

“Think like a Scientist!”

Finding out what
works, in what way
and for whom



Contents

What does it mean to think like a scientist?	3
The rationale for thinking like a scientist	4
The limits of human decision-making	4
What do we mean by an 'evidence-based approach'?	6
The ingredients of an evidence-based approach	6
A brief history of evidence-based practice	9
Barriers to evidence-based practice	10
Do these sound familiar?	12
Evidence-based practice: a story in three parts	13
Part one: "We need to do something about this"	13
Part two: "What's the solution?"	13
Part three: "Moving on"	14
A job well done?	15
The role of evidence at work	16
Myths, fads and other fairytales	18
The varying quality of evidence	20
The world of work is complicated!	21
Revisiting Sarah and Mike	22
The World of Work model	23
So you want to think like a scientist?	24
How to make a start	24
Assess yourself	25
Pathway: a journey for practitioners	26
Conclusion	27
The Future Work Centre: our mission and values	28
What we do	29
Evidence-based practice: useful resources	30

What does it mean to think like a scientist?

Let's start by asking you to think of a scientist. What do you picture? Someone famous you've seen on TV talking about the cosmos? A character from CSI, working in a lab? Perhaps a medical scientist, researching a cure for a serious illness. Our point is this: there are many kinds of scientists, real and imaginary.

Yet they all have this in common: they use rigorous scientific methods to answer challenging and interesting questions.

And we can be just like them.

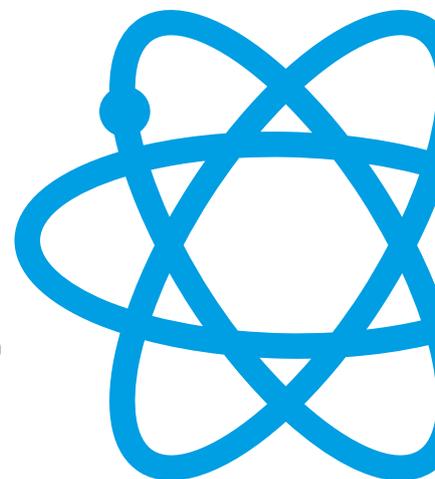
Scientists aren't a breed apart, born with superhuman gifts of intelligence. They're inquisitive people, using established frameworks and methods to get answers to what interests them – and us – most. They generate hypotheses, test these hypotheses and update our collective understanding with the results of that analysis.

We, as occupational psychologists at the Future Work Centre, are scientists too. We use scientific approaches to research topics in the workplace, research evidence to frame our interventions and solutions and take action to help individuals and organisations. The advice we give our clients and the techniques we use are grounded in science. We see the power of a scientific approach and want as many people as possible to understand it and use it for themselves.

We think everyone could benefit from thinking like a scientist more often, especially when we're faced with difficult decisions. This paper sets out the rationale for adopting an evidence-based approach to decision-making at work, what it means for individuals in the workplace and provides guidance on how to start being an evidence-based practitioner.

Scientists spend their careers asking questions about the world around us, wondering why things are the way they are and how they can be improved. Thinking more like a scientist requires each of us to adopt a more inquisitive and sometimes sceptical stance when evaluating information placed in front of us.

From thinking critically about the evidence behind an advertiser's claim about their product, through to evaluating the effectiveness of the most common people-related practices, we can use a questioning approach to help us make better quality decisions.



The rationale for thinking like a scientist

Without considering evidence, we leave ourselves open to wasting time, money and effort. We remain susceptible to the many fads and fashions that are so prevalent in the workplace, whose impact is disruptive as well as expensive.

Without a focus on evidence, we miss the opportunity to find out **how** things work. It also improves the quality of the decisions we make, because instead of relying on gut feel, we use quality data to inform our thinking. If we don't adopt a level of scepticism about a new product or way of working, we run the risk of engaging in 'groupthink', simply going along with majority opinion.

The limits of human decision-making

As humans, we're not equipped to make perfect, rational decisions at all times. Plenty of obstacles prevent this, from how our brains are wired, how emotions impact our thinking and the sheer volume of information and decisions we encounter every day. Just think about how much news, information, advertising and advice you encounter on a typical day.

We often use a combination of experience, 'gut feel' and personal preference when making decisions, which is absolutely fine when selecting from a restaurant menu, but less effective when making important decisions at work.

What about when we're hiring new staff? When we're evaluating someone's performance to calculate their annual bonus? When we're making a large organisational investment in new technology or processes? How helpful is gut feel then?

We don't **set out** to make poor decisions. But internal factors (e.g. emotions, faulty logic) and external factors (e.g. poor quality information or simply information overload) in combination, can mean we make poor decisions and investments on a surprisingly frequent basis. Not only that, we may not be aware of the impact of our decisions for some time, if ever. And so we continue, using our instincts, out of date information and faulty logic.

At the Future Work Centre, we believe it's important to acknowledge the limits of our decision-making capability and to make use of processes and techniques to help us make better, more effective decisions. This is so important when making high-risk, high-cost decisions that impact people and organisational effectiveness.

People-related questions are difficult to both pose and answer. Asking simple questions about the workplace will get us simple answers, but these are not always answers based on evidence, or likely to help us take the right action.

For example:

Q: "How can we motivate the customer service team?"

A: "Introduce a bonus for answering calls more quickly!"

In this example, it's not obvious if there's a problem to be solved, whether a financial bonus will motivate all team members effectively and whether quicker answering times will have a positive impact on the service provided.

