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How to Rob an Empty Safe with ChatGPT

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This article investigates, for the first time, how quickly curious individuals can uncover the secrets behind popular magic tricks through internet research requiring minimal effort. To do this, 20 well-known magic tricks were selected, and the underlying trick secrets were sought using the AI assistant ChatGPT. It was found that using language assistants and the large language models behind them makes the search significantly more promising compared to recent keyword-based searches. For 18 of the 20 magic tricks, an explanation in the form of a descriptive text or an exposure video was found with little effort. The significance of this observation for the art of magic was not the main focus of this contribution, but the concluding section at least contains the author's initial thoughts on the matter.

KEYWORDS: Magic Tricks, Chat GPT, Large Language Model, Exposure

HOW TO ROB AN EMPTY SAFE WITH CHATGPT

1. Introduction

In the recently published article “Toward a Theory of Exposure,” Rappert & Kuhn, (2024) addressed various aspects of the exposure of magic tricks. One of the open research questions they raised in this article was: “How readily are members of the public able to find out how (named) tricks are done through consulting online or other sources?” Answering this question can contribute to the discussion about secrecy regulations held by societies of magicians. One understandable argument could be that there is no point in keeping something secret if it can be easily discovered by anyone within a short period of time.

Until the 1990s, researching information about the secrets behind magic tricks was considerably more effortful compared to today. At best, one could acquire knowledge from books in the local library. This changed dramatically with the advent of the internet. Nowadays, there is a plethora of exposure videos on YouTube (in various quality levels). In addition, classic books like *Modern Magic* (Professor Hoffmann, 1890) are available in the public domain on platforms such as archive.org. Rissanen et al. (2017) point out that in recent years “digital culture has radically transformed the power relations within the professional field of magic”. While in the past secrets of magic tricks were only shared personally between magicians after a relationship of trust had been established, nowadays learning such secrets is significantly easier through platforms like YouTube. What remains to be answered is how quickly curious viewers, even if they are not really deeply interested in the art of magic, can uncover the secrets of a trick through internet research.

As recently as 2020, the German magician Axel Hecklau answered this question with considerable calm in an article for the journal *Magie*, published by the German Magic Circle. He wrote: “I once searched for 'linking rings – Chinese ring puzzle – explanation,' *[using keywords in German language – author’s note]* etc., as a test. After 20 minutes, I still hadn't found a satisfactory solution. There was no explanation video on YouTube.” (Hecklau, 2020)

However, with the increasing popularisation of Large Language Models (LLMs), a completely new aspect is emerging: it can be assumed that internet searches will soon change dramatically—from querying keywords in search engines to communicating with an LLM, for instance in the form of a chatbot. Since tools like ChatGPT, which possess impressive capabilities, have been available for some time, it is expected that a common way to gather information will soon involve describing the sequence of a trick from the spectator's perspective to the chatbot and then asking for a solution.

This article aims to examine how well this is already possible today.

2. Method

Twenty magic tricks were selected according to the following criteria:

The tricks had to be popular tricks that have been on the market for some time and can be referred to as well-known among magicians.

The author of this paper had had actually seen performed each trick live in shows in recent years which should ensure that only currently relevant tricks are taken into account (and which led to the side effect that stage illusions were omitted.)

Care was taken to include both tricks whose names an audience member would intuitively mention when describing them (e.g., “Linking Rings”) and those which laypeople would not name in a description (e.g., “Out of This World”).

For the experiments, ChatGPT 4o was used via input through the web interface at chatgpt.com. The initial queries were conducted in January 2025. For each question, only one response was generated (which does not capture the stochastic nature of LLM responses but likely reflects the typical behaviour of a merely curious spectator). A new session was started for each question, meaning each question was asked independently of previous dialogues. The language assistant was presented with the following prompt:

> You are an experienced magician and mentor to a young magician who, like you, is a member of the Magic Circle. He describes the following magic trick to you: [Description of the trick as experienced by the spectator]

Please answer the following questions

(1) What is the name of this trick?

(2) What is the secret behind the trick?

(3) Which sources (books or videos) can I use to get a good explanation?

The introduction “You are an experienced magician…” takes into account the observation that setting the context in this way is likely to result in higher quality responses from ChatGPT (Amin & Schuller, 2024).

In describing the perceived effect, care was taken to present the events from the perspective of a spectator unfamiliar with magical secrets. For example, in the description of the trick “Linking Rings” it was written: “The magician displays several solid metal rings, which are also examined by the audience.” (even though the author of this article is aware that this description is only partially accurate).

Question 2 was aimed at testing whether the chatbot would provide a useful answer directly. Since it is assumed that for more complex effects like the Matrix Coin Trick, a text-based explanation from the language assistant might be of limited help, Question 1 asked for the name of the trick. With this information, one can search on YouTube for an explanation video for the named trick (see section 3.5). The placement of Question 1 (asking for the name) before Question 2 (asking for the explanation) was intentionally chosen in this order because having the name of the trick already in the LLM’s context window is expected to yield better results for the second question.

