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DIGITAL VIRULENCE: DIMENSIONS OF DEEPPFAKE WITHIN DISINFORMATION NETWORKS

Peter MIKULÁŠ – Amice SHELTON

ABSTRACT:

This study has two primary objectives: first, to identify which elements of manipulatively anchored deepfake videos on YouTube contribute to their potential for virality, and second, to examine how social media channels facilitate the erosion of rational perception in the consumption of media content. Using Jakobson's communication model, we identify the basic communication elements associated with a specific deepfake video of a manipulative nature. The analysis revealed that the video aligns with a broader framework of stereotypes, media representation, and political discourse. We place the results in the context of media exposure, the fragmentary and instant consumption of media content, as well as within the specific space of perception of visibility and visual communications in the current media environment. Results show that the articulation of context plays a crucial role in interpreting a deepfake communication, underscoring the limitations of current mechanisms for labelling manipulated content on the YouTube platform.

KEY WORDS:

deepfake video, disinformation, digital virulence, social media, YouTube

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1 Introduction: Media Consumption, Information Threats, and Media Virulence

The average time spent consuming media has increased significantly in recent decades, and media exposure (see, e.g., De Vreese & Neijens, 2016) and social media influence are becoming increasingly important topics in media studies. The current numbers are so high that media exposure almost saturates a person's workday. Globally, individuals spend an average of 6 hours and 40 minutes daily engaged in screen-based, internet-connected activities, of which approximately 2.5 hours are browsing social media platforms (Kemp, 2024). Recent data indicate that media consumers are increasingly seeking instant gratification and personalised experiences, resulting in a preference for short-form content, including social media posts and short videos. While the use of media brings undeniable benefits, society simultaneously faces significant threats to the integrity of information. These threats, such as the spread of misinformation, disinformation, and manipulative content, erode public trust in institutions, distort democratic discourse, and undermine societal cohesion. Disinformation has become an increasingly defining feature of the global media landscape. Disinformation in social media spreads particularly effectively through automated bots, trolls, and "content polluters", who publish contradictory narratives to create chaos, deepen social divisions, and destabilise situations in various countries. These actions result from deliberate disinformation strategies of specific political actors (Gawel et al., 2021).

According to Ipsos European Public Affairs (2024), 69% of surveyed EU citizens reported believing they had been exposed to disinformation within the past week. Another study (Phillips et al., 2024) revealed a notable cognitive bias, as respondents who were more likely to believe their friends and family are more susceptible to disinformation on social media than they are themselves. While only 17% of voters admit to personally believing false information at least once a week, 35% felt their close contacts fell for it just as often. These findings align with Davison's (1983) Third-Person Effect Theory, which suggests that individuals tend to perceive media, particularly biased or manipulative content, as having a greater influence on others than on themselves. Social media platforms, such as YouTube, facilitate the dissemination of audiovisual content, which research has demonstrated to have a greater cognitive and emotional impact on audiences.

The rapid spread and harmful impact of disinformation and fake news, specifically through social networks, is increasingly described using the term *digital virulence*. This concept draws on the metaphor of biological virtues, traditionally defined in medicine as "the degree to which a pathogenic organism can cause disease" (Biology Online, n.d.), and applies it to the digital realm. In this context, digital virulence captures the notion that disinformation functions like contagion, capable of spreading quickly and widely, while exerting a profoundly negative influence on public discourse and societal cohesion. The velocity and scale of media manipulation contribute to what could be construed as a form of concentric information chaos. It becomes an overwhelming flood of content that disrupts users' ability to critically evaluate the credibility or quality of the information they encounter. This phenomenon not only undermines individual media literacy but also fuels societal polarisation by creating echo chambers and reinforcing ideological divides.

Extending the medical analogy further, disinformation can be seen as a kind of virus that may be resisted by an individual's cognitive "immune system". These would be individuals' critical thinking skills, media literacy, and scepticism. However, just as in biology, a high viral load or frequent and sustained exposure to manipulative content can compromise their resistance. This can lead to accessibility and eventual acceptance of false narratives. The virulence of disinformation is further intensified by repeated exposure and the proliferation of seemingly minor or fragmented narratives. These "micro narratives" are individually benign, but collectively, they contribute to a broader, manipulative ecosystem. These narratives may vary in format, platform, tone, authorship, and context, making them more challenging to track and assess.

