 edition of the Tour came to town. Everywhere was evidence of the Tour organisers' collaboration with British counterparts. Different bodies had been mobilised, including Transport for London, the British police force and the French gendarmerie. Roads were closed. Crowds controlled. The media flitted in and out of the race on motorbikes or hovered above it in helicopters. The

cyclists were preceded by the commercial excesses and blaring Euro pop of the Tour caravan, as well as by VIP vehicles, press cars and police outriders. Then in among the cyclists and bringing up the rear were race officials, team cars, cameramen. It was fluid, chaotic, agile and speedy. Elsewhere team coaches and other vehicles carrying support staff, chefs, soigneurs and mechanics were heading into central London. Yet other systems came into play too, not least the weather, which turned from sunshine to rain as the riders headed towards the finish line on the Mall.

Cycling history is littered with stories of the impact of inclement weather, notably, in recent memory, the snow-affected Milan-San Remo race of 2013. Then there is the rogue or simply vacant element in the roadside crowds, such as the tack droppers who attempted to sabotage the 2012 Tour and the selfie-photographers that lined the Yorkshire roads in 2014. There are also numerous tales of the role railway level crossings have played in proceedings, holding cyclists up as others, who managed to get over the crossings before the barriers came down, race away to victory. It is a sport that demonstrates that everything connects. A sport steeped in and interwoven with politics and media throughout its history, with both the Tour and the Giro d'Italia originally conceived to sell newspapers.

It is this very interconnectedness, this interplay of multiple systems, that reinforces my belief in the peloton formation as an apt metaphor for a modern, agile, adaptive and responsive organisation. One that has to operate under loose frameworks, tolerating risk, constrained by Government and regulatory policy, responding to shifting market conditions, seeking to evolve, transform, succeed, survive.

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On 4 July 2009, as a belated 40th birthday present, I visited the Tour de France for the first time. This consolidated a fascination with the professional sport that had been further piqued in April by standing at the roadside (and then in the velodrome) for that year's edition of the one-day classic Paris-Roubaix. As I walked the streets alongside Monaco's Port Hercules and up into Monte Carlo in oppressive heat and cloying humidity, I watched riders from the different trade teams warm up and inspect the course for the time trial that would launch the great event. Proximity to the athletes and support staff, together with the atmosphere and anticipation among the fans, was a heady mix. I was smitten.

Elsewhere in Monaco the latest pages in the first chapter of another story were being written. This was one that would buttress and intertwine with my appreciation of professional cycling and my borrowing from it for the notion of peloton formations and the exploration of responsive, adaptive organisations. Behind the scenes the then performance director of British Cycling, Dave Brailsford, was in negotiations to establish a new professional men's road racing team for the following season: Team Sky. Everything about the team, from its initial launch, its openness to and advocacy of new practices, its bucking of tradition, have tended to divide opinion since its black-clad riders first appeared in the peloton during the 2010 season. For some, Team Sky is viewed as an interloper, an undesired change agent. Its failures are celebrated just as vociferously in certain quarters as its successes are lauded in others.

Of course, there is no right answer. The story of Team Sky is a story of *both/and* not *either/or*. Sky serves as a bridge from the past to the present: a new team combining youth and experience; clean riders and a backroom team tainted in part by cycling's doping past; established professional racing practices blended with new techniques related to training (of both body and mind), performance assessment, nutrition, an individual's race schedule, clothing, sleeping habits, adoption of information technology and use of big data. You can walk around the story of Team Sky over the past five years and constantly reframe, adopt a different perspective, find an angle that suits either diatribe or eulogy. There is evidence of naivety and misplaced confidence just as there are many examples of innovation and unprecedented success. It is the story of a start-up taking on and then rapidly becoming part of the establishment. No different, really, than the story of a Google or a Facebook.

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One of the factors that informs the culture and operation of Team Sky is the notion of continuous improvement. Brailsford has absorbed ideas from kaizen and from other sports, notably Manchester United's treble in 1999, England's success at the 2003 rugby world cup and the Oakland Athletics' *Moneyball* story in baseball. He has coined the phrase 'the aggregation of marginal gains', which is all about making infinitesimal improvements across a broad range of things rather than a huge advance in a single thing. It echoes Clive Woodward's argument that success often is 'not about doing one thing 100% better, but about doing 100 things 1% better'. As Daniel Friebe argues in his article '[Cyclonomics](#)', Brailsford's fascination with *Moneyball* reflects a shared interest in data and what can be learned from it. It proved to be a contributing factor in an unprecedented run of Olympic and World Championship success for British track cycling under his leadership. Lessons learned also were adapted for and absorbed by his road cycling programmes too, first with the British Cycling Academy and then with Team Sky. It eventually led to close partnerships with the likes of Matt Parker and Tim Kerrison, the latter one of the architects of Tour de France triumphs for both Bradley Wiggins in 2012 and Chris Froome in 2013.