Subsequently, the answers to Question 3 are intended to provide an initial indication of how much magical literature has been incorporated into the LLM’s training data. Additionally, this response can be used to assess whether the curious can gain quick access to explanations available in digital book format (as would be the case with the explanation of the Linking Rings in the aforementioned book *More Magic* by Professor Hoffmann).

Following these questions, which were answered by the GPT-4o language model, the dialogue was continued in February 2025 with two additional questions, activating the newly available “Search the web” option:

(4) Which books that can be read for free on the Internet can I read to get a good explanation? List only books available online! Provide links to the PDF or HTML versions of the books!

(5) Which videos on YouTube or similar platforms can I watch to get a good explanation? If available, provide three links to such videos.

This was intended to test whether ChatGPT could directly provide links to book sources and videos, allowing access to these resources with just one more click.

The reason for the two-step approach (the first three questions without the “Search the web” option, the next two with it) lies in the preliminary test finding that information on trick explanations is more diverse when initially refraining from using the web search.

The evaluation of the responses was conducted by the author, who is a member of the German Magic Circle and has extensive experience studying magic literature, thereby feeling confident in making an assessment of whether the explanations a practically feasible method that aligns with the observations described to the chatbot.

The selected tricks were as follows:

A Book Test, Coin Matrix, Invisible Deck, Pompom Sticks, Knifeboard, Twentieth Century Silk Trick, Zodiac Sign Divination (described as using a progressive anagram as the method), Glorpy (dancing handkerchief), Ringflight, Arm Chopper, Cake in Hat, Strat-o-Spheres, Which Hand, Enchanted Cube (Rubik’s Cube solving when thrown in the air), Three-Card Monte, Die Box, Out of This World, Bill in Lemon, Gypsy Thread, Linking Rings.

A description of these effects from the spectator's perspective can be found in Appendix A. It can be seen from the names provided that the designation of the tricks in professional jargon is immediately evident to the spectator in only a few cases (such as *Cake in Hat* or *Invisible Deck*). This was clearly an obstacle in the search for trick secrets before the advent of LLMs.

3. Results

For all 20 questions, the chatbot provided an answer that appeared understandable and credible to a layperson at first glance. An assessment of the actual quality will be conducted in the following sections.

3.1. Naming of the Trick

The table below outlines the tricks and the names provided in ChatGPT’s responses, along with comments regarding their accuracy or commonality:

Table 1: Naming of the Tricks by ChatGPT

Trick name	Name(s) in ChatGPT's Response		comments
Arm Chopper	Arm chopper, Guillotine trick	✓	
Bill in Lemon	Bill in lemon, Banknote in lemon	✓	
Book Test	Book test	✓	
Cake in Hat	Baking a Cake in a Hat, Magic Baking Hat	✓	
Coin Matrix	The Matrix, Coin Matrix	✓	
Die Box	Die Box	✓	
Glorpy	The Dancing Handkerchief, The Haunted Handkerchief	✓	Both are common names.
Enchanted Cube	Rubik's Cube Solve in the Air, Instant Cube Solve	(✓)	Most magicians would likely use one of the terms from column 2 themselves to describe the effect. The name under which Craig Nichols marketed the trick is unknown to many magicians too.
Gypsy Thread	The Torn and Restored Thread	✓	Although “gypsy thread” is the common name, the trick has also been marketed as “Torn and Restored Thread.” (Whaley, 2007)
Invisible Deck	Invisible Deck	✓	
Knifeboard	Russian Roulette Knife Trick, Knife Under Cup Trick	✓	All names are equivalent as no single name has become standard.
Linking Rings	The Linking Rings	✓	
Out of this World	Out of this World	✓	
Pompom Sticks	Pom-Pom Stick	✓	
Ringflight	Ring to Impossible Location	✗	
Strat-o-Spheres	Color-Changing Balls, Traffic Light Balls	✗	The official name of the trick is likely unfamiliar even to many magicians too.
Three-Card Monte	Three-Card Monte	✓	
Twentieth Century Silk Trick	Silk Vanish and Reappearance, The Traveling Silk	✗	
Which Hand	Which Hand? The Which Hand Trick	✓	
Zodiak Sign Divination	progressive anagram, zodiac sign revelation	✓	The first name is technically the method’s name, not the trick's name, but the question pertains specifically to this method.

In general, the chatbot successfully identified many tricks by their common or descriptive names, with a few instances where the names provided may not align perfectly with the most widely recognised names in the magic community.

3.2. Explanation of the Trick Secret

Table 2 illustrates how well the response provided by the language assistant explains the trick. This is evaluated from the perspective of the observer, who will be satisfied with a plausible explanation as soon as it corresponds to the description of what was experienced.

