

The Role of Scientific Findings in Evidence-Based HR

By Rob B. Briner and Eric Barends



What springs to mind when you hear the term science? Laboratory workers in white coats? The Large Hadron Collider in Geneva? Memories of exciting and seemingly dangerous chemistry experiments at school? These are widespread and popular ideas of science. So is it any surprise that many in HR appear to wonder what science has to do with them or what they do?

Of course, science isn't only about such "hard science" phenomena. As a method and way of thinking about how to understand the world, it can be applied to almost anything, including people's behavior—the very stuff of HR. So what is science actually for? What does it really have to do with HR? How does it fit into evidence-based HR practice?

What Is Science for?

The basic purpose of science is simple: to gather reliable and trustworthy information that helps us answer questions about what things are like and how they work. Science isn't about making things complicated or trying to be clever but, like anything technical, it can and sometimes needs to get complicated.

In our personal and professional lives, we are constantly faced with different kinds of decisions. When these decision points arise, we seek out relevant information to help us to make better-informed choices that are more likely to lead to the outcomes we want. Which new movie will I most enjoy seeing this weekend? Should I move into that neighborhood? How can we help improve the performance of our middle managers? Is it worth buying this employee engagement survey? For any particular decision, we may have plenty of relevant information or very little. That

information may be very trustworthy or highly questionable.

As decision-makers we are inclined to use the most easily accessible source of information—ourselves. What we remember from our experience. What we think. What we believe is true or not. This approach makes a lot of sense in terms of saving time and effort and for simple, frequent everyday decisions.

However, for more complicated decisions in business and management, relying solely on our own experience and professional judgment is likely to lead to poor decisions. We simply don't have *enough* information from which to draw reliable conclusions—even though we may strongly believe we do. Even when we do have access to more information, we are highly prone to cognitive biases in our thinking which cause us to *misinterpret* that information.

Wikipedia lists over 100 different cognitive biases. Some particularly relevant to HR include confirmation bias and the bandwagon effect (or groupthink). Confirmation bias occurs when we interpret or selectively search for information that confirms our existing beliefs and ignore contradictory information. If we strongly believe diverse teams perform best we will look for evidence that supports that idea and reject information that doesn't. The bandwagon effect, the tendency to do or believe something simply because others do, in part helps explain why we follow HR best practices or copy the HR practices of other organizations.

So what's any of this got to do with science? Science emerged in part as a direct response to these twin problems of relying solely on our personal knowledge and the biases that can lead to misinterpretation of information. A core activity of science is therefore gathering objective, external information rather than relying solely on subjective, internal knowledge. Adopting a scientific approach to taking a decision means actively searching for and collecting information relevant to that decision.

Science isn't about collecting and using more of *any* information. Rather, it involves thinking carefully about how we can collect the *most trustworthy* relevant information and how we can judge the trustworthiness of the information we already have. For any problem or decision we need to ask what type of information would, *in principle*, convince us that a particular idea or proposition is likely to work or be correct.

Science Is Not About “Truth” or “Proof”

Developing a scientific understanding of the trustworthiness (validity and reliability) of information is important. But equally important is understanding that science is not about truth or proof. Science is about gathering information and testing assumptions (hypotheses) in ways that allow us to estimate how *likely* it is that something is true. We can never know for sure. This is for three main reasons.

It is always possible that *new* information will cast serious doubt on a well-established theory and the body of evidence on which it is based. For example, more rigorous research may demonstrate that the underlying assumptions are incorrect or that previous research was flawed in ways that produced biased or even false results. To claim something is simply “true” or “proven” is completely to miss the point of science: All claims

are contingent and based only on the data we have.

Second, even where something seems very close to being “proven,” it will still be subject to boundary conditions—it *always* depends on the situation. Even though lots of data may support a particular theory there may be other data from other settings that suggest that theory doesn't hold true everywhere. Goal-setting theory, for example, holds up extremely well in some contexts and far less so in others.

Last, as we find out more and more about something, we also find out that our original findings were not quite right—or at least not specific nor detailed enough. Take the concept of organizational commitment: When first developed, it was a general and one-dimensional construct which suggested employees were just more or less committed to their jobs. However, subsequent research has shown there are at least *three different* and *specific* types of commitment which have *different* and *specific effects* on outcomes. To claim, therefore, that commitment in general has some general effect no longer holds water as it depends on which *type* of commitment and which outcomes we're considering.