Exposure to disinformation can have serious consequences (see Tkáčová et al., 2024). It erodes public trust in institutions, traditional media, and even established scientific facts. In the context of social media and globalisation, erosion can contribute to a state of social entropy. This increasing breakdown of shared norms and consensus poses

a significant threat to the cohesion and stability of society. Numerous scholars have highlighted this concern (e.g., Tandoc et al., 2018; Spálová & Račková, 2022, and others).

2 Visuality

In the current media environment, visuality is a crucial, often even central, component of communication. This insight is not new; after all, the mass consumption of images has been one of the fundamental forms of mass communication since the invention of photography. Evidence of this can be seen in the establishment of photography in print and advertising, as well as its motion through film and later television. An examination of platforms like Facebook, Instagram, YouTube, or Truth Social reveals the centrality of visual elements in their structural design. The emphasis on visual content across these dominant platforms is supported by empirical data, indicating that users consistently respond more positively to visual media compared to other forms of content. The preference for visual media is closely linked to the brain's ability to process visual stimuli more quickly than written text. While research findings on this are modest (Potter et al., 2014), they consistently highlight the notable, rapid speed at which visual information is received and interpreted.

Visual media also play a crucial role in enhancing the retention of communication stimuli, thereby increasing the memorability of media content, even under conditions of brief exposure. As Medina (2014) notes, "people could remember more than 2,500 pictures with at least 90 percent accuracy several days later, even though subjects saw each picture for about 10 seconds" (p. 192). This highlights the significant influence of visual stimuli on memory. Paivio and Csapo's (1973) Dual Coding Theory offers a theoretical explanation for this phenomenon. According to the theory, information is processed through two distinct cognitive pathways: verbal and visual. While text engages only the verbal code, visual stimuli activate both, generating dual representations in memory. As a result, images are encoded more efficiently and robustly than textual information. This redundancy in representation increases the probability of successful recall or recognition, making visuals inherently more memorable.

An essential factor in the perception of visuals, particularly in social media contexts, is the fragmented nature of user attention in these environments. Although the human brain is remarkably capable, it cannot process the full range of visual stimuli and encounters. As noted in the introductory sections of this work, audiences are exposed to an overwhelming volume of media input. To stand out in this saturated environment, stimuli must include visual features specifically designed to capture attention. Because the brain processes visuals more efficiently than text, visual content is more easily absorbed when the attention is divided or fleeting. The dominance of visual content on social media can also be attributed to its low demand for users' communicative competencies. Visual communication allows for the transmission of information without relying on language proficiency, making it universally accessible and easily shareable.

Visual elements in media are often accepted uncritically, creating the illusion of a direct imprint of reality and fostering the perception that they function as objective representations of the real world. This is particularly true for visuals that overly reference reality, offering what appears to be an unmediated depiction. A philosophical questioning of reality and its representation dates to ancient Greece, where thinkers debated the extent to which visual representations accurately reflected or simulated reality. A significant contribution to this discourse came from Jean Baudrillard (1981), who introduced the concept of the simulacrum – a simulation that does not reflect or reproduce reality. Instead, it constructs a hyperreality that is independent of any original reference. With images as constitutive due to the structural design of social media platforms, technical preparation becomes a critical issue. Photographs and videos often give the impression of directly capturing reality. Using Baudrillard's stages of simulation, a faithful image or copy that is usually, and rightly considered reality, is the first stage. However, most images are, in fact, simulations, although media consumers frequently fail to recognise them as such.

While we most often encounter mild and relatively benign simulations, such as a corrected pose or modified flawed detail, AI and other editing software manipulate content that rises to the third and fourth stages of Baudrillard's simulation, where the content claims represent something real, but instead of fabricated (stage three) and where the

content has no connection to reality at all (stage four). However, even minor simulation flaws (such as the unconvincing pose or a flawed detail) significantly alter the perspective of human perception.