Table 2: Evaluation of ChatGPT's Answers

Trick	explained	comments
Arm Chopper	partly	The actual mechanics are not explained. The explanation does not go beyond what the spectators probably already suspect.
Bill in Lemon	fully	
Book Test	partly	There are countless methods for this effect. Some key approaches are correctly explained, but some explanations (such as the use of “small dots”) are unusable. The term “Dual Reality” is used differently from how it is commonly used in magical literature, resulting in an inadequate explanation of this magical concept.
Cake in Hat	partly	The explanation does not go beyond what the spectators probably already suspect.
Coin Matrix	partly	It's unrealistic to expect an complex routine to be described in a few words. Important terms like “palming”or “shell coin” are mentioned, though what a “shell coin” is isn't explained.
Die Box	very incomplete	The gimmick producing the sucker effect is explained, but the information on the movement of the die isn’t helpful.
Enchanted Cube	Useless	
Glorpy	partly	Only part of the mechanism is described.
Gypsy Thread	fully	The trick secret is correctly explained, although it's supplemented with a nonsensical description of tearing.
Invisible Deck	fully	
Knifeboard	fully	Several possible methods are mentioned.
Linking Rings	fully	
Out of this World	very incomplete	Part of the explanation obviously does not match what the spectator observed.
Pompom Sticks	very incomplete	A key aspect (taking apart and reassembling) is not sufficiently explained.
Ringflight	Useless	
Strat-o-Spheres	Useless	
Three-Card Monte	Almost useless	While the explanation “Sleight of Hand” may be accurate, it isn't particularly helpful. The idea of a double-backed card is revealed, along with a completely irrelevant mention of marked cards.
Twentieth Century Silk Trick	partly	The disappearing is explained (one possible method), but the reappearance is very inadequately covered.
Which Hand	fully	One of the most common modern methods is described, although it is accompanied by some complete nonsense (particularly the “nail nick method”).
Zodiak Sign Divination	fully	

In summary, the chatbot provided varying degrees of completeness and accuracy, with some tricks being fully explained and others lacking crucial details or containing irrelevant information.

3.2. Literature Recommendations Given by ChatGPT

Table 1 presents which books were recommended and the frequency of each recommendation. Table 3 then shows the assignment of literature recommendations to the individual tricks.

A notable aspect of the literature recommendations for the Rubik's Cube trick is that all three suggested books (Steven Brundage: *Cube Magic*, Dariel Fitzkee: *The Psychology of Magic*, Karl Fulves: *Rubik's Cube Magic*) do not actually exist. While these names are associated with real authors in the field of magic, these titles are hallucinations of the LLM.

Box 1: Literature Recommended in the Responses From ChatGPT

(Ammar) Michael Ammar: The Magic of Michael Ammar
(Annemann) Theodore Annemann: Practical Mental Magic
(Banachek) Banachek: Psychological Subtleties
(Berglas) David Berglas: The Mind & Magic of David Berglas
(Bobo) J. B. Bobo: Modern Coin Magic
(Brown1) Derren Brown: Pure Effect
(Brown2) Derren Brown: Tricks of the Mind
(Cassidy) Bob Cassidy: The Artful Mentalism of Bob Cassidy
(Corinda) Corinda: 13 Steps to Mentalism
(Curry) Paul Curry: World's Beyond
(Downs) T. Nelson Downs: The Art of Magic
(Ganson)Lewis Ganson: The Art of Close-Up Magic
(Giobbi) Roberto Giobbi: Card College
(Hay) Henry Hay: Modern Magic
(Henderson) Brad Henderson: The Dance
(Hoffmann) Professor Hoffmann: Modern Magic
(Hugard/Braue) Jean Hugard & Fred Braue: The Royal Road to Card Magic
(Jay) Joshua Jay: Magic: The Complete Course
(Kaufman) Richard Kaufman - David Roth's Expert Coin Magic
(Maven) Max Maven: Prism: The Color Series of Mentalism
(Nelms) Henning Nelms: Magic and Showmanship
(Ortiz) Darwin Ortiz: Strong Magic
(Pogue) David Pogue: Magic for Dummies
(Rice) Harold Rice: The Encyclopedia of Silk Magic
(Scarne) John Scarne: Scarne on Card Tricks
(Starke) Georg Starke: Stars of Magic
(Wilson) Mark Wilson: Mark Wilson's Complete Course in Magic
(Tarbell) Harlan Tarbell: Tarbell Course in Magic
(Wakeling) Jim Steinmeyer: The Magic of Alan Wakeling

If a ChatGPT user follows the literature recommendations of the language assistant (see Box 1), they will have assembled a remarkable magic library that includes many of the most essential foundational magic books in the English language. However, the primary focus of this article is not the recommendations for building a magic library, but rather whether a quick search for the suggested titles on the web can help uncover the trick secrets. This can be negated for two reasons.

The first reason why the literature suggestions are not immediately helpful is that most of the books are under copyright and not freely available. Only a few books are freely accessible (e.g., on

archive.org), as they are no longer under copyright in the USA (such as *The Royal Road to Card Magic*, *The Art of Magic*, *Practical Mental Magic*, and Professor *Hoffmann's Modern Magic*).

The second reason is that the specifically queried tricks are often not described in the recommended books. For instance, four books on mentalism are suggested for Zodiac Sign Divination (which would indeed be very helpful for the intent stated in the prompt, i.e., to teach a budding magician), but actually none contain a description of the method for the specifically queried trick. Similar patterns can be observed with recommendations for other tricks. In Bobo's book, a classic work on coin magic, one will search in vain for information on *Cake in Hat*, *Strat-o-Spheres*, or the *Die Box*. The latter trick, incidentally, is also not found in the other three books recommended when asking for literature on the *Die Box*.

