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The Enjoyment of Live Magic and its relation to other forms of entertainment

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Magic is a performance art that allows us to experience the impossible. We present data from a questionnaire-based study that examined how the liveness and social and physical proximities of a magic performance affects people's enjoyment and how this relates to other forms of entertainment. We found moderate to strong evidence to suggest a preference for magic performances that were live to when they were presented on video, but this preference for live performances was also found for dance, theatre, visual arts and sport, but not for film music and comedy. People's enjoyment of live magic correlated positively with all other forms of entertainment except music at home, film on TV and sports on TV. Watching magic on TV correlated positively with all the other forms of entertainment except live dance, live music, live plays, film on TV and at the cinema. Regression analysis showed that people's reported enjoyment for live and video magic was influenced by different factors. Enjoyment for live magic was negatively predicted by watching stand-up comedy and sports on TV. Live stand-up comedy, live sport and live dance and film at the cinema all contributed positively to people's enjoyment of live magic. Watching magic live was the strongest predictor enjoyment of watching magic on TV, followed by stand-up comedy on TV, dance live, dance TV, sport TV play TV, sport live, and film on TV. Live dance and sports were negative predictors, implying that increase enjoyment in these forms of entertainment predicted lower levels of enjoyment of magic on TV. Our findings suggest that the enjoyment of magic operates independently from other art forms such as visual art and music. This indicates that existing aesthetic models developed for those domains may not fully account for the mechanisms underlying the appreciation of magic. We also examine how physical proximity influences reported enjoyment, revealing a consistent preference for live performances, alongside a marked aversion to magic performed over Zoom. Additionally, our study explores the frequency with which individuals engage with magic, showing a strong preference for non-live formats. Our findings offer initial insights into how environmental and social factors shape people's enjoyment of magic and its connection to other art forms

KEYWORDS: Magic, Enjoyment, Liveness

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THE ENJOYMENT OF LIVE MAGIC AND ITS RELATION TO OTHER FORMS OF ENTERTAINMENT

Introduction

Magic is a performance art from that allows us to experience the impossible (Leddington, 2016b), and magicians create these experiences by exploiting limitations in perception and cognition (Kuhn, 2019). In recent years there has been much scientific interest in understanding the psychological mechanisms that underpin the creation of these illusions (Kuhn et al., 2008; Macknik et al., 2008; Rensink & Kuhn, 2015; Thomas et al., 2015), but there has been relatively little focus on the emotions that magic elicits (Ozono et al., 2021), or why people enjoy the experience itself (Bagienski & Kuhn, 2023; Leddington, 2017; Wincza & Kuhn, 2025). The aim of this paper was to gain insights into people's enjoyment of magic and examine how this relates to other artforms. We also aimed to the explore how physical proximity affects people's enjoyment of magic and the context in which people consume magic.

Magicians aim to suspend reality and evoke a wide range of emotions—such as awe, wonder, curiosity, and uncertainty—similar to other art forms like theatre, dance, and music (Bagienski & Kuhn, 2019). Psychologists, art critics, and philosophers have largely overlooked the aesthetic experience that magic evokes (Leddington, 2016a). Despite magic's popular appeal, there are very few theoretical frameworks that explain why or how people enjoy magic (c.f. Grassi et al., 2023; Leddington, 2017). Magic allows us to experience the impossible, and in doing so it creates a cognitive conflict between the things we experience and the things we believe to be possible (Kuhn, 2019). Leddington (2016a) suggests that a strong sense of curiosity is key to enjoying magic. This curiosity arises from a cognitive conflict: you know the illusion isn't real, yet you have no clear evidence to disprove it because the trick is happening right before your eyes (Bagienski et al., 2022; Kuhn, 2019; Lamont, 2017; Leddington, 2016a).

There are only a few theoretical frameworks that attempt to explain how or why people enjoy magic (Grassi & Bartels, 2021; Grassi et al., 2023; Leddington, 2016b, 2017), and there is very little empirical research on the topic. Medeiros and colleagues (2023) conducted a qualitative analysis examining what people enjoy about magic. Participants reported that they enjoyed the entertainment and the feelings that magic evokes (mystery, wonder, surprise and amazement), aspects of the magician themselves, as well as beliefs in the impossible, and the child like feelings that magic evokes. Neuroimaging studies support the view that cognitive conflict lies at the heart of magic (Danek et al., 2015; Parris et al., 2009), and this cognitive conflict may account for why we are captivated by magic (Kuhn, 2019). For example, infants are drawn towards causal violations, and this may explain our interest and captivation by magic tricks (Harris, 1994). Indeed, Lewry and colleagues (2021) demonstrated that infants' developmental trajectory of physical knowledge directly relates to adults' interest in different types of magical effect. Moreover, Bagienski and Kuhn (2023) have shown that subjective experiences of impossibility are directly related to people's enjoyment of such tricks. Kuhn et al., (2023) corroborate these findings in a subsequent paper that examined the relationship between impossibility and a range of epistemic emotions, including enjoyment.

We may also learn more about people's enjoyment of magic by relating these experiences to more established art forms. Previous research revolving around the enjoyment of art forms such as painting, dance and music (Bullot & Reber, 2013; Ruth & Müllensiefen, 2020) suggest that people enjoy paintings more when they are given the title of the artwork and they are informed about the artist's method and materials (Belke et al., 2010). This alludes to the idea that arts appreciation can be grounded in the processing fluency, with cognitive fluency being an intrinsic source for hedonic value (Belke et al., 2010; Reber et al., 2004). Magicians purposely deceives the audience by intentionally withholding information about the materials and method, disrupting cognitive fluency. However, Jay (2016) reports data from a survey that suggests people are more impressed with a magician when they know details about the performer, such as having been on live TV. This may suggest that processing fluency is essential for perceiving the experience of magic. Magicians do make certain aspects of a trick disfluent, but these are related to the method rather than the effect that people experience.

