How Do Magic Tricks Help Explain Social Science Concepts in University Teaching?

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Abstract

Drawing on teaching experience in undergraduate and postgraduate political science modules, this paper argues that brief demonstrations and the reveals of visual illusions (magic tricks) are a more effective introductory pedagogy than realistic simulation exercises for novice students, including both traditional-age and mature undergraduates. While simulations can cultivate strategic thinking and enable students to test possible future scenarios, beginners often struggle with limited comprehension of and weak commitment to role-play, which undermines the exercises or compels the instructor to assume a directive, quasi-theatrical role. The paper reports on the use of a simple card trick to introduce the meaning of politics and political science to one cohort of mature top-up degree undergraduates and one cohort of taught Master's students. It shows how illusion-based demonstrations provide a shared focal event that prompts discussion about perception, rules and order, agency and authenticity, and the construction of social reality, thereby directly addressing the two persistent weaknesses of simulations— shallow understanding of the roles and engagement. The paper concludes that integrating critically chosen illusion tricks to explain core social-science concepts yields higher engagement, clearer conceptual understanding, and more consistent outcomes in early-stage political science teaching.

Keywords: magic tricks, realistic role-play simulations, conceptual clarification, contextual elucidation, politics

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Introduction

In this paper, I draw on my own experience in teaching undergraduate and postgraduate political science modules and argue that brief demonstrations and the reveals of visual illusions (magic tricks) are a more effective introductory pedagogy than realistic simulation exercises for novice students, for two reasons. Firstly, while both can serve the same pedagogical purposes, and interesting and even entertaining may both seem, role-playing realistic simulations require substantial preparation on the part of the participating students than that of watching and discussing magic tricks. Because the students' preparation required for in simulation participation causally impacts their performance and hence the learning outcomes of this kind of classroom activity, teachers responsible for role-play simulations, as myself was, are often caught in a predicament when the participating students were under-prepared for the role they played: either the whole role-play simulation game did not carry out as it was meant to be, or, as I did, the teacher presumed oneself a directorial role in order to make it what it was meant to be. In either case, the effect fell short of the expectations. But performing and discussing a magic trick do not need to face this predicament because the teacher has almost full control of how the particular concepts or theories are to be explained as well as the tricks are to be delivered. The second reason why showing and critically discussing magic tricks is more preferred is due to the class size and how much the teacher can decide on the course deliverables and the logistics. Recalling my experience, when the class size was as large as 60+, and/ or when the teacher had little control over the course assessment items and the classroom settings, insisting on simulation games ended up in a lose-lose situation, that is, most students could hardly enjoy the game while the responsible teacher, albeit got fully exhausted, still failed to bring forth the expected learning outcomes. In contrast, demonstration of all visual illusions — stage magic as we conveniently call them, does not have a class size problem. Members of the audience share almost equal amazement and enjoyment when they are attentive to the magic demonstration, whether there are two, twenty, or two hundred of them. While keeping the students inspired and impressed, the teacher can more easily control the learning outcomes, so I argue that explaining social sciences concepts by means of performing and discussing magic tricks are especially suitable for the beginners of the course subject.

To substantiate my argument, the following discussion is divided into 3 parts. *Part one* compares how magic trick performances and discussions can serve the same pedagogical purposes, in terms of conceptual clarification, contextual elucidation, and esthetic appreciation, with role-play simulation games. Illustration of concepts by magic tricks brings students the kind of immersive experience similar to that of simulation games, but contrary to simulation games, the efficacy of magic tricks demonstration as a teaching tool depends less on the students as the audience than the teacher as the performer, which, I argue, outscores teaching by role-play simulations. *Part two* recalls my experience as the teacher / course tutor handling two different role-play realistic simulation games for two different groups of students: one was an introductory course on Asian regional governance for traditional-age undergraduates, another was part of the experiential workshops in a top-up degree program on public administration and management for mature undergraduates. I argue that when the participating students were not sufficiently prepared, and/or the class size went beyond what the simulation game could accommodate, the result fell short of the expectations. *Part three* reports on the use of a simple card trick to introduce the meaning of politics and political science to one cohort of mature top-up degree undergraduates and one cohort of taught Master's students on an introductory course on contemporary Chinese politics. It shows how illusion-based demonstrations provide a shared focal event that prompts discussion about rules and order, thereby directly addressing the two persistent weaknesses of simulations—shallow

understanding of the roles and engagement. The paper concludes that integrating critically chosen illusion tricks to explain core social-science concepts yields higher engagement, clearer conceptual understanding, and more consistent outcomes in early-stage political science teaching.

