Dedicated to the vast majority moral HR professionals of integrity, so that they can make more evidence-based decisions.

If you do not agree with some chapters or paragraphs, follow the advice of the ancient Greek skeptics, who urged us to suspend our judgment and not give in to the anger or the initial indignation we may feel.

"At the heart of science is an essential balance between two seemingly contradictory attitudes – an openness to new ideas, no matter how bizarre or counterintuitive they may be, and the most ruthless skeptical scrutiny of all ideas, old and new. This is how deep truths are winnowed from deep nonsense."

Carl Sagan, 1995

"Keep an open mind, but not so open that your brains fall out."

Popular skeptic maxim, probably first used by Walter M. Kotschnig in 1939[1]

"A wise man, therefore, proportions his belief to the evidence."

David Hume, 1748

"I want to talk about your mindset. Does your mindset correspond to my dataset? If not, one or the other needs upgrading, isn't it?"

Hans Rosling, TED talk on August 9, 2009 at the United States State Department

[1] With my usual drive for perfectionism, you can read the slightly different handwritten text on this blog: http://www.skeptic.com/insight/open-mind-brains-fall-out-maxim-adage-aphorism/

■ Preface – why a skeptical attitude towards HR is a must

I must admit, I am a skeptic and a lover of science. Let me explain how that will affect the tone of this book. First of all, a skeptic is not someone who is merely being skeptical in the traditional sense of the word. Traditionally speaking, skeptical people are *"inclined not to believe; in the habit of questioning the truth of claims, statements etc"* (Hornby, 1974, p. 759). Some people mistakenly consider skeptics to be distrusting of other people or to have a highly negative view of the world and other people. However, I am sympathetic towards this point of view as, after all, one of the nastiest features of humankind is our capacity to mislead our fellow human beings. So, let me first explain why I have sympathy for them, and then I shall give the academic definition of skepticism and explain my passion for skepticism and science.

We are social animals. And like all other social species, we have the seemingly conflicting motives of competition (getting ahead, striving for a good place in the social hierarchy) and collaboration (getting along, being a respected group member). Primates have huge brains compared to other mammals, and apes are known to use their brain power to mislead their fellow species. Just ask primatologists like Frans de Waal. A chimpanzee will typically mislead his community members by gazing in a certain direction to arouse their curiosity and incite them to search in the wrong place, so (s)he can get at food first. At least in the primate world, humans are the champions in misleading other members of our own species. Some scientists believe that only a small portion of the human population *tries* to be 100% honest (e.g. Ariely, 2012; Trivers, 2011). It seems that creative people are better at lying, for example. Some lie their way to the top of the social ladder.

We only need look at some anecdotal events of the last few decades to realize this unavoidable, inconvenient truth. Take Bernard 'Bernie' Madoff, for example, who set up a huge Ponzi[2] scheme, devastating the lives of thousands of investors. The prosecutors estimated the size of the fraud to be worth about 65 billion U.S. dollars, which ultimately resulted in his being sentenced to 150 years in prison. U.S.-based Enron executives have been jailed for setting up a fraud system by creating a power blackout that increased the demand for electric power, thus raising the stock price and their own income. Germany-based Volkswagen has used software to mislead the whole automotive industry, seemingly not caring about our environment or our health. Former U.S. president George W. Bush and his administration lied about the weapons of mass destruction in Iraq that allegedly threatened the world. U.S. company Fannie Mae,[3] featured in the book *Good to Great*, was a reseller of mortgages on the secondary market and, when home prices fell in 2006, it almost single-handedly caused the subprime mortgage crisis in the financial world, very nearly causing the financial system to collapse and making some banks go bankrupt. Much lauded former General Electric CEO and guru Jack Welch has been condemned by the U.S. SEC (Securities and Exchange Commission) for disclosure failures in connection with his benefits under his employment and retirement agreement.[4] Top Catholic Church officials have finally admitted they covered for and protected priests who sexually abused children.

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[2] Charles Ponzi became notorious for setting up a system where returns for early investors were 'generated' by collecting money from new investors. Most of the time, the short-term returns offered by the fraudsters are higher than what the market offers.