Whilst magic is undoubtedly an aesthetic experience due to its evaluative, affective and sematic dimensions (Leder & Nadal, 2014; Shimamura & Palmer, 2012), it may be more similar to aesthetic domains that are performance-based and that do not rely on the audience understanding the making, method or authorship to appreciate the performance. For example, you do not have to know what instrument is being played, how to play that instrument or who is playing the instrument to enjoy the song. In dance, people enjoy dance postures more when they feel incapable of performing them themselves (Cross et al., 2011). Moreover, as with dance and other performance arts, magic performances are dynamic events in which the magician intends to elicit a range of different emotions and experiences. It is therefore likely that the enjoyment of magic will correlate highly with the enjoyment of performance-based aesthetic domains such as dance and theatre.

People consume magic in different contexts, and these physical and social constraints have important implications for the performance and experience of magic. Given sufficient amplification, a musician can play the same song to a small or a large audience. In magic, the physical distance between the performer and the audience affects the type of tricks that are performed (Landman, 2013). Most magic tricks rely on the audience being able to see what the magician is doing. It is possible to project parts of the performance on screens that enable large audiences to see such performances. However, in most instances, magicians adapt the type of tricks that they perform based on the physical proximity between the audience and the performer, and the physical setting dictates some of the major magic genres (Landman, 2013). For example, close-up magic refers to magic tricks that are performed in close physical proximity allowing the audience to inspect the performance in much detail. This type of magic typically relies on audience interaction, and members of the audience are often invited to carefully examine the props to rule out any use of deception. Stage illusions on the other hand involve large props, but they are viewed from a further distance, and they rarely involved much social integrations. The physical context in which magic is performed has a big impact on the type of tricks that are typically performed, and the difference between close-up and stage magic is a large as the differences between classical music and jazz. However, we know remarkably little about how such contexts affect the way people experience magic.

The physical distance between the magician and the audience is also likely to affect the audience's experience of the performance. Magic relies on exploiting the audience's psychological blind spots and a successful magic trick relies on the audience being oblivious about how the illusion has been created (Kuhn, 2019; Lamont & Wiseman, 1999). A successful magic trick not only relies on the spectator failing to see the method, but they must not suspect how the trick is done (Kuhn et al., 2014; Ortiz, 2006). Even the faintest suspicion of how a trick is done can break the illusion, which is why magicians go to great length to rule out any suspicion (Tamariz, 1988). For example, a magician might roll up their sleeves to prove they have nothing hidden. When levitating a person, they may pass a hoop around the floating assistant to show there are no invisible wires holding them up (Leddington, 2016b). The physical proximity between the audience and the performer is likely to affect the potential explanations that come to people's mind, and we expect that it will also affect how the magic trick is experienced. Indeed, a large majority of magicians claim that magic performed live is much more effective than when viewed on video (Wincza & Kuhn, 2025).

There has been much interest in understanding the impact that liveness has on people's engagement with different art forms. For example, the social context plays an important role in dance, where the presence of others increases the subjective enjoyment of the dance experience (Carlson et al., 2018; Solberg & Jensenius, 2017). People also report stronger musical experiences for live events (Lamont, 2011; Swarbrick et al., 2019), due to the experience of the social context (Brown & Knox, 2017; Burland & Pitts, 2016) and the physical proximity of being in the same space as the performers (Silverberg et al., 2013). Moreover, people generally enjoy experiences more when they have them with others (Boothby et al., 2014). A live magic performance is likely to engage similar social factors, but the liveness in magic has an added importance difference – trust. The first cinema goers were surprised and astonished when seeing moving images projected on a screen, and early films often incorporated basic editing tricks that resembled a magic trick (Lachapelle, 2008). However, we have become accustomed to seeing astonishing illusions and special effects on our TV screens.

Seeing a magic trick live is often seen as having a special status, as we are experiencing the effect firsthand and without the possibility of video editing behind the scenes trickery. We therefore predict that the sense of liveness is particularly important for magic and that people would enjoy live magic performances more than when viewed on TV.

The aim of this paper was to gain insights into people's enjoyment of magic and how this relates to other artforms. More specifically we examined the impact that liveness had on people's enjoyment of magic. We expected that people prefer watching magic live and that this benefit of watching the performance live is stronger in magic than other forms of entertainment and art. Our second aim was to examine how physical proximity influenced people's enjoyment of magic. We expected that people would prefer magic that is performed in close physical proximity as this would potentially heighten the sense of impossibility that this form of magic elicits. Our third aim was to examine how enjoyment of magic volud correlates to enjoying other forms of entertainment. We expected that the enjoyment of magic would correlate highly with other performance-based aesthetic domains. Very little is known about the frequency by which people consume magic and platforms through which people engage with magic. Our final aim was to learn more about how people consume magic.

METHOD

Participants

281 Participants were recruited internationally (USA and UK) from the Prolific survey panel to create a representative sample as defined by Prolific which stratified the samples across age, sex and ethnicity. All participants were fluent English speakers. After an initial data inspection data from 24 participants was excluded due to completing the survey within less than 5 minutes, or none-completion of the survey. Our sample thus contained 257 participants (126 male, 128 female, 3 non-defined; age M = 29.5, 19 – 67, SD = 8.95. Based on the policies of the survey panel, all participants provided informed consent before participating and were paid £4.50 upon completion. The Department of Psychology at Goldsmiths, University of London provided ethical approval for the study.