When faced with complex decisions, we can:

- Do what we've always done. This is comfortable and we may believe that it's still the right thing to do. Because we got it right last time. Right?
- Choose the newer option before us. Humans like novelty and whatever is new can seem exciting, better and more interesting. Making older ways of doing things seem out of date and less attractive. Newer is better. Right?
- Put off the decision. Quality decision-making is taxing. If we're doing it properly, it really feels like work. So it's natural that sometimes, the easiest thing is to make no decision.
- Ask some more questions, gather more information and make a more informed decision. This is getting us a lot closer to being evidence-based. The start of evidence-based thinking and decision-making is asking more questions.

So just like a professional scientist, we can start to ask more rigorous questions (hypotheses), look at the evidence (data) and form an opinion based on that.

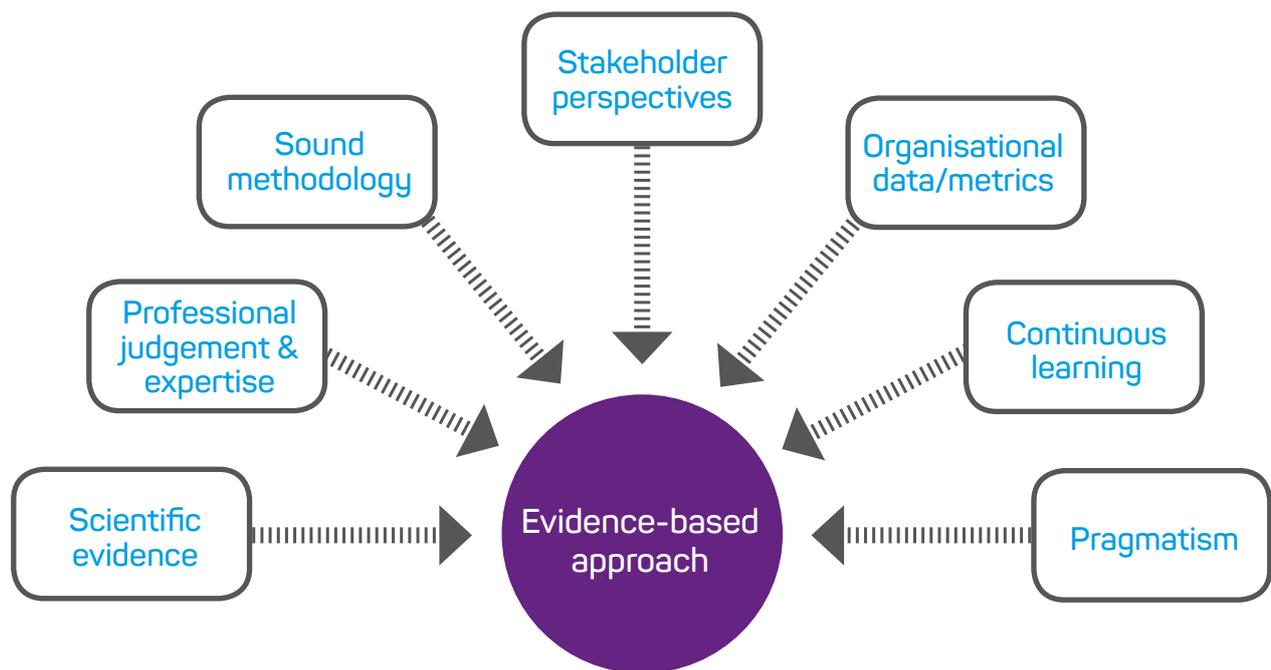


What do we mean by an 'evidence-based approach'?

In our other publications and public workshops, we talk about the importance of adopting an evidence-based approach. But what does that actually mean?

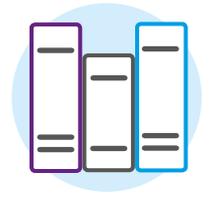
It means combining a scientific mind-set and a questioning outlook with several other 'ingredients' to improve decision-making and challenge misleading claims or organisational myths. When adopting an evidence-based approach, we make our decision-making process more explicit and transparent. We weigh up available evidence and apply it in the context we work in. We challenge simple answers to complex problems and consider the risk of unintended consequences when we take action.

The ingredients of an evidence-based approach



1. Scientific evidence

This is the information that has been gathered over time by researchers, using scientific methods. The information we can glean from journals, research reports, conference proceedings and articles that scientists share in the popular press. It may also come from what are essential 'studies of studies' or meta-analyses, which bring together the results of multiple studies of the same phenomenon. We need to be careful not to include evidence as 'scientific' just because it's been reported that way in the press. In pursuit of a strong headline, the popular press has a knack of over-simplifying and over-hyping scientific findings for their readers.



2. Professional judgment and expertise

Another important element is the experience and expertise a practitioner brings to the table. This is not about over-confidence or 'knowing everything', but using experience to guide decision-making and being aware of patterns and trends in our experience. An example would be when the manager of an IT sales team looks at some sales projections provided by her team. She reviews the charts and says "This doesn't look right to me". She falls back on her experience of selling computer equipment to this sector and uses it to challenge the over-optimistic sales plan. In other words, while the numbers on the charts "add up", the sales manager challenges their validity, based on everything she knows about that sector and the market.



3. Sound methodology

Methodology is the collective term for the scientific way we collect data to test hypotheses we have about how things work. A good methodology will limit the impact of luck or chance and minimise the extraneous 'noise' in the data we collect. Examples of good methodological decisions include having a before and after measure of the thing we're studying, having a 'control' group we can compare against and timing research studies to minimise external disruption. Methodology is central to good science and something we're keen to share with as many people as possible so they can a) question the validity of research results when they see them and b) conduct their own good quality research at work.