If you dig into scientific findings looking for absolute truth and proof then you will be disappointed. If you go in looking for information about likelihoods and probabilities then research findings can be very useful and highly informative.

What Does Science Have to Do with HR?

Some of what we do in HR, such as complying with legal requirements, has got little if anything to do with science. However, whenever we attempt to do something with the intention of influencing some outcome we move into the world of science.

Essentially, much HR is about shaping the thoughts, feelings and behaviors of employees in ways that benefit both employees and organization. We do this through a range of practices in selection, performance management, training and development, reward, and communication. HR is usually about cause and effect. We do X because we want outcome Y. Of course, the causal mechanisms are not straightforward—like a simple chemical reaction—and many other factors will come into play. Nonetheless, our aim is to change things through the actions we take. This is precisely why scientific thinking and research findings are, or should be, at the heart of how we practice in HR.

The Place of Science in Evidence-Based HR

Scientific thinking and research findings are certainly not the only important sources of knowledge. One way of thinking about how to pull together the different types of knowledge used in professional practice in *any* field can be found in the idea of *evidence-based practice*.

Even though the idea of evidence-based practice has been around for over 20 years and has been adopted in fields as diverse as medicine, policing, education, policy-making and social work it remains a much misunderstood and misused term. At the Center for Evidence-Based Management, we use a definition widely-shared across a number of professions:

Evidence-based practice is about improving the chances of favorable outcomes from decision-making through the

conscientious, explicit and judicious use of the best available evidence from multiple sources by:

1. **Asking:** translating a practical issue or problem into an answerable question
2. **Acquiring:** systematically searching for and retrieving the evidence
3. **Appraising:** critically judging the trustworthiness and relevance of the evidence
4. **Aggregating:** weighing and pulling together the evidence
5. **Applying:** incorporating the evidence into the decision-making process
6. **Assessing:** evaluating the outcome of the decision taken

A number of the features of this definition are particularly relevant to HR. First, as already mentioned, using information or evidence helps us to increase the *likelihood* of obtaining the outcome we want. It's not about proof or truth. It does not mean we will always get it right or that using more information will simply produce *the* answer. The more information we have, the more we realize there is unlikely to be one simple "right" answer.

Second, this definition emphasizes the conscientious, explicit and judicious use of evidence. *Conscientious* means we should try hard and be careful in the way we collect and use evidence. Of course, we use evidence all the time in HR but how much time, effort and care do we really take? *Explicit* means we write down, represent, discuss, and explain the evidence we have. Too often in HR it seems that we "just know" things to be right or wrong: Of *course* poor performance is caused by low engagement; it's *obvious* that pay is a motivator.

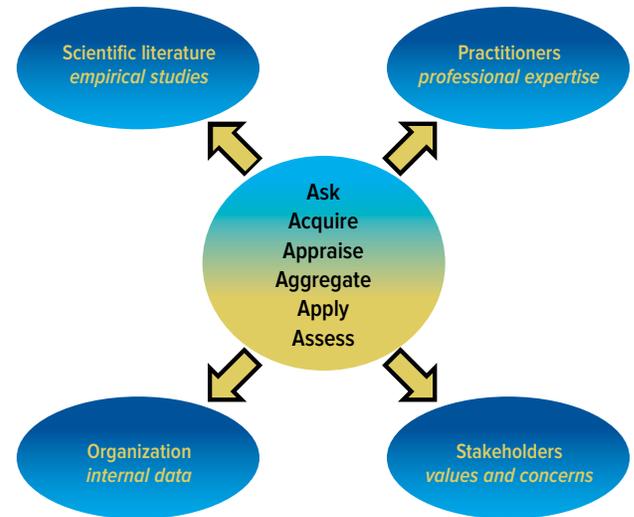
Science involves thinking carefully about how we can collect and judge the trustworthiness of information. For any problem or decision we need to ask what type of information would, in principle, convince us that a particular idea or proposition is likely to work or be correct.

We often fail to clearly articulate and express to others the information on which such assertions are based.