MATERIALS

Three questions about people's enjoyment of magic were embedded within a larger survey about the aesthetics of magic and individual differences (Big five, Locus of Control, Need for Cognitive Closure, Loathing of Legerdemain). This data is reported in a separate paper, and we only report data from 3 of the questions here (see supplementary material for exact wording of the questions).

What impact does liveness have on people's experience of magic?

Using a continuous slider scale with values ranging from 0 (not at all) to 100 (very much) participants were asked to rated how much they enjoyed watching different forms of entertainment in different contexts (watching a film at a cinema, watching a film at home on TV, listening to a live music concert, listening to music at home on a CD, watching a live stand-up comedy performance, watching a stand-up comedy performance at home on TV, watching a live magician, watching a magician at home on TV, watching a livestream/zoom magic show at home, watching a live play at a theatre, watching a play at home on TV, watching a live dance performance, watching a dance performance at home on TV, seeing a piece of art in a gallery, seeing a piece of art at home on a device, watching a live sports event in an arena, watching a sporting event at home on a TV).

How does physical proximity affect people's enjoyment of magic?

Participants were asked to rate how much they would enjoy watching a live magic performance (continuous slider scale from 0 (not at all) to 100 (very much)] in different proximities: (TV/streaming platforms, social media on a portable phone, live close-up performance, parlour magic, small stage magic, large stage magic, live magic performance on TV, Street magic performance) using a continuous slider scale from 0 (not at all) to 100 (very much). How do people consume magic?

Participants were asked to rate who frequently (never, very rarely, rarely, sometimes, often very often) they watched magic performances in each of the following contexts (TV, Streaming platforms (e.g. Netflix, Disney plus, Prime etc.), social media (e.g. YouTube, TikTok, Facebook etc.), live theatre performance, children's birthday party, a social event (e.g. birthday party, wedding, office party etc.)

RESULTS

All data analysis was conducted using Jamovi - Version 2.3.21.0.

What impact does liveness have on people's experience of magic?

Our first analysis examined the impact that liveness had on people's enjoyment of magic and other forms of entertainment. Figure 1 shows the mean enjoyment ratings provided for each of the entertainments, as a function of whether this was experienced within a live context, or not. We ran an ANOVA with liveness (live vs. not live) and entertainment (film, music, comedy, magic, play, dance, visual art, sport) was within-subjects factors. Since Sphericity assumptions were violated, we applied a Greenhouse-Geisser correction to the ANOVA. There was a significant main effect of liveness F(1, 255) = 43.2, p < .001, $\eta^2 = .013$, a significant main effect of entertainment F(5.54, 255) = 57.3, p < .001, $\eta^2 = .009$, and a significant entertainment by liveness interaction F(5.96, 255) = 42.2, p < .001, $\eta^2 = .021$.

Table 1 shows the within subjects t-tests for differences between the live context or not for each of the entertainments – we predicted greater enjoyment for live performances and thus applied a one tailed Bonferroni-Correction to the t-tests. As predicted participants enjoyed magic significantly more when experienced live than when consumed at home (non live). The Bayes Factor shows that there is moderate to strong evidence to support the hypothesis that people report a preference of live magic. However, this preference for liveness was not unique for magic, and the same pattern was observed for plays, dance, visual arts, and sports. Participants seemed to enjoy films more on TV than in the cinema, and there was no significant difference between listening to music in a live concert or at home, or watching live stand-up comedy compared to watching it at home on TV.



Figure 1 – Mean enjoyment ratings for different forms of entertainment as a function of whether they are experienced live or not. Error bars denote standard errors of the means

Magic	<i>t</i> (255) = 1.69, <i>p</i> = .036, d = 0.17, BF ₁₀ = 4.09
Plays	t(255) = 8.93, <i>p</i> <.0001, d = 0.56, BF ₁₀ = 1.15 * 10 ¹⁴
Dance	<i>t</i> (256) = 6.11, <i>p</i> <.0001, d = 0.38, BF ₁₀ = 4.23
Visual arts	<i>t</i> (256) = 12.42, <i>p</i> <.0001, d = 0.78, BF ₁₀ = 12.2 * 10 ²⁵
Sports	<i>t</i> (255) = 3.50, <i>p</i> <.0001, d = 0.38, BF ₁₀ = 51.4
Film	<i>t</i> (256) = 2.49, <i>p</i> = .052 d = 0.16, BF ₁₀ = 0.02
Music	<i>t</i> (256) = 1.77, <i>p</i> = .312, d = 0.11, BF ₁₀ = 0.62
Comedy	<i>t</i> (256) = 2.65, <i>p</i> = .36, d = 0.11, BF ₁₀ = 0.027

Table 1 – Within-subject t-tests comparing the difference in liking ratings for the live compared to the non-live context. We applied a one tailed Bonferroni correction to all t-tests. We also calculated Bayes Factor₁₀ with a default priory 0.707 using Jamovie. 2.3.28.0.

How does enjoyment of magic relate to other forms of entertainment?

This analysis examined the relationship between people's enjoyment of magic and other forms of entertainment. We ran Pearson correlations between each of the variables and table 2 shows the correlation matrix for these variables. Unsurprisingly, there was a significant correlation between live magic and watching magic on TV (r = .61). However, our main interest lay in examining how enjoyment of magic correlates with the other forms of entertainment. People's enjoyment of live magic correlated positively with all other forms of entertainment except music at home, film on TV and sports on TV. Watching magic on TV correlated positively with all the other forms of entertainment except live dance, live music, live plays, film on TV and at the cinema.