4. Organisational data and metrics

Most organisations are data-rich environments as so many things are measured constantly. Consider the data that is gathered on sales figures, expenses, product delivery times, employee performance, market performance, customer feedback and so on. This doesn't necessarily mean the data is accurately captured or consistently used. Poor quality data is often a barrier to evidence-based practice at work. But if we are to take a contextual and organisationally-relevant approach to evidence and decision-making, we need good quality organisational data. And if it doesn't exist, we need to gather it, to provide a solid foundation on which to make decisions and base initiatives.



5. Stakeholder perspectives

We think of the workplace as a 'complex eco-system'. We are inter-dependent with others and as such it's important to factor in stakeholder perspectives when making decisions and weighing up evidence. For example, there's little point in introducing a new way of organising shift-patterns that are backed by rigorous science, when employee representatives (and employee feedback) has consistently indicated that they are happy with the status quo. Introducing new shift arrangements against the will of stakeholders may in fact damage relationships and have negative unintended consequences.



6. Continuous learning

As evidence-based practitioners, we should be open to continuously learn and to update our knowledge and skills. This is particularly important given our predisposition to use faulty logic and fall prey to thinking errors and biases. It's also important given the myths and fads we may have been exposed to in the past – new information may run contrary to our expectations and feel uncomfortable or unintuitive. A focus on continuous learning, from a scientific perspective, means we remain open to being convinced by new, high quality evidence.



7. Pragmatism

Most research conducted in the so-called 'hard' sciences (e.g. physics, chemistry) takes place in laboratories, where as many environmental factors as possible can be controlled and accounted for. As you've probably gathered, the workplace is far from a laboratory and we can't control for all the factors that make organisational research a challenge. We've highlighted the role of good data and effective methodology, but even with those on our side, we need to remain pragmatic when changes outside of our control 'muddy the waters'. When evaluating some training, your delegates may forget to provide their feedback. When evaluating a structural change, another change might creep up and disrupt your project. Things happen and the workplace is complicated. That shouldn't stop us from attempting to seek out evidence and evaluate initiatives as rigorously as we can.



The same pragmatism should be applied to evaluating quality evidence from external sources. You may have some across some compelling evidence about new assessment methods – but the data was gathered in another country. Should this stop you from piloting similar methods in your organisation? Not at all, but you should remember that your results may differ due to this geographical difference.

Consider the question: did that training course work? It depends on what you mean by 'work', depends on who attended the training and who was delivering it, for example. The training might have a more positive impact on some kinds of employees. Or have a superior impact when employees attend the training off-site, rather than in the office. Or when it's delivered face-to-face, rather than via a webinar.

So, an evidence-based approach means using established methods to identify **what works, in what way** and **for whom**.

A brief history of evidence-based practice

Evidence-based practice, as we refer to it in the workplace, has its origins in evidence-based medicine. Surprisingly, medical approaches haven't always been supported by high quality evidence. Much of what was handed down from one generation of medics to the next, consisted of 'received wisdom' or 'best practice', deployed in the absence of hard data.

The movement to make medicine more evidence-based, highlighted the need to reflect what works, as well as what doesn't work. Researchers and practitioners developed the notion of a 'three-legged stool' of evidence:

1. The best available research evidence on whether and why a treatment works.
2. Clinical expertise (clinical judgment and experience) to rapidly identify each patient's unique health state and diagnosis, their individual risks and the benefits of potential interventions.
3. Client preferences and values.

This concept blended 'hard' research evidence with the more subjective factors of clinician expertise and patient perspectives. And so it is in the world of work, where we emphasise the best available academic evidence, along with practitioner judgement and expertise, along with organisational metrics and stakeholder perspectives. But more on that later.

The push for increased use of evidence in medicine was followed by similar moves in other professions, including nursing, dentistry, education, policing and management. Each profession has had practitioners who are passionate about finding out what works, in what way and for whom.

The principle holds true whether we are talking about new drugs, new teaching methods or new community policing protocols. An evidence-based approach seeks to go beyond gut feel or long held beliefs, shining a light on objective evidence to improve quality and add to our collective knowledge.

Barriers to evidence-based practice

If we consider the merits of an evidence-based approach at work, we have to ask why more decisions aren't made using high quality evidence. We've touched on a couple of the challenges above, but there are quite a few things that could prevent us thinking like a scientist:



Workload

We've outlined how gathering, interpreting and basing decisions on evidence can be hard work. When we factor in the 'day job', it's easy to see how thinking like a scientist may get relegated in our list of priorities. There's a perception that it's too time-consuming, inapplicable in a fast-moving business environment or just too conceptual for real world applications. Our mission is to remove (or at least lessen) these barriers and make evidence-based practice a core part of how we do work, not an optional add-on.

Faulty information

We may be basing our decisions on out of date information or information that isn't directly applicable to our environment. This might lead us to make false comparisons (how many of you have read articles about leadership lessons from Mark Zuckerberg or Steve Jobs and wondered how you can be more like them?) or see problems where there are none. The organisational information we have to hand may be incomplete or unreliable, providing us with a misleading starting point for our decision-making. This is particularly the case when the data has been provided by other people (e.g. performance appraisal ratings).

