

‘Breaking’ the Magician’s Code: The Problem with Exposure Rules

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This manuscript is reprinted from *VANISH Magazine*.

As the director of the [MAGIC Lab](#), at Goldsmiths University of London, I oversee projects that combine psychological research methods with performance magic. For instance, we study misdirection and forcing to learn more about consciousness and free will. We also seek to apply many of these principles to non-magical contexts. For example, we are currently exploring ways of implementing forcing principles in computer games, and we are even ‘teaching’ artificial agents magic deception, as part of a project to develop new cyber security technologies. By mixing magic tricks with science, we aim to uncover the secrets of the human mind (see [Experiencing the Impossible \[1\]](#)).

The Science of Magic has now become a research area in its own right, and its principles are helping advance science, technology and wellbeing. It might seem like a paradox, but, science and magic complement each other nicely. Magic provides unique insights into ways that the human mind can be deceived, and science can help reveal the psychological mechanisms that underpin these deceptions. Magic and science do however have rather different views on outward transparency. The world of magic shrouds itself in secrecy and deception, whilst science strives towards openness and clarity. I am a scientist and a magician, which means I have had to learn to straddle a fine line between secrecy and honesty – or at least that’s what I thought I was doing.

I joined the Magic Circle more than 25 years ago, and I have lectured there on several occasions, talking about how science can enhance the art of magic. A few years ago, several fellow members of the Magic Circle accused me of exposing magic secrets to the general public, which resulted in a formal investigation by the Magic Circle’s Exposure Committee. Moreover, it resulted in a truly heated, and often hostile argument on social media. The Exposure Committee ultimately concluded that I was indeed guilty of exposing magic secrets, and that I should be publicly shamed. The ‘secret’ that I exposed? I acknowledged, to non-magicians, that magicians *sometimes use misdirection*

manipulate what you see and fail to see. As part of my scientific work and public engagement activities, I often explain how we use eye tracking and other scientific tools to investigate misdirection in the laboratory (see [Royal Institute talk](#)). Wellcome Collection in London put on an exhibition that examined the link between magic and psychology and it prominently featured some of the scientific work conducted by myself and my colleagues. In one of the pieces, (part of a recorded exhibit) I spoke about how misdirection can be used to prevent people from seeing things that are happening right in front of your eyes. The Smoke and Mirrors exhibition attracted nearly 180’000 visitors, and our goal was to give viewers a deeper understanding of magic and the important role that magicians have played in areas beyond entertainment.

I have been performing magic for most of my life, and I have been fortunate to have been mentored by some of the world’s best magicians (Jim Cellini). I have a deep respect and passion for magic, and I’m certainly not out to loot the art of magic for scientific prestige. I genuinely believe that enhancing the public interest in the mechanisms that underpin magic is a good thing, something that will lead to a greater appreciation the art. A short survey we conducted during the



Figure 1. The Wellcome Collection “Smoke and Mirrors” exhibition.

exhibit provides some empirical support for these beliefs. We surveyed a sample of nearly 400 visitors during the exhibition. For the vast majority of the people questioned reported that the exhibit had increased their interest in magic and respect for magicians. Only 2% felt that learning about the psychological principles that underpins magic had a negative impact on their perception of magic. Some magicians (who presumably did not conduct any surveys of their own) took great offence at the exhibition. These magicians believe that magic secrets are so valuable that we should never reveal them to the outside world under any circumstances. Furthermore, their definition of 'secrets' proved to be alarmingly broad.

I was both puzzled and amazed by some of the negative backlash. As a magician myself, I am very aware of the taboo of gratuitously exposing magic 'secrets.' But I was shocked that some magicians would extend this idea to encompass the act of publicly discussing some of the scientific principles that we are studying. For them, even the act of acknowledging that magicians can manipulate the way an audience looks at a scene was tantamount to 'exposure' of a secret of magic. But then again, exposure is one of the most contentious issues within the magic world, and the Magic Circle in particular. Back in 1936, David Devant, the founding president of the Magic Circle, was asked to resign from the organization for exposing secrets [2]. The twist was that Devant had been exposing the secrets to tricks of his own invention. At the time of his censure by the Magic Circle, the aging Devant, who was suffering from Parkinsons, was living out his last days at Putney Home for the Incurables. He simply wanted to share some of his work with the world before he passed away. The Magic Circle later regretted this decision, Devant's membership was quietly reinstated before his death, and they have now named one of their rooms in their headquarters and award after him. Although some rules have been liberalised since Devant's time (selling your own secrets in books is now 'permitted'), exposure remains one of the most contentious issues in many magic societies.