When simulating human subjects, technical execution becomes a critical factor. Even seemingly minor flaws – such as an unnatural pose or a slight distortion – can carry significant weight from the standpoint of human perception. This is particularly relevant due to the Uncanny Valley effect, a concept introduced by Japanese roboticist Masahiro Mori. The theory suggests that near-human simulations, when not entirely convincing, often provoke discomfort or eeriness. This phenomenon has since been widely applied across multiple disciplines, including digital media (Laja & Manaf, 2015), visual culture (Salvesen, 2021), virtual reality and game studies (Csöngé, 2023).

In this context, Charles S. Peirce's semiotic classification proves especially useful. Peirce distinguished three categories of signs: the index, the symbol, and the icon. An icon is a sign that bears a physical or perceptual resemblance to the object it signifies. An index signifies its object through a direct or causal connection; for example, the presence of smoke implies the existence of a fire, even if the fire is not directly visible. A symbol, by contrast, has this meaning established through shared cultural understanding. Thus, photography, film, and video serve as prototypical examples of the icon, as they bear a resemblance to the object they represent. Within media communication, iconic signs are the most misleading, as they perpetrate the illusion of objective truth. This illusion has been repeatedly exploited since the advent of photography and remains a significant vulnerability in the age of digital media manipulation. Iconic signs, due to their apparent realism, are particularly susceptible to being used as tools of disinformation and propaganda.

As we stated above, visual perceptions via social media are often brief. However, they can paradoxically convey a high degree of complexity. Visuals are inherently self-contained and can communicate meaning independently, even when accompanied by other elements such as text. The textual component typically serves to anchor the image within the recipients, bringing a framework of understanding. Verbal anchoring or words that function to clarify or direct the viewer's interpretation in line with the sender's intended meaning is a critical aspect (Lacey, 1998). This principle is particularly relevant to content and social media platforms. However, in this environment saturated with communication stimuli, it remains uncertain whether audiences are able or willing to devote sufficient attention to this anchoring process. Additionally, as Reichstein and Dost (2024) note, users frequently overlook the textual elements, giving them minimal attention.

When we synthesize the points discussed above, it becomes evident that visual stimuli are prioritised in both social media environments to sustain user engagement and to maximise exposure. This is done in the hope that at least some of the content will capture attention. In the fast-paced context of social media, there is little room for nuance. Visual content is consumed instantaneously, and sensational or provocative material often overshadows more meaningful messages. From the standpoint of visual manipulation, the phrase "seeing is believing" (Lacey, 1998) remains relevant, as visuals convey multifaceted information that, despite their fleeting nature, tends to leave a lasting impression. Accompanying text, while typically brief, is often regarded as secondary or even redundant, merely labelling what appears self-evident.

The potentially harmful effects of visual media have become a focal point of critical scientific inquiry. Ebaid and Crewther (2019) emphasise that "visual attention and information processing are particularly relevant to the study of cognitive decline as most human behaviour is visually driven with visual attention considered the key driver of most perceptual, cognitive, and behavioural processes". In this light, the visual environments we navigate may increasingly resemble manipulative spaces, particularly in today's post-factual era. Manipulatively constructed visuals can serve as potent carriers of disinformation, designed to saturate the media landscape with content that advances the communicator's agenda while exploring the viral potential of visual formats.

3 Methodology

The core idea of this study lies in recognising that social media content today operates significantly differently compared to the formerly institutionalised dominant mass media. This process is amplified by the increasingly

prominent presence of generative artificial intelligence and the escalating virulence of manipulative content (Radošinský et al., 2025). The influence of such content is not based on the dominance of a single source; instead, it consists of numerous less prominent ones. Although these sources may appear fragmented on the surface, it is more appropriate to consider them as having a synergistic, and therefore amplified, effect. A consequence of manipulative content, which is deeply embedded within the mechanisms of a deliberately constructed media ecosystem, is the repeated exposure of audiences across a wide array of touchpoints or contact points. This continuous exposure increases susceptibility as individuals encounter such content through various channels and platforms, each with varying levels of personalisation influence. The different levels and intensities range from the broad nature of institutionalised traditional media to the highly targeted and uncontrolled nature of social media. Through these processes, the viral load of communicative content can reach a level of potency that significantly advances disinformation agendas. Such content is often designed not to convince necessarily, but to create doubt, foster confusion, or shape perceptions of social reality.