Plausible but false claims

A lot of advertising claims fall into this category. They sound right and they make sense, but they don't stand up to scrutiny. That is, when we take the time to scrutinise them. The source of claims can make them sound a lot more compelling than they actually are and we can, in a sense, comply with them if we think they're from an authority or expert on the subject.

Faulty logic and thinking errors

Our own thinking can trip us up. We might fall into one of any number of decision-making traps, each of which can muddle our thinking or convince us that we're right. Examples here include 'confirmation bias', where we only notice and pay attention to information that supports our existing beliefs. Or 'social proof', where we evaluate our decisions in the light of what others are doing ("Our competitors have an engagement survey, so we should too!". Organisations who make changes based on 'trends in the sector' may well be guilty of using social proof.

Challenging stakeholders

You may work with colleagues (and clients) who have a preference for fads, fashion and all things new. It can be a challenge to get them to think about options critically and carefully. They may prefer to make decisions on 'gut instinct' or force you to buy products and services that they personally like and believe in. Even if you are an exceptionally evidence-based practitioner, it can still be a task to bring your stakeholders with you, especially when they are more senior and more influential!

Organisational culture

Organisational culture may be thought of as personal preferences and decisions, writ large. Even if you and your immediate colleagues are keen to make use of evidence to guide your decisions, the culture in which you find yourselves working may emphasise speed of decision-making over quality of decision-making. Alternatively, it may be a very risk-averse culture, making piloting new initiatives a challenge. Finally, a hierarchical or threat-based culture could make it very difficult to critically appraise colleagues' work and suggest improvements based on evidence.

Myths, fads and truisms

The workplace is, for many reasons, a hotbed of myths. Myths about how our brains work, how to get the best out of people, how to organise work for productivity and how to make businesses more successful. Fads that centre on how we should organise ourselves, our work and our organisations. And since the Second World War, we've seen wave after wave of management fads invade and disrupt the workplace. We'll explore these in more detail later in this paper, as spotting and challenging them is a core skill of the evidence-based practitioner.

Access to evidence

Unfortunately, a lot of the good quality evidence we could use to help us make decisions is safely locked away in academic journals that can't be easily accessed. So, with the best will in the world, the evidence is out of reach. It's important to note that scientific journals shouldn't be the only source of evidence we rely on, but peer-reviewed scientific studies (where research is reviewed and scrutinised by other experts, prior to publication) frequently represent a gold standard, if executed well.

Skills in interpreting evidence

It's also true to say that, for most people, being given a weighty journal article containing scientific evidence isn't enough. They need to be able to understand it and, more importantly as we shall see later, critique it. Not simply agree with everything they read. The same applies to sales brochures, news stories and claims made by colleagues and suppliers. Critiquing claims, evidence and beliefs are core to thinking like a scientist.

Do these sound familiar?

Now that you've read about some of the barriers to evidence-based practice at work, do they sound familiar to your own experience? Can you think of any examples of when you or colleagues have made decisions using faulty data or the rationale of 'social proof'? Have you bought in to a fad or fashion at work or at home? We wouldn't be surprised to hear you cry "yes!". If you feel uncomfortable with this realisation, don't worry. It's a natural consequence of examining your own fallible decision-making and unsurprising given all the decisions that we need to make each day.

Later in this paper, we'll explore how to become more evidence-based at work, but let's now turn our attention to a realistic scenario of how some of these barriers can combine to make for a less than ideal set of decisions.

Evidence-based practice: a story in three parts

To put all of this in context, let's review a very common workplace scenario. While you read this, consider the role of decision-making and the type of evidence people are using to guide their decisions.

Part one: "We need to do something about this"

Sarah is a Learning and Development Manager for a large IT services company. Sarah has recently joined the organisation, and this is her first management role. Over the last month there have been lots of complaints from customers about the Service Delivery team, who visit client sites to install equipment.

During one of the leadership team meetings, the company's Sales Director, Mike, argues forcefully that the problem is due to the communication styles of the people in the Service Delivery team. Mike tells Sarah: 'Look, you need to do something about this, I don't know what you guys in L&D do, but here's a chance to sort something out, and have an impact on the business. I brought in some experts in emotional intelligence to improve the quality of my sales team – why don't we have a look at that? Frankly I'm surprised we're behind the curve with this.' Sarah feels humiliated and angry, but also compelled to act because the other members of the project team nod in agreement with Mike.

Part two: "What's the solution?"

That evening, Sarah posts a message on LinkedIn asking for advice from other L&D professionals about how to improve communication at work. One reply gives a link to a consultancy that specialises in emotional intelligence profiling and training. Three other LinkedIn members 'like' this post, so Sarah decides to look at the consultancy's website. It includes a white paper, which claims that their approach improves performance by enhancing communication.

Sarah contacts the consultancy the following day and asks one of their sales consultants to meet with her, so that she can explain the situation and ask for their advice on resolving the issue. Following their meeting – in which the consultant assured Sarah they could help her improve communication – the consultant sent her several white papers and links to blog posts highlighting the benefits of their approach to emotional intelligence. The papers were impressive, well designed and very credible.

Following the meeting with the consultancy, Sarah decides to contract with them for psychometric profiling of the Service Delivery team, and a day's training in emotional intelligence and communication. The cost of the services, while high, is within Sarah's budget. Later that day, Mike calls Sarah and thanks her for taking action. Delegates on the course complete an evaluation questionnaire and highlight the quality of the training materials and the diligence and professionalism of the trainer.