Having become embroiled in my very own contemporary exposure debate, I was inspired to take a closer look at this supposedly sacred rule. At first glance it might seem simple to prohibit magicians from exposing their secrets to the public. However, I have learnt that exposure is an emotive and complex issue, and the closer I look, the less sense it makes. The last few decades have seen a dramatic revolution in how we

access and share information, and I think it's time to re-examine the value of the exposure rule.

1. Exposure for cheap thrills

Let us start by examining the least controversial form of exposure – exposure for the sake of exposure, usually with the intent of self-promotion. In some cases, magicians have sought attention by crudely exposing magic tricks on TV or online. The online craze for likes and followers has driven people to expose pretty much any magic secret online. If you Google a particular magic performance, a link claiming to expose the method often pops up before the original performance. And, of course, we all love to hate the *Masked Magician*. Let me be clear - I do not defend this type of exposure. Exposing magic tricks to simply attract attention seems wrong, especially if it exposes individual magicians and potentially affects their livelihood (e.g. preventing a magician from performing a signature illusion). This is wrong in the same way that any public action that negatively impacts another performer is wrong. That said, let us be clear that exposing a magic trick is not a moral issue on par with leaking state secrets, a point previously made by Jamey Ian Swiss [3]. Revealing magic secrets can be intellectually lazy and aesthetically crude, but the only genuine moral issues with magic secrets concern the theft of material, or in the case of exposure, the impact that this may have on fellow magicians.

When I first heard about the Masked Magician back in the 1990's, and I naively feared that his actions would bring about the end of magic. To me, as a young performer, it seemed as if he was gratuitously exposing the secrets behind many of our classic illusions, and clearly did not respect for the art of magic. Looking back on the 'performances' now, I still really don't like the show, but I doubt that the exposure caused much actual harm. I would argue that his casually misogynistic demeanour was more offensive than exposure of secret methods. If these kinds of exposures are really so detrimental to magic, how can magic survive in a world where all of its secrets are shared online? If exposure truly damages magic, I would expect to see a negative correlation between ease of discovering the secret and people's enjoyment for magic – the current popularity of magic suggests otherwise.

This form of exposure is ethically dubious, but it may actually have very little long-term impact on the public perception of magic. Any lay person who discovers a

specific method, in a specific context, will struggle to generalize this knowledge to a new situation. For example, people may know about the use of thumb tips to vanish a silk handkerchief and yet they will struggle to extrapolate this knowledge to switching billets/notes or to making fluids disappear. Most kids' magic kits have a version of the cups and balls in their magic sets, accompanied by detailed instructions. Many magicians, myself included, still frequently perform the cups and balls, and I would be very surprised to hear that anyone's experience of the routine was spoiled by a childhood magic set. Decades of psychological research on functional fixedness has shown that people struggle to generalize knowledge to different contexts [4], and I feel the same is true for magic secrets that are publicly exposed. Most people will simply forget about it (they don't really care that much about it anyway), and those who do remember it won't necessarily be able to extrapolate it to a performance in a different context.

2. Exposure and debunking

Having considered an ethically dubious form of exposure, let us move to a form of exposure that I feel is more palatable – exposing individuals who do not admit they are using magic tricks. Magicians are typically honest about the fact that their seemingly impossible feats are not what they appear to be. But deception is a tool that can be used for both entertainment and for more predatory purposes. Others have used similar tricks to exploit vulnerable individuals. For example, mentalism techniques (e.g. cold reading) are often used by psychics, who charge vulnerable people to contact their dead relatives. Since the early days of spiritualism, magicians have played an important role in debunking fraudulent mediums [5]. Prominent performers like Harry Houdini and James Randi have publicly exposed charlatans who claimed to have real supernatural powers [[Popoff and his earpiece](#)]. This form of exposure is (generally) embraced more positively and accepted by the magic community. Maskelyne often included psychic debunking routines in his theatre [6]. He also testified as an expert witness in prosecutions of mediums for criminal fraud, and he helped establish an Occult Investigative Committee within the Magic Circle (the committee still exists today, although it has since been rebranded as the *Paranormal Investigation Committee*).

