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## ARTICLE

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# *Epic Sock Puppet Theater: artistic tactics for mitigating online disinformation*

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**Abstract**

This case study presents the artistic research and production process for an interactive installation, *Epic Sock Puppet Theater (ESPT)*, that uses activist tactics to engage with the divisive socio-political content of online disinformation campaigns. The project allows viewers to interact with a dataset of social media posts made by “sock puppets” or imposter accounts used as part of state-sponsored disinformation campaigns so the viewer can become better equipped to recognize disinformation in their own social media feeds, less susceptible to its negative effects and less likely to unwittingly share it. The project is based on inoculation theory, a biological metaphor for building resistance against future disinformation through careful preemptive exposure to disinformation messages, as well as research that found that the revelation of a sock puppet account helped social media users identify other sock puppets spreading disinformation. In this case study, we summarize our research, user testing, and artistic process as a resource for others who may be interested in combining research, art and activism. Through our research and experimentation, we carefully selected artistic tactics, focusing on techniques from Brechtian epic theater to present emotionally and politically charged content that is designed to polarize viewers in a way that allows for critical reflection. The result is an *artistic* solution to a socio-technical

problem: an animatronic sock puppet theater that simultaneously helps to familiarize and distance the public from online sock puppet disinformation, to creatively mitigate its negative effects.

### Keywords

disinformation; media art, epic theater; activism; polarization; social media

### *Epic Sock Puppet Theater: tácticas artísticas para mitigar la desinformación en línea*

#### Resumen

*Este estudio de caso presenta el proceso artístico de investigación y producción para una instalación interactiva, Epic Sock Puppet Theater (ESPT), que utiliza tácticas artísticas para interactuar con el contenido sociopolítico divisivo de las campañas de desinformación en línea. El proyecto permite a los espectadores interactuar con un conjunto de datos de publicaciones en redes sociales realizadas por «marionetas» (sock puppets) o cuentas de impostores utilizadas como parte de campañas de desinformación patrocinadas por estados para que el espectador pueda estar mejor equipado para reconocer la desinformación en sus propias redes sociales, sea menos susceptible a sus efectos negativos y menos propenso a compartirla involuntariamente. El proyecto se basa en la teoría de la inoculación, una metáfora biológica para desarrollar resistencia contra la desinformación futura a través de una cuidadosa exposición preventiva a mensajes de desinformación, así como en investigaciones que hallaron que la revelación de una cuenta marioneta ayudó a los usuarios de redes sociales a identificar otras marionetas que propagan la desinformación. En este estudio de caso, resumimos nuestra investigación, pruebas de usuario y proceso artístico como recurso para otras personas que pueden estar interesadas en combinar investigación, arte y activismo. A través de nuestra investigación y experimentación, seleccionamos cuidadosamente tácticas artísticas, centrándonos en las técnicas del teatro épico brechtiano para presentar contenido cargado emocional y políticamente que está diseñado para polarizar a los espectadores de una manera que permita la reflexión crítica. El resultado es una solución «artística» a un problema sociotécnico: un teatro de marionetas animatrónico que ayuda, simultáneamente, a familiarizar y distanciar al público de la desinformación de las cuentas marioneta (o impostoras) en línea, para mitigar creativamente sus efectos negativos.*

#### Palabras clave

desinformación, media art, teatro épico, activismo, polarización, redes sociales

## Introduction

*Epic Sock Puppet Theater (ESPT)* is an artistic research project that takes the form of an interactive animatronic puppet show to familiarize viewers with the content of online disinformation campaigns by state-sponsored sock puppet accounts. The project is based on research into sock puppet campaigns and utilizes artistic techniques for critical distancing. “Sock puppet” accounts are fake online identities that present themselves as individuals, news sources or trusted social or activist groups. Disinformation can be defined as “an adversarial campaign that weaponizes multiple rhetorical strategies and forms of knowing – including not only falsehoods but also truths, half-truths, and value-laden judgments – to exploit and amplify identity-driven controversies” (Diaz Ruiz & Nilsson 2022, 29). The goal of *ESPT* is to help viewers become familiar with sock puppet content so they are less likely to spread disinformation when they encounter it in their own social media feeds or read news articles based on sock puppet