Further discussion on the possibilities of finding trick descriptions in the recommended literature will be omitted here, as sections 3.4 and 3.5 will demonstrate that the literature and even more video suggestions generated with the "Web Search" option are far more fruitful for curious individuals.

Table 3: ChatGPT's Literature Recommendations for the Individual Tricks

Trick	Recommended Books
Arm Chopper	Wilson, Tarbell 4 & 6, Wakeling
Bill in Lemon	Ammar, Wilson, Bobo, Tarbell 1-8
Book Test	Corinda, Annemann, Berglas, Cassidy
Cake in Hat	Wilson, Bobo, Tarbell 1-8, Pogue
Coin Matrix	Bobo, Ganson, Kaufman
Die Box	Hoffmann, Wilson, Tarbell 6, Bobo
Enchanted Cube	Fulves, Brundage, Fitzkee
Glorpy	Tarbell, Wilson, Ammar
Gypsy Thread	Tarbell, Wilson, Starke
Invisible Deck	Scarne, Hugard/Braue, Hay
Knifeboard	Corinda, Annemann, Ortiz, Nelms
Linking Rings	Tarbell 4, Hugard/Braue
Out of this World	Scarne, Hugard/Braue, Curry
Pompom Sticks	Wilson, Tarbell 5, Pogue
Ringflight	Downs, Bobo, Wilson, Tarbel 5 etc., Hugard/Braue
Strat-o-Spheres	Tarbell 5 or 6, Bobo, Wilson
Three-Card Monte	Erdnase, Scarne, Jay, Giobbi
Twentieth Century Silk Trick	Wilson, Tarbell 1&2, Rice
Which Hand	Corinda, Annemann, Brown1, Brown2, Banachek
Zodiak Sign Divination	Corinda, Maven, Cassidy, Henderson

3.3. Video Recommendations

The recommended videos in answer to Question 3 are without exception commercially available videos from magic retailers such as Penguin Magic or Vanishing Inc. The titles of the videos were not always accurately stated; for example, there is no video by Dirk Losander titled *The Floating and Dancing Handkerchief*. Instead, a relevant routine is included in his video series named *The Art of Levitation*.

These video recommendations are not helpful for those with only a superficial interest, as the explanatory videos require significant financial investment. However, as we will see in section 3.5, with the right prompting, ChatGPT can lead users more easily to free videos that explain tricks.

3.4. Literature Recommendations and Video Recommendations Using ChatGPT's "Web Search" Feature

With the "Web Search" option, available since January 2025 even in the free version of ChatGPT, the language assistant can be prompted to initiate a search across the World Wide Web when formulating responses. This offers the significant advantage of accessing information that may not have been available at the time the language assistant's base model was trained. For the challenge of quickly finding trick explanations for magic tricks, this also allows for verification at the time of inquiry as to whether the explanation for a given trick can actually be found in a freely available publication.

Table 4 shows, for each literature source recommended for a trick as an answer to Question 4, whether a correct possible explanation for at least one variant of achieving the described effect can indeed be found at the provided URL (which was required in the prompt). If this was the case, it was indicated with the checkmark symbol ✓, otherwise with a cross sign (✗).

Table 4: Availability of Trick Explanations in the Book Links Provided by ChatGPT

Trick	Significance of the Linked Literature
Arm Chopper	✗ (contains no description of the trick)
Bill in Lemon	✓ / ✓ / ✓
Book Test	✗ (describes a Book Test that doesn't match the described presentation) / ✗ / ✗
Cake in Hat	✗ (contains no description of the trick) / ✓ / ✗
Coin Matrix	Provides explanation, but due to technical terms, it's incomprehensible for laypeople
Die Box	✗ (contains no description of the trick)
Enchanted Cube	✗ (All three links are tutorials for solving a Rubik's Cube without a magical effect)
Glorpy	✗ (contains no description of the trick)
Gypsy Thread	✗ (recommended Tarbell Vol. 1&2, but correct would have been vol. 7)
Invisible Deck	✗ (Only 3 links to general lists of magic books, unrelated to the specific trick)
Knifeboard	Refuses to provide sources due to safety concerns
Linking Rings	✓
Out of this World	✓ (not a book, but a website with explanation) / ✓ (website with link to video)
Pompom Sticks	✗ (Both recommended books were written before the described version of Pompom Sticks was even invented (Maven, 2019))
Ringflight	✗ (contains no description of the trick)
Strat-o-Spheres	✗ (contains no description of the trick) / ✗
Three-Card Monte	✓ / ✓ (both links lead to unauthorised uploads)
Twentieth Century Silk Trick	✗ / ✗
Which Hand	✗ / ✗ (two explanations using "reading body language" and "mind control")
Zodiak Sign Divination	✗ / ✗ / ✓ (last link leads to an unauthorised upload)

From Table 4, it is evident that the literature recommendations are rarely helpful, even though this time (unlike with the literature recommendations in Table 3) the language assistant was able to use the "Web Search" tool in addition to relying on the LLM's "knowledge". This suggests that the

specialised magic literature, much of which is not publicly accessible, has not been significantly incorporated into the training data of the language model.