Why is Playing Magic Preferred?

It is presumed that different methods of knowledge delivery and presentation have their pedagogical merits and limitations, and teachers have their preferences, personal strengths and weaknesses too (and so do students). The recent research literature suggests that some interactive learning tools, i.e., role-play simulation games (Rozinski, 2015), to music playing (Petersen-Overton, 2023; Soper, 2020), and magic performances (Landman, 2018), are selected in course teaching on humanities and social sciences. I argue in this paper that the choice of the teaching methods must consider both pedagogical merits and practical concerns. While I will leave my substantiation of the importance of practical concerns, particularly on role-play simulations, until Part Two, in this section I argue that while all the interactive learning tools discussed here should enable well-prepared students to get the most of these communication channels in class, namely, conceptual clarification and contextual elucidation (Petersen-Overton, 2023), magic performances and subsequent discussions stand out in explaining social sciences concepts for beginners of the course subject not only because to immerse oneself into magic does not require any prior knowledge; rather, the immersive experience in the magic performance impresses and inspires novice students to know and learn more.

The following brief comparison between role-playing simulation games and magic playing as interactive learning tools adopts a framework by Kristofer J. Petersen-Overton in his analysis of how music playing can help in teaching concepts in political theory, and I apply it to the cases of role-play simulation games and magic performances in teaching.

Petersen-Overton categorized the major pedagogical objectives music playing can serve into three kinds: conceptual clarification, contextual elucidation, and esthetic appreciation as a secondary consideration. (Petersen-Overton, 2023, p. 547) I explain each of them when I analyze the two interactive teaching tools. The main focus is on the pedagogical objectives of conceptual clarification and contextual elucidation. Petersen-Overton argues that music can help in "illustrating ideas or recurring themes in some way via its form and/or content." He recalls Tom Rozinski's explanation by this, namely:

(1) to "introduce a concept that is important to the theorist that we are studying,"
(2) to "demonstrate how a theorist's concept applies to a concrete situation," and
(3) to "reinforce the students' understanding of a particular theorist."

Rozinki's analytical framework has a fourth element, which Petersen-Overton understands it as contextual elucidation:

(4) to "draw attention to a theorist's biography" (Rozinski, 2015, as cited in Petersen-Overton, 2023, p. 547).

In Petersen-Overton's own words, this element offers "a vivid example of the historical and cultural world from which a thinker and their ideas emerged" (Rozinski, 2015, as cited in Petersen-Overton, 2023, p. 547). To apply this to role-play simulations, this element would "draw students" attention to the particular contexts of the case concerned.

Role-play simulation games as one kind of experiential learning can serve the purpose of concept clarification. Citing Dean Dorn's earlier work, Melvin Khan and Kathleen Perez support the claim that simulation games "deliver effective cognitive and conceptual learning; they are especially good at linking abstract concepts to their explicit referent because players are encouraged to reflect on the meaning of concepts in light of a shared experience." (Dorn 1989, as cited in Khan & Perez, 2009, p. 334) In their exploratory study of a simulation game titled *The Game of Politics*, Khan and Perez reported that "over the years, the course instructor had found that students invariably misunderstood the Presidential removal process and equated impeaching the President with removing him from office." To clarify the meaning of impeachment of the president of the US, the course instructor, as the game coordinator, could partake in the game by signaling some players to initiate an inquiry on the impeachment of the US president, and upon the role-playing, to let the students "corrected prior views that impeachment meant removal." (Khan & Perez, 2009, pp. 338–339) In terms of context elucidation, I take it for granted that role-play simulation games by definition present to the students the particular contexts the roles they play are being involved, since simulation exactly requires the participants to put their feet into the stakeholders' shoes, so that students must need to consider their perspectives in the game, rather than to bring to life any specific persons in the classroom by mimicking them.