Being *judicious* means making judgements about the quality of the information we have because not all evidence is trustworthy and therefore not all evidence deserves our attention. We need to be able to pick out the signal from the noise. In HR it can seem we are not particularly good at distinguishing between reasonably sound evidence and weak, dubious and downright nonsense claims.

Although we are focusing here on evidence from scientific research—empirical studies published in academic

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journals—it's important to bear in mind that other types of evidence form an essential part of the evidence-based practice mix. Depending on the situation and the nature of the information available from each source, no one source is necessarily better or more trustworthy.

Let's take the case of a perceived problem of a 'high' absence rate which it is believed needs to be reduced. What kinds of questions and what types of information should a HR professional collect and critically appraise from each source?

- **Scientific research findings.** What does the scientific literature suggest are the major causes of absence? What does research suggest are effective interventions? What are the typical rates of absence in my sector and location—is the absence rate high? How reliable and relevant are these scientific findings?
- **Organizational data.** What actually is the absence rate? What type of absences (short or long) and where? How does this compare to the average in the sector? Is there a trend? Is it worth intervening here? What are the possible costs and benefits of interventions? How reliable and relevant are these organizational data?
- **Professional experience and judgment.** Have I (as a practitioner) seen this before? What happened? What are my beliefs about the causes of absence? What's worked in the past and why? How reliable and relevant is my experience? Could I be biased?
- **Stakeholder's values and concerns.** How do employees feel about the proposed absence interventions? Do they see downsides or unintended negative consequences? How do managers feel about these interventions? How reliable and relevant is this evidence about values and concerns?

Sometimes people are puzzled about why it is important in evidence-based practice to pay attention to these other

sources and types of less scientific evidence. The main reason is that research findings cannot speak or act for themselves or do anything. Applying research findings to practice requires knowledge of the context and the professional expertise of those taking decisions and actions. Just because a sound body of research findings suggests it is likely some intervention has a positive outcome it does not mean that research is *relevant* to or *effective* in your context. In addition there may be cultural or ethical reasons why the intervention is unacceptable. You can only discover this by examining information from these other sources.

It may also be that the research findings published in the scientific literature are poor quality or few in number. In such situations it may well be that the best available evidence already exists in your organization. If analyzed carefully, such internal data it may give you better insights than the published research.

Judging the Reliability and Trustworthiness of Scientific Information

As emphasized, being evidence-based does not mean using all or any evidence. Rather it means focusing on the best quality and most reliable evidence. The table above describing the pros and cons of different publication types gives some indication of what is likely to be more or less trustworthy.

At a more detailed level, judging the quality of scientific evidence always needs to be done in relation to the question being asked. So, for example, questions about cause and effect can only really be answered by longitudinal research designs which track how things change over time. One way of thinking about the trustworthiness of scientific evidence is to ask whether or not the research is fit for purpose: Is the way the research was designed and conducted likely to provide findings that can adequately answer the research questions.

Where Are Scientific Findings to Be Found?

HR practitioners are bombarded on an almost daily basis with all kinds of information which, though perhaps interesting or providing insight, *cannot* be considered to be scientific research findings and therefore need to be treated with caution:

- The *opinions* of thought leaders and gurus
- Expert *opinions* including those of researchers, academics, and consultants
- The *views* of professional bodies
- The *stories* of apparently successful companies (e.g., Google) which imply that if you do what these organizations do, you too will be successful
- Case studies from consultants or other organizations

On the other hand, there are places where you will find scientific findings or, at least, some reference to them. From a scientific perspective, each of these publication types has pros and cons. In general, those nearer the top can be considered to be more useful as they are more likely to be trustworthy.