Part three: "Moving on"

Six months later, the profiling and training has been completed, and customer complaints have reduced. Sarah and Mike think that the consultancy's work was key in achieving this outcome. Mike congratulates Sarah on a job well done and suggests that the training is rolled out to more employees across the business. Sarah considers how assessment of emotional intelligence can be used to select and develop more employees and increases her budget for this for the year ahead.



A job well done?

At first glance, this looks like a great solution to this problem. Sarah looked to other experts for support, brought in specialists for the assessment and training and over time, the customer complaints had dropped. It even looks like she and Mike have become advocates of this particular training, so more of their colleagues could benefit from it in future.

Except, not really.

If we start with the question “What’s the problem you’re trying to solve?”, it looks like one colleague (Mike) had some clear beliefs about the link between customer complaints and service delivery staff training needs – specifically, his belief about the role of communication skills. But no clear evidence that the complaints were due to a training deficiency, or that the complaints were significantly more than could be expected at that time of year.

In this case, training quickly became a solution in search of a problem, a scenario we see all too frequently.

Further, Sarah chose a training provider based on some peer recommendations and the provider’s own promotional materials. Is this good objective evidence of their quality? And even using the best consultants, there’s no clear link established in Sarah’s organisation between customer complaints and emotional intelligence.

In terms of evaluating how well the training went, both Sarah and Mike *felt* it went well, pointing to the drop in customer complaints as evidence. However, there’s no evidence that the training changed behaviour, or that any behaviour change positively impacted their customer service outcomes. In fact, it might be that customer complaints rose as a natural consequence of what was going on in the external market and returned to a lower level over time. It may be that the assessment and training had absolutely no impact. Given that Sarah didn’t evaluate the training properly, we can’t tell either way. (And no, asking delegates if they enjoyed the course doesn’t really tell us if it met its objectives!)

Our most parsimonious interpretation of this whole story is that Mike and Sarah actually spent quite a lot of time and money on a solution that wasn’t related to the initial problem. And that problem itself wasn’t really clearly defined or measured. Which could be quite embarrassing if their CEO asked them to demonstrate a return on the investment made.

The role of evidence at work

The story about Mike and Sarah highlights the importance of using evidence and adopting a scientific approach when making decisions and investments about people at work. Wherever decisions or important questions need to be made, it's important to reflect on the evidence underpinning our thinking. If a colleague poses you any of the following questions, think about how evidence would help you improve the quality of the decisions made:

- How do we choose the best candidates from this group of applicants?
- How can I improve my sales team's motivation?
- Which of these training courses shall we buy for the graduates?
- Is this leadership development programme working?

These are the kind of questions that can prompt a 'solutions response'. In other words, a response offering a potential solution. But the danger is that we jump to a solution before fully understanding the problem we're trying to address. It could be a lot more helpful to answer these questions with questions! For example, the questions below could take the conversation (and solution) in a completely different direction, focusing on the rationale of decisions, rather than looking for solutions when no rationale has been explored.

- "What does 'best' mean to you?"
- "How do you know there's a problem with their motivation now?"
- "Why do you think training is the best solution for the graduates?"
- "What were your original goals when you put the programme together?"

On a similar note, consider the following statements and how you might respond to each. They're presented as statements of fact, but each as a flaw – while they sound sensible and positive, they're lacking in evidence. And even though they may be said with certainty or conviction, we should question the basis for each.

- An open-plan office arrangement will improve our productivity.
- If we ban email after 6pm, we'll improve everyone's work-life balance.
- We need to ensure everyone's learning styles are accommodated.
- We'll improve our bottom line by raising employee engagement.



By adopting these recommendations without question, we run the serious risk of wasting time and resources, disrupting productivity, upsetting colleagues and even having a negative impact on satisfaction and wellbeing. They represent 'one-size-fits-all' solutions, which are inappropriate in a complex work environment.

How many times have you encountered statements like these? Have you felt secure and confident enough to challenge them? Or have you gone along with them, as they sound quite sensible? We don't blame you if you have – when delivered with confidence, these kind of assertions might appear to be backed by science. In fact, science has helped us better understand things like how to schedule shift patterns, how to best select new employees and how to safely use technology at work. But the science doesn't always make its way into the hands of practitioners, leaving them unaware that learning styles and employee engagement are supported by very little quality evidence.

A related challenge is the number of unhelpful myths, fads and fashions that are so pervasive in society at large and in the workplace in particular.

Myths, fads and other fairytales



This topic can be quite uncomfortable. The number of myths about human performance, personality and how we work is quite frightening when we think about it. You may indeed believe in some of these myths yourself. Simply put, myths represent misunderstandings of scientific findings that make their way into the public consciousness and live on, despite evidence that runs to the contrary. Myths may also stem from marketing campaigns that particularly resonate with the public.

Many myths seem grounded in science and are communicated using pseudo-scientific language to make them seem more believable. Many myths that were held up as scientific in the past have since been relegated to the bin. For instance, we no longer believe that you can assess personality or ability by feeling the bumps on someone's skull (phrenology) or through their handwriting (graphology). Thankfully, these pseudo-sciences have been debunked, though at various points in history they were thought to be scientific and useful.

On the other hand, some myths seem to live on. Has anyone ever told you we only use ten percent of our brain? Or that right-brained people are more creative? Have you ever signed up for 'brain training' using a smartphone app to make you smarter or stave off age-related cognitive ageing? Put simply, there's no evidence for these myths, yet they remain pervasive, despite repeated attempts to refute them.