	Magician live	Magician TV	Stanul-ny comenty live	Stand-up concerty TV	Dance live	Dance IV	hi mic live	himsie kome	P lay live	Play IV	film direna	Film TV	Visa al art gallery	Visaal art kome	Sport live	Sport TV
Magician live	_															
Magician TV	0.613 ***	-														
Stand-up comedy live	0.362 ***	0.249 ***	_													
Stand-up connecty TV	0.158 *	0.423 ***	0.531 ***	_												
Dancelive	0.254 ***	0.087	0.262 ***	0.154 *	_											
DanceTV	0.195 **	0.320 ***	0.160 +	0.312 ***	0.723 ***	_										
Music live	0.134 *	0.065	0.325 ***	0.072	0.221 ***	0_112	_									
Music home	0.068p	0.216 ***	-0.023	0.230 ***	0.035	0_164 **	0.298 ***	_								
Play live	0.258 ***	0.079	0.305 ***	0.037	0.474 ***	0.287 ***	0.314 ***	0.095	-							
Play TV	0.179 **	0.385 ***	0.211 ***	0.329 ***	0.317 ***	0.513 ***	0.146 *	0.253 ***	0.370 ***	—						
Film cinema	0.273 ***	0.035	0.262 ***	-0.002	0.381 ***	0.217 ***	0.373 ***	0.055	0.469 ***	0.164 **	-					
FilmTV	0.001	0_103	0.120	0.271 ***	0.065	0.205 ***	0_163 **	0.334 ***	0 <u>.181</u> ↔	0.256 ***	0.153 **	-				
Visual art gallery	0.231 ***	0.163 **	0.183 **	0.111	0.352 ***	0.258 ***	0.203 ↔	0.196 **	0.501 ***	0.226 ***	0.189 **	0.067	-			
Visual art home	0.165 **	0.214 ***	0.162 **	0.289 ***	0.240 ***	0.317 ***	0.105	0.262 ***	0_193 **	0.410 ***	0.119	0.050	0.467 ***			
Spart live	0.192 **	0_146 *	0.329 ****	0.101	0.133 *	0.051	0.255 ***	0.011	0.124 *	0.114	0.166 **	0.012	0.105	0.016	_	
Sport TV	0.029	0.244 ***	0.152 *	0_173 **	0.011	0_126 *	0.150 *	0.136 *	0.042	0.152 **	0.042	0.127 *	0.052	0.029	0.731 ***	-

Note. * p < .05, ** p < .01, *** p < .001

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Table 2 – Correlation matrix showing Pearson correlations between enjoyment ratings for experiencing all forms of entertainment live and non-live.

We next used a multiple regression model to examine the independent contributions that enjoyments of the different forms of entertainment made towards people's enjoyment of magic. The first regression model examined enjoyment of live magic and the overall model was significant F(15, 237) = 237, p <.001, R² = .58. Table 3 shows the individual predictors in descending order. Enjoyment of watching magic on TV was the strongest predictor, followed by watching stand-up comedy and sports on TV. However, these predictors were negative, implying that increases in enjoyment were predicted decreases in live magic enjoyment. Live stand-up comedy, live sport and live dance and film at the cinema all contributed positively to people's enjoyment of magic. None of the other variables significantly contributed towards people's enjoyment of live magic.

The second regression model examined people's enjoyment of magic on TV. The overall regression model was significant F(15, 237) = 27,1, p <.001, $R^2 = .632$. Watching magic live was the strongest predictor followed by stand-up comedy on TV, dance live, dance TV, sport TV play TV, sport live, and film on TV. Interestingly, dance live and sports live were negative predictors, implying that increase enjoyment in these forms of entertainment predicted lower levels of enjoyment of magic on TV.

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Predictor	Estimate	SE	t	р
Intercept	8.97	6.93	1.3	0.197
Magician TV	0.73	0.05	14.1	< .001
Stand-up comedy TV	-0.22	0.06	-3.5	< .001
Sport TV	-0.22	0.05	-4.1	< .001
Stand-up comedy live	0.22	0.06	3.7	< .001
Sport live	0.18	0.06	3.3	0.001
Dance live	0.18	0.07	2.6	0.01
Film cinema	0.16	0.06	2.5	0.012
Dance TV	-0.13	0.07	-1.9	0.063
Music live	-0.10	0.05	-1.9	0.058
Play TV	-0.08	0.06	-1.5	0.134
Music home	0.05	0.06	0.9	0.354
Play live	0.05	0.06	0.8	0.432
Visual art home	0.04	0.05	0.7	0.513
Visual art gallery	0.03	0.05	0.5	0.625
Film TV	-0.01	0.07	-0.2	0.861

Enjoyment of magic on

ΤV

Predictor	Estimate	SE	t	р	
Intercept	8.67	6.45	1.35	0.18	
Magician live	0.63	0.04	14.11	< .001	
Stand-up comedy TV	0.28	0.06	4.81	< .001	
Dance live	-0.25	0.06	-3.97	< .001	
Dance TV	0.24	0.06	3.74	< .001	
Sport TV	0.20	0.05	3.91	< .001	
Play TV	0.16	0.05	3.11	0.002	
Sport live	-0.13	0.05	-2.41	0.017	
Film TV	-0.09	0.07	-1.31	0.193	
Stand-up comedy live	-0.08	0.06	-1.51	0.133	
Film cinema	-0.07	0.06	-1.16	0.248	
Play live	-0.05	0.06	-0.95	0.342	
Visual art home	-0.05	0.05	-1.03	0.305	
Music live	0.05	0.05	0.99	0.323	
Visual art gallery	0.04	0.05	0.87	0.388	
Music home	0.02	0.05	0.35	0.725	

Table 3 – Multiple regression model

How does physical proximity affect people's enjoyment of magic?

