What's not to like about evidence-based management: a hyper-rational fad?

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Abstract

Purpose – A topic currently receiving significant academic and practitioner attention is called evidencebased management. The purpose of this paper is to suggest that this approach is sometimes over-sold and may be a fad. Additionally, evidence-based management fails to fully recognize the importance of tacit knowledge, what Kahneman calls system 1. Evidence-based management does provide tools to better use what Kahneman calls system 2, rationality. Decision-makers need to take advantage of both rational and beyond rational processes.

Design/methodology/approach – This is an essay, it is not a report of a study. At this point in time, this paper needs thinking, reflection, pondering, more than a data-based study.

Findings – Advocates promote evidence-based management in part to help avoid fads, yet evidence-based management itself has many of the characteristics of a fad. Evidence-based management is based on an objective rational view of the world and suggests highly rational methods of decision-making. However, a rational fact-based might not give sufficient credit to instinct and feelings. Decision-makers should take into account facts, evidence, when making decisions, but not ignore intuition, hunches and feelings. This study is learning that decisions use a galaxy of approaches, with both cognitive and affective flexibility.

Research limitations/implications – As with any opinion-based paper, this lacks empirical support. Proponents ask us to believe in evidence-based management. Neither we, the authors of this paper, nor the proponents of evidence-based management can empirically support the ideas offered. An additional limitation is that the paper is written in one language, English. Translation into another language might yield different meanings.

Practical implications – There are advantages for scholars and practitioners to look at the best available evidence. There can be disadvantages in overlooking non-quantifiable factors.

Social implications – Those who use evidence-based management should also take into account feelings, ethics, aesthetics, creativity, for the betterment of society. To solve wicked problems one needs more than facts and rational analysis.

Originality/value – The overwhelming majority of those writing about evidence-based management are supporters. This study offers a different view. This paper brings new ideas and new thinking to both the

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International Journal of Organizational Analysis Vol. 30 No. 7, 2022 pp. 95-123 Emerald Publishing Limited 1934-8835 DOI 10.1108/IJOA-06-2020-2278 extensive fad literature and the huge evidence-based management literature. Evidence-based management is discussed widely. Google Scholar lists more than two million papers in 2019, 2020 and 2021 on evidence-based management. Readers of this journal should critically evaluate this popular set of ideas.

Keywords Decision-making, Evidence-based practice, Intuition, Organizational decision-making

Paper type Viewpoint

Professor Julius Johnson was touring our university in Hong Kong. We stood on a causeway between buildings, taking in the spectacular view of Clearwater Bay. His faculty tour guide commented, "I really like this place." Julius paused, stared back and said, "what's not to like?" The phrase stuck and may apply in considering "evidence-based management." What's not to like? Prof Johnson's tone suggested there could be nothing wrong with what he saw. At first glance, one might reach a similar conclusion about evidence-based management. Making decisions after obtaining and then considering the best available information, taking all aspects and elements into account, must be a good thing. Proponents describe evidence-based management as "the conscientious use of multiple sources of evidence in organizational decisions" (Rousseau, 2020). That approach sounds better than what Stanford Professor Jeff Pfeffer sees today: too often managers "don't use the best or, perhaps, any, evidence" in making decisions (Pfeffer quote from Barends and Rousseau, 2018, p. xvi). Many academics in the 2020s agree: more evidence can help facilitate better managerial, and thus better organizational, decisions.

While acknowledging the positive potential we suggest keeping an open mind. We are not convinced that evidence-based management can live up to its many positive appraisals. In this essay, we raise two main unsettled issues, unanswered questions. First, is evidencebased management a fad, similar to others that have gained the attention of management practitioners and academics of the past? We conclude that evidence-based management is in danger of being oversold, given more prominence than is appropriate. It cannot yet be declared a fad but it may gain that status in the future. Second, by stressing evidence, facts, data, might evidence-based management be overlooking or underutilizing the significance of effect, emotions, intuition, the feelings managers rightfully take into account when leading organizations? Stated in academic terms, would or could attention to evidence-based management discourage decision-makers from harnessing the power of what Nobel-prize winner Daniel Kahneman (2011) calls System 1 thinking? After discussing these two issues we offer some thoughts on an emerging third way, reducing the use of the name evidencebased management but not de-emphasizing the importance of facts.

The essay in the following pages is structured in more-or-less this sequence. We begin by briefly describing evidence-based management in a section called an *introduction*. Then we ask, like Professor Johnson, what's not to like. We discuss the fad idea and ask *is evidence-based management a fad?* We show that evidence-based management meets many but not all of the criteria of a fad. Then the following major section asks *does evidence-based management underutilize System 1?* System 1 is a term often used to describe the automatic holistic approach humans use as opposed to System 2, organized rationality. Our analysis says yes, evidence-based management underplays the importance of System 1. In a final section, we suggest a third way, *moving beyond a single focus or even a dual-processing perspective.* We note that many scholars answer the question about the use of Systems 1 or 2 by endorsing a dual processing approach. These experts typically suggest a modified name such as fact-assisted sense-making instead of evidence-based management.

We appreciate this trend away from a single-focused approach but suggest even the "dual" processing is unnecessarily limiting. Acknowledging that while neither System 1 nor

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System 2 are sufficient alone, we hold that even recognizing the value of both cognitive and automatic, dual processing explanations are still not enough. The growing area of scholarship on cognitive flexibility sheds light on how thinking really works. Cognitive flexibility is as yet relatively underexplored but already shows that even a dual systems view is as unnecessarily limiting as a single focus such as that in evidence-based management. We suggest that humans also exhibit emotional and affective flexibility. In the future, we will learn more about the myriad of ways different emotions, from fear to fury, relate to decision-making. We will learn that the decisions of humans use a galaxy of approaches, with both cognitive and affective flexibility. The facts on this are not all known vet and are changing. The facts on this are not all known vet and are changing.

1. Introduction: what is evidence-based management?

The idea of making decisions after looking at the evidence first took hold in medicine a decade or so earlier and still survives as evidence-based medicine, sometimes abbreviated as evidence-based medicine (EBM) (Sackett *et al.*, 1997). Evidence-based management has been part of standard management vocabulary since around 2003 (Tranfield *et al.*, 2003) with some relevant papers published as early as 1948 (Reay *et al.*, 2009). As medicine had already claimed the EBM abbreviation evidence-based management is sometimes called evidence-based management (EBMgt).

Evidence-based management started as a set of suggestions for practitioners (Rousseau, 2006). As Professors Jeff Pfeffer and Robert Sutton explained decision-makers should "use sound logic and analysis" when confronted with management advice (2006a, 83). Leaders should "instead of being interested in what is new... ought to be interested in what is true" (2006a, 77) and "be suspicious of breakthrough ideas" (2006a, 90). To reach the best decisions one should systematically analyze the best available evidence.

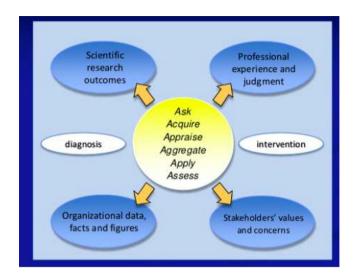
Evidence-based management suggests specific procedures and tools. To begin decisionmaking one should consider the population, the intervention, the comparison, the outcome and the context, which then becomes a new acronym, PICOC. After searching for relevant evidence, using the terms population, intervention, comparison, outcome and context to help focus the search, then evidence-based management suggests the following six steps, ask, acquire, appraise, aggregate, apply and assess. These steps from the website of the center for evidence-based management make sense and provide structure for decision-making. One should search for relevant evidence broadly, not overlooking any sources of evidence, insuring that the ideas of practitioners, scientific literature, organizations and stakeholders are examined. In an approach this complicated it is not possible to briefly describe evidencebased management, but this graphic helps simplify a very complex area: (Figure 1).