Fraudsters who use magic tricks to pretend they have skills or gifts in order to exploit innocent individuals

are clearly wrong, and, consequently, I feel it is ethically right to expose them. This type of deception causes immeasurable damage to individuals and society more generally. Surely the magic community has an ethical responsibility to enlighten the public about this form of malpractice. Even though the Magic Circle still has a dedicated Paranormal Investigation Committee, its members are discouraged from exposing magic methods used by mediums. Indeed, when questioned, the Exposure Committee told me that "In the case of "mediums" and psychics we would encourage alerting the public to the fact that they are not actually exercising genuine supernatural powers, but we would again shy away from revealing specific methods because the same methods are also used by magicians and mentalists." Likewise, when I asked whether it was acceptable to publicly expose individuals who claim to be using scientifically dubious or outright fraudulent "psychological" techniques such as Neuro-linguistic Programming, or those who use magic tricks to claim they could put members of the audience under an instant trance, I was told to avoid exposing the 'magic' secret.

Mentalists often use disclaimers which explicitly inform the audience that they are using tricks, which means they avoid explicitly misinforming the public. Many performers who wish to avoid spreading fraudulent claims about their own work simply label their feats as being 'tricks.' It seems that the Magic Circle's advice is that we should simply apply similar disclaimers to the work of charlatans. The idea that anyone might mistake a trick with genuine evidence represents a fascinating problem for psychological researchers. In the MAGIC lab, we have spent nearly 10 years studying the impact that different types of disclaimers have on people's willingness to accept that they have witnessed genuine paranormal phenomena, (e.g. ability to read minds and contact dead people) and our experiments have yielded some surprising results [7]. In short, our research shows that simple disclaimers have very little impact on people's beliefs. Meaning that even though simple disclaimers might make performers *feel* like they're taking an ethical stand, they might have very little real influence on audiences. We have tested thousands of people on experiments in which we use magic trick methods to create fake psychic readings. We combine a range of techniques, including electronic devices (e.g. an iCube), cold reading and stooges to give the illusion that our 'psychic' medium has genuine supernatural powers. We perform these types of demonstrations in

front of large groups of volunteers and we use questionnaires to measure people's beliefs about the demonstrations. Two findings are particularly poignant. Firstly, a large proportion of our participants express the belief that the demonstrations are genuine. Secondly, simply telling people that they are watching a magician performing magic tricks, rather than a real psychic performing a genuine supernormal feat, has virtually no impact on their reported beliefs. In some of these experiments, we explicitly told our participants that the person they were about to see was a magician who used tricks and deception (without actually exposing the specific methods), and yet, after they saw the magician 'read' a person's mind, many of them still claimed to have witnessed a real psychic event. In one of our most recent studies, we showed that even when we explicitly told participants they were seeing a magician who uses tricks, those same participants still reported increased beliefs in paranormal phenomena after watching our magician's 'mind reading' demonstration.

The types of disclaimers usually used by magicians (e.g. I don't have real supernatural powers) are arguably much weaker than the ones we used in our experiments. This leads me to doubt that such simple disclaimers have much of an effect on what people believe to be true or not. Anecdotally, I know from personal experience, as well as talking to other mentalists, that members of the audience often mistake explicitly fake mind reading demonstrations that are performed as for genuine paranormal demonstrations. Indeed, much of the psychological research shows that people often struggle to distinguish fact from fiction, which is why fake news and other forms of misinformation can have a psychological impact despite knowing that the information is false [7]. Our most recent research shows that the surest way of avoiding false beliefs is to move beyond simple disclaimers and actually expose the real methods behind the tricks.