The linked videos were significantly more fruitful, as shown in Table 5 All videos found by ChatGPT were hosted on the YouTube platform.

Table 5: Evaluation of the Videos Linked by ChatGPT

Trick	Significance of the Linked Videos
Arm Chopper	✓ / ✓
Bill in Lemon	✓/ ✓ (in Japanese, but understandable by watching) / ✕ (only shows the performance)
Book Test	✕ (in Arabic, explains a Book Test that doesn't match the described presentation) / ✕ / partly
Cake in Hat	✕ (only shows the performance)
Coin Matrix	✓/ ✓/ ✓
Die Box	✕ (dealer demonstration without explanation) / ✕ (shows a different trick)
Enchanted Cube	✓/ ✕ (joke explanation) / ✕ (shows solving the Rubik's Cube without magical effects)
Glorpy	✕ (explains a version of Dancing Hanky that doesn't match the described effect) / ✕ / ✕
Gypsy Thread	✓/ ✕ (shows a version of the trick that doesn't match the described effect)
Invisible Deck	✓/ ✓ (possibly too advanced: explanation for creating the gimmick) / ✓
Knifeboard	✕ (only shows the performance)
Linking Rings	✓/ ✕ (a good tutorial, but only useful for magicians who already know the trick secret) / ✓
Out of this World	✓/ ✓/ ✓
Pompom Sticks	Partly (stick cannot be taken apart) / ✕ / ✕
Ringflight	All three videos show a different effect
Strat-o-Spheres	✕ (explains a different effect) / ✕ / ✕
Three-Card Monte	✓ (but maybe a little too advanced for the just curious) / ✓ / ✓
Twentieth Century Silk Trick	Partly (in Telugu, but understandable by watching the video) / ✕ / ✕
Which Hand	✕ (revealing an old method which is actually no longer used) / ✕ / Partly
Zodiak Sign Divination	✓ / ✕ / ✕

In summary, we see that the use of web search did, in several cases, lead to better or more accessible explanations.

3.5. Results up to This Point and Manual YouTube Search

The results provided by ChatGPT up to this point are quite noteworthy: Of the 20 tricks, 7 were sufficiently explained with a possible method in the first textual response. When using the search for online book and video sources using the “Web search” option, the number of tricks for which a solution was provided increased to 14. It can be observed that in most cases, a curious individual can even skip reading the textual description, as there was no instance in this experiment where the text-based explanation offered a complete explanation of the trick without a corresponding explanatory video being available. The *20th Century Silk Trick* was a partial exception, where the

disappearance of the silk was explained only in text and its reappearance only in video (this case is counted among the above-mentioned 14 tricks fully explained via video).

The number of fully explained tricks further increases to 15 when users consider the recommended videos with similar content suggested by YouTube in a sidebar when watching a video on a PC screen. While ChatGPT did not provide direct video links with sufficient explanations for the Pompom Sticks, among the top 6 sidebar-recommended videos for this trick were links to other videos containing the desired explanation. The limit of 6 videos was chosen because that number of video recommendations can be displayed without scrolling on a PC even with moderate screen resolution.

Curious viewers have yet another option: after inquiring about the trick's name (see Table 1), they can specifically search for trick descriptions for a trick by that name. To assess the success of such a search, tests were conducted to see if searching on YouTube with the query string:

(intitle:revealed OR intitle:explained OR intitle:tutorial) AND "[trick name given by ChatGPT]"

yielded a useful instructional video. This was indeed the case for three additional tricks (*Die Box*, *Glorpy*, and *Strat-o-Spheres*).

To sum up, using the described strategy with the language assistant ChatGPT-4o, explanations for 18 out of 20 tricks could be unearthed with very minimal searching effort in a short amount of time.

3.6. Tricks for Which No Complete Explanation Was Found

For only two tricks, no solution matching the described effect was found. These will be briefly discussed here.

No adequate explanation was found for the trick *Ringflight*, aside from stating that the magician makes the ring disappear using sleight of hand (which the spectators likely assume anyway).

For the described book test, ChatGPT's textual answer provided numerous methods that are indeed used in practice, either in combination or with other methods. The videos also explained book tests, but not those that matched the effect description given. It is possible that curious individuals might discover at least part of the trick, although none of the given explanations truly matched the description of the effect as described to the chatbot.

4. Discussion

Table 6 summarises once again at which stage of a search the tricks are explained to just curious spectators.

It is difficult to discern any clear patterns from Table 6 regarding which types of magic tricks can be more or less easily explained by ChatGPT. Nonetheless, some initial considerations can be made: one reason why the book test was not explained is certainly that there are countless different ways to perform this effect. Although the language assistant did refer to various possible methods for book tests, these did not match the experience described in the prompt. On the other hand, the prompt describing the 'Coin Matrix' deliberately contained fewer details, making it more likely that a spectator—presumably unable to grasp the subtleties of a sophisticated routine—would accept any plausible explanation, whether or not it perfectly matched the actual performance. Accordingly, this was reflected in the assessment in Table 6.