What started out as a fairly clear good idea, evidence-based management, changed over the next decade into an evidence-based management movement. As one journal article stated, "Change the World: Teach Evidence-Based Practice!" (Rynes *et al.*, 2014). Pfeffer and Sutton had warned against adopting "the next big thing," but, perhaps, this happened: scholars embraced the evidence-based management idea and it became a movement to change the world.

2. Is evidence-based management a fad?

Evidence-based management has been described in many ways and is complex enough to defy one simple definition. Sara Rynes and Bartunek (2017, p. 240) list "the [7] main definitions that have been offered by various authors over the first years." One expert in the Rynes and Bartunek list is then Academy of Management president Denise Rousseau. Rousseau said the idea is to "make organizational decisions informed by social science and organizational research [...] based on the best available scientific evidence [...]" (Rousseau, 2006, p. 256).

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Notes: Figure from web page www.cebma.org accessed May 2021 at www.slideshare.net/barene/bath-university-taster-event-ev idencebased-decision-making slide 16. The webpage https://cebm a.org/resources-and-tools/ says "freely downloadable and can be used and modified without permission"

Although there are many more than seven definitions at this point one additional definition will suffice. In their analysis, Roshanghalb and colleagues say evidence-based management "concerns how to translate the best available scientific evidence into organizational practices *avoiding* (italics added) decisions based on individual experience and preference" (Roshanghalb *et al.*, 2018). The "avoid" aspect of evidence-based management has been observed by others as well. For example, Pfeffer and Sutton, who helped launch evidence-based management, warned about fads: they advised organizational decision-makers to "be suspicious of breakthrough ideas" (Pfeffer and Sutton, 2006b, p. 8). One should approach with caution "new" ideas presented as ways to improve organizational management (Pfeffer and Sutton, 2006a, p. 77), especially if promoted as *the* answer.

Many of the followers of evidence-based management are believers as if following this new breakthrough that Pfeffer and Sutton warned about. It is not necessary to "be suspicious of" evidence-based management, but this new idea should be carefully considered. Sometimes managers become so enamored of new methods of operation that the idea becomes a fad. As Pamela Matthews puts it, some "quick-fixes, which appear to provide answers, but more often than not, do not address the underlying problems facing organizations" (2015, p. 302).

Serious researchers might ask if evidence-based management materially different than the fads that "have been greeted with great enthusiasm [...] then a few years later only to be quietly ushered out the back door" (Mintzberg, 1976, p. 53). In organizations, we see trends or in less neutral terms, fads and fashions. Although some make a distinction between fad and fashions, some using the term management fashion theory (Abrahamson, 1991), for our purposes no distinction is needed. A book by Barends and Rousseau explaining and supporting evidence-based management mentions and names (2018, p. 72) some earlier fads.

Figure 1. Evidence-based management overview

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IJOA 30.7 It is to their credit that they raise the possibility of decision-makers following a popular but inappropriate movement. The analysis in this paper asks if evidence-based management might be added to the list of fads and fashions.

Whether or not the "fad" label fits evidence-based management is important. Proponents of evidence-based management have at times offered this approach as an alternate to fads. The volume by Barends and Rousseau mentioned above, which is seen as an authoritative source on evidence-based management, raises the issue directly. That book says managers need to make better use of evidence as opposed to following ideas or trends such as "management by objectives, business process reengineering, total quality management, learning organizations, knowledge management, lean management, six sigma, talent management, employee engagement and agile" (Barends and Rousseau, 2018, p. 72). To this list, many scholars add others. An abbreviated list of some of these ideas, most of which might be labeled fads, follows.

The list of fads from the Barends and Rousseau book is impressive. However, that list is far from exhaustive as shown by the longer but still changing list above (Table 1). Many of the ideas within these fads on this list of fads will continue as useful tools, become part of the manager's normal routine (Sharma, 2021), but will be seen less and less as the fad popularity declines over time. The fad or components from the fad, become tools in the toolbox. There were no computers in faculty offices when we started our teaching careers. Then, following a pattern seen so often, the idea of and term PC, personal computer, arrived. Our lives changed. Until the twenty-first century when we no longer need a PC, everything could fit on a laptop. Then the smartphone changed lives again.

Trends come and go. Relatively recently CSR stopped meaning customer service relations (Froehle, 2006; Little et al., 2013) and become a corporate social responsibility, CSR (Van Marrewijk, 2003). White asked in 2005 whether this newer idea is also called CSR. Would be seen as "a passing fad" (p. 1). On many corporate agendas, the term and sometimes the Office of, CSR is being replaced by a newer emphasis on sustainability. Meanwhile, social audits came and went (Carroll and Beiler, 1975). The balanced scorecard, for a few years, reminded all to keep track of not only profit but people as well. The triple bottom line (TBL) said one should track results in financial areas plus social and environmental (people, planet and profits) (Elkington, 1997; Henriques and Richardson, 2004). One may remember the enthusiastic embrace of PPBS or zero-based budgeting or value engineering or JIT or theory Z or sensitivity training or OB Mod or second life. Sometimes business fads originate in the academic world. Then professors spread the new idea via consulting or business students take the idea to work with them when they graduate. Other fads start with practitioners, managers or consultants and then move into academia (Spell, 2001). The few experts who end up watching in both academia and organizations may earn the not-altogether complimentary label "guru" (Collins, 2003; Micklethwait and Wooldridge, 1996).

A 2013 article promotes *performance*-based management, a potential new big thing (Melaniphy, 2013). Simultaneously and similarly one could track managerial and analytical tools, from Porter's five forces (Pfeffer, 1995) to the resource-based view (Priem and Butler, 2001) to blue ocean strategy (Mauborgne and Kim, 2005). These may be taught to business students today, but, perhaps, not tomorrow. The list is continually in flux, expanding and contracting. SWOT analysis has faded, even though many students and some managers still find it useful (Helms and Nixon, 2010).

Today the advice seems to be, embrace evidence-based management or, perhaps, design thinking. Both evidence-based management and design thinking or DT or simply design, appear to be on the upward curve portion of what Spee and Basaiawmoit (2016) label the hype cycle. However, in a cycle, what goes up may eventually come down. DT reminds one of but is not the same as, the systems approach, which for part of the twentieth century was Evidencebased management