This analysis examined the impact that different physical proximities have on people's enjoyment of a live magic performance. Figure 2 shows the mean ratings for how much participants would enjoy watching magic in order of preference. Since Sphericity assumptions were violated, we applied a Greenhouse-Geisser correction to the ANOVA. An ANOVA found a significant main effect proximity F(4.93, 2031) = 61.2, p < .001, $\eta^2 = .073$. We ran Bonferoni corrected t-tests to examine the differences between the contexts. Close-up magic received the highest score, but this was not significantly different from social media t(254) = 1.34, p = 1, BF₁₀ = 0.172. Social media also did not score significantly higher than parlour t(254) = 0.07, p = 1, BF₁₀ = 0.07, and parlour did not score significantly higher than street magic t(254) = 0.75, p = 1, BF₁₀ = 0.092. Street magic scored no higher than small stage t(254) = 0.71, p = 1, BF₁₀ = 0.090. However, small stage scored significantly lower than close-up t(254) = 4.18, p = .001, BF₁₀ =, which demonstrates a preference for watching magic in close proximity. The small stage did not differ significantly from the large stage t(254) = 0.077, p = 1, BF₁₀ = 297. The large stage scored numerically higher than live TV, but this difference was not significant t(254) = 2.25, p = 0.9, BF₁₀ = 0.83, and there was no significant difference between live streaming and live TV t(254) = 0.10, p = 1, BF₁₀ = 0.07. Live TV scored significantly higher than zoom t(254) = 14.1, p < .001, BF₁₀ = 3.5×10^{30} . The zoom show scored significantly lower than any of the other performance contexts.



Figure 2 – Mean enjoyment ratings for magic experienced in different contexts. Error bars denote standard errors of the mean.

How do people consume magic?

Our next analysis examined the frequency by people consume magic. Figure 3 shows the mean frequency by which participants claimed to be watching magic performances in each of the

different contexts, ordered by size. A Friedman repeated ANOVA found a significant main effect of context $X^2(5) = 345$, p < .001. Dubin-Cover post hoc tests found significant differences between ach of the categories (all ps < .02) except for the difference between children's parties and the theatre (1.11, p = .27).



Figure 3 – Frequency by which participants consume magic. Error bars denote standard errors of the mean.

DISCUSSION

We know remarkably little about why people enjoy magic, and how performance magic relates to other forms of art and entertainment. The current paper tried to establish some of the factors that affect our enjoyment of magic as an attempt to form a broader understanding of this mysterious art form. Our first question examined whether liveness influences people's enjoyment of magic. Magic relies on experiences that conflict with our beliefs about the world, and we expect that this conflict would be stronger when experienced live, than when people watch a magic trick on TV. We therefore predicted that people would report enjoying live magic more than when they are experienced on TV - our results found moderate to strong evidence to support this but with an important caveat. A previous study showed that 94% magicians thought that magic performed in a live context would be more impressive that when it is viewed on video , and our results seem to support this intuition (Wincza & Kuhn, 2025). However, this preference for live performances was not unique to magic, and the same, if not greater differences were found for other forms of entertainment (music, plays, dance, visual arts and sport). Interestingly, our participants reported a preference for watching films at home rather than the cinema, and they showed no preference over watching stand-up comedy live.

Our results dovetail previous findings in other domains such as music which show stronger experiences in live events than when they are consumed in a less interactive environment and not in the same space as the performer (Silverberg et al., 2013). Moreover, Bertamini and Blakemore (2019) demonstrated that people are willing to pay significantly more for seeing an original piece of art, than a replica, and that the medium in which the piece is presented also has a significant impact. For example, people value a mirror reflection of an artwork more highly than a video projection. Zoom magic offers a live magic performance that also allows for direct audience interaction, and yet participants reported disliking this form of magic. However, it is important to note that few participants will have experienced a zoom magic show, and it is therefore difficult to know how they would experience such performances. The link between liveness and

enjoyment therefore appears to be more nuanced. Participants' dislike for zoom magic may also relate to a more general phenomenon of "Zoom fatigue" in which people report zoom meetings as being both more tyring than face-to-face meetings (Nesher Shoshan & Wehrt, 2022), which may explain why zoom magic is thought of as being less enjoyable.

Our next analysis focused on the relationship between people's enjoyment for magic and other forms of entertainment. We found a significant correlation between people's enjoyment of watching live magic compared to watching magic on TV, but this correlation was far from perfect. This finding suggests that there is something unique about experiencing magic tricks live. Just because someone likes watching magic on TV, does not necessarily imply they enjoy it being performed live. We ran two separate linear regression models to shed light on the relationship between people's enjoyment of magic and other forms of entertainment. Our regression models for live and TV magic revealed a different set of predictors, which again suggest that there is something inherently different about watching magic live. These results suggest that people's enjoyment of an artform is strongly driven by the format in which it is presented, which can outweigh individual differences in preference for other types of artform (e.g. art vs. music). This alludes to a new classification of the arts which relates to their ability to be translated into a 'non-live' context. Alongside magic, visual art, music and dance appear to be most susceptible to being taken out of a live context. It would be valuable to further explore the reasons why some individuals feel drawn to non-live iterations of artworks. An alternative explanation is that some of the effects observed here are driven by individual differences amongst the spectators. It is possible that some individuals simply prefer consuming certain forms of entertainment from the comfort of their own sitting room (e.g. low on extraversion and sensation-seeking) (Silvia et al., 2023). It would be interesting to explore such individual differences in future research.