The scientific research on misinformation presents a difficult dilemma. I personally feel that magicians have an ethical obligation to prevent people from exploiting magic trick methods outside of entertainment contexts. Magicians can play an important role in protecting the public from fraudulent scientific claims, and history illustrates that magicians are often better equipped at exposing fraudulent mediums and psychics than scientists are. However, it's possible that the best way of countering this type of misinformation is to expose the methods the tricks that are being

used. The problem of course is that many of these methods are used by magicians which means you are exposing more general magic principles. I have no answer to the dilemma, but as a scientist I am obliged to point out the difficulty in maintaining the moral high ground in maintaining a magic society does its best to protect the public from flatulent supernatural claims.

3. Exposure as part of the performance

At this point, I would like to address magicians who oppose any and all exposure on moral grounds: Take a moment to think about the last time you exposed a magic 'secret.' Once you start looking at the issue of exposure more critically (especially if your definition of secrets is very broad), you soon realize that it forms part of our daily magic routines. Most of us expose magic secrets in the context of our performances, and these exposures happen so naturally that we barely notice them. Let us therefore take a closer look at what it means to expose a magic secret, by starting with a classic effect that explicitly exposes its method.

Slydini's 'Flight of the Paper Balls' ([link](#)) is a wonderful performance piece, in which one audience member experiences truly magical effect (physical objects inexplicably vanish from existence), while at the same time, the rest of the spectators are being exposed to the 'secret' method (the magician is simply tossing the balls over the audience members head while misdirecting their attention). This routine clearly exposes magic methods, and yet it is not considered to represent a violation of any exposure rule. I struggle to understand the difference between me informing the public that magicians use misdirection to prevent people from seeing a lighter visibly drop into my lap and the paper balls over the head. Both rely on attentional misdirection and involve a specific choreography that is not usually used by magicians, yet the general principles are widely employed in other contexts. Nonetheless, my lighter trick was officially deemed a violation the exposure rule. This brings us to one of the central problems with forbidding magicians from exposing secret method – what exactly is the secret method, and what secrets can be exposed?

Magic relies on people experiencing a magical effect without realizing the true method that caused the effect. For example, the magician might use a false transfer to vanish a ball, in which case the secret method refers to the false transfer. If the magician

tells people that they are using a false transfer, they are exposing *the* true secret method (e.g. [Dai Vernon cups and balls routine](#)). But there are of course other plausible non-magical causes to the effect (i.e. viable methods that happen to have not been used in this instance). The coin could have gone up the magician's sleeve, or maybe the coin was made of a special material that can become transparent. The magician performing the trick is fully aware of the true secret method deployed, but, from the audience's perspective, exposing *any* plausible method has the same impact as exposing the true method. Any plausible, yet 'unmagical' method will destroy the effect, and Juan Tamariz explains this much more eloquently in *The Magic Way* [8].

If we are serious about forbidding magicians from exposing magic secrets, we would need to ban them from mentioning these types of principles as part of their performance. And yet, magicians frequently present their audience with plausible yet non-implemented magic techniques. Any sucker trick by definition exposes a secret magic method. For example, you might reveal the principle of palming, or sleeving, and even though this specific principle is not applied in the current context, they are often deployed in other routines. The complexity of these issues makes it practically impossible to describe a simple fair set of internally consistent guidelines. Moreover, there are often good theatrical reasons for manipulating the audience's suspicion by exploring the complexity of explanations ranging from plausible to impossible (see [The Jerx](#)).

There are lots of "*non-sucker trick*" contexts in which we expose secrets that are rarely considered as exposure. For example, Derren Brown often preforms tricks in which the audience is convinced that the effect was carried out using a psychological technique (e.g. priming). Gambling routines are often explained as relying on sleight of hand. Card tricks that are framed as feats of memory. If the observer accepts these explanations as real (and sometimes, in other contexts they *are* real methods), then technically these types of effects would be considered to be exposure.