disinformation. The project utilizes artistic distancing techniques to both help users critically reflect on the content and keep them from becoming upset or inadvertently polarized when they engage with content posted by sock puppets. The project is designed to quickly incorporate content from new disinformation campaigns as they emerge, but for the first iteration of *ESPT*, we used data from Russian interference in the 2016 presidential election. However, state-sponsored sock puppet disinformation campaigns are not exclusive to the Russia-US context, and the prevalence of social media disinformation campaigns is growing; in 2019, these campaigns were waged in 70 countries, an increase from 48 countries in 2018 (Bradshaw & Howard 2019). These campaigns sometimes try to spread a positive portrayal of a country, like a public relations campaign, or attempt to polarize the citizens of a targeted country or interfere in a democratic process.

*ESPT* is a transportable, interactive, animatronic puppet theater that resembles a classic Punch and Judy puppet stage combined with a dystopian video game or penny arcade that has

a laser-etched plexiglass facade with animated lights to attract viewers in a public setting. The animatronic puppets look around naturalistically until viewers activate them using the arcade buttons or touchscreen controls to select a social media post to be performed from a database of sock puppet disinformation.



Figure 1. *Epic Sock Puppet Theater*  
Source: Derek Curry and Jennifer Gradecki

Sock puppet disinformation campaigns are made possible by a socio-technical situation that includes online communications technology and networks of individuals that coalesce around various affinities, identities and associations. The “fragmented” media landscape in Western democracies that has developed from widespread access to numerous online and cable television news sources allows users to choose sources that conform to (and reinforce) their ideological beliefs (Ardèvol-Abreu & de Zúñiga 2017). This situation is exacerbated by content aggregators tailored to individual users. Social media is now a major source of news for many internet users, with more than half of adults receiving some of their news from social media in Western democracies (Pew 2021). Because the business models of social media companies prioritize advertising revenue over democracy, recommendation algorithms promote sensational content and trending topics, which are easily gamed by advertisers, influencers and sock puppets (Woolley 2022).

Expanded access to alternative sources of information and news media by “networked individuals” has been called the “Fifth Estate” and can rival or challenge the influence of other more established authorities, such as traditional journalism or the government (Dutton 2009). The Fifth Estate includes web-based political movements, blogs, news aggregators, peer-to-peer file sharing, and social media. In our first dataset, sock puppet agents created fake blogs, fake news sites, and fake online political campaigns, in addition to fake social media accounts as part of a coordinated and comprehensive disinformation campaign.

## 1. Sock puppets

*Sock puppet* is an internet slang term for imposter social media accounts that conceal the identity of a user so they can collect and/or disseminate information. Originally devised as a way for users to pseudonymously post supportive comments about themselves on USENET in the 1990s, sock puppets have since been used in various capacities, including business promotion, book and film reviews, evading bans on social media and gathering open-source intelligence. Sock puppet accounts often manipulate public opinion by posting reviews or liking or sharing content, but have also been used to infiltrate, surveil, and spread disinformation. Sock puppet accounts typically support each other to create a facade of consensus but will sometimes present the illusion of being in opposition to lure members of the public into taking sides of an argument (Glenski, Volkova & Kumar 2020). Because sock puppet accounts are controlled by humans, they are extremely difficult to detect using algorithmic bot detection measures (Schwartz & Overdorf 2020). The sock puppet accounts featured in the project can be characterized as “infiltrators”, which assimilate into a group to influence and persuade members but may also directly attack a target (Schwartz & Overdorf 2020). Disinformation campaigns are effective at sowing doubt and changing political opinions (Zerback, Töpfl & Knöpfle 2021). This is partially due to members of the public trusting accounts that they identify with more than experts or politicians (Lefevre, de Swert & Walgrave 2012). Therefore, creating a deceptive social media sock puppet requires research into how a targeted group communicates, including important issues, popular phrases and slang terms used by the group.