Magic tricks can score high in clarifying concepts too. For one thing, the creation of *all* mathematical playing card magic tricks are based on some mathematical principles or concepts, so the teaching of these principles and concepts is best illustrated by precisely those tricks. Todd Landman, himself both a politics professor at University of Nottingham and a professional magician, "operationalized" Ludwig Wittgenstein's thought experiment on the meaning of "beetle" in his *Philosophical Investigations* by a magic trick with four boxes containing "beetles." As he recalls, "the effect allows for an inexplicable divination of contents, a play on the word 'Beetle', and a learning point about the social attribute of language." (Landman, 2018, p. 13) In terms of contextual elucidation, Landman suggests that magic performances can replicate or emulate some metaphorical examples or thought experiments political thinkers developed, and enable members of the audience to immerse themselves into their hypothetical or philosophical context. The mind magic recreating Wittgenstein's beetle thought experiment was mentioned just now. Likewise, Plato's thought experiment of The Ring of Gyges (in *The Republic*) and Rawls' Veil of Ignorance can be produced and let the audience experience them. (Landman 2018) Understandably, however, there is very little magic can do to bring forth the real historical or cultural contexts of the thinkers or the case to study. After all, as Landman puts it, "magic can function as a significant means to disrupt and subvert an audience's sense of reality, and in some cases, their fundamental set of beliefs about how the world 'works', as well as deeper religious and metaphysical concerns." (Landman, 2018, p. 4) Magic works best in producing things that look unreal rather than real.

To recap what I argued in this part, illustration of concepts by magic tricks can serve the same pedagogical purposes as stimulation games do, but contrary to simulation games, the efficacy of magic tricks demonstration as a teaching tool depends less on the students as the audience than the teacher as the performer, which, I argue, outscores teaching by role-play simulations.

Two Simulation Games, Same Occasional yet Disappointing Result

I want to begin with a caveat. My experience only suggests that when some participants were not sufficiently prepared for the simulation, and/or the class size was 60+, and/or the teacher

had little leeway as to how the class should be delivered, then the simulations ended up falling short of what was planned.

My involvement in the delivery of role-play simulations started as early as in Spring 2008 until Fall 2024, when I worked as a part-time course tutor for a top-up undergraduate degree offered by De Montfort University of the United Kingdom via City University of Hong Kong. It was a public administration and management program in which the policymaking simulation exercise was part of the compulsory experiential workshop. A controversial bill on the inheritance right of the land in the indigenous villages (in short: whether female family members are legally eligible to inherit the land) is about to be tabled in the legislative council for its first reading, and the government sets up an *ad hoc* government panel and expects the panel, having received feedback from the stakeholders, to make recommendations as to whether the bill shall be shelved. All students taking part in the experiential workshop are divided into seven groups of stakeholders, namely, the government panel, the clansmen federation, the women's rights coalition, the media, the village women, political parties, and common citizens. Media interviews, a TV news report on the issue, a public hearing in the town hall, petitions or protests before, during, and after the hearing, and a press conference hosted by the government panel are scheduled.

Over the 15 years I was mainly responsible for taking care of the media group and the political parties. I was expected to guide them to get their scheduled tasks prepared and delivered by asking them to draw reference from the reality of what the journalists, news presenters, radio phone-in hosts, local political party leaders look like and how they perform at their job positions. During the debriefing session as the final activity of the workshop, I asked them to reflect on how (much) the stakeholders impacted the policymaking process, and how (much) the policymaking theories they learnt could help make sense of the happenings in the role-play simulation.