Related to myths, fads are short-term fashions that quickly gather popularity, after which they are replaced by other, newer fads. They often focus on how we organise work and teams, making great promises in terms of the benefits users can expect. They are often based partly on limited scientific data which is over-simplified, then productised and over-hyped – at which point they become 'truth', and are adopted and implemented widely.

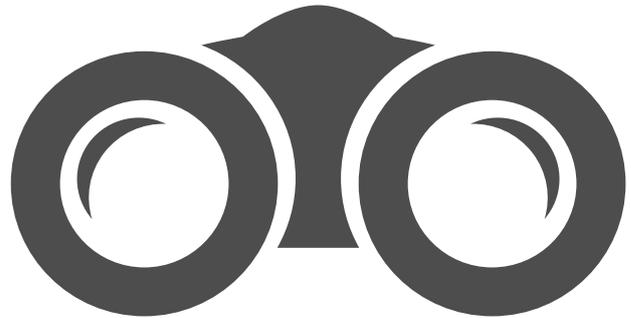
Fads differ from myths in terms of their longevity, but also their validity. While myths are frequently utter nonsense, fads can be based on a nugget of science and then misapplied. It may be that open-plan offices improve communication among team members. In **some** organisations, for **some** people and in **some** cultures, but not for everyone.

Banning email after an arbitrary cut-off point in the evening may help improve 'work-life balance' for some employees, in certain situations. But it will almost certainly disadvantage some employees in the process.

Prof. Adrian Furnham wrote an excellent piece on fads at work in 2015 and identified a large selection of management fads that have come and gone since the 1950s including: Management by Objectives, Matrix Management, One-minute Management, Management by Walking Around, Total Quality Management... the list goes on. He emphasises the disruption and cost associated with each while also hinting at why we're so attracted to them – they promise us so much:

“ *Management is tough; there are no magic bullets or pills. It is a complex contact sport. And no, the magic prefix “neuro” is not the answer.* ”

So keep an eye out for fads and myths in the workplace and consider how you can challenge them when they are suggested as solutions by your colleagues.



The varying quality of evidence

We've made the case for evidence, but remember that not all evidence is created equal. Evaluating evidence is a key skill required of evidence-based practitioners. Consider the difference between the evidence in a peer-reviewed scientific journal article and the claims made in a marketing brochure. We should trust the former much more than the latter, right?

Not necessarily. Even the evidence published in journals is up for discussion and criticism. Journals frequently only publish 'novel' studies, not studies that replicate earlier work and add to the evidence-base. They also publish research that has un-representative samples of participants (e.g. college students) or work that is based on extremely small numbers of participants.

But as a general rule, if it's made it into an academic journal, it will probably be more objective and powerful than a sales brochure. If we consider evidence to sit on a continuum, marketing collateral and case studies represent quite weak evidence, whereas studies that involve data collection over time and include a control group constitute more powerful evidence.

Of course, we are also regularly presented with evidence even when we don't go looking for it. Consider the persuasive nature of most advertising. As we flip through magazines, sit under advertising on public transport or simply watch television, we are often presented with arguments for buying products and services. Add to this the opinion pieces in the popular and technical press, the recommendations for how we can improve our lives and so on, the need to be more evidence-based and sceptical quickly becomes more apparent. However, at the same time, many of us feel overloaded with both the range of options ("the tyranny of choice") and the volume of information we're expected to process.



The world of work is complicated!

We believe an organisation is like an ecosystem – a complex mix of functions, responsibilities, workload, relationships, technology, personality and culture. Getting the right balance and blend between all these factors can be exciting and challenging.

Organisations also operate within a wider social and economic context, making them both exciting and challenging. Despite our attempts to look at organisations in terms of departments and functions, these simplified representations don't show us what's going on in reality.

So if we begin to think of the workplace as an ecosystem, rather than as discrete departments and functions, several things quickly become apparent. If we make what we think are simple changes in one part of the system, we can often see unexpected results elsewhere. And sometimes these results can take a long time to become obvious – even if we're looking out for them in the first place.

For example, consider an organisation that wants to implement a flexible working policy. It's something their competitors offer, and senior stakeholders have for some time felt pressure to 'catch up'. A policy is drawn up based on what the competition is doing and sent to all employees.

What happens next?

Some employees are more interested in flexible working and start to enquire about how they could begin working in this way. (Research also shows us that some other employees may view the organisation more favourably simply because this policy exists).

But on the other hand, line managers need support to apply the policy fairly and accurately, to minimise the disruption to day-to-day operations. Similarly, some employees to whom the policy doesn't apply may feel disgruntled, impacting their motivation.

Those employees who do take advantage of flexible working arrangements will need guidance on how to structure and prioritise their work, and learn how to use the communications technology that comes with this working arrangement.

So what started as a communications exercise may have consequences for employee motivation, training and development needs and investment in new technology.

And how will we know if the policy is working if the anticipated 'wins' weren't clearly articulated at the outset? So how can we tell if the investment was worthwhile? How can we tell if the drawbacks of this approach don't outweigh the advantages?

This illustrates that what looks like a simple communications exercise, can have far reaching implications, both positive and negative. In other words, if you make a change to this ecosystem, you'll get a response. Some of the responses you'll expect, some you won't. Like a pebble thrown into water, the ripple extends far and wide.

Adopting a holistic and joined-up approach to challenges in the workplace, ensures that action is taken with insight and understanding. This means we take a step back, combining evidence, action and evaluation, providing clients and their employees with solutions that truly reflect the environment where they work.

Starting with the end goal in mind and using an evidence-based approach can help you make sense of your own organisational system and begin to minimise the unintended consequences your well-meaning initiatives may stimulate.