PUBLICATION TYPE	TYPICAL PROS	TYPICAL CONS
Systematic reviews (SRs) and meta-analyses (MAs)	May be very relevant. SRs focused on a specific sometimes practice-based question. Not cherry-picked. Tries to be objective and includes all relevant evidence. MAs statistically summarize previous research on particular question frequently investigated by academics	Harder to access. Sometimes hard to read. SRs still relatively rare in HR. MAs may not address a practice question. Sometimes only consider certain types of studies.
A literature review	May be very relevant. Usually quite readable. Some details of studies provided. Some critique of field and studies.	Harder to access. Author may have cherry-picked studies to include. May be pursuing a particular line. Not focused on a question.
A single scientific study	May be highly relevant. Can look at method and results in detail to judge quality.	Harder to access. Sometimes hard to read. Single studies don't matter that much – it's the <i>body of research</i> that matters.
Textbooks for students	Accessible. Easy to read. Summarize some scientific findings.	Present few research findings in detail. Cherry-picked. Over-simplify. Superficial discussion. Hard to judge quality of research included.
Best-selling business books written by gurus or thought leaders	Accessible. Easy to read. Entertaining. Feels cutting-edge. Sometimes present scientific findings.	Contain limited and cherry-picked scientific findings. Focus on 'wow-factor' latest findings not body of evidence. Authors often promoting a view or themselves. Uncritical.
Commercial research published by businesses and consultancies	Accessible. Easy to read. Feels relevant and contemporary.	Biased and partial as vested interest in finding particular result as basis of selling product or service. Hard to scrutinize or verify.

Better Use of Scientific Evidence in HR Practice

The easiest way to start using scientific evidence is to follow an evidence-based approach as described above. This means first identifying a specific question or problem. Once you have done this, here are some suggestions about getting started quickly:

- **Work as a team.** Discuss the problem with your colleagues. What exactly is the problem we are trying to solve? How do we know that is the problem? Can we convert it into a focused question? So, rather than the problem “our absence rates are too high” ask the question “what is known in the scientific literature about effective ways to reduce absence rates?” Work together on reading and understanding the scientific findings you find.
- **Start small and do it quickly.** Don’t get overwhelmed with the quantity of scientific findings available. Focus

Resources

There are many relevant resources including papers, magazine articles, and presentations on the Center for Evidence-Based Management website (www.cebma.org).

This is an excellent article describing evidence-based HR <http://www.hrmagazine.co.uk/article-details/evidence-based-hr-under-the-microscope>

A real challenge for many in HR is getting access to the scientific literature as unfortunately much of it is locked up behind paywalls. So here are some tips for getting hold of the full-text of articles published in academic journals without having to pay:

- Use Google Scholar to search for relevant scientific research. Sometimes there are links to free full-text versions
- Once you have found an article that looks relevant, try doing a Google search on the title (in quotes) and adding the term full text or pdf
- Email the author directly to ask for a copy. Almost all academics’ email addresses are publically available (search for their name and institution) and most will be flattered and delighted that a HR practitioner is taking an interest in their work and be happy to email you a copy
- Become a member of the Center for Evidence-Based Management which gets you access to the full text of thousands of academic journals
- Local public libraries may have access to academic journals
- University libraries sometimes give academic journal access to their alumni
- Many universities are now supporting open access through posting publications from all staff on their website

Learning how to find relevant scientific findings is like any skill: It takes time and lots of practice. We have found that HR practitioners are quite surprised about just how much very relevant and useful scientific information there is around. But once we’ve got hold of it, how can we start to judge its quality?

on meta-analyses or reviews about the topic. Read them quickly to see what, if anything, you can find within them that could help you make a better decision. This may take just a couple of hours.

- **Be prepared for your HR preconceptions to be challenged—and learn to enjoy it.** We all have our own pet theories and strong beliefs. A challenging aspect of using findings from scientific research is that they can contradict strongly-held beliefs and show them to be too simplistic. It doesn’t mean they’re completely wrong, but if you find lots of evidence that contradicts them it’s worth thinking through why you hold them so strongly. One example of this is employee engagement. Although there are very strong beliefs within the HR community about its importance most people are quite surprised about how little good quality evidence exists (<http://engageforsuccess.org/wp-content/uploads/2015/09/Rob-Briner.pdf>).
- **Include information from other sources.** Evidence-based practice isn’t just about scientific research findings, so ensure you also collect and interrogate information from the other sources.
- **Don’t aim for perfection.** Remember the aim here is to make a *better-informed* decision using scientific findings and other evidence, not to make a perfect decision with every single piece of information you could possibly need.
- **Do it again. And again. And again.** Try going through the same process every time you come across a problem or need to make a decision. Give you and your team the opportunity to develop the evidence-based habit.

Most of all, remember that science is not about being complicated or clever. We don’t need to be blinded by science, nor in awe of it nor dismiss it all as irrelevant. The key is to consider it and use it to help us make more effective and more evidence-based HR decisions. ■■

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