Considering that input will likely soon be possible even through voice recognition, the effort required to find an explanation is minimal in almost all cases. It is evident that language assistants

offer the key advantage over search engines in not requiring the searcher to know the exact search string.

Table 6: Summary of the Search Success

	Explanation was found				
Trick	from ChatGPT's textual answer	from book links provided by ChatGPT with "Web Search"	from video links provided by ChatGPT with "Web Search"	from videos recommended in YouTube's sidebar	after searching YouTube for the trick named by ChatGPT
Arm Chopper	✕	✕	✓		
Bill in Lemon	✓				
Book Test	✕	✕	✕	✕	✕
Cake in Hat	✕	✓			
Coin Matrix	✕	✕	✓		
Die Box	✕	✕	✕	✕	✓
Enchanted Cube	✕	✕	✓		
Glorpy	✕	✕	✕	✕	✓
Gypsy Thread	✓				
Invisible Deck	✓				
Knifeboard	✓				
Linking Rings	✓				
Out of this World	✕	✓			
Pompom Sticks	✕	✕	✕	✓	
Ringflight	✕	✕	✕	✕	✕
Strat-o-Spheres	✕	✕	✕	✕	✓
Three-Card Monte	✕	✓			
Twentieth Century Silk Trick	✕	✕	✓		
Which Hand	✓				
Zodiak Sign Divination	✓				

A valid point is that the search strategy used in this paper assumes some familiarity with language assistants and search engines. Observations of logs of actual search queries show that techniques such as the use of Boolean operators AND and OR in YouTube searches are not employed by the majority of search engine users (Lewandowski, 2023).However, as leading search engine operators are expected to invest considerable resources into using large language models to provide very good answers to questions posed in natural language, it can be assumed that in the near future knowledge of such advanced search techniques will no longer be necessary to obtain the desired results. It is even conceivable that, in the future, an AI application will no longer have to rely on texts formulated by humans but will instead be able to analyse, for example, a video of a magic performance and attempt to uncover the secrets behind the tricks (initial research in this direction already exists; see Zaghi-Lara (2019).

A noteworthy objection is that a description of an effect written by a magician considers and highlights different details than an impartial spectator would. In that respect, it is not ideal that the

effect descriptions were written by the author of this paper rather than by uninvolved lay spectators. Admittedly, this may be a weakness of the present work, while at the same time giving rise to an interesting research question for future studies: to what extent actual descriptions of effects by laymen might differ.The findings of the present study, which for the first time highlight how easily non-magicians can access explanations of magic tricks through current technology, are significant in two ways.

Firstly, magical associations must consider whether the prohibition of exposures by organised magicians, as enshrined in many club constitutions, still makes sense. One could argue that if information on trick secrets is so easily accessible (regardless of whether magicians favour this or not), then the secrets to be protected by club rules do not truly exist, and such a ban becomes irrelevant and pointless. However, this discussion is for the magicians within these organizations to conduct and cannot be explored here.

Secondly, the results prompt questions about what magicians should do to continue showing audiences surprising and mysterious tricks. While a detailed discussion is necessary on another occasion, here are three initial ideas:

The first idea is based on why the language assistant could provide such good answers: it was possible only because the trick's operation was precisely described in words. Experienced magicians are familiar with techniques to influence spectators so that their recollection of the trick doesn't match the actual performance. Psychological studies in the field of magic have, in recent years, described mechanisms that can be used for this purpose. Kuhn et al. (2014) provide a taxonomy of misdirection, which encompasses the various ways in which spectators can be misled. In the context of trick explanations by chatbots, particular attention should be given to methods of memory misdirection, which make it impossible or at least difficult for spectators to verbally reconstruct the sequence of the trick. For example, (Cami et al., 2020) points out that "misinformation can affect recapitulation by distorting long-term memory recall".A good magician will strive to ensure that a layperson's account of what they experienced during a magic show may not align with the actual events. That this is possible has already been demonstrated by Hodgson and Davey (Hodgson, 1887). Their observations, although largely not related to magicians but rather to fraudulent spiritualist "mediums," pertain to the important fact that is also relevant for entertaining magic: a description given based on what was seen may potentially omit crucial details and exaggerates in other places. This can result in a layperson's description lacking the detail and factual accuracy necessary to convey the actual course of the trick to a voice assistant. This is especially true when a psychologically skilled performer deliberately aims for certain facts to be forgotten by the audience (see for example (Quian Quiroga, 2016), where it is stated that "…the facts that are revisited" [which the performer therefore explicitly draws attention to once again – Author's note] "will be later remembered and the ones that are not will be only processed momentarily and will then be forgotten.")

The second idea involves the necessity of giving the language assistant a description of the trick's operation as input. It is conceivable to alter a trick's effect and patter so that a language model cannot identify the underlying principle. For example, after illustrating how quickly an explanation for the card trick *Out of This World* can be found, ChatGPT was tasked with explaining a "completely different" trick in which a spectator mimics using the dating app Tinder, swiping physical photos left or right (full wording in Appendix B). While any seasoned magician would immediately recognise the similarity to *Out of This World*, ChatGPT provided only unhelpful answers when queried about this trick.