## 2. IRA dataset

The first dataset incorporated into the project consists of sock puppet posts made by accounts controlled by the Russian Internet Research Agency (IRA) released as part of a US Senate Select Committee on Intelligence (SSCI) report on Russian interference in the 2016 presidential election (US Congress 2020). This dataset is unique in that it contains an extraordinarily large number of positively identified imposter accounts and posts (Ferrara 2020). The IRA is a private company founded by Yevgeny Prigozhin, the Russian oligarch and co-founder of the Wagner private military company, which operates on behalf of the Russian government (Krever & Chernova 2023). The sock puppet accounts in this dataset were controlled by operatives based in St. Petersburg, Russia, working 12-hour shifts for the equivalent of \$800 to \$1,000 a month (Demirjian 2019). While these workers are often referred to as “trolls” by the news media, and the IRA as a “troll farm”, this can be misleading because the English usage of the term troll refers to an online subculture that engages in trolling behavior for enjoyment or “lulz”, while the Russian usage of the term refers to humans paid to intervene in and shape an online conversation (Benkler *et al.* 2018).

In the case of Russian interference in the 2016 election, evidence has been found to both support and debunk claims that the disinformation campaign had a significant impact (Jamieson 2018). While it is extremely difficult to quantify the impact of sock puppet campaigns because the impact is incremental, distributed across multiple social factors and happens in conjunction with many other events and actors (Woolley 2023), the campaigns did have observable consequences. Many established media sources gave sock puppet disinformation a broader impact by publishing it as legitimate news stories. Lukito *et al.* (2020) found that in 314 news stories that quoted tweets posted by IRA-controlled accounts, the information was often presented as *vox populi*. This means that content that was specifically designed to polarize the public was presented as representing the opinion of the public-at-large. In other instances, stories were written based entirely on sock puppet posts without checking their veracity. Celebrities, politicians and public figures also shared IRA sock puppet posts, which helped expand their reach. IRA sock puppets even organized both right and left-wing rallies and protests where sometimes more than 10,000 members of the public attended, believing the event to be part of a grassroots movement. In some cases, sock puppets would organize both a rally and an oppositional protest of the rally (US Congress 2020). Consumption of news on social media has been found to increase polarization because content-recommendation algorithms, like those used by Facebook, deliver “ideologically congruent news” to users making them less tolerant of differing opinions (Levy 2021, 831). State-sponsored sock puppet campaigns often focus on polarizing the public, increasing disagreements and doubt and sowing discord, rather than directly influencing particular political campaigns (Alieva, Moffitt & Carley 2022, 80). The US is currently severely polarized, meaning that elites and non-elites alike have aligned to form two “large opposing blocks”, and this division has been sustained over time because it is rooted in “clashing social identities” rather than driven by one leader (Carothers 2019, 6-8). Disinformation campaigns not only leverage this situation, but they also attempt to actively contribute to it.

### 3. Theoretical basis

The goal of *Epic Sock Puppet Theater* is to help the public critically reflect before sharing sock puppet disinformation in their own social media feed or when they read news stories based on disinformation. The project “inoculates” against or “pre-bunks” disinformation campaigns by familiarizing participants with sock puppet content while using creative techniques for distancing and reflection. Inoculation theory is a technique for counteracting disinformation based on a biological metaphor to explain how “resistance to future persuasive messages can be increased by administering a weakened version” of the message preemptively (Zerback, Töpfl & Knöpfle 2021, 1084). Although controlled experiments for “inoculating” against disinformation found that it is a difficult process that requires the dissemination of “issue-specific” refutational messages in advance of each disinformation message, as well as continuous

maintenance of the process (Zerback, Töpfl & Knöpfle 2021, 1094), other researchers have found that familiarity with one sock puppet account has helped online users identify other sock puppets. Kevin Winstead found that when a popular account on Black Twitter, an African American community on the platform, was revealed to be an IRA-controlled sock puppet, members of Black Twitter were able to accurately identify other sock puppet accounts because they were familiar with the type of content posted by the revealed account (Winstead 2020). While it may not be possible to eliminate people’s emotional reactions when they view sock puppet disinformation online, we believe it is possible to minimize the spread of sock puppet disinformation.