[3] Fannie Mae is the Federal National Mortgage Association, a former government-sponsored enterprise. The biggest issue that caused trouble was their use of 'derivatives' to hedge the interest-rate risk of their portfolios. A second issue was that U.S. laws did not require them to offset the size of their portfolio with enough capital. *Good to Great* is a book by Jim Collins that I consider to be entirely flawed due to poor research methodology (halo effects). It featured Fannie Mae as one of the great companies.

[4] https://www.sec.gov/news/press/2004-135.htm.

On the academic side of things, between 1977 and 2012, more than 1,300 articles published in top biomedical science magazines were retracted, of which almost 70% was due to downright fraud. As of 2007, the number of retracted articles due to fraud has increased enormously (Fang, 2012). This sometimes comes at a high price and has severe moral consequences. Consider the case of former British gastroenterologist Andrew Wakefield, who managed to get an article published in the *Lancet* (in 1998) that was entirely incorrect, but was only retracted in 2010. He had falsely claimed that vaccines for measles, mumps, and rubella led to autism and bowel disease. His publication led to an *anti-vax* movement which caused an outbreak of those diseases in the UK from 2005–2013. He was found guilty several times over for his fraudulent actions and was struck off the UK medical register on May 24, 2010. This case caused so much damage that the World Health Organization even issued a *Best practice guidance* (2016) to *"respond to vocal vaccine deniers in public."*
In the field of psychology research, a recent, famous case involved Dutch social psychologist Diederik Stapel, who fabricated entire datasets, resulting in the retraction of *all* the articles he authored or co-authored. Fancy article titles such as 'eating red meat makes you act more aggressively' were the basis of his publication success. He now makes a living writing apologetic stories about why 'the system' made him corrupt (Stapel, 2012).

Psychology is still in its infancy as a science and is often ridiculed by 'hard' scientists such as physicists and biologists. I think this ridicule is well deserved. The field hardly makes any effort to get rid of old and refuted theories. It allows *professors* to continue spreading bullshit[5] under the false pretext of academic freedom. Even many psychology textbooks repeat these myths (e.g. Ferguson et al., 2016). Most of the outcomes found in the 'first study' cannot be replicated, or magazines are not interested in publishing replication studies. The *Open Science Collaboration* attempted to replicate 100 psychology studies: over 50% of studies published in prestigious journals like the *Journal of Personality and Social Psychology (JPSP) and Psychological Science* did not produce the same strength or even direction of effects. Money is spent on ridiculous research topics that afterwards turn out to lack any grounds, such as the power pose (for women), the idea that priming (young) people with elderly-related words makes them walk slower, whether cleanliness influences your moral judgment, whether self-control ('ego-depletion') really fails when you are tired, whether experiencing physical warmth (e.g. holding a cup of warm coffee) promotes interpersonal warmth, whether applying eyeliner leads to weight loss, whether brain scans can now reveal if you are the right candidate for a job, etc.[6]
Questionable research practices also exist, like writing up hypotheses after data collection, manipulating data until they reach 'statistical significance' (p-hacking), using too small sample sizes but still reporting effect sizes as if they were proven, nonrandom sampling, nonrandom assignment, overrepresentation and generalization of results that reach low standards of 'statistical significance,' outcomes found in small laboratory experiments (with a limited number of students as a target group) that disappear if the experiments are run in the real world, etc. Even top journals are not free from these problems. A recent study used a new statistical package (R package statcheck) to perform a validity check on the p-values reported in eight top psychology journals from 1985–2013 (Nuijten et al., 2016). They found that 70 of the 775 results reported in these journals were inconsistent and 17 results were grossly inconsistent, thereby confirming the results of an earlier (manual) study (Wicherts et al., 2011). This can have serious consequences since having a significant *'real*

[5] If you think this is inappropriate language, think again. In 1986 Harry Frankfurt of Princeton University even published a book titled *On Bullshit*. It has been reprinted many times. In 2015, Harvard Professor Jeffrey Pfeffer published a book titled *Leadership BS: Fixing Workplaces and Careers One Truth at a Time*.