Over the years, most of the time the students showed in their reflection how much they enjoyed the simulation role-play game. This was especially the case when two conditions were met: when the class size was below 60, and when most students have thrown themselves into their role. But there were several times the result was short of an enjoyable one. When the participating students were more than 60, the vibe became more playful than professional. Classroom discipline could help little here, because the workshops were always scheduled over a weekend, while most of these top-up degree students either worked full-time in the weekdays or on shifts over weekends. All these mean that their attendance, punctuality, and hence their performance in the tasks could never be reasonably assured. For example, the government panel members might just arrive halfway at the public hearing without knowing what was going on, or the news report covered very little the issue because the journalists were empty-handed, and/or the news interviews were not conducted because one or more of the parties were absent. Once student participation and their performance were lax, the downward spiral was almost certain, and ended up in a tragedy of the commons.

I have attempted to "save" the situation by offering more guidance to those who were late to the workshop, and /or to those who have done their prior preparation, so much so that these students turned to me when they were asked why they needed to do certain things or behaved in a certain way. It was not until at one time, when a student replied to her classmates, "our tutor Larry told us to do so," I realized that I have become "the deep state."

My another involvement in a role-play simulation game was to tutor a common-core course on Asian regional governance from 2013 to 2015 at the University of Hong Kong. All the participating students were traditional-age undergraduates. As a final course assessment, the role-play simulation game consisted of a Six-party Talk among and between the state leaders from the six nations: People's Republic of China, Japan, Republic of Korea, Democratic People's Republic of Korea, Russia, and the United States, and non-state organizations working in East Asia, for example, Eugene Bell Foundation, Red Cross Society of the DPRK, Swiss Agency for Development and Cooperation, International Atomic Energy Agency, etc., as well as the media groups like Chinese People's Daily, Japanese Asahi Shimbun, and South Korean Chosun Ilbo. All students have had time and resources to get themselves prepared for the role they played, and took part in the discussions, interviews and negotiations during the Six-party Talk in the final two weeks of the semester. A Communique was expected to be agreed by all the six nations despite their own agendas, while non-state actors were also expected to get what they wanted too, and the media groups were expected to cover the major happenings during the Talk.

Students in the two cohorts have generally had strong commitment to the coursework by my impression. Many were eager to present themselves according to their assigned role in the simulation. But the large class size and the students' lack of sufficient background knowledge have discounted the delivery of the learning outcomes. A HKU Common Core course accepts 120 students, and in the two years I tutored, both cohorts have reached the fall capacity. The 2013–2014 cohort was the first time for both the lecturer and me teaching that course, and we just allowed the 110+ students (a few students have dropped the course for various reasons) to carry out their tasks, most importantly the negotiations between the state leaders, in a lecture room, while some other activities like the discussions among the non-state actors outside the lecture hours.

Two of the problems that concern our discussion here stood out. First, the lecture room turned out to be a wet market, so much so that I as the tutor could hardly follow what was going on. Worse still, because of this, I could hardly offer timely and helpful guidance to those who were for various reasons left aside. In the next year, the lecturer found two lecture rooms, so that the whole class of 120 students was divided into two halves, while each half of 60 students played their game concurrently. Students playing different roles found it easier to know what was going on in other parts of the lecture room, but having 60 students was still too many in my view. More importantly, since a Common Core course precisely expects students to have no prior knowledge of the field of study, despite how hard they have tried to mimic the real persons doing their job in reality, the students still haven't been successful in playing their role. After all, it is too demanding to require a young student to reason and behave in the way a senior diplomat does in a formal multi-party negotiation. But anyone can tell something must have been going wrong when the North Korean representatives and its Southern counterparts (in my concurrent session) quickly reached a unanimous agreement in their first encounter with each other. I was once again caught in dilemma: to guide the state leaders how to behave in the realistic way would make me playing the Deep State, or to let their uninformed play roll out as they wished would defeat the core purpose of the simulation, i.e., to let students put their feet into the shoes of the real-world political actors, so that they can make a more critical sense of both the literature and the reality.