Both magic and stand-up comedy rely on surprise and violations of expectations. For example, standup comedy often relies on the audience not knowing the punchline, and violations in expectation can evoke laughter, resulting in a collaboration between an active audience and the comedian (Berger, 2014; Brodie, 2014). It seems likely that people enjoy magic and other performance-based arts, such as comedy, because they can actively participate and experience epistemic emotions like surprise (Bagienski & Kuhn, 2023; Grassi et al., 2023; Leddington, 2017). Leddington (2020) argues for a close connection between comedy and magic, citing similarities in the history and theatrical performance modes, as well as the emotions (i.e. laughter) that these two forms of entertainment elicit. People's enjoyment of live magic was significantly associated with people's enjoyment of stand-up comedy, but not necessarily in the expected direction. Enjoyment of live comedy positively predicted enjoyment of live magic, but there was a negative association between enjoyment of TV magic and stand-up comedy watched on TV. People's enjoyment of TV magic was positively related to watching a stand-up comedy live, but enjoyment of comedy on TV did not significantly predict enjoyment of magic. These results further illustrate that there is something rather unique about watching magic and other forms of entertainment live, rather than at home or on TV.

Our multiple regression model revealed interesting differences in the relationship between people's enjoyment of magic and other forms of entertainment. Enjoyment of music (live and at home), visual art (art gallery and at home) did not predict enjoyment of magic live or on TV. The results suggest that our enjoyment of magic is independent of these artforms, which implies that models on the aesthetics of visual art and music may not adequately explain our enjoyment of magic.

Our study also focused on the impact that physical and social proximity have on people's enjoyment of magic, by asking participants to rate their enjoyment of magic when presented in different formats. Participants reported a preference for watching magic performed close-up, than magic on TV and stage (small and large) as well as zoom. However, rather surprisingly close-up magic did not score significantly higher than magic watched on social media and magic watched in a parlour or street setting. We predicted a positive relationship between people's enjoyment of magic and the physical and social distance between the performer and the magician. This prediction was only partially supported. Our participants enjoyed magic performed close-up more than when it was performed on stage. It is also interesting to note that participants preferred watching live magic on social media than on TV, which may suggest that the closer connection

between the performer and the audience enhances enjoyment. One of the most striking findings was people's dislike for zoom magic. Zoom magic evolved during the COVID pandemic when social distancing prevented magicians from preforming magic live. This type of magic is far more interactive than magic experienced on TV or social media, and yet people's preference for this type of magic was significantly lower than any other forms of magic. These results suggests that people's enjoyment of magic does not rest on the direct interaction between the magician and their audience.

Our final analysis examined the frequency by which people reported to consume magic in different contexts. Our results show that participants sometimes watch magic on social media, and that social media is the most popular platform for watching magic, and significantly more popular that TV. Social media allows people to re-watch a magic trick, which often increases the chances of people discovering the secret to the trick (Ekroll et al., 2018). Moreover, social media magic tricks often include solutions to how a trick is done (Rappert & Kuhn, 2024), which may appeal to individual who cannot bear to be beaten by the deception (Silvia et al., 2023). Our participants rarely reported watching magic at the theatre, children's parties or other social events. Even though participants showed a preference for watching live magic, our results illustrate that they rarely watch live magic, and instead seem to consume magic through social media platforms. One possible reason for the preference for non-live magic is simply ease of access. If someone wants to watch magic, it is quick and easy to find clips from Fool Us on YouTube or browse magic content on TikTok. In contrast, attending a live magic show typically requires more effort-especially for those who don't live in a large city or tourist area where such performances are readily available. Our findings may therefore reflect these practical limitations rather than a true preference for one style of magic over another. It is important to note that the overall reported engagement with magic was rather low, regardless of how it was being consumed. At this point in time, we have now definitive answers as to why this may be, but we can speculate about some possible causes. People often identify themselves as sports fans, or individuals who frequently engage with the arts, and this self-identify may play an important role in driving behaviour. The number of people who identify as active consumers of magic is likely to be much lower which would reduce their willingness to seek out magic, leading to a reduced level of proactive engagement. Our data show that people enjoy an incidental and rather causal consumption of magic via social media, which dovetails this interpretation.

Our study offers an exploratory analysis of individuals' enjoyment and engagement with magic. Participants were asked to report the extent to which they appreciated magic and other art forms across various contexts. A key limitation of this approach is the reliance on self-reported data, which may not accurately reflect participants' actual experiences or emotions. Future research would benefit from directly measuring the emotional responses elicited by magic rather than relying solely on subjective reports. Additionally, some participants provided responses about contexts they had not personally experienced. For instance, few reported having seen magic performed in a theatre, raising concerns about the reliability of these findings.

Magic is one of the oldest forms of entertainment, and for many centuries people have enjoyed conjurers performing tricks (Lamont & Steinmeyer, 2018) and yet we know very little about why we are drawn towards such illusions (Corrieri, 2018). In recent years scholars from a range of disciplines including philosophy (Grassi et al., 2023; Leddington, 2016b), computer science (Grassi & Bartels, 2021), history (Lamont, 2013), theatre studies (Corrieri, 2018) and psychology (Lamont, 2017) have started to focus their attention on this secretive art form. We used an empirical approach to help understand how our enjoyment of magic relates to other form of entertainment and some of the contextual factors that contribute towards this enjoyment. Illusions and magical experiences are important components to other artforms such as film (North, 2001; Solomon, 2006), visual art (Wade & Hughes, 1999) or comedy (Leddington, 2020), and thus an understanding of our aesthetic appreciation of such magical experiences has important implications beyond the art of magic. Our empirical investigation into people's enjoyment of magic offer a starting point into this endeavour.