### 4. Artistic research process

*Epic Sock Puppet Theater* followed an iterative artistic research process that involved academic research, artistic experimentation and user testing. We present these phases separately for clarity’s sake, but they often took place simultaneously. The research phase began with a literature review, which included research into artistic tactics and qualitative and quantitative analyses of social media disinformation datasets. Both the research and production phase of the project were done within the context of the MediaFutures transnational support program for “counteracting the negative effects of misinformation and disinformation across society” (MediaFutures 2022), which included workshops and training sessions with specialists that addressed issues surrounding data ethics and governmental regulations (or the lack thereof, depending on the country), and feedback from cohort members and cultural partners.

Data analysis began by reviewing and reconstructing the sock puppet posts from various datasets of the IRA campaign in the US. This included the Linvill and Warren dataset of almost three million tweets by handles Twitter identified as IRA-controlled (2020) and *The Internet Research Ads Dataset*, which included images of IRA Facebook ads with their associated metadata, including the number of impressions for each ad, amongst other variables (Lindblad *et al.* 2019). The Linville and Warren dataset labeled the tweet as targeting right or left-wing members of the public and included the text and metadata for each tweet but did not include any accompanying images or videos. Although social media platforms removed the accounts and posts, we were able to locate much of the content using the Internet Archive’s Wayback Machine or Archive.today and a web scraper programmed to collect additional photos and videos posted by IRA sock puppets that had been shared or retweeted by other users. We also created a new dataset of sock puppet accounts made by US Central Command (CENTCOM) sock puppets that had spread disinformation in places such as Yemen, Syria, Iraq and Kuwait (Fang 2022) using similar methods.

We used both qualitative and quantitative methods to determine which sock puppet posts to include in the project. For Twitter disin-

formation, we identified the ten most popular left-wing and ten most popular right-wing accounts based on the number of followers. We eliminated all non-English tweets and tweets containing only a URL link. Within those top twenty accounts, we conducted a qualitative analysis by manually reading the posts, comparing the language used in the posts and coding for common issues and tactics. This process took several months to complete. We added a sensitive content label to our dataset for posts containing profanity, racial slurs or violence, and removed the most violent content. Sensitive content can be hidden entirely if the project is displayed in a context where it is inappropriate. A similar process was followed for Facebook ads, where content was selected based on the number of impressions it received and its suitability for viewers. We then selected posts based on how well they represent IRA disinformation tactics. Among the most common topics of discussion in the combined dataset were highly divisive socio-political issues, including the removal or preservation of confederate monuments, arguments for and against presidential candidates Donald Trump and Hillary Clinton, posts criticizing police violence against Black Americans or arguing that police should be supported for providing public safety. The most common tactics were twofold: sock puppets either sought to incite outrage, indignation or hate against a particular group, or sought to incite feelings of pride in a particular group, including immigrant, Muslim, Queer, Black, White, liberal and conservative identities. The combined dataset was also used to create a machine-learning classifier that shows viewers how closely their social media posts resemble IRA sock puppet posts. Because these posts were widely shared by the public, it is possible that users may find that they have previously shared posts made by IRA sock puppets.

Online user testing helped us determine which data types to include in the project's interface, which voices to use for the animatronic puppets and how sensitive content should be handled. We recruited participants from parts of the United States with differing political orientations to represent the groups targeted by the IRA, as well as international participants for a global perspective. Participants reported that a short description of each post, the number of followers (Twitter) or impressions (Facebook), whether the content was sensitive, and the targeted group (left or right-wing) were the most helpful features for choosing a post for the puppets to perform. The sock puppet's handle was also included because it is usually informative. Participants can sort the dataset by any of these attributes.