Revisiting Sarah and Mike

Let's have another look at Sarah's situation. She brought in consultants to fix a problem that hadn't been clearly defined. Strongly influenced by her stakeholders, it seems that she believed she was doing the right thing – but in the end, she wasn't able to demonstrate the impact of the assessment and training, or even show a link between it and the improved customer feedback.

If Sarah were to adopt a more evidence-based approach, the story would have gone like this...

When confronted with the request to get service delivery team members properly trained, Sarah assures her stakeholders that she will investigate the matter. Rather than jumping to training as a solution, she instead looks at the possible root causes of customer feedback. Gathering and analysing customer data, she quickly notices that while there has been a recent 'spike' in negative feedback, customer comments illustrate that feedback centres on the Service Delivery team not arriving at customers' sites on time.

She also notices that there was a similar spike in customer complaints at the same time last August. Sarah then reviews the resourcing logs, which track how many jobs each member of the Service Delivery team is responsible for. It quickly becomes obvious that several members of the team take their holidays each August and are not replaced by temporary staff. The remaining team members have to carry the workload and as a result, find themselves running late to customer appointments.

She runs a focus group with members of the Service Delivery team to get a better understanding of their perspective and finds that every August, they have to deal with increased workload and are frustrated by their inability to arrive for every appointment on time.

She reports back to the leadership team that training is probably not a suitable solution and highlights the staffing pressures experienced each summer. Instead, she proposes that budget is used to cover holiday leave more effectively in future.

The World of Work model

Given the complexity of an organisation, we've developed a joined-up view of the workplace that we refer to as the 'World of Work' model. It helps us think clearly about the impact and reach of organisational challenges – positively and negatively – and how to embed effective and sustainable solutions.



The **Employee Journey** describes the path we take through our career and how organisations recruit and develop talent. From talent attraction, through assessment and selection, to training and development, succession planning and organisational exit.

The **Evolving Organisation** looks at how organisations adapt to reflect the changing world and the impact this has on their people. From the implementation of new processes, through to wholesale mergers and organisational restructures, change impacts individuals at all levels in the organisation.

The **Work Environment** describes the physical and psychological environment people work in every day. People are impacted by their working environment, the tools they use to get the job done and the atmosphere around them, from day-to-day satisfaction to motivation and organisational culture.

The **Healthy Workplace** focuses on psychological and physical health, initiatives to improve wellbeing, the impact of pressure and stress and how employees balance their work and personal responsibilities.

Using the flexible working example, we can see that what started as a minor change, taking place in the 'Evolving Organisation' part of this model had potential impacts in the 'Work Environment' (psychological environment, motivation, satisfaction, physical tools for the job) and implications for the 'Employee Journey' in terms of training needs and support. Without guidance and support, employees working flexibly may experience longer working hours and may not make great use of communications technology, themes that are covered in the 'Healthy Workplace'.

If your role means you have responsibilities in one of these areas, it's worthwhile considering how your actions may impact employees in other ways. We also recommend working as closely as possible with colleagues who have responsibilities in other areas to ensure your initiatives and planning are as aligned as possible.

So you want to think like a scientist?

Hopefully by this point, we've convinced you that it would be helpful to think more like a scientist and you'd like to learn more. The good news is that we're not suggesting it takes a PhD! And as it's one of our core organisational aims, we're here to support you in your journey.

How to make a start

There's no magic pill to turn anyone into an evidence-based practitioner. It's also not an instant change, more of a step-by-step process. A journey. At the same time, it's very simple to take the first step on this journey.

Consider the next opportunity you have to question something you take for granted. What evidence are you using to back that up? Might your thinking be skewed by your own world view? Is there objective data that could support you?

Questions are an excellent starting point too. By questioning even the simple decisions, you can explore your own rationale and that of your colleagues. A fundamental – and incredibly useful – question to pose when someone wants to introduce a change is:

What problem are we trying to solve?

Without clarity on what the problem is, there's little point in making changes, buying products or introducing new ways of working.

Getting consensus on the nature of the problem is great start point. Next, we'd suggest identifying whether the problem actually exists. It may just be a perception, rather than something that's supported by data. Consider the example "What can we do about our turnover problem?" Before we start to consider interventions to reduce turnover, we should really ask "Is there a turnover problem?" Is there a perception that turnover is high? Is it higher than expected? Is it higher in some parts of the organisation, but not others? Higher than the industry or geographical average? Before we spend time and money on a fix, let's consider whether a problem actually exists that requires a fix.

So, in a sense, the best way to make a start is to adjust your mind-set when it comes to evidence and decision-making. Seek out the evidence underpinning your own decisions, get input from others. Demand evidence from those attempting to sell to or convince you.

Assess yourself

We have identified a number of qualities and skills that can that combine to help us be more evidence-based. One starting point on your journey might be to assess yourself (and others) against these qualities to identify your strengths and your development needs. When responding to this brief questionnaire, a '5' represents an established and recognised strength, whereas a '1' represents a significant development area.

		1	2	3	4	5
Mindset	Self-awareness					
	Questioning and curious outlook					
	Healthy scepticism of fads and fashions					
	Pragmatism					
Research	Critical appraisal of research evidence					
	Formulating good research questions					
	Understanding research methodology					
	Conscientiousness					
Communication	Making decisions more explicit					
	Stakeholder management					
	Tact and diplomacy					
	Communicating science					
Practice	Integration of evidence into practice					
	Commitment to ongoing learning and development					

We have a range of resources that could help you and your colleagues on this developmental journey. The Future Work Centre website (www.futureworkcentre.com) is a great starting point, where you can download free resources and find out more about the free events we run on a regular basis. These include our 'Insight into Action' workshop which aims to give delegates the essentials of evidence-based practice in a one-day, interactive experience.