[6] In Part V, Chapter 1 on evolutionary psychology, I have added several references of papers reporting on failed replications (see 'Original sources consulted').

life' effect or not can influence important decisions, for example with regards to treatment. Having a conflict of interest is also a huge problem as one recent study indicated: 30% of the effect sizes of a given form of psychotherapy were found to be larger by almost 30% when the allegiant therapist[7] had participated in the respective Randomized Control Trial (RCT) (Dragioti et al., 2015).[8]

The field produces a grab bag of findings, resulting in dustbowl empiricism and rainforest empiricism—a bad case of finding correlations where in reality there aren't any, let alone would they be able to explain anything—such as causal effects. Without good theorizing and hypothesis testing, the content of the articles is hardly better than the made-up stuff you read in the tabloids. As if this were not enough, questionable publishing practices are also at play. Most magazines refuse replication studies, refuse research outcomes with null findings (though these are equally important), and present a bias towards immediately newsworthy or novel findings. Most of them also refuse to solve problems, even if solutions like preregistration of trials or the obligation of data sharing have been proposed. So yes, I do have sympathy for those people that are not very trusting of other people. They have good reasons to mistrust. And you need to be even more mistrusting when it comes to HR. It is the weaker sibling of the field of psychology, often relying (loosely) on results produced in psychological research. Organizational and Industrial (I/O) Psychology should produce the knowledge that underpins HR practices. But while the psychological field finds it difficult to get rid of outdated and flat-out wrong theories like psychoanalysis, HR has even more problems as it seems to embrace almost any fringe theory. That's why all employees and executives need to be vigilant. HR seems to attract all kinds of people with different educational backgrounds, but particularly the credulous, the romantics and the idealists (I will call them *Platonic Idealists* later).

It is important to understand that skeptics are not merely people with a skeptical attitude, also called cynics. As Michael Shermer wrote: *"Skepticism is a provisional approach to claims. Skepticism is a method, not a position"* (1997, p. 8). Skepticism comes from the Greek word 'skeptomai' which means thinking and critical appraisal. Its tradition is often attributed to Plato, an ancient Greek philosopher. The approach is using scientific methods. I will explain these methods in more detail later, but for now suffice it to say that **science is designed and is still being refined to avoid misconceptions, prejudices, and reasoning errors, and to counter weird beliefs and biases**, and so on. We can't always trust our brain; it is a survival machine, not a truth-seeking device. Although certainly not without its flaws (it is after all still a human endeavor), the scientific methods are the best way for learning the most about the objective truth and, as I will argue, it lies at the heart of our ever-increasing moral sense, expanding the principle of doing no harm to future generations and our fellow species, other animals. And yes, I still love to read psychological articles, albeit I am more selective, and mainly turn to the champions league of science-based, evidence-based psychology researchers. For this reason, I have not tried to stop my daughters from studying psychology as well. But I hope they will develop a strong set of critical appraisal skills. They will need it.

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[7] Experimenter's or investigator's allegiance is defined as a personal confidence in the superiority of a specific psychotherapy treatment. James Coyne (2016) cited a 2014 version of this study and reported that 69% of the effect size was explained by investigator's allegiance.

[8] This was true for all psychotherapies, except for Cognitive Behavioral Therapy, where the noted effect was statistically not significant. Therapy methods that include psychoanalytical informed therapies (psychodynamic) and family systems therapy had even greater inflation effects caused by experimenter's allegiance.

I have received conflicting advice on how to write this book. Some have said I should write in a neutral tone, as academics strive to do. In their opinion, my message would be better digestible for managers who wish to be perceived as rational and objective (or cold-hearted). Others have said I should try to use the bantering tone of my first, Dutch-language book *The HR-balloon* (2006) because it makes reading more enjoyable. That is my personal preference, though I believe there are people out there who are far funnier than I am. I love the witty style of science writers like Ben Goldacre or Dan Ariely.[9] So I have had to mix styles a little bit. My chapter on the moral aspects of using scientific models and questionnaires as the basis for HR policy hardly lends itself to humor. The chapters on the myths, however, lend themselves perfectly to a slightly more cruel sense of humor. After all, some ideas behind some of the myths are truly ridiculous.