REFERENCES

Bagienski, S., & Kuhn, G. (2019). The crossroads of magic and Wellbeing: A review of wellbeingfocused magic programs, empirical studies, and conceivable theories. *International Journal of Wellbeing*, 9(2), 41-65. <u>https://doi.org/http://dx.doi.org/10.5502/ijw.v9i2.740</u>

Bagienski, S., Lorna, G., Kuhn, G., & de Almeida e Souza Brodtkorb, S. (2022). Mastering the Impossible: How an easier-than-expected, magic intervention acts as a source of self-efficacy. *Psychology of Consciousness: Theory, Research, and Practice,* 9(2), 243-256. https://doi.org/https://doi.org/10.1037/cns0000332

Bagienski, S. E., & Kuhn, G. (2023). A balanced view of impossible aesthetics: An empirical investigation of how impossibility relates to our enjoyment of magic tricks. *I-Perception*, 14(1), 20416695221142537. <u>https://doi.org/10.1177/20416695221142537</u>

Belke, B., Leder, H., Strobach, T., & Carbon, C.-C. (2010). Cognitive fluency: High-level processing dynamics in art appreciation. *Psychology of Aesthetics, Creativity, and the Arts*, 4(4), 214.

Bertamini, M., & Blakemore, C. (2019). Seeing a work of art indirectly: When a reproduction is better than an indirect view, and a mirror better than a live monitor. *Frontiers in Psychology*, 10, 2033.

Boothby, E. J., Clark, M. S., & Bargh, J. A. (2014). Shared experiences are amplified. *Psychol Sci*, 25(12), 2209-2216. <u>https://doi.org/10.1177/0956797614551162</u>

Brown, S. C., & Knox, D. (2017). Why go to pop concerts? The motivations behind live music attendance. *Musicae Scientiae*, 21(3), 233-249.

Bullot, N. J., & Reber, R. (2013). The artful mind meets art history: Toward a psycho-historical framework for the science of art appreciation. *Behavioral and Brain Sciences*, *36*(2), 123-137.

Burland, K., & Pitts, S. (2016). Coughing and clapping: Investigating audience experience. Routledge.

Carlson, E., Burger, B., & Toiviainen, P. (2018). Dance like someone is watching: A social relations model study of music-induced movement. *Music & Science*, 1, 2059204318807846.

Corrieri, A. (2018). What Is This...': Introducing Magic and Theatre'. Platform, 12(2), 12-17.

Cross, E. S., Kirsch, L., Ticini, L. F., & Schütz-Bosbach, S. (2011). The impact of aesthetic evaluation and physical ability on dance perception. *Frontiers in Human Neuroscience*, *5*, 102.

Danek, A. H., Öllinger, M., Fraps, T., Grothe, B., & Flanagin, V. L. (2015). An fMRI investigation of expectation violation in magic tricks [Original Research]. *Frontiers in Psychology*, *6*. <u>https://doi.org/10.3389/fpsyg.2015.00084</u>

Ekroll, V., De Bruyckere, E., Vanwezemael, L., & Wagemans, J. (2018). Never Repeat the Same Trick Twice—Unless it is Cognitively Impenetrable. *I-Perception*, *9*(6), 2041669518816711. https://doi.org/10.1177/2041669518816711

Grassi, P. R., & Bartels, A. (2021). Magic, Bayes and wows: A Bayesian account of magic tricks. *Neuroscience & Biobehavioral Reviews*, 126, 515-527. <u>https://doi.org/https://doi.org/10.1016/j.neubiorev.2021.04.001</u>

Grassi, P. R., Plikat, V., & Wong, H. Y. (2023). How can we be moved by magic? *The British Journal of Aesthetics*, 64(2), 187-204. <u>https://doi.org/10.1093/aesthj/ayad026</u>

Harris, P. L. (1994). Unexpected, impossible and magical events: Children's reactions to causal violations. *British Journal of Developmental Psychology*, *12*, 1-7.

Jay, J. (2016). What do audiences really think. MAGIC(September), 46-55.

Kuhn, G. (2019). Experiencing the impossible: The science of magic. MIT Press.

Kuhn, G., Amlani, A. A., & Rensink, R. A. (2008). Towards a science of magic. *Trends in Cognitive Sciences*, 12(9), 349-354. <u>https://doi.org/10.1016/j.tics.2008.05.008</u>

Kuhn, G., Caffaratti, H. A., Teszka, R., & Rensink, R. A. (2014). A psychologically-based taxonomy of misdirection. *Frontiers in Psychology*, *5*, 1392. <u>https://doi.org/doi</u>: 10.3389/fpsyg.2014.01392

Kuhn, G., Pailhès, A., Jay, J., & Lukian, M. (2024). Experiencing the improbable: How does the objective probability of a magic trick occurring influence a spectator's experience? *Decision*, 11(3), 420–434.

Lachapelle, S. (2008). From the stage to the laboratory: magicians, psychologists, and the science of illusion. *Journal of the History of the Behavioral Sciences*, 44(4), 319-334.

Lamont, A. (2011). University students' strong experiences of music: Pleasure, engagement, and meaning. *Musicae Scientiae*, 15(2), 229-249.

Lamont, P. (2013). Extraordinary beliefs: A historical approach to a psychological problem. University Press.

Lamont, P. (2017). A particular kind of wonder. *Review of General Psychology*, 21(1), 1-8. https://doi.org/10.1037/gpr0000095

Lamont, P., & Steinmeyer, J. (2018). *The Secret History of Magic: The True Story of the Deceptive Art*. Penguin Random House.

Lamont, P., & Wiseman, R. (1999). Magic in theory. Hermetic Press.