To conclude this part, I recall what Sarah M. Wheeler (2006) has evidently argued in her own research, "a simulation may fall flat in an introductory class with mostly nonmajors, while meeting its objectives quite successfully in an upper-level course of mostly Political Science

majors" (p.334). My experience fully substantiates the first part of her view. But my stories go further on the challenges the course instructor faces when s/he has a big class of novice students to teach. How can a teacher inspire and impress the traditional-age students who may be committed to learning but lack the maturity to properly capture the complexity of the political world, or the mature students from various backgrounds who take part-time study that is marked by a lack of prep time to pledge commitment to a role-play simulation game?

Let the Magic Begin!

Instead of making any attempt to cut corners and keep the simulation game as an essential part in an introductory class, this paper proposes another approach which presumes students as *tabula rasa* and to play with the situation by means of performing and discussing magic tricks that help illuminate the concepts or theories that are remote to beginners. In what follows I want to recall my illustration of the meaning of politics and the meaning of studying it with the help of magic trick performance to one cohort of mature top-up degree undergraduates and one cohort of taught Master's students on an introductory course on contemporary Chinese politics. In both cases the course enrollments were different (21 vs 101), but the effects were basically the same: both groups of students were hinted and encouraged to think outside the box, and could easily capture the meaning of politics, and how it differs from the study of politics as an academic discipline.

Instead of showing both groups of students the set of PowerPoint slides that explain the textbook definition of politics and the study of politics as a subfield of social sciences, in each case, I invited one student to come forward to me and be my assistant. I showed the class a simple card trick, that is, a card remembered by the audience but unknown to me, firstly buried in the middle of the deck in the hands of my student assistant, but in a snap of fingers, quickly shown to have moved to the top.

The choice of the magic trick is not even crucial. Whether the teacher spoiled the trick and let the students figure out how the trick was done is never a problem but is instead a merit. One can quickly tell why. (In both classes) after I finished the trick, I asked the same questions and as follows:

1. Can anyone *describe* what happened?
    - Certainly anyone who watched the trick can easily answer by recalling what they just saw.
2. Can anyone *explain* what happened?
    - Here I emphasize that the two words "describe" and "explain" are very different in what they refer to. To explain a phenomenon cannot just recall what one observes. One essentially needs to consider what one did not see or cannot tell by mere observation, yet one attempts to figure out how a phenomenon came about.
    - This part has drawn much attention from the floor. I asked them to talk to their neighboring classmates and gave them some time to come up with an explanation. Here, a rare few of students could explain how the trick was done. In any case, they seemed to enjoy this discussion as they exchanged ideas. Some even used their electronic devices and googled magic trick reveals.
    - I rounded up this discussion by making several points. Firstly, any explanation of any magic trick must be logical and scientific. It means that one can verify if any of the many explanations makes sense by carrying it out and see if one can produce the expected magic effect.

- Certainly, some magic effects can be produced in more than one way, and a magic trick can be performed in a way unknown to the world except the magician. An explanation, albeit making logical sense on its own, may not be the actual happening of how the trick was precisely done. The second point I made was that scientific explanations seek to explain how the real world may operate, rather than asserting what the real world is.
- Pulling these two threads together, I argued that the study of politics is mostly about how to logically explain different parts of the political world, just like the way we tried to figure out how magic tricks were done. Some phenomenon happened in reality that seemed to be at odds with our common understanding. Merely describing what we observed does not mean that we know how things took place in the way they did. In order to explain what happened, political scientists make informed guesses, *aka* hypotheses, of what may likely have happened. And they must want to verify if their hypotheses are true, so much so that their theory can probably explain how things happened in the way they did.
- I concluded that the above is what the study of politics means. Next I asked another question that relates to the question "what is politics":