IJOA 30,7	Managerial or organizational idea, tool	for more info
00,0	Agile*	Annosi <i>et al.</i> (2020)
	AI appreciative inquiry	Bushe (2011) and Geldenhuys (2020)
	AI artificial intelligence	Winston and Brown (1984)
	Balanced scorecard	Dechow (2012)
100	Behavioral finance	Lo (2017)
100	Big data	Gonzalez (2017)
	Blue ocean strategy	Mauborgne and Kim (2005)
	BPR business process reengineering*	Wang (2008)
	CSR corporate social responsibility	Golob et al. (2013) and White (2005)
	CSR customer service relations	Froehle (2006) and Little et al. (2013)
	DT design thinking	Spee and Basaiawmoit (2016)
	Employee engagement*	Li and Bunchapattanasakda (2019) and Sharma (2021)
	Five forces	Pfeffer (1995)
	High-performance management	Lloyd and Payne (2006) and Tweedie et al. (2018)
	IoE internet of everything	Joseph <i>et al.</i> (2017)
	IoT internet of things	Joseph <i>et al.</i> (2017)
	JIT just in time	Jette and Padgaonkar (2021)
	Job enrichment	Hackman (1975)
	Knowledge management*	Martensson (2000)
	Lean management*	Jette and Padgaonkar (2021)
	Learning organization*	Adzic (2018)
	MBO management by objective*	Spell (2001)
	Microfoundations	Aguinis and Molina-Azorın (2015)
	Mindmapping	Gavens <i>et al.</i> (2021)
	OB Mod organizational behavior modification	Locke (1977)
	OD organizational development	Denison and Spreitzer (1991)
	Performance-based management	Tweedie et al. (2018)
	PPBS planning programming budgeting system	Hoecht (2006)
	RBV resource-based view	Priem and Butler (2001)
	Right brain	Lindell and Kidd (2011)
	Scientific management	Busse <i>et al.</i> (2016)
	Second life	Page (2011)
	Sensitivity training	Back (1987)
	Six sigma*	Naslund (2008)
	Sustainability	Burritt and Schaltegger (2010)
	Social audit	Carroll and Beiler (1975)
	SWOT analysis	Helms and Nixon (2010)
	Systems approach	Bryer (1979) and Grewatsch (2019)
	Talent management*	Iles <i>et al.</i> (2010)
	Theory Z	Ouchi (1981) and Godkin <i>et al.</i> (1996)
	TQM total quality management*/quality circles	Strang and Macy (2001)
	Triple bottom line	Elkington (1997) and Henriques and Richardson (2004)
	Value engineering	Kissi <i>et al.</i> (2016) and Mousakhani <i>et al.</i> (2017) Brooks (1999)
		Brooks (1999)
	VR virtual reality	
Table 1.	Zero-based budgeting	Lunenburg (2010)
Table 1. Fads fashions tools	Zero-based budgeting	

organizations

following principles of evidence-based management. From an authoritative and influential primer on evidence-based management (Barends and Rousseau, 2018, p. 72)

the latest thing. The systems approach seemed broad enough to include a way of thinking for everyone related in any way to organizations (Bryer, 1979). However, systems thinking "lost favor because the very complexity of systems meant that systems theories were difficult to apply" (Grewatsch, 2019, 1). The complexity of evidence-based management, due to the comprehensiveness of its approach, may make it also "difficult to apply."

Job enrichment was for a time very popular. The excessive attention paid to job enrichment worried even the person credited with inventing job enrichment. The originator of the idea then wrote an article called "the coming demise of job enrichment" (Hackman, 1975). Another big wave was the "excellence movement." Peters and Waterman (1982), who triggered this excellence movement, had found that management of human resources was a key to "excellence." However, studies after the fact show that a randomly selected list of firms performed about, as well as the Peters and Waterman exemplars (Hitt and Ireland, 1987). New terms and new ideas will keep appearing. Big data will be used to extract information from the internet of things (IoT) or the internet of everything (IoE) if we are to achieve a high-performance workplace. Practitioners are advised to explore the microfoundations of fintech or blockchain. The AI of today means artificial intelligence and is not related to the AI of an earlier day, appreciative inquiry. Then, even artificial intelligence has some of the characteristics of a fad. Winston and Brown (1984) "fear that this field has been hyped beyond all belief and there is a serious danger that it might be oversold" (quote from Google Scholar, no page number).

Some fads or fashions come and go so quickly that one is reminded of bubbles (Rogmans, 2019). Value engineering saw meteoric growth, but then did not burst like a classic bubble, but faded nonetheless. Tides rise and fall, fads come and go, sometimes following a certain path because others are following the same path (Scarbrough and Swan, 2001; Spell, 2001; Van de Ven and Schomaker, 2002). At least, as le Bon wrote in "The Crowd: A Study of the Popular Mind" scholars know that there is a lot of "follow what others do" in human behavior (le Bon, 1960 [1895]). A number of management writers describe business fad adoption using the colloquial term "bandwagon effect" (Aksom, 2021). The term mania is also used sometimes, roughly synonymous but often carrying a slightly negative connotation.

Since 1968 scientists have tried to make sense out of "things that change suddenly" using catastrophe theory (Zeeman, 1976). Maybe one day scholars will explain some of the ideas that failed to save the world by comparing them to catastrophes. However, it would be a mistake to write off performance-based management or AI or evidence-based management as catastrophes. Decision-makers should see what lessons can be learned from each. Even if evidence-based management loses popularity, as criticisms such as ours become more frequent, the ideas within should still be applied as appropriate.

Many managerial discoveries, including evidence-based management, seem to have roots in the USA. However, fads may originate anywhere. The Japanese are credited with launching the "quality" movement, but the Japanese firms who best demonstrate "Continuous Improvement" receive "the Deming Prize." That award was named after W. Edwards Deming, the American consultant who taught key points of total quality management (TQM) in Japan before it became popular in the USA. Quality circles seemed to work in Japan and believers in the US tried to make TQM work in the States (Waddock and Bodwell, 2004).

Sometimes movements take on an almost religious feel. Consider this quote from an American geologist: "While I was working at an engineering firm back in the 1990s the owners became true believers in TQM. I recall going to conferences or seminars and thinking that it seemed vaguely religious. Like going to Sunday School. I don't recall anything about TQM." The geologist compares sessions on TQM with the Sunday School at

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the family's church. Evidence-based management and TQM and Sunday school are thought to be good for a person, however, it is not always clear why or how.

This discussion illustrates that even good ideas often fade away over time. On TQM, one article was titled, "quality is dead in Europe – long live excellence: true or false." The authors noted that "TQM is regarded as a fallen star" which they see as a pity. TQM had many useful ideas but was not easily implemented. What was rising toward the end of the twentieth century was excellence, which those writers consider a passing fad. Quality and TQM should endure. Excellence should be on the way out: "the term 'excellence' has already started to become subject to ridicule" (Dale *et al.*, 2000, p. 9). The hopes of those authors were not realized. Both the excellence fad and the TQM fad have faded.

One of the first ideas which might in retrospect has met the criteria to be labeled a fad was scientific management. When Frederick Winslow started measuring all parts of the steel production process he saw the potential for dramatic increases in productivity. People became nothing more than elements of the production machine. Midvale Steel benefited and Taylor became famous. Today, scientific management is gone, except, perhaps, as Busse, Warner and Zhao note, in China "some firms are still stuck in operating the concept of scientific management but labeling it as human resource management" (2016, p. 538). Perhaps, Taylor was ahead of his time (Taylor, 1911). Measure everything, make decisions based on facts, was the essence of scientific management in 1911 and, perhaps, the core of evidence-based management today.

Evidence-based management reminds one of the fashions now faded or fading (Alvesson and Spicer, 2012). A typical fad or fashion or movement has its own jargon, to help distinguish between believers and unbelievers. Evidence-based management has terms exclusive to that persuasion. PICOC is not a large bird like a turkey with a gorgeous expandable tail. PICOC means Population, Intervention, Comparison, Outcome and Context. Is this acronym necessary? It helps a movement can gain momentum to have unique terminology. A movement must also believe it has the answer, the right solution. Talk to or more likely listen to, a six sigma black belt and one realizes you are either in it or not in it. Only a few can be six sigma black belts. With the wisdom of these select enlightened few, better organizational operations can be achieved.