Like many sports, cycling has always been one filled with data and statistics. It includes time measurements within each stage, aggregated time assessed over stage races, and points systems for certain jerseys. More recently, a rolling points system has been established by the UCI, the sport's governing body, that assigns a quantified value to individual riders and can impact on the licensing of the trade teams for which they ride as well as the size of their national teams at competitive events. It is a sport in which numbers matter. As with any workplace, performance assessment is in place and it can affect individual, as well as team, behaviour. Brailsford appears to have introduced another dimension too, which others have been quick to copy. For example, the biological passports and long-term performance data of athletes were assessed prior to some of the early signings for Team Sky. With Kerrison in place now, the collection and assessment of training data is constant too, as the team seeks to understand where an athlete's tolerance threshold is, helping them determine the correct pace for climbing a given mountain or closing the gap to a breakaway. Some of the riders now seem to find it difficult to tear their eyes away from their power meters as they hit the peaks of the grand tours.

A recent *Guardian* [interview](#) with Brailsford by Sean Ingle suggests that there is much more to follow. Brailsford has spent time in Silicon Valley assessing new technologies and how they might support rider performance and health, continuous improvement and effective decision making. Sensors in clothing, for example, have the potential to provide

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a dashboard of rider health information, real-time data that can impact on who should lead on a given day, who should attack the peloton and when, and so on. There is a danger that the riding then becomes robotic, remote controlled from team cars. It is a criticism already levelled, perhaps unfairly, at Team Sky and others in the peloton, particularly in those races in which radio contact between riders and sporting directors is permitted. It is a criticism that tends to ignore the level of autonomy the riders themselves have. It is not all about numbers or radios.

There are many riders in the peloton who are not quantified serfs. Like the corporate employees who rebel against the calibration process that accompanies the annual review, there are prominent athletes like Mark Cavendish who mount a numeric challenge. It is well known that Cavendish performs dreadfully on the static testing equipment that generates assessment metrics. Thankfully, his abilities on the road, his capabilities among the peloton and his strength of purpose were all recognised early in his career and this overrode the story the numbers told. As a consequence space was made for the qualified self. One of the most successful careers in road cycling sprinting followed. Numbers do lie. We should not always be in thrall to them. Brailsford himself is one of the first to observe that data or technology will not themselves give riders an edge. It is the application of these things, their enabling potential, that matters together with the athlete's own talent, the mastery of their discipline, their decision making and autonomy within the context of a loose framework.

This was brilliantly illustrated at the 2015 edition of the one-day race Omloop Het Nieuwsblad. Another example where the story suggested by numbers was turned on its head. Riding for Team Sky, Ian Stannard was the reigning champion from 2014. Through smart riding and great awareness, he had managed to manoeuvre himself into the decisive breakaway in the final kilometres of the race. There was one problem, however: a significant numeric disadvantage. The three other riders in the breakaway all belonged to the same team, Etixx-QuickStep, specialists in the north European races over the cobblestones. Among their number were Stijn Vandenberg, Niki Terpstra, winner of the 2014 edition of Paris-Roubaix, and Tom Boonen a serial winner of one-day classics and one of the most successful cobblestone riders of the past decade. This, however, was a race without radios, the breakaway's bubble punctured by occasional visits by team cars to the front of the race. In other respects the riders were on their own and had to self-organise. The Etixx decision making proved to be flawed, and Stannard, through a combination of his own skill, mental fortitude, physical strength and canniness was able to outwit his companions and win the event. It was a demonstration of talent and

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autonomy. Evidence that the riders selected to represent the team will always outweigh any interest in data or technology. People first. Always.

After a far-from-perfect season in 2014, Team Sky's dual emphasis on both its people and its drive for continuous improvement is already bearing substantial fruit, of which Stannard's solo efforts are just one example. Elsewhere Chris Froome and his teammates overcame the challenge of Alberto Contador to win the Ruta del Sol, Geraint Thomas claimed overall victory in the Volta ao Algarve stage race and Richie Porte prevailed after eight days of Paris-Nice. Cycling is a team sport where individuals win, one person stepping onto a podium representing the networked efforts of teammates on the road and the support team of directors, coaches, chefs, psychologists and data analysts which orbit them. The marginal gains have effectively blended training methods, professional mastery across a spectrum of disciplines, a balance between quality and quantification, planning within broad frameworks, the adoption and application of appropriate technology, and trust placed in the ability and decision making of the athletes on the bikes.