But if I have one modest request—it is that you read the rather humorless chapter on why it is morally important to use the 'good stuff' and not the 'wrong stuff.' I promise I make it up to you in the myth-busting section. Do read them, even if you can't resist the temptation to take a quick glance at the executive summaries or 'the curious case of' sections in the myth debunking chapters. I understand—I would probably do the same. So why is it so important to read this chapter on morality? **Only if you read the chapter on the moral aspects will you come to a full understanding as to why it is truly necessary to use scientifically sound models and methods.** Since 2014, I have been experimenting on how I could get my message to *stick* better. From 2010 to 2014, I experimented with a more neutral, academic, rational style. But people told me the message did not come across very well. People remained pretty much indifferent and happily continued to use HR bullshit, regardless of the nasty consequences of such practices. So, I tried an approach as evidenced in the charismatic leadership literature. Transformational and charismatic leaders appeal to emotions too. They criticize the old situation, prudently and gradually at first, slowly insisting ever more intensely as they become a more accepted group leader. The Obama pre-election campaign (2004–2008) for the United States presidency was very inspiring in this way. So I decided to play that card for a while.

A personal experience drove me to the decision to join the Belgian branch (SKEPP.be) of the worldwide skeptical movement. It was my family struggle with mental illness that made me fully realize how dangerous pseudoscience and quackery can be. My sister-in-law suffered from schizophrenia for many years. As if this were not enough, she was plagued by vulture-like charlatans who tried to convince her that the 'classical' drugs were bad for her and were *making* her sick. One such charlatan managed to convince her, telling her to stop her medication and instead take Bach-blossom therapy to cure her. It cost her 20% of her monthly allowance.[10] The lack of medication eventually made her sicker and ever more desperate. She tried to commit suicide on several occasions during a period of more than 5 years. Although she finally got rid of the charlatan with the help of a family lawyer, she continued to struggle with accepting her need for medication. She was only 36 when she decided to lie down on the railway tracks on the day she had to go back to the hospital to get her 3-monthly injection with regular medication.

This traumatic period for my wife and my in-laws made me join the skeptic movement as a way to inform people and help protect weak, vulnerable, uninformed, and credulous people. To my regret, that was not my only negative experience with quacks or unprofessional people. We also struggled to find a decent psychiatrist to treat a family member for sudden outbursts of psychotic depression, a symptom caused by a biological malfunction. It almost cost her

[9] Although it is not always a guarantee that they do good research. Ariely's findings of 'moral nudging' for example, could not be replicated in a joint research effort by 25 labs, encompassing 4,674 participants (Verschuere et al., submitted for publication).

[10] A government benefit for the disabled.

her life, and thanks to the help of some professors, we found science-based psychiatrists who were able to help her with Electro-Convulsion Therapy (ECT). To my regret, on several occasions in my private life I have witnessed how damaging quackery and pseudoscience can be. And how difficult it is to find true professionals.

But I also have witnessed in my professional life how damaging pseudoscience can be to people. People have been fired based on incorrect questionnaires. People have been denied access to better-paid jobs because of improper recruitment practices. People have suffered from blatantly foolish assessment centers. Some lost their jobs and fell into deep depressions.

I can't remain a bystander. I have to say this and write it down. You may occasionally notice that anger sometimes manages to hold of me. I try to turn it into humor, though sometimes it is sharp. But if you are as deeply morally involved as I am, humor is the only salvation. I have to admit it is a hard to strike the right balance: If I use too much humor and self-condescension when perspective-taking, it may come across as if it is not worth doing something about it. If I am too serious, the issue becomes dull and people might be put off. If I am too cynical, it will put those people off even more, as well as people who are uninformed or still unsure, whom I could possibly win over by using the right tone. But as people have so many (ego) defense mechanisms, I can never be as successful as I wish I could be. I have no illusions about that.

So that's why I ask your forgiveness, as I might not always strike the right tone you wished for.

And that is why I repeat my warning from the initial pages:

> *"The author warns the potential reader that parts of this book are written in a bantering and teasing style which could offend some readers. It is recommended that you not read the book if you feel this is in any respect insufferable."*

Oh yes, and one more thing. The chapters on debunking the myths are quite lengthy. The main reason for this is quite simple: *"The amount of energy necessary to refute bullshit is an order of magnitude bigger than to produce it"* (credited to Alberto Brandolini, Twitter, January 11, 2013). The second simple reason is that if I don't do my job thoroughly, I might be sued by people who don't wish to participate in an academic debate, but prefer to resort to a judge instead. I have experienced this twice, but to my pleasure, I won both cases.

Enjoy the book —don't be a bystander, join my cause.

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