There would be benefits if the *idea* of using evidence (information) to make better decisions persists, whether or not the *movement*, the evidence-based management persuasion, gets quietly ushered out the back door. However, there are worrisome signs. As with many or, perhaps, most fads, Evidence-based management has lofty goals. Evidence-based management is not merely about better management. The goal for some adherents is to save the world.

One hopes the enthusiastic believers in evidence-based management will not turn good ideas into us versus them. Only if we use evidence-based management can we make better organizational decisions? Stated that way would be unfortunate. Using evidence is one way, but not the only way, for decision-makers to make better organizational decisions.

This background mentions and lists numerous ideas that we include on our list of fads (Table 1). Although this list may seem long, it could easily be doubled. Furthermore, the list is long for a reason. Shown a shorter list of fads, a colleague commented, "but evidencebased management is not like these on your list." The evidence we see suggests that it is very much like the other fads in many ways. Readers of this article will have never heard of many fads on our list. However, each of these was at one time for one period of time as widely praised as today's evidence-based management. In the future, evidence-based management may also lose popularity or may be equally forgotten. Only time will tell.

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As a starting point to determine whether evidence-based management deserves to be on the fad list one could look at the list of commonly accepted characteristics of fads as complied by Matthews (2015), who, in turn, credits other scholars (Miller and Hartwick, 2002; Shapiro, 1995; Best, 2006; Naslund, 2008; Carson *et al.*, 1999; Collins, 2008) ("Agreed characteristics of fads include" (Matthews, 2015):

"Agreed characteristics of fads include" (Matthews, 2015):

- · Perceived simplicity and ease of implementation.
- · Prescriptive answers to complex issues and problems.
- The promise of short-term gains and big promises.
- Equal applicability to all organizations and all situations.
- Are resources (both financial and non-financial) hungry.
- · Targeting specific contemporary issues.
- Seemingly novel but not overly radical answers.
- Have the support of recognized individuals who actively promote ideas (Miller and Hartwick, 2002; Shapiro, 1995; Best, 2006; Naslund, 2008; Carson *et al.*, 1999; Collins, 2008) [of these six listed by Matthews we have not seen Collins, 2008]

This list complied by Matthews is the best we have seen. Any list will be modified as research continues. Matthews' list seems to give insufficient attention to the time element. If a fad of fashion endures, lasts a long time, then it should not be labeled a fad. Furthermore, item 1 does not apply to many or most fads in business. Six sigma nor TQM nor evidence-based management would be described as having "perceived simplicity and ease of implementation." These and some of the other fads contain very detailed steps, procedures, requirements. In addition, and probably more important, the Matthews list omits a mandatory feature, the transitory nature of a fad. This we would propose a revised list of fad characteristics. A fad is likely to (revised list of fad characteristics below).

Revised list of fad characteristics:

- have a simple to remember the name, often abbreviated into initials (e.g. MBO);
- · prescribe answers to complex issues and problems;
- promise short-term gains, high long term achievement;
- · claim applicability to various types of organizations and situations;
- require resources-both financial and non-financial;
- target specific contemporary issues;
- claim to be new;
- have the support of key individuals, active promoters;
- · often be described in very positive or very negative terms; and
- come and go, typically following a cycle of incubation, take-off, rising popularity, decline.

The list shown here in the revised list of fad characteristics, modified slightly from the Matthews list, will, without doubt, be further revised in the future. However, one key difference in our A B C list as compared to Matthews' 1 2 3 list is our increased attention to the temporal element. The idea "fad" almost always contains a time element. These managerial and organizational innovations with "limited life spans" (Matthews, 2015, p. 303)

Evidencebased management IJOA 30,7 often follow a "characteristic trajectory from sudden prominence to obscurity" (Miller and Hartwick, 2002, p. 26). As Lilienthal and colleagues state, "Traditionally, fads are defined as short-lived fashions that disappear about as abruptly as they emerged. . ." (Lilienfeld *et al.*, 2014, p. 62). Strang and Macy note a pattern: "a stylized picture of a faddish cycle" might include the following elements:

- A potentially extensive incubation period where few firms use the innovation.
- A take-off period where popularity rises explosively.

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· A short period of ascendancy marked by very high levels of innovation usage.

A period of rapid decline leading to a low equilibrium level of usage (Strang and Macy, 2001, p. 151). Thus, a new idea or set of ideas cannot be confidently labeled a fad until and unless it fades, becomes less prominent. Indeed, there are those who believe the core ideas of evidence-based management will forever change managerial thinking, thus should not be placed in a category with fads.

Although the English language term fad does not typically convey positive implications, neither does the word always convey negative connotations. Some fads simply come and go, are noticed and, perhaps, commented on, in more or less neutral, possibly historical, terms. Perhaps, one way to view this would be to look at two extreme examples on the spectrum between a fad and game-changing paradigm shift in thinking. An extreme example of a fad might be the phenomenon called streaking, where a young person or young people ran in front of a crowd with absolutely no clothes on. Once this event received publicity others did the same. By the early 1970s, at least 1,000 incidents of streaking were identified on US college campuses (Kirkpatrick, 2010). After 1973, the fad stopped.

At the other end of an imaginary fad, the longevity continuum might be "hand washing" which changed the culture of the clinic. The old paradigm held that a surgeon with a dirty blood-smeared smock must be busily changed to the surgeon with unclean outer garments is spreading disease. This change took more than a century to become the new norm, but unmistakably, forever, habits changed. The old ideas were strongly entrenched and since Thomas Kuhn, we know that many important discoveries and developments in scientific knowledge do not occur smoothly. Paradigm shifts involving major revisions to conventional thinking are core to what Kuhn called scientific revolutions (Kuhn, 1962). Foucault also looked at medical thinking in France in the eighteen century and observed that an "unprejudiced gaze" was needed to make the invisible visible. "It is as if for the first time for thousands of years, doctors, free at last of theories and chimeras, agreed to approach the object of their experience with the purity of an unprejudiced gaze" (Foucault, 1963/1973, p. 195). If hand washing had disappeared over time we might classify it as a fad. However, it endured a paradigm shift. Neither streaking nor hand washing in clinics would fit neatly into a category of managerial fads, but they do illustrate the fad concept (Carson *et al.*, 2000).

Is evidence-based management a fad or a paradigm shift, part of a scientific revolution? (Bosman, 2015). Or if surviving, but less than a paradigm shift, might the idea become institutionalized, integrated into managerial thinking? (Aksom, 2021). Evidence-based management calls for a new way to see management. The old ways were insufficient: As cited above, Pfeffer says many managers "don't use the best or, perhaps, any, evidence" when managing (Pfeffer quote in Barends and Rousseau, 2018, p. xvi).