Defining and identifying secret methods is very difficult, and such definitions may even change with time. Many magicians and magical theorists are well aware of the complexities and Andy, the writer of [The Jerx](#) puts this very nicely in his article on [exposure](#). Imagine a trick in which you ask the spectator to pick a card

after which you spread the cards face-up on the table and take a picture of the spread. You then falsely claim that your phone uses an algorithm to work out the missing card. To everyone's amazement you manage to identify the card. In this case, the computer algorithm was simply a pseudo-explanation, and instead you used a marked deck. Performed like this nobody would accuse you of exposing a magic method, but as Andy points out, things get rather more complicated if methods exist that can do exactly what you claim to be doing. And indeed, there are apps that can perform this task, and as such you are exposing *a* secret method.

It is very difficult to objectively define what you mean by a magic secret, which makes it virtually impossible to have a rule that prevents magicians from exposing them. Just to add to the complication, we often expose magic secrets in contexts where they are not framed as a magic trick and again this seems to be acceptable. For example, it is completely acceptable for me to talk about visual illusions or attentional illusions, such as the 'Invisible Gorilla' [9] as long as I am not framing it as a magic trick. Likewise, Richard Wiseman beautifully merges magic with psychology, and created numerous excellent viral YouTube clips that fool us with clever psychological principles. For example, the [Colour Changing Card Trick](#) exploits change blindness. Change blindness refers to a psychological phenomenon that occurs when people fail to detect seemingly obvious changes to visual scenes. Even if one does not consider the Colour Changing Card Trick to be a 'magic' trick in a traditional sense, the underlying principle of change blindness can be used in magic tricks. Many of his other brilliant YouTube clips expose magical methods, and yet, because they are viewed in a non-magical context, they are typically not considered to represent violations of the exposure rule.

The closer we look at what it means to expose a secret, the harder it becomes to define what it actually means. Rather than simply focusing on exposure per se, it might be more meaningful to look at what impact your actions have on the art of magic more generally.

Before concluding this section, I would also like to present one other form of exposure that will certainly have a negative impact on the art of magic. This final form of exposure, rather ironically, does not technically break the exposure rule. It is the type of exposure that occurs when a magician performs magic poorly and inadvertently expose their secret method. Surely this

form of inadvertent exposure does more harm to magic than revealing the secret in that it gives magic a bad reputation.

4. Why the exposure rule is simply wrong

Victorian magicians often prided themselves on performing illusions with methods so secret that they were known only to the trick's inventor. In those days, publicly proclaiming that you were performing an illusion based on a novel secret method was a common practice—a standard way of drumming up publicity. Today, the answers to most secrets are only a few clicks away. Given the demonstrated inability of powerful governments to prevent even state secrets from being leaked to the public, how long can a new magic method really remain truly secret? Let's face it, if you really want to know how a trick is done, you can usually discover the secret online within minutes.

Secrets are an important aspect of magic, and people seem to like the idea that magicians actively prevent the public from discovering them. We are fascinated by secret societies, such as the freemasons and the Magic Circle. When I tell people that I'm a member of the Magic Circle, they often ask me whether I have sworn an oath to secrecy, and this creates much intrigue. Like freemasons, magic societies captivate people's imagination, and the idea of the magicians' code prohibiting its adherents from disclosing secrets serves to heighten this sense of mystery and interest. However, I worry that a disproportionate fixation on keeping magical effects secret can actually distract from the larger issue of promoting the art of magic. I believe that a blanket rule that prohibits magicians from disclosing their secrets to the public is not fit for purpose.

I am not the first to say so. For example, back in 1922 Rémi Ceillier wrote that "*one might think that illusionists, especially professionals, take a dim view of the disclosure of their secrets, however partial it may be. It was indeed still like this 25 or 30 years ago; but since around 1900 a very clear turnaround has occurred.*" [10] He observed that many magicians who had exposed some conjuring secrets to the public had enhanced the people's interest and curiosity in magic and thus helped promote the artform. While secrets play an important role in magic, it's important to remember that there is so much more to magic than secrets. People don't go and watch David Copperfield or Dynamo simply because they do not know the secrets.

They go and see these great performers because they love the wonder that they elicit. Indeed, giving audiences a small glimpse into how tricks are done can enhance people's amazement, which is probably why Penn and Teller and Derren Brown are among the most successful magicians in the world.