The puppet voices were created using an online algorithmic text-to-speech voice generator. Six voices were presented during user testing: one voice was naturalistically human-sounding with an angry tone, one voice was child-like, and four voices were highly performative and cartoon-like. While the deeper-sounding cartoon-like voices tested positively with some users, some non-native English speakers found them hard to understand so they were not used in the final project. We also found that slowing the remaining cartoon-like voices down to 90% speed helped make them more understandable. Most importantly, we learned from user testing that

the less performative and more naturalistic-sounding human voices did not create enough distancing from the content.

## 5. Artistic tactics

Many tactical media performances could be considered precursors to ESPT, particularly those that focus on the portrayal of political and corporate power structures. For example, Critical Art Ensemble's *A Temporary Monument to North American Energy Security* uses covert theatrical performance to enact corporate and environmentalist arguments. The tactic of spoofing often employed in The Yes Men's "identity correction" performances, where the identity of a corporation is emulated to embarrass them while exposing malfeasance and correcting the public record (Bichlbaum 2012), was strongly considered as a possible approach for the project. We have used spoofing successfully in some of our previous projects such as *Boogaloo Bias* (2021-ongoing), which assumes the guise of a facial recognition company, and the *Crowd-Sourced Intelligence Agency* (2015-2020), which takes the form of an intelligence agency. While spoofing was effective for these projects because they provided the public with access to interactive replications of socio-technical systems that usually remain secret, we did not feel that revealing the mechanisms behind creating or controlling a sock puppet would help people identify disinformation campaigns. We ultimately decided that the best approach for *ESPT* was to use distancing techniques to prevent emotional engagement and allow for critical reflection. These techniques were pioneered by Bertolt Brecht and other practitioners of Epic Theater, which is part of the namesake for the project. More recently, this approach has been used by L. M. Bogad in projects such as *Clandestine Insurgent Rebel Clown Army (CIRCA)* and *COINTELSHOW*, which were important precursors to *ESPT*. Bogad draws from Brechtian epic theater as well as the Bakhtinian carnivalesque and uses humor to "open people up to new ideas or ways of looking at power relationships" (Bogad 2010).

In what Brecht termed *Verfremdungseffekt*, often translated as the "alienation effect" or "distancing effect", political situations are presented in a way that questions the distinction between representation and nonrepresentation, which deconstructs social processes into rhetoric that can be examined critically (Eagleton 1985). This was fitting for the project because disinformation has been characterized as a form of weaponized rhetoric that amplifies preexisting grudges and "identity-driven controversies" (Diaz Ruiz & Nilsson 2023, 29). Social media sock puppets have also been characterized as political performances where the accounts function as "propagandistic masks" (Zelenkauskaitė 2022) where their effectiveness depends on how well a user emotionally identifies with the account. It was important to Brecht that the audience could not emotionally identify with the characters so that "the spectator is prevented from feeling his way into the characters. Acceptance or rejection of the characters' words is thus placed in the conscious realm, not, as hitherto, in the spectator's subconscious" (Brecht & Bentley 1961, 130). *ESPT* prevents overidentification or subcon-

scious processing by foregrounding the constructedness of the audience's interaction, framing the experience of exploring a dataset as a playful and absurd theatrical performance enacted by cyborg sock puppets.