The solution according to proponents is to adopt this new evidence-based management paradigm, see things with an unprejudiced gaze. Certainly, there are many who see this as a revolutionary step in the direction of improved management. As one journal stated not very modestly, "change the world: teach evidence-based practice!" (Rynes *et al.*, 2014). In a 2020

publication, Daouk-Ovry and colleagues say "EBMgt which refers to using the best-quality evidence from different sources in decision-making, is becoming an imperative for managers in both profit and non-profit sectors" (Daouk-Oyry *et al.*, 2020, p. 1). The website of the Academy of Management in May 2021 announces a new subpage called Academy of Management Insights, "bringing the best management research to business and society worldwide. Our summaries transform evidence-based (italics added) research [...] into actionable insights" (Academy of Management, 2021). Many "...scholars have seen EBM becoming an important area of research and practice" (Yang, 2020, p. 706). It is very common to see this sort of positive evaluation: "Evidence-based management is on the rise" and "widely embraced around the globe" (Hall and Van Rizen, 2018, p. 321). George Graen (2009, p. 257) says evidence-based management is not just another "flavor of the month" and educators should "teach our management students that evidence-based management is the way to solve management problems in organizations." Lisa Burke-Smalley agrees: "put simply, [...] publishers, authors and management faculty should pursue evidence-based teaching and education" (2014, p. 264). Jean Bartunek and Wayne Cascio agree and describe how to teach this (Bartunek, 2014; Cascio, 2007). More than a decade ago Trish Reay and her colleagues surveyed the literature on evidence-based management. Their study listed 144 papers. Of these 140 articles were supportive, 4 papers did not favor evidence-based management (Reav et al., 2009). That ratio might be categorized as overwhelming support. However, not everyone is supportive. Martelli and Hayirli (2018) discuss pro and con camps. Some say the idea, even the words "evidence-based," should be avoided (Hall and Battaglio, 2018). Some scholars oppose evidence-based management. Morrell and Learnmouth say directly that they are "against evidence-based management" (2015, p. 520). However, even today, by far most comments are positive, endorsing evidence-based management.

One readable and informative 2016 article supports evidence-based decision-making: Hospital physician-manager "Dr Clancy" followed the principles of evidence-based management. After methodically analyzing the problems in the Fast Track department the physical layout of the hospital was changed and how patients were selected for Fast Track was revised. The results meant shorter waiting times and better satisfaction among both staff and patients (Wright *et al.*, 2016). A real organization benefitted. This hospital example illustrates the potential. There are positive aspects of evidence-based management. Potential benefits are widely discussed and well covered in the literature.

One can see it so often in so many places that the question arises, is this a fad. Ironically, the Matthews paper cited above used evidence-based management to help her understand and describe fads: evidence-based management is "deemed to be essential for the underpinning of any new management practice or process and, therefore, must be a core element of any model for explaining 'fad' adoption" (Matthews, 2015, p. 306). Thus, if our original question number 1, is evidence-based management a fad, is answered in the affirmative, one might be in the unusual situation of using a fad, evidence-based management, to determine why when and how managerial fads are adopted.

Matthews' commonly agreed list of fad characteristics (above) as modified in this essay provides a starting point. By reviewing these characteristics one sees that there is a possibility, even a likelihood, that evidence-based management can be added to the fad list. Only time can answer this question.

The cycle of popularity could be traced using many methods, including a number of journal articles on the topic and/or a number of times these papers have been cited (citation counts). Strang and Macy (2001, p. 151) use a different method to illustrate the cyclical nature of one fad, TQM. They show changes in the numbers of TQM consultants who focus on one aspect or tool of TQM, quality circles (Table 2).

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Popularity in academic journals is certainly not the only or even the best way to determine if a management idea is a fad but can be instructive. Citation counts are also widely used and widely debated. The number of articles on a given topic published in journals can be an indicator. One could use simple frequency counts to show the life cycles of each and every fad or tool on a revised list of fad characteristics above. We provide journal article frequency counts for two topics, quality circles and evidence-based management.

We searched each term in Google Scholar for different time periods, five-year intervals. Although Google Scholar sometimes misses things and sometimes double counts it can give a researcher a general picture. We looked for the term *quality circles* which is seen as an important component of TQM and is the term used by Strang and Macy. We searched in the titles only, not text or abstract, of each article. We followed a similar protocol for *evidence-based management* with or without a hyphen and for *EBMgt*. We looked at each paper found and eliminated those relating to evidence-based *medicine*.

Table 3 shows the results for the citation search for quality circles, following a similar cycle to that in the Strang and Macy paper.

Table 4 shows the results from the journal publication search for evidence-based management. Although we see incubation, takeoff and a period of rising popularity, we do

	Year	Quality circle consultants in the USA Consulting firms	Consulting FTEs
Table 2. Quality circle consultants (from	1978 1980 1983 1988 1991 1994	2 2 60 21 13 5	11 469 264 91 60
Strang)	Source: Training as	nd development organizations directory (Gale Publishing, J. N	AcLean, ed.), various years
	1975 1980		0 20
	1980 1985		20 135
	1990		65
Table 3.	1995 2000		20 16
Google Scholar	2005		10
entries including the	2010		12
term quality circles in titles	2015 2020		11 10

0
13
37
2021)
2

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not see a decline. Thus, as of 2021, it is not appropriate to include evidence-based management of any list of fads. This analysis could be redone in 2025 and after.

As stated above, the term fad often, probably usually, carries negative connotations in managerial and academic circles. However, even if it is concluded that evidence-based management is a fad, destined to fade away, the tools introduced have the potential to remain in the decision-maker's toolbox. One of the authors of this essay was once an active, even passionate, member, of the Military Affairs subcommittee of the Western Massachusetts chapter of the Society of American Value Engineers, SAVE. The chapter is no longer active, but the SAVE has adapted and morphed into SAVE International. The value engineering tools and checklists, still usable, remind one of those found in the literature on evidence-based management publications (Mousakhani et al., 2017). Value engineering tools survive, even as popularity waned. Only time can tell what will happen to evidence-based management. The SAVE changed with the times and now is SAVE International. Will one day the Center for Evidence-based Management be modified, stressing checklists less, thinking more? A goal of a name change might be to show that there needs to be a broader approach to decision-making than the hyperrationality many see as a feature of evidence-based management. The term hyperrationality has at times taken on a definition used by sociologists, which Ritzer traces back to Max Weber. We use the term in a non-technical sense (Dandaneau and Dodworth, 2006). We see evidence-based management as hyperrational, extremely rational. A Center might possibly be renamed, to a Center for Dual Process Based Management or Center for Third Way Management? Those of us asking for something other than hyperrationality, which the dictionary defines as extreme rationality, are not promoting irrationality. Then, as of the year 2021, there are many saying one needs more than rational analysis in decision-making. Although this "more-than-rational" approach has been studied for many decades, it gained additional attention when Daniel Kahneman won a Nobel Prize in 2002.

3. Does evidence-based management underutilize System 1?

In this essay, we ask two main questions. First, is evidence-based management a fad. We now turn to our second question, does evidence-based management underutilize System 1 described by Kahneman? Overemphasis on facts, best available evidence, raises questions. Prizewinning economist Kahneman wrote a scholarly yet readable book thinking, fast and slow (2011). That book explained his findings from years of work with much of it along with Amos Tversky. Kahnemann put together ideas that are central today to behavioral economics. Kahnemann looks at how humans decide and sees two basic approaches. System 1 operates automatically and quickly, using impressions, intuition, feelings. System 2 constructs thoughts in an orderly series of steps, "thinks." The evidence-based management idea is *for* System 2, the rational fact-based approach and *less supportive of* System 1, instinct, feelings, emotions, hunches. The evidence-based management may lead managers to neglect System 1. This can lead to decisions based on insufficient thinking, inadequate analysis (Liu *et al.*, 2017).

Overemphasis on the best available evidence, the facts, may be ill-advised. The world is changing and "facts" change. What we know as "facts" today may be replaced by new facts in the future. Also, facts look backward. Some say they are using "facts" that observers describe as "alternate truths" and "alternate facts" (Bilos, 2019). Supporters said US President Donald Trump made decisions after reviewing of evidence, after looking at facts. However, supporters labeled as facts things some others saw as untruths.