Finally, it may even be possible to use the language assistant's propensity to provide answers to magicians' advantage. By describing the trick from a spectator's perspective to the assistant and

asking for an explanation, magicians receive a range of possible (correct and incorrect) explanations. A master magician can then structure the trick's performance to methodically rule out these explanations, much like Juan Tamariz excellently described in his book *The Magic Way*. (Tamariz, 2014) As shown in Thomas & Diderjean (2016) and Thomas et al. (2018), this approach even has an additional effect: spectators who initially believe they have found a solution to the secret behind the trick—but then realise that it cannot be correct—have more difficulties to arrive at the actual solution.

One thing is certain: despite the immediate availability of trick explanations through services like ChatGPT and YouTube presenting new challenges to magicians, magic as an art form will continue to thrive and evolve.

Appendix A. URLs of Archived ChatGPT Sessions

Trick	URL
Arm Chopper	https://chatgpt.com/share/6778e8bf-a034-8013-939e-9dabb4730380
Bill in Lemon	https://chatgpt.com/share/6778e52d-f668-8013-ab3a-c54460951415
Book Test	https://chatgpt.com/share/6778f6d4-98b8-8013-aa3c-e1939f4ce537
Cake in Hat	https://chatgpt.com/share/6778e871-3034-8013-a079-11458e96c153
Coin Matrix	https://chatgpt.com/share/6778e840-b398-8013-88b0-bb481d6e94c0
Die Box	https://chatgpt.com/share/6778e6b3-a978-8013-abd5-a44faf241893
Enchanted Cube	https://chatgpt.com/share/6778e77c-59ac-8013-a06c-856669e93552
Glorpy	https://chatgpt.com/share/6778e947-d8b4-8013-b94a-920fbdbd3674
Gypsy Thread	https://chatgpt.com/share/6778e4a6-2ac8-8013-8dc3-dd36a5940947
Invisible Deck	https://chatgpt.com/share/6778f57c-8680-8013-bcfb-7e16f8b6e033
Knifeboard	https://chatgpt.com/share/6778f485-d614-8013-b0bc-6d169a613068
Linking Rings	https://chatgpt.com/share/6778e3d7-7000-8013-9d07-64b056c30c4d
Out of this World	https://chatgpt.com/share/6778e5b7-0ba4-8013-8438-d63c0ede2e76
Pompom Sticks	https://chatgpt.com/share/6778f4da-2e0c-8013-bb5f-2d8c0d0eaa84
Ringflight	https://chatgpt.com/share/6778e8fb-c6f0-8013-ba3c-70e2c3d8579c
Strat-o-Spheres	https://chatgpt.com/share/6778e806-8b0c-8013-b3f3-aa716549319a
Three-Card Monte	https://chatgpt.com/share/6778e720-6148-8013-a4ed-a09ba637ccb8
Twentieth Century Silk Trick	https://chatgpt.com/share/6778f41d-7f94-8013-ab47-b2d4c3e08b36
Which Hand	https://chatgpt.com/share/6778e7c1-178c-8013-9b0f-3d935a2cb151
Zodiak Sign Divination	https://chatgpt.com/share/6778f3d7-f7e4-8013-bc65-f5ce19e782c9
Tinder Test (see Sect. 4)	https://chatgpt.com/share/67b1e705-5bf0-8013-af15-33037abd9f21

Appendix B. Trick Descriptions Given to ChatGPT

Arm Chopper: The magician displays a device with a blade positioned above a hole. He places a cucumber and other vegetables through the hole and moves the blade downward, slicing the vegetables cleanly with the sharp blade. Next, a spectator is asked to place their arm through the hole. The blade is lowered again, passing underneath the spectator's arm, but the spectator remains completely unharmed.

Bill in Lemon: A banknote, whose serial number was noted by a spectator beforehand, vanishes from the magician's hand. The banknote reappears inside a lemon that has been visible the entire time in a fruit basket on the table.

Book Test: A spectator is allowed to choose one book from a selection of 10. The magician slowly flips through the chosen book until the spectator says "Stop." At this point, the spectator can open the book and select a word that particularly catches their eye. During this process, the magician turns their back to the audience, so they cannot see either the spectators or the book. Nevertheless, through mind-reading, the magician is able to determine which word the spectator is thinking of. The spectator can verify that all the pages of the book are different, allowing for hundreds of possible word choices.

Cake in Hat: In a children's show, the magician places various ingredients such as flour, milk, and more into a hat and holds a flame underneath it. In no time, a cake is "baked" inside the hat and is then distributed to the audience.

Coin Matrix: The magician places four coins on the table, each covered with a playing card. When the card covering one coin is removed, the coin underneath has vanished. It is revealed to have moved under another card, where there are now two coins. This process is repeated with the other two coins until, in the end, all four coins have magically gathered under the same playing card.