For Brecht, it was important that “[t]he audience forfeits the illusion of being unseen spectators at an event which is really taking place” (Brecht & Bently 1961, 130). Removing this illusion, often referred to as breaking “the fourth wall”, can be accomplished by having actors directly address the audience and by revealing the technology that constructs the theatrical illusion. *ESPT* eliminates the fourth wall in several ways. First, it attempts to reveal its own constructed nature by foregrounding the mechanical aspects of the puppets. While the hand movements are realistic, the sound of the servo motors remains audible alongside the voices of the puppets. Some of the circuitry was also placed on the outside of the puppets, giving them a dystopian cyborg aesthetic while partially revealing their artificial construction. Instead of traditional button eyes, the sock puppets have tiny OLED screens that play glitchy animations of buttons. Viewers must also interact with the puppets through an arcade-like interface for them to perform, and when they speak, the puppets directly address the viewers, which prevents the viewer from becoming a passive spectator. There is no passive narrative in a performance by the puppets, if a user ceases to engage with the puppets, the show is over.

The interruption of action is another method used by epic theater for slowing the advancement of the play and breaking the context and framing of a performance, allowing for critical reflection by the viewer (Benjamin & Bostock 1998). Social media feeds are engineered to provide users with an endless, uninterrupted stream of posts to keep them engaged with the platform to increase advertising revenue. Like epic theater, *ESPT* interrupts the endless feed by continuously forcing the user to engage with the puppets to see them perform the social media posts. Before a participant sees a post, they see information about that post alongside other posts, which provides a sense of what the post is about, so they can deliberate what they want to experience.

Humor is one of the most important distancing techniques used in *ESPT*. For Brecht, the circus clown's manner of speech alienates the events depicted from the audience (Brecht & Bently 1961), whereas in *ESPT*, the speech of the puppets alienates the audience from the disinformation being performed. Almost all humor is based on contradictions and incongruities (Sørensen 2008) and during user testing, some participants laughed at the contradiction between the puppets' appearance and voices and the content they were presenting. Multiple participants remarked on how this inconsistency led them to reflect on what the puppets were saying and why they were saying it, instead of reacting emotionally. A possible explanation for this is offered by Henri Bergson (1911) who says that laughter is an appeal to intelligence and is incompatible with emotions. Puppets and automatons are also comical because we know they do not perform out of their own free will. Laughter can disarm people and allow them to laugh at their own faults (Bergson 1911), which is important for the project because participants may agree with some of the disinformation content being performed.

## Conclusion

In summary, *Epic Sock Puppet Theater* familiarizes viewers with the type of content posted by online sock puppet disinformation campaigns, enabling them to critically reflect before reacting to similar content in their own social media feed. In the context of the project, emotional reactions to the social media posts are mediated by a puppet show that allows for playful exploration of content from a sock puppet disinformation campaign. Because participants view the posts in a physical space, rather than a virtual one, and they are not able to share or comment on the sock puppet content on social media, the only mode of social engagement facilitated by the installation is face-to-face discussions among viewers in the space. The (dis)information is presented purely for their reflection, and many considerations were taken to mitigate any emotional impact the sock puppet posts may have.

*ESPT* is a unique case study in how academic and artistic research can be combined for media activism. Artistic techniques and research are directly employed to achieve activist objectives – namely mitigating the spread and impacts of harmful disinformation online. Importantly, while the project incorporates data analytics and machine learning, the project is not an attempt at technological solutionism. Rather, through techniques appropriated from Brechtian theater, *ESPT* is an artistic solution to a socio-technical problem.

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## CV

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Derek Curry (US) is an artist-researcher whose work critiques technological power structures using an approach that combines academic research with critical artmaking. His artworks often reverse-engineer or replicate technologies of control. His academic research draws from media theory and the social sciences, while his artistic practice is grounded in tactical media and institutional critique. He holds a PhD in Media Study from the State University of New York at Buffalo (2018) and an MFA in New Genres from UCLA (2010). He is currently an Associate Professor at Northeastern University in Boston. He has exhibited at venues including Ars Electronica, ISEA, National Gallery X (London), NeMe (Cyprus), and the Athens Digital Arts Festival. His research has been published in *Leonardo*, *Big Data & Society*, *Visual Resources*, and Leuven University Press. His artwork has been funded by Science Gallery (Dublin, Detroit, Atlanta), NEON Digital Arts Festival and MediaFutures.

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