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There is an additional point. The question "what are the facts" may get harder to answer. As time passes, things change. Scientific advances enable the world to learn new things. Many things are more complex than previously thought. For example, how many stars are there? On a clear night, humans can see approximately 4,500 to 5,000 stars. Radio-telescopes and sky-mapping space probes are expanding the previously-known universe. Every star one can see with the naked eye is within our galaxy, the Milky Way Galaxy. One constellation in that Milky Way galaxy is in the Northern Hemisphere known as the Big Dipper. Within the dipper part of the Big Dipper, astronomers have mapped as many galaxies as there are visible stars in the night sky. How many stars are there? The changing number of stars shows that what is known as fact may be wrong. Evidence-based decision-making should search for and use facts but decision-makers should approach "facts" cautiously. Today's facts may change. Looking upwards helps us see that yesterday's facts do not fit today or tomorrow.

A look at the sky reminds us that facts change. In decision-making, there may be similar frame-shattering discoveries. As more is being learned about the universe above, more is also being learned about the magic within, the human decision-making machinery. One can start by looking at the brain. It is a *fact* that in most people speech is handled mostly by the left hemisphere. The left hemisphere seems best at verbal, sequential, logical tasks. For creativity, the right hemisphere seems best. For multidimensional tasks where unrelated activities are done simultaneously, the right hemisphere *seems* best. In the opinion of many, the right hemisphere has powers still being discovered. In a burst of enthusiasm in the twentieth-century "experts" showed how the discovery of the "Right Brain" should change education and management. It became a fad, claiming to use the best available evidence. However, that evidence was incomplete (Lindell and Kidd, 2011). As in the case of "how many stars," more and more is being discovered about the brain. Not only which hemisphere but what combination of tissue and enzymes and synapses and hormones and neurons make creativity happen are being studied now (Gabora and Ranjan, 2013). There are numerous avenues currently being explored. For example, professor Carel Le Roux won an award for studies related to hypothalamic signaling or "how the gut talks to the brain" (Miras and Le Roux, 2013. See also Soosalu et al., 2019). Scientists are learning more and more, finding new facts, about the brain. If science has now identified as many galaxies in the dipper part of the Big Dipper as previously "known" stars, what will be learned about the brain? We may find patterns and possibilities and better ways to improve the decisionmaking and creative capabilities of managers, beyond simply adding up facts (Hodgkinson et al., 2009).

As Rowan (1979 p. 110) put it, those "hunches are more than blind faith." That same article quotes Herman Kahn: "my research is a combination of intuition and judgment. I don't know where it comes from. The mind simply puts things together" (111). The quote sometimes attributed to Einstein deserves attention: "The intuitive mind is a sacred gift and the rational mind is a faithful servant. We have created a society that honors the servant and has forgotten the gift" (Kuhlmey, 2017). Einstein is also credited with saying "not everything that is counted counts. Not everything that counts can be counted" (Pfeffer and Sutton, 2006a p. 86). Neglecting gut feelings, overreliance on "scalable measurements" (Landfester and Metelmann, 2020 p. 3) might be as detrimental as ignoring facts and data. In the 1960s America tried unsuccessfully to stop an idea with overwhelming firepower and kept fighting a war in Vietnam that was globally unpopular. Continued involvement was in part due to a tendency to statistically analyze things that should have been considered holistically. The USA led by Defense Secretary Robert McNamara looked at numbers and

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fought on. This earned the Secretary the distinction of being named in a decision-making approach, "the McNamara Fallacy:"

The first step is to measure whatever can be easily measured. This is OK as far as it goes. The second step is to disregard that which can't be easily measured or to give it an arbitrary quantitative value. This is artificial and misleading. The third step is to presume that what can't be measured easily really isn't important. This is blindness. The fourth step is to say that what can't be easily measured really doesn't exist. This is suicide (Yankelovich, 1972).

For many years the US firm General Motors (GM) topped the annual Fortune 500 list of firms, led by GM executive Alfred Sloan. Management consultant Peter Drucker explains, when Sloan saw no arguments against an idea and when even he himself could articulate no opposing argument if it did not feel right, he postponed the decision (Drucker, 1967). Managing this way, observing and considering facts but also listening to gut feelings, helped GM stay on top. Professor Henry Mintzberg also sees the value in considering facts and data, as well as intuitive feelings. Mintzberg tied his ideas to the partially correct notion that rational sequential approaches generally start in the brain's left hemisphere, while creative, intuitive, more likely originate in the brain's right hemisphere: "Planning on the left side, managing on the right" (1976). Herbert Simon received a Nobel Prize for telling the world that the rational model of decision-making is not followed by most cases and is in fact wrong (Cristofaro, 2017a; Kim *et al.*, 2006; Leahey, 2003). Will someone later receive a Nobel Prize for showing that evidence-based management does not guide decision-makers in actual organizations?

For better decisions, one should carefully look at the evidence. Ideally, attention paid to evidence-based management will help bring improved use of the rational mind, while not forgetting the sacred gift, the intuitive mind. Whether it is called right-brain or System 1 or non-rational or nonlinear or intuitive, effective leaders take advantage of instinct, intuition, creativity, feelings and have a sense for when to stop looking for additional data and start reflecting (Hodgkinson and Sadler-Smith, 2018). They assess then reflect. They use both heart and mind, using both affective and cognitive analysis (Kim *et al.*, 2006; Luo and Yu, 2015). The evidence-based management movement overstates its case for System 2 and unwisely minimizes System 1.

Many observers have made similar observations and criticisms, both as pertains to evidence-based management and to evidence-based medicine (Edwards, 2018; Morrell and Learmonth, 2015; Morrell *et al.*, 2015). There is value in looking at quantifiable supportable data-based evidence (Banasiewicz, 2019). There is also a danger that one may become so enamored with facts that one may forget that not all quantifiable information is important and that not everything that is quantifiable is important. For making decisions in large organizations, most of the steps suggested by proponents of evidence-based management make sense. However, managers we observe do not consult checklist after checklist. The impetus for evidence-based management was correct, some managers use too few facts, however, overreliance on facts, a hyperrational approach, would come at a cost. If the house is on fire, sometimes intuition says when to move out (Gladwell, 2005 *p* 122). If the ship is sinking, even before careful analysis, plug the leaks.

The checklists recommended on the evidence-based management web page (www. cebma.org) tell practitioners to consider the population, the intervention, the comparison, the outcome and the context (PICOC). Then, an effective evidence-based manager should follow "*the* six steps" ask, acquire, appraise, aggregate, apply and assess. One should consider "*the* four sources of evidence," practitioners, scientific literature, organizations and stakeholders. Implementing evidence-based management is not as easy as 1, 2, 3, 4, 5 and 6 followed by 1, 2, 3 and 4. Our analysis agrees to suggest that decision-makers take into

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account facts, evidence when making decisions. However, one should use the rational approach but not ignore feelings, misgivings, hunches (Rousseau, 2020). Kahneman is right: both Systems 1 and 2 have value.

Reflecting back on the terminology used in the 1980s, the brain has two hemispheres. We should use both. This oversimplification is a starting point. We are continually learning more and more about the brain. Each hemisphere includes a huge number of subcomponents. Just as the number of stars in the sky increased from 5,000, technology is facilitating the exploration of the brain. Today we might say that the brain has a universe of possible combinations usable in decision-making.