Die Box: The magician displays a box with compartments, each covered by a flap. A large die is placed into one of the compartments, and both flaps are then closed. The magician opens the flap of the compartment where the die was placed, but it is now empty. The audience assumes the die must be in the other compartment. The magician closes the flap again and then opens the other compartment, which is also empty. Once more, the audience guesses that the die has moved back to the first compartment. This process is repeated several times. In the end, however, both flaps are opened, revealing that the die has completely disappeared.

Enchanted Cube: A Rubik's Cube is shown in a scrambled state, thrown into the air, and lands completely solved. At the beginning, the cube is clearly displayed as scrambled, and at the end, it is unmistakably shown as fully solved.

Glorpy: A handkerchief is placed on the table, and it mysteriously rises and moves in various directions as if a ghost were inside it.

Gypsy Thread: The magician tears a thread into many small pieces. These pieces are rolled into a ball. When the ball is unrolled again, the thread is completely restored.

Invisible Deck: The magician hands an invisible deck of cards to a spectator. The spectator is instructed to take the deck out of the imaginary box, shuffle it, choose a card from the fanned-out (still invisible) deck, and mentally note it before placing it back into the deck upside down. The deck is then placed back into the imaginary box. The magician takes the invisible deck back, and it transforms into a real deck of cards. The spectator names their thought-of card, and when the magician spreads the deck face up, the named card is the only one that is face down.

Knifeboard: On the table are six stands. One of them has a knife with the blade pointing upward, while the others are empty. In the absence of the mentalist, all the stands are covered with identical paper cups and shuffled. Once covered, it is impossible to tell which cup hides the knife. The mentalist then smashes five of the cups one by one, flattening them. Remarkably, the one cup he does not smash is the one hiding the knife.

Linking Rings: The magician displays several solid metal rings, which are also examined by the audience. Although the rings are clearly separate at the beginning, he joins them together to form a chain, first of two rings, then three. This chain is also examined by a member of the audience—none of the rings have any openings. The connecting and separation of the rings are then repeated in various ways, and at the end, the magician shows separate rings again.

Out of this World: The magician performs a card trick: He selects one black and one red card from the deck. He then asks the spectator whether they think the top card of the deck is red or black. Depending on the answer, the card (which the spectator never sees) is placed on either the red or the black card. This process is repeated with more cards taken from the top of the deck—the spectator decides each time whether the card is red or black. In the end, it turns out the spectator has correctly sorted all the cards, even though they never saw a single card face.

Pompom Sticks: A stick has strings running through both ends, with a pom-pom attached to each end of the strings. There are four pom-poms in total, each a different colour. The magician demonstrates that pulling the upper-right pom-pom upward causes the lower-right pom-pom to move upward as well. The same happens on the left side. However, it is also possible for the right pom-pom to move upward when the left string is pulled, and vice versa. This is demonstrated multiple times. Then, the stick is taken apart into two halves, revealing to the audience that there is no visible connection between the right and left strings. Yet, when the stick is reassembled, the up-and-down movement of the pom-poms works just as it did before.

Ringflight: The magician borrows a wedding ring. It vanishes from the magician's hand and reappears inside the magician's key case, securely hooked onto a key ring.

Strat-o-Spheres: The magician presents a transparent tube mounted on a base, along with three balls in the traffic light colours: red, yellow, and green. After covering the transparent tube with a second, opaque tube, the balls are dropped inside in the order of a traffic light's colours. When the opaque tube is removed, the balls are revealed to be in a different order. This effect is repeated several times. Finally, one of the balls vanishes into a box.

Three-Card Monte: The magician shows three playing cards—a Jack, a Queen, and a King. The cards are then displayed with their backs facing the audience, and the spectator is asked to guess the position of the Queen. Despite the cards being repeatedly shown face-up and their positions seemingly easy to follow, the spectator always guesses incorrectly.

Twentieth Century Silk Trick: Two silk handkerchiefs are tied together and set aside. A third handkerchief vanishes from the magician's hand. It reappears between the two previously knotted handkerchiefs, forming a chain of three handkerchiefs.

Which Hand: The spectator places a coin in one of their hands behind their back. The mentalist looks into the spectator's eyes and correctly identifies which hand holds the coin. This is repeated multiple times, and each time, the mentalist's answer is accurate.

Zodiak Sign Divination: The mentalist invites an unfamiliar spectator onto the stage. The spectator is asked to think of their zodiac sign. The mentalist gradually receives letters of the thought-of word until he eventually reveals the zodiac sign in full.

Tinder Test as a variant of *Out of This World* (see Sect. 4): The magician tests a male spectator's intuition in choosing a partner. He explains that on the dating app Tinder, you swipe right if you find the person attractive, and left otherwise. The spectator is then asked to do this with a photo, of which he only sees the back. Depending on the answer, the photo (which the spectator never sees) is placed either to the right or left on the table. This process is repeated with more photos taken from a stack—the spectator decides each time whether the photo should be placed on the right or left pile on the table. When the photos are turned over, it turns out the spectator has matched them all correctly: The right pile contains only pictures of very attractive women, while the women in the left pile appear less flattering.

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