If you want to take your learning to the next level, you may be interested in our 'Pathway' programme.

Pathway: a journey for practitioners



We recognise that readers of this paper will be at very different stages in their careers, have differing levels of awareness of evidence-based practice and probably hold different viewpoints on its relevance to them and their work.

We also recognise that becoming an evidence-based practitioner, regardless of the job we have, is a journey. As such, we've put together a development programme that reflects the needs of practitioners, called 'Pathway'. It consists of a number of workshops, webinars and papers to help people thinking more scientifically, introduce evidence-based practice to their organisations and confidently challenge claims. Ultimately it's about equipping you to make better decisions and investments, implement more effective interventions and drive organisational performance.

We offer in-house training in two broad areas:

1. Organisational Research

- Understanding data analysis and statistics
- Scientific methodology and organisational research design
- Getting value from employee surveys
- Qualitative research methods

2. Practitioner Skills

- Stakeholder management and communicating the value of an evidence-based approach
- Evidence-based thinking and decision-making
- Interpreting and critiquing scientific literature

Pathway modules can be chosen individually on a 'mix and match' basis to reflect the needs of your organisation and the skills in your team. For more information and to discuss your specific requirements please get in touch at info@futureworkcentre.com

Conclusion

In this paper, we've highlighted the importance and benefits of an evidence-based approach in the workplace. This is because of a combination of challenging factors, including:

- The volume of information and decisions we need to process each day
- Our tendency to use subjective perspectives when making important decisions.
- The prevalence of myths and fads that disrupt the workplace and represent wasted energy and money

However, adopting a more systematic, rigorous approach to decision-making can yield great returns for organisations, accelerating and driving organisational effectiveness.

Thinking like scientist means:

- Adopting a sceptical mindset
- Challenging assumptions and asking questions
- Critically evaluating evidence and data
- Testing/piloting interventions
- Being aware of our own biases and those of others

We can help practitioners on their journey to being more evidence-based. We can do this both in terms of supporting organisations answer challenging people-related questions and upskilling practitioners via our Pathway programme.

If this paper has inspired you to take the next step on this journey, please visit our website at www.futureworkcentre.com

The Future Work Centre: our mission and values

Our mission is to make work better for everyone, now and in the future. We want to examine what evidence there is for the advice that people and organisations are offered about work. And we want to know whether that advice works. Put simply, we want to find out what works, in what way, and for whom.

We're working to achieve a number of important objectives:

- To help organisations make evidence-based decisions and understand what works, in what way and for whom.
- To help the public understand the value of occupational psychology, an evidence-based approach and how they can apply its lessons to their own experience of work.
- To engage and inspire the general public by openly sharing our research and actionable insights.
- To develop the next generation of evidence-based practitioners, creating rounded professionals who value evidence and who seek to advance our combined understanding of the world of work.
- To campaign and lobby for change where the evidence supports this.

What we do

We work in three complementary areas – **insight**, **education** and **services**. The income generated from the work we do with organisations (our services), is re-invested in research and education to help further our learning about the workplace, for the benefit of organisations, people and society.

Insight

We conduct research into areas of the contemporary workplace, like technology and how it impacts our experience of work. We conduct research for client organisations into their own employees' experience of work and bring their organisational data to life, while providing actionable insights.

Education

We share our insights with the public, to raise awareness of the value of science, to bust myths and correct popular misconceptions about the world of work. Our goal is to take the mystery out of the scientific approach and help as many people as possible to 'think like a scientist'. We want everyone to be more inquisitive about their experience of work, to question what is being sold as 'best practice' and to make use of good quality evidence in the best possible way.

Services

As experienced occupational psychologists, we're well placed to support clients directly, through the provision of high-quality, evidence-based solutions. As a team, we have experience across the entire world of work and so can support clients in areas as diverse as talent management, assessment and recruitment, job design, workplace design, evaluation of training and development and the provision workplace wellbeing initiatives.

Evidence-based practice: useful resources

Online resource

The Future Work Centre events page – <http://www.futureworkcentre.com/events>

The Centre for Evidence-based Management – <https://www.cebma.org>

Science for Work – <https://scienceforwork.com>

Evidence-based HR – <https://www.evidencebasedhr.com>

I/O at work – <http://www.ioatwork.com>

The essentials of critical thinking – <http://www.openculture.com/2016/07/wireless-philosophy-critical-thinking.html>

Further reading

The Oxford Handbook of Evidence-based Management

https://www.amazon.co.uk/Handbook-Evidence-Based-Management-Library-Psychology/dp/0199366268/ref=sr_1_1?s=books&ie=UTF8&qid=1469023721&sr=1-1&keywords=the+oxford+handbook+of+evidence-based+management

The Art of Thinking Clearly

https://www.amazon.co.uk/Art-Thinking-Clearly-Better-Decisions/dp/1444759566/ref=sr_1_1?s=books&ie=UTF8&qid=1469023783&sr=1-1&keywords=the+art+of+thinking+clearly

We can help

At the **Future Work Centre** we're passionate about the communication of science and the value of evidence-based practice. We help organisations make sense of their data through the provision of flexible training modules, practical user-friendly resources and professional services.

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 @FW_Centre