One area addressed in numerous publications has to do with the role of emotion in decision-making (Aroesty-Cohen, 2013; Bartel and Garud, 2009; Betsch and Glöckner, 2010; Cristofaro, 2020a; Evans, 2008; Evans and Stanovich, 2013; Kim *et al.*, 2006; Lerner *et al.*, 2015; Luo and Yu, 2015; Soosalu *et al.*, 2019). Emotion involves more than System 1 thinking but is closer to System 1 than to System 2.

There are questions as to what extent evidence-based management actually helps managers facing decisions (Hamilton, 2012; Reay *et al.*, 2009). Many decisions have "soft skills" or "ethical" dimensions (Hulpke and Fronmueller, 2020; Parlamis and Monnot, 2019). As Gill warns "decision-making may fail by being too narrow [...] [ignoring such questions as] what are my values?" (Gill, 2004, p. 136). Fatien Diochon and Nizet (2019) observe that it is difficult to use a formula to resolve questions of ethics. Rather than follow checklists, managers see "Ethics as a fabric: an emotional reflexive sensemaking process." Careful analysis might show that decision-makers in organizations make decisions through the knitting of emotions and reflexivity, interwoven as in a *fabric*. Wicked problems such as climate change require more than evidence-based analysis (Bartel and Garud, 2009; Cadez and Czerny, 2016). "Thick evaluation" involves "a union of fact and value" (van der Linden and Freeman, 2017). Chaos theory and also complexity theory as mentioned above, provide additional lenses by which to study decisions. Although most often applied in the hard sciences, these ways of seeing may also be useful in helping understand how people make decisions.

One might guess that evidence-based management would receive a warmer reception in more quantitative areas, say accounting or finance. However, that may not be the case. A relatively new idea in finance is the realization that numbers, facts, are not enough (Powell *et al.*, 2011), Rational economics is basically wrong. In reality, "investors and financial markets behave more like biology than physics [...] the principles of evolution are more useful for understanding the financial industry than the physics-like principles of rational economic analysis" (Lo, 2017 p. 2). Careful collection and analysis of voluminous pieces of data, evidence, are not enough to prevent a meltdown of the price of any specific stock or for that matter, of Wall Street.

If not finance, where might evidence-based management be best put to use? The team which concluded that Dr Clancy solving the Fast Track delays shows benefits of evidence-based management gave a few caveats. For example, "EBM decision processes may be particularly suited to operations management problems, as this sub-field in organization and management studies has shown itself to be well suited to formal scientific approaches, and thus has a well-developed literature [...]" (Wright *et al.*, 2016, p. 173). However, even in operations management, the evidence-based approach does not appear to always be the answer. It is true there is well-developed literature. Even on a small sub-topic such as inventory control, "thousands of pages have been printed in scholarly books and operations research journals [...]" (Wagner, 1974 p. 278). Unfortunately for supporters of evidence-based management that is not the end of the story. In the article containing that quote,

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published in 1974, Yale Professor Harvey Wagner noted that "It is paradoxical then, that so few of these techniques have been implemented in real manufacturing companies" (p, 278).

Our ability to obtain data and to perform more sophisticated statistical analyzes has improved. However, implementation sometimes remains elusive. If implementation could not be achieved in the area of production management, which was "well suited to formal scientific approaches," one might expect organizational managers to encounter even more difficulties today if they attempt to implement evidence-based management. As Jen Howard-Grenville says, "for a lot of the topics we study, it's unclear that there could be a definitive empirical contribution [...] We don't study things that are subject to universal laws. We're studying humans; we're studying how they make sense of things; we're studying the decisions that they take under uncertainty" (Hahn *et al.*, 2021, p. 4).

Data should be obtained and considered as appropriate, the best available evidence should assist in decision-making. Evidence-based management can add tools to the decisionmaker's toolbox. However, there are times when decision-makers should think out of the toolbox. Managers and those analyzing organizations should not ignore the brain's "System 1" (automatic, holistic) way of thinking. This does not mean that the evidence should be ignored. Both Systems 1 and 2 are useful. A look at a list of 10 "environmental, social and governance" indicators suggests areas where data, evidence, should be obtained and considered. However, this list also suggests that each should also be evaluated qualitatively and searching for the best available scientific evidence. The list illustrates climate change, natural resources, pollution and waste, environmental opportunities, human capital, product liability, shareholder opposition, social opportunities, corporate governance, corporate behavior. The article which contains this list criticizes that "the metrics used" here and by implication, most such lists, "almost completely ignore" key qualitative aspects (Lyon et al., 2018). Numbers can definitely help decipher climate change, for example, but the human evaluation is also needed. As Raadschelders (2011, p. 920) states "big questions cannot be answered by means of measurement and quantification alone. After all, we can measure and quantify only that which allows measurement." It is important to think about impact and impact is often hard to measure. When making a decision involving ethics, one needs more than the best available evidence. One needs to consider right and wrong (Hulpke and Fronmueller, 2020).

In one sense the discussion of evidence-based management mirrors a bigger discussion or debate that lies behind many or the points in this essay. A brief review of two overlapping and imprecisely defined world-views may be appropriate. Positivists-objectivistsreductionists see the value of scientific methods and typically quantify where possible, while relativist-interpretivism leans toward humanistic qualitative approaches. Those seeing the world from a positivist-objectivist perspective might well endorse evidence-based management. Adinolfo describes the two sides as "objective/subjective; rational/intuitive; ordered/disordered" (2021, p. 18). Those who stand on the interpretive-relativist-subjectivepostpositivist side may see issues with evidence-based management. These relativist humanists might ask, is evidence-based management really different than the many fads and fashions listed above?

Evidence-based management is being recommended by many as a way or even the way, toward better decisions. We fear an overreliance on this popular framework would miss something, leading to a one-dimensional approach. We do not agree with Rynes and Bartunek (2017, p, 252), who ask for a "moratorium on opinion pieces" about evidence-based management. They want to see empirical studies. It is almost as if they are already convinced of the value of evidence-based management but cannot find evidence to prove

Evidencebased management their support is justified. From our perspective, more empirical studies are a good idea, but researchers should keep in mind points made by Bartunek in a different paper. Bartunek sees "challenges" in material based on.

Positivist epistemology centered on the scientific method [where] findings presented is results of quantitative studies, something I find a bit narrow in scope. Many scholars conduct qualitative studies and there is increasing awareness of the importance of multiple epistemologies in conducting research [...] with the consequence that some particular statistical findings may not seem particularly meaningful (regardless of whether they are statistically or practically significant (2014, p. 102).

Where does this leave us on the question, evidence-based management: what's not to like? Evidence, facts, may help some managers sometimes. A rational approach has advantages. However, decision-makers should be cautious not to overdo this. There are disadvantages to extreme rationality, hyper-rationality. Management is as much an art as it is a science. Baniewicz believes we can benefit from the ideas of evidence-based management but prefers not using the term. Instead, "fact-based sensemaking should be framed as an educator of decision-maker intuition" (2019 p. i). Tourish (2013) suggests the term evidence-based management might be replaced with the term evidence-oriented organizing. Instead of the term evidence-based, Tranfield and colleagues use evidence-informed (Tranfield *et al.*, 2003). Manning and colleagues suggest substituting a new term management-based evidence instead of evidence-based management (Manning *et al.*, 2020).