3. In order to successfully perform magic tricks, what else is required in addition to the magician being skillful?
   - Here, both groups of my Chinese politics course did not easily get what I meant. I invited them to reflect on what happened on the floor, i.e., how did the members of the audience behave?
   - Some smarter students began to take notice of this, and the whole class started another round of brief discussion.
   - I argued that the scenario of having one magician performing tricks and having most if not all the audience put their attention to it, and some of whom, amazed by the magical effects, truly believe in the magic power the magician has, is analogous to political totalitarianism.
   - I asked everyone to recall our experience: the magician was able to draw everyone's attention to what he was doing. On the floor, no one diverted each other's attention away from the magician. More importantly, no one was allowed to stay behind the magician; no one was allowed to challenge the magician and his magic; no one, during the show, could openly discuss their speculation about how the trick was performed. We could further imagine: the more the audience watched the magic, the more they were convinced and believed in the magic, and the more they would be reluctant to accept challenges or criticisms against the magic. And these are the basic features of a totalitarian regime.
   - Depending on how much my students could follow my elaboration, I may want to go on and distinguish between a totalitarian regime and a political dictatorship by suggesting that the difference lies in merely rejecting opposition and challenges (that is what most political dictatorships do) and accepting the values implanted by the governing authority (that is what most totalitarian regimes aim at).
   - I then continued: the more liberal the society is, the more magicians are available and are lawfully allowed to play their own magic. Political leaders exercise their political power to mobilize support, just like religious leaders demonstrate their religious power to attract believers, just like business tycoons attract their investors, and retailers their customers, and social leaders their supporters. A truly open and liberal society must allow not only different "magicians" playing their magic, but also allow challenges to their "magic," at least legally. People should be allowed to discuss, analyze, and even criticize privately and publicly the "magic" they are

watching. And people should also be allowed to become "magicians" and "play magic" too. This, I concluded, is one of the basic categorizations of different political regimes. To close this discussion, I asked the final question:

4. What do all these mean to you — as a student and as a citizen?
    - This is the final part of the more general question "what is politics?" I asked my students to connect what you were going to learn from the course (as well as other courses in social sciences) with how you live your life in the political world. Certainly there is neither a final answer nor a model answer. But I said I expected them to think beyond what you have been told and to believe: Are you living in reality like an audience watching magic produced by the same (group of) monolithic magician(s)? Is the information you received, and the moral values system you get socialized, coming from the same monopolized course? Or are there different sources coming from different origins? How possible are you, as a citizen, to openly and legally discuss, comment on, or even challenge the leaders in society as well as their policies?

To conclude my report on the use of a simple card trick to introduce the meaning of politics and political science to one cohort of mature top-up degree undergraduates and one cohort of taught Master's students on an introductory course on contemporary Chinese politics, I seemed to have successfully encouraged (at least some of) them to open up their mind and to think outside the box. Teaching contemporary Chinese politics for the two groups of undergraduates and postgraduates who are predominantly Chinese has never been an easy task, for the following reasons. Firstly, talking about Chinese politics has been sensitive in the campus—at least they think it this way. Students with a Mainland Chinese background later told me that their training from high school in Mainland China was that students should only listen and accept rather than critically discuss what they were told. Not until I showed them in the first lecture did they realize that I "taught in a way very different from their high school or university teachers in politics course." Secondly, most of the students who took my course have held some presumptions about what Chinese politics does and should look like, again due to their cultural and social background. More than half of them have held a belief that "pointing out bad things about China means being antagonistic towards their motherland," their birthplace they must defend. Third, accordingly, no one dares to play the role of Xi Jinping or any senior Chinese political leaders should there be a role-play simulation game. Introducing social sciences concepts with demonstration and discussion of magic tricks simply circumvents the three challenges here.

Conclusion

I argue in this paper that performance and discussion of magic tricks can help explain social science concepts in university teaching because they can serve the common pedagogical purposes that role-play simulations and music playing do. More importantly, recalling my own teaching experience in the delivery of role-playing simulation games as well as magic tricks in large classes, I argue that using magic tricks in the illustration of social science concepts should bring fewer challenges to the teachers.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that no AI or AI-assisted technologies have been used to generate, refine, or correct the content in the manuscript. The ideas, design, procedures, findings, analyses, and

discussion are originally written and derived from careful and systematic conduct of the research.

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