So, *what counts?* Certainly not just the numbers. As with the operation of any organisation, from small-scale cycling team to huge corporation, the people matter above all else. They flourish in the right environment, with a supportive culture, enabling technology, common purpose, freedom to express their professional mastery, and autonomy to respond and adapt to context. Cycling is a fascinating mix of human endeavour, mechanisation and technological advancement. The way each element is harnessed to achieve objectives is crucial to the concept of peloton formations and its broader application to business.

Ready to jump

This article was first published on the the Hack & Craft News website in November 2016.

Sunday 11 September 2016. A diminutive professional road cyclist, Nairo Quintana, takes his place on the top step of the podium in the centre of Madrid. He has just secured overall victory in a Grand Tour race for the second time in his career. But things could have turned out so differently were it not for the spirit of adventure that Quintana and his teammates had demonstrated the previous Sunday...

Peloton formations

For all the focus on the individual, winning unique stages, overall races, classification jerseys and intermediate sprints, road racing is in fact a team event. It is played out against a backdrop of numerous interacting systems – competing teams, event organisation, municipal authorities for the host towns, policing, media embedded within the race, team cars, support vehicles, spectators on the roadside, weather, terrain, course routes and road furniture. The passage of the cycling peloton itself – that swarming mass of lycra-clad teammates and competitors – is complex and adaptive. The peloton formation, in its responsiveness and fluidity, serves as a useful metaphor for an aspirational modern organisation.

The peloton is characterised by constant shifts between competition, collaboration and cooperation. Leadership is always in motion rather than remaining static, a baton that is passed off and handed back again, determined by day-to-day and overall objectives for the team. Leaders become followers, servants become leaders, as the road flattens or climbs, as the wind strengthens or tarmac gives way to cobblestones. Emphasis is placed on time-bound actions and relationships; forming or chasing down a breakaway, setting up a sprint finish, helping a teammate make their way back to the main group after a mechanical failure.

Alliances of mutual convenience take shape and then shatter as competitors accommodate contextual shifts. Teams operate within loose frameworks, exercising

personal and collective autonomy, as they amend their plans. Decisions are made on the fly, in recognition of changes in weather, incidents on the road, the health and form of colleagues, as well as in response to the actions of riders from other teams. The roles an individual fulfils are in a constant state of flux.

Members of a nine-man Grand Tour team, assembled for the annual editions of the three-week Giro d'Italia, Tour de France and Vuelta a España, will assume a variety of responsibilities. Some will defend against breakaway attempts. Others will collect water bottles from the team cars. Some will shelter the day's designated leader from the wind, while that leader will aim to conserve energy for the final sprint or climb, or for key stages later in the week. All, though, are alert to opportunities to break free from the peloton's grip and enjoy a day in front of the television cameras. For several teams, lacking the personnel for overall victory, exposing your corporate sponsor's logo to a global audience is the ultimate objective. Brand awareness leads to revenue; a sponsor's income can translate into ongoing financial viability for the team.

Serial masters

An effective road racer, with aspirations to win a Grand Tour, tends to master several disciplines. Invariably, they are extremely competent climbers, often to be seen at the front of the race as it reaches its highest slopes. Often they are highly proficient against the time trial clock too, the ultimate test in performance measurement. The very best are also characterised by their inner strength, their responsiveness and occasional opportunism.

Being serial masters, the Grand Tour contenders seem better able to play what is in front of them, rewriting the day's plans when necessary, gambling where they believe the calculated reward will outweigh the potential risk. Without that mastery and responsiveness, it is difficult to adapt to and rectify major problems. Even more so to take advantage of the serendipitous opportunity. Individual initiative will often be amplified and consolidated by the supporting actions of teammates.

At the start of the 2016 Tour de France, three riders were considered potential winners: Chris Froome, Nairo Quintana and Alberto Contador. This was founded in part on their own form and palmarès and, in particular, on the collective abilities of their respective

Sky, Movistar and Tinkoff teams. It was expected that the big three would mark each other closely, with only injury, illness or individual opportunism likely to differentiate before their rivalry was played out on the most vertiginous of the Tour's ascents.

As things transpired, all three came into play. Contador succumbed to the effects of crashes early in the race, while Quintana's own performance was inhibited throughout by illness. This was exacerbated by Froome's willingness to do the unexpected; to go against the unfair stereotype he bears of being a robotic rider in thrall to the data available on his cycling computer and the instructions received from sporting directors through his earpiece.

Froome is renowned for his sudden accelerations on the Pyrenean and Alpine climbs. Rival teams watch closely, preparing to respond, either accompanying him as he breaks away from the peloton, or neutralising his efforts. On stage 8 of the Tour, there was some relief as the summit of the Col de Peyresourde was attained with the leading group intact.