Evidence-based management is being recommended by many as a way or even the way, toward better decisions. We fear an overreliance on this popular framework would miss something, leading to a one-dimensional approach. The best available evidence is necessary but not sufficient. Even a dual-processing perspective may oversimplify the complexity of human decision-making. In Kahneman's approach System 1 is automatic "thinking without thinking" and System 2 is the rational approach. However, some scholars suggest there may be more. One 2019 paper is titled "head, heart and gut in decision-making" (Soosalu et al., 2019). We observe extensive and growing attention to emotions in decision-making (Cristofaro, 2019; Cristofaro, 2020a; Lerner et al., 2015). Emotions definitely impact decisions. However, neither System 1 nor System 2 fully take into account gut feelings. When a decisionmaker says "I knew in my gut that was what I had to do" this may reflect more than head or heart. Even the popular culture suggests decision-making is complex. The series of Star Wars movies which began in the 1970s had a fictional character named Obi-Wan Kenobi. In one film Kenobi warned "Your eyes can deceive you. Do not trust them" and "let go of your conscious self and act on instinct" (Feichtinger, 2014 p. 39). In an exhibit about Star Wars in the Singapore Art Science Museum in 2021, this Obi-Wan Kenobi quote is posted on a wall, modified as follows: "Your eyes can deceive vou. So can vour feelings."

How things are called, named, sometimes helps add to our understanding. It is interesting that when dual processing decision-making is discussed, most papers now use the system or System 2, not terms used earlier Type 1 and Type 2. The term type might have somehow seemed more restrictive than the word system. Even that newer improved term has been seen as overly restrictive. Evans, an expert in dual-process theories wrote a paper, which included the word "Type 2" in the title. Then inside that paper Evans used slightly different terms and stated whey he found neither term sufficiently robust to convey the ideas:

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Multiple type 2 systems (bold font title case in original)

I stated earlier that the main reason I have stopped using the terms systems 1 and 2 is that there is clearly a multiplicity of systems underlying autonomous type 1 processes. [...] If type 1 is a category of processes then why should type 2 not be as well? [...] each type 2 system can be thought of as an ad hoc committee [...] [here Evans cited Mercier and Sperber, 2017] (Evans, 2019 pp. 396–397).

It may be generally agreed that facts, the best available evidence, are useful, even necessary. However, after reading this essay, after hearing multiple opinions, many will agree that evidence, facts, are not sufficient. What may be a bit harder to adopt or agree upon is the idea that emotions and opinions are also a necessary part of the process and that even dual processing ideas oversimplify human decision-making.

Fortunately, humans have definite cognitive flexibility, which brain scientists are learning more and more about (Hodgkinson, 2002; Laureiro-Martínez and Brusoni, 2018). Both neurologists and psychologists now have technology enabling us to better understand how affect works (Miras and le Roux, 2013). As time passes we will learn more about the myriad of ways different feelings, including anger and resolve, relate to decision-making. It appears that in addition to cognitive flexibility humans also possess emotional and affective flexibility. We are learning that decisions use a galaxy of approaches, with both cognitive and affective flexibility. The dual processing metaphor is better than a no-facts approach or even a (potentially hyper-rational) evidence-based approach. Varga and Hamburger (2014) use the term "third way." Cognitive flexibility plus affective flexibility suggests humans have a multimodal decision-making capability.

Consider again the case mentioned above where evidence-based management was a success. The successful changes to the Fast Track system in XYZ Hospital would not have happened without the guidance, the belief, the leadership skills, of Dr Clancy. Dr Clancy gathered and did a systematic analysis of the best available evidence. And then, according to Dr Clancy, "there's still a little bit of intuitive filling-in of the blanks" (Wright *et al.*, 2016, p. 170).

Supporters say "evidence-based management is *organizational* (italics in original) not managerialism" (Rousseau, 2020, p. 415). However, in the final analysis, decisions are made by individuals. If the goal is better organizational decision-making, one must still look to individual decision-makers. However, individuals are not the focal point of evidence-based management, with its six steps and four sources of evidence, etc. Effective decision-makers see in all directions and sense more than the eye sees, much like a chameleon (Remenyi *et al.*, 2005). Evidence-based management begins with a fundamentally incomplete and we believe the incorrect notion that management should follow principles of rationality, should see the world from a positivist-objectivist-rational perspective. It is correct that decision-makers should gather and use evidence. However, it would be a mistake to give more credit to evidence-based management than is due. It would be a mistake to use only System 2 when making decisions. As quoted above, "The intuitive mind is a sacred gift and the rational mind is a faithful servant." Evidence-based management might lead decision-makers to honor the servant and forget the gift.

4. Limitations and recommendations

This essay is written in English. One author's first language was not English but uses English in daily and academic life. This paper, if translated into another language such as Chinese and later back-translated into English might yield different meanings. To put it into affective terms, the feel might be different. Even a simple starting dichotomy, rational versus emotional and presents issues. The opposite of rational is in English sometimes thought of as irrational. The goal of dual-processing theories or of our essay is not to Evidencebased management encourage decision-makers to be irrational. How Systems 1 and 2 or heart and mind, may fit together is worth contemplating, feeling. If "chi" is a strength inherent in the world, if one needs to adopt yoga-like approaches to understand anything, might this also apply to decision-making? Some might see contradictions between, for example, evidence-based management and intuition-aided decision-making, perhaps, it is worth relooking at the yin-yang idea embraced in many Eastern cultures. Two sides may be different, even appear contradictory, yet when considered together simultaneously may provide solutions where the sum is greater than the combination of the parts. These points are not merely about semantics. It may be that a yin-yang approach might lead to a qualitatively different way of looking at decision-making. This essay is in English, based totally on English language sources. This is a limitation of the essay.

5. Concluding thoughts

We return again to the questions posed in the introduction to this essay. Regarding evidence-based management, what's not to like? We say that evidence-based management is sometimes over-sold and may be a fad. Additionally, evidence-based management fails to fully recognize the importance of tacit knowledge, factors, which cannot easily be translated into evidence and what Kahneman calls System 1.

When *organizations* make decisions these depend on *individuals* making decisions. Many now study the human brain. There are numerous respected journals such as *brain research*, *cognitive brain research* and *frontiers in behavioral neuroscience*. Each issue contains significant information. In the same sense that the number of stars visible with the human eye exploded exponentially because of technology, new techniques are enabling scientists to learn more and more about connections between and characteristics of components of the brain. For example, emotions and what may have traditionally been labeled intuition are not exclusively right brain. These processing and handling systems of the brain can now be studied and sometimes even seen.

The scientific community should continue to investigate how Dr Clancy happened to have "a little bit of intuition." There is really no need to know exact neurological processes any more than we need to know exactly how any stars there are. It was a step in the right direction to learn that there were many more than 5,000 stars. Evidence-based management suggests obtaining the best available scientific evidence and using the tools in the evidence-based management toolbox. Having the best available evidence can be useful but this is absolutely not enough. It will be a step in the right direction to acknowledge that effective decision-makers both assess *and reflect*. As more and more people realize this, the attention to evidence-based management is likely to lessen. Evidence-based management may fade away, like the fads in the list above.

For additional perspectives, we recommend the *Stanovich and West* (2000) paper shown in this list above. Appended to that paper are 39 commentaries from experts on this topic.

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Dr Michael P. Fronmueller received his PhD in Strategy from Washington State University and has had a distinguished career as a faculty member and administrator at several universities, most recently at University of Wisconsin, River Falls. Fronmueller's questions about evidence-based management stem from his consulting work and participation in dozens of AACSB accreditation visits. As Fronmueller says, "The really good leaders don't lead this way, checklist after checklist. Management is as much an art as it is a science. We should acknowledge that as we teach."

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