The issue of exposure is one of the most controversial topics in magic, and the modern social media platforms often results in toxic fanatical arguments and witch-hunts. Some consider any revelation of a magic method to the public is a sacrilegious act. However, as we have seen here, once you look at the issue of exposure more closely, it soon becomes apparent that a dogmatic rule forbidding magicians from exposing magic secrets is nonsense. That is not to say that all secrets should be exposed. Exposing magic secrets that harm the art form should be discouraged. However, our obsession with exposure causes more harm than good. Our primary objective should be to promote and advance the art of magic. Some of our most celebrated magicians expose magic secret to the wider public. For example, Penn & Teller very publicly reject the exposure conventions, and they often explicitly expose magic secrets in an artful fashion. Derren Brown often frames his tricks by presenting pseudo explanations the public accepts to be true (e.g. forcing) that are commonly used by magicians. Richard Wiseman 'exposes' magic adjacent psychological principles as part of science communication. A simplistic exposure dogma would technically condemn all of these performers, and yet they are true champions that elevate the art of magic.

The Magic Circle's exposure committee has tried to mitigate some of these issues by defining lots of exceptions to the rule. For example, it states that you are allowed to expose a method in the context of a sucker trick, and you can expose any method *if* people pay for it. The futility of these contortions was recently exemplified by the committee's attempt to adapt the rules in light of the covid 19 lock down. In April 2020, the Exposure Committee circulated a list of tricks they felt could be exposed without breaking the rule. Their intention was to offer some relief and clarification to magicians struggling to apply exposure rules to internet-based performances necessitated by social distancing rules. Instead, the announcement caused an extreme backlash from both sides of the argument. On one hand, some felt that allowing magicians to expose magic secrets undermined the societies integrity and

foundation, whilst others questioned why it was acceptable to expose some methods rather than others, and who has the right to make this decision? In a fittingly paradoxical response, the committee stated that their announcement merely reflected a clarification of the existing exposure guidelines AND said that they would officially withdraw that 'clarification.' My personal dispute with the exposure committee has taught me two important lessons. For one, many of the individuals on the exposure committee who are responsible for implementing this rule are trying their best to accommodate a wide range of views on the matter. Secondly, there are so many exceptions and complications to the exposure rule, making it not only nonsensical, but also unworkable. Within the Magic Circle in particular the difficulty in defining/enforcing the rules often leads to witch hunts, bullying, and accusations of favouritism.

Magic is a wonderful artform, and it has the potential to not only to entertain, but also help individuals and society in many other ways. I believe that increasing our scientific knowledge is a laudable goal in itself, and we are exploring more direct connections between magic and wellbeing. For example, [BREATHE Magic](#) is an organisation that teaches children with hemiplegia to perform magic as part of their rehabilitation program. [Magicians Without Boarder](#) teaches disadvantaged kids magic to help empower them in other aspects of their lives. At Goldsmiths, the MAGIC Lab has partnered with [Abracademy](#) to teach our undergraduate students to perform simple magic tricks. These lessons have demonstrably improved our students' reported self-esteem and general wellbeing. Magic provides a wonderful tool to help people in wide aspects of life, but this can sometimes involve revealing how the tricks are done, and thus breaks the exposure rule. But so what? Surely the 'harms' of exposure can, in some instances be outweighed by its tangible benefits. Our research has also shown that people who learn to perform a few tricks in the wellbeing workshops show significantly higher interest and appreciation for magic.

I suggest we simply scrap the exposure rule, and instead focus on what we can do to promote the art of magic. The lack of respect and recognition magic received in the field of art and entertainment poses a bigger threat than exposure of magic secrets. Magicians should be discouraged from actions that harm the art of magic, and in some instances the exposure of a magic secret will indeed have a negative impact.

However, let us stop wasting time and energy obsessing about whether a magician should be punished for exposing a magic trick and instead focus our energy on promoting and enriching the art of magic. I have spent far too much time thinking and writing about the issue of exposure, and for me at least it is time to move on to the things that really matter: the art and science of magic.

Acknowledgements

I would like to thank Matt Tompkins for his excellent comments and suggestions on earlier drafts of this paper.

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