As Quintana reached for his water bottle, however, Froome attacked as the road dropped downhill, assuming an ungainly and uncomfortable position on the crossbar of his road bike. It proved to be a turning point in the race, laying the foundations for Froome's overall victory, expertly marshalled and supported by his teammates over the remaining thirteen stages.

Seize the day

At the start of the Vuelta a España in mid-August, the names of the same three contenders for overall victory were on everyone's lips. New variables were in play. How well had Contador recovered from his injuries, Quintana from illness, Froome from his efforts at both the Tour and the Olympics, where he had medalled in the time trial event? How would the apparently weaker Tinkoff and Sky teams respond to the collective strength of the Movistar squad? How would Froome cope without his Tour wingman Wout Poels?

In recent editions, the Vuelta has become known for its challenging climbs and searing heat. The 2016 race had been designed with several mountain-top finishes that would

serve as enticing canvases for the climbing artists. One stage, though, stood out in the final week: an individual time trial, which many believed favoured Froome. If other aspirants to overall victory wished to take the sting out of that particular day, then they would need to accumulate a significant time advantage.

In the Vuelta, time can be gained in two ways. First, by finishing ahead of your competitors, thereby securing a time gap over them. Second, by winning the stage or finishing high up on it, particularly on the more difficult climbs, thereby earning time bonuses. The rider who has the lowest overall time after three weeks is declared the winner of the race.

Teamwork becomes essential, therefore, as members of a squad sacrifice their own prospects of finishing high up on the general classification in order to ensure that a colleague does. Trust-based relationships and collaboration informed by a shared purpose define the dynamics of the team. Often, however, there is a need for this to be supplemented by cooperation with riders from rival teams. These temporary alliances are mutually convenient as the pursuit of distinct goals are benefited by working together.

The Vuelta started with a team time trial, which immediately disadvantaged Contador, as his underperforming team lost time to the other overall contenders. This recast him in the role of agitator, of opportunistic forager, seeking out ways to regain time and a spot on the podium, if not overall victory. His actions later in the race would benefit Quintana, who soon established himself as the rider to watch on the steepest of slopes, assuming race leadership by the midpoint of the Vuelta.

On paper, stage 15 looked like it would be short but explosive. Only 118km in length, from Sabiñánigo to Aramon Formigal, it had a lumpy profile, with three classified climbs, culminating in a mountain-top finish. With 112km still to race, and the peloton already on the first of the day's ramps, Contador made the jump. His attack was marked by Quintana, and together they formed an alliance, each with two teammates alongside them, as they pulled away as part of the day's breakaway. A gamble was rapidly translated into a race-transforming opportunity.

Froome was left behind, and as the day progressed found himself isolated without teammates from Sky. Meanwhile, Quintana's own Movistar colleagues expertly disrupted attempts to chase down the breakaway. The events of the day were as much about Quintana's own seizing of it as the work of his team behind him. Second place on the stage, a time bonus and Froome's loss of over two-and-a-half minutes secured the

temporal buffer Quintana required prior to the time trial. Froome's phenomenal performance in the latter suggested what might have been, with the Sky rider clawing back two-and-a-quarter minutes from Quintana. But the latter and his Movistar team had effectively won the race on 4 September.

Peloton lessons

Stories from the peloton frequently demonstrate that it is about so much more than the individual. Network effects are key, both within the clearly delimited organisation of the team, and in the messier relationships and alliances with others in the peloton. The technical policies, rules and regulations of governing bodies and event organisers give a semblance of structure to the races. But the teams use them as creative constraints, operating more under flexible frameworks than rigid plans. Without responsiveness and autonomy, without the willingness to experiment, these teams would experience little success, letting one opportunity after another pass them by.

Paradoxically, life in the peloton is about both preparing and being willing to discard a plan at a moment's notice. It is what Harold Jarche refers to as life in perpetual beta. Complexity cannot be dealt with in simplistic terms, uncertainty is a constant, and individuals have to be willing to respond to momentary context and trust their colleagues to follow their lead. How many organisations in the private, public and not-for-profit sectors do you know that operate like this?

Pelotons are able to function in the way that they do because learning and experience is embedded within them. Young riders are mentored by seasoned professionals. They learn through imitation, trial and error, developing both instinct and intuition, daring to experiment when the occasion presents itself. The sport is all about life lessons acquired on the road, the knowledge gained from numerous failures as relevant as that acquired through the occasional success. Teamwork provides firm foundations. But autonomy within loose frameworks, decision-making and accountability are all encouraged from early on. It is this crucial combination – individual action contextualised in relation to the collective – that the modern corporation, government agency and charity now need to learn.

Ready to jump

<https://www.youtube.com/watch?v=r5yQypJM5w>

<https://www.youtube.com/watch?v=jtiaGZtRfbM>

<https://www.youtube.com/watch?v=JPvOmk1WZLs>

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