Landman, T. (2013). Framing performance magic: the role of contract, discourse and effect. *Journal of performance magic*, 1(1), 47-67.

Leddington, J. (2016a). The art of the impossible: the aestetics of theatrical magic London Aesthetics Forum, London.

Leddington, J. (2016b). The experience of magic. *The journal of aesthetics and art criticism*, 74(3), 253-264.

Leddington, J. (2017). The enjoyment of negative emotions in the experience of magic. *Behavioral and Brain Sciences*, 40.

Leddington, J. (2020). Comic impossibilities. *The journal of aesthetics and art criticism*, 78(4), 547-558.

Leder, H., & Nadal, M. (2014). Ten years of a model of aesthetic appreciation and aesthetic judgments: The aesthetic episode–Developments and challenges in empirical aesthetics. *British Journal of Psychology*, 105(4), 443-464.

Lewry, C., Curtis, K., Vasilyeva, N., Xu, F., & Griffiths, T. L. (2021). Intuitions about magic track the development of intuitive physics. *Cognition*, 214, 104762. <u>https://doi.org/https://doi.org/10.1016/j.cognition.2021.104762</u>

Macknik, S. L., King, M., Randi, J., Robbins, A., Teller, Thompson, J., & Martinez-Conde, S. (2008). Attention and awareness in stage magic: turning tricks into research. *Nat Rev Neurosci*, 9(11), 871-879.

Medeiros, G. T., Tomkins, M. L., Bagienski, S., & Kuhn, G. (2023). Not Just a Trick: A survey study exploring how 'exposing' exhibition visitors to science of magic concepts impacts their appreciation of magic. *ournal of Performance Magic*, 7(1). <u>https://doi.org/doi</u>: <u>https://doi.org/10.5920/jpm.1260</u>

Nesher Shoshan, H., & Wehrt, W. (2022). Understanding "Zoom fatigue": A mixed-method approach. *Applied Psychology*, 71(3), 827-852.

North, D. (2001). Magic and illusion in early cinema. Studies in French Cinema, 1(2).

Ortiz, D. (2006). Designing miracles. Magic Limited.

Ozono, H., Komiya, A., Kuratomi, K., Hatano, A., Fastrich, G., Raw, J. A. L., Haffey, A., Meliss, S., Lau, J. K. L., & Murayama, K. (2021). Magic Curiosity Arousing Tricks (MagicCATs): A novel stimulus collection to induce epistemic emotions. *Behavior research methods*, *53*(1), 188-215. https://doi.org/10.3758/s13428-020-01431-2

Parris, B. A., Kuhn, G., Mizon, G. A., Benattayallah, A., & Hodgson, T. L. (2009). Imaging the impossible: An fMRI study of impossible causal relationships in magic tricks. *Neuroimage*, 45(3), 1033-1039. <u>https://doi.org/10.1016/j.neuroimage.2008.12.036</u>

Rappert, B., & Kuhn, G. (2024). Toward a Theory of Exposure *Journal of performance magic*, 7(1). <u>https://doi.org/https://doi.org/10.5920/jpm.1512</u>

Reber, R., Schwarz, N., & Winkielman, P. (2004). Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Personality and social psychology review*, 8(4), 364-382.

Rensink, R. A., & Kuhn, G. (2015). A framework for using magic to study the mind [Hypothesis & Theory]. *Frontiers in Psychology*, 5. <u>https://doi.org/10.3389/fpsyg.2014.01508</u>

Ruth, N., & Müllensiefen, D. (2020). Associations between musical preferences and personality in female secondary school students. *Psychomusicology: Music, Mind, and Brain,* 30(4), 202.

Shimamura, A. P., & Palmer, S. E. (2012). Aesthetic science: Connecting minds, brains, and experience. OUP USA.

Silverberg, J. L., Bierbaum, M., Sethna, J. P., & Cohen, I. (2013). Collective motion of humans in mosh and circle pits at heavy metal concerts. *Physical review letters*, 110(22), 228701.

Silvia, P. J., Greengross, G., Karwowski, M., Rodriguez, R. M., & Crasson, S. J. (2023). Who hates magic? Exploring the loathing of legerdemain. *Psychology of Aesthetics, Creativity, and the Arts*, 17(6), 762.

Solberg, R. T., & Jensenius, A. R. (2017). Pleasurable and intersubjectively embodied experiences of electronic dance music. *Empirical Musicology Review*, 11(3-4), 301-318. Solomon, M. (2006). Up-to-date magic: Theatrical conjuring and the trick film. *Theatre journal*, 595-615.

Swarbrick, D., Bosnyak, D., Livingstone, S. R., Bansal, J., Marsh-Rollo, S., Woolhouse, M. H., & Trainor, L. J. (2019). How live music moves us: head movement differences in audiences to live versus recorded music. *Frontiers in Psychology*, *9*, 2682.

Tamariz, J. (1988). The magic way. Editorial Frankson Magic Books.

Thomas, C., Didierjean, A., Maquestiaux, F., & Gygax, P. (2015). Does magic offer a cryptozoology ground for psychology? *Review of General Psychology*, 19(2), 117-128. <u>https://doi.org/10.1037/gpr0000041</u> Wade, N. J., & Hughes, P. (1999). Fooling the eyes: trompe l'oeil and reverse perspective. *Perception*, 28(9), 1115-1119.

Wincza, R., & Kuhn, G. (2025). Challenging magicians' intuitive insights: The role of audience participation in experiencing a magic trick. *Psychology of Aesthetics, Creativity, and the Arts.* Advance online publication. https://doi.org/10.1037/aca0000762