To illustrate these findings, the research section focuses on a specific media artifact situated within Slovakia's disinformation environment and commonly referred to as the "dezinfoscene" (disinformation scene). The primary selection criterion for this case study was its inclusion of a manipulative core, coupled with a relatively limited reach or influence. This example serves as a fragment that cannot be fully understood in isolation, but rather as a part of a broader mosaic of virulent, manipulative media influence. Its significance emerges only with other discursive elements, functioning within a moderated, interconnected system of meaning-making, or discourse. Technically, the artifact in question is a deepfake video, i.e., a form of media or video that has been extensively modified using visual intelligence technologies.

To comprehensively interpret this case, a post-structuralist approach is applied, combining semiotic and discursive analysis, with foundational elements of visual analysis. The research is framed as an instrumental case study, selected not for its uniqueness, but for its utility in shedding light on a more general phenomenon: the virulence of manipulative media. The analytical framework is grounded in Jakobson's model of communication, which conceptualises the communicative act through six components: the addresser, the addressee, context, message, contact, and code. The framework is further enriched by Lacey's (1998) concept of anchoring and Saussure's structuralist distinction of sign systems. Together, these tools support a new interpretation of the selected case within the broader dynamics of digital disinformation.

4 Analytical Part

The source of the video is a YouTube channel called 99corgon99 (n.d.a). Established on April 5, 2014, the channel has approximately 7,120 subscribers in July 2025, placing it among the less prominent entities within the Slovak disinformation ecosystem. Based on its subscriber count, the user can be classified as a micro-influencer. A content analysis reveals repeated references to three well-known disinformation sources: Zem a Vek, Slobodný vysielateľ, and Infovojna, thereby clearly situating the chat within the broader Slovak disinformation sphere. The content provided is part of the Slovak disinformation scene. Since its inception, the profile has published 226 videos, which have amassed around 6 million views. The name Corgoň alludes to a mytho-historical figure associated with the Slovak city of Nitra, while the profile picture depicts the coat of arms of Holíč, another Slovak locality. The banner image portrays a small town or rural urban landscape. As the profile does not disclose the operator's identity, further personal or demographic details are not available.

Viewers of the video can be divided into two primary audience segments. The first comprises the channels' direct subscribers, which is a clearly defined group of followers. The second includes a wider audience reached through social media, which constitutes a more diffuse and less quantifiable segment. While the data on the first group is publicly accessible, metrics regarding the secondary audience are not readily available and would require administrative access to the channel.

Despite its relatively modest subscriber base by Slovak standards, several videos posted by 99corgon99 have achieved significant reach. For example, some content has garnered almost 100,000 views (see Figure 1). The specific video analysed in the study has received 30K views, with 241 comments, 440 likes, and no recorded dislikes, resulting in an engagement rate of 2.27%, which is considered above average. Notably, the channel's overall engagement rate calculated for the last year (20 videos total) is much higher, at 12.85%, indicating an extremely active and engaged viewership. An especially interesting fact is that the average number of video views over the past year was as high as 30,000, which significantly exceeds the subscriber base. These metrics suggest that the channel's content can reach beyond its immediate subscriber base.

The context of the analysed media artifact can be understood through two lenses: the broader media ecosystem in which it is embedded (external context), and its alignment with other content produced by the same creator (internal context). Externally, the video can be situated within the Slovak disinformation landscape characterised by a network structure of ideal, logically aligned sources. Internally, the video reflects recurring themes and rhetorical strategies commonly employed across the 99corgon99 channel, reinforcing its role within a coordinated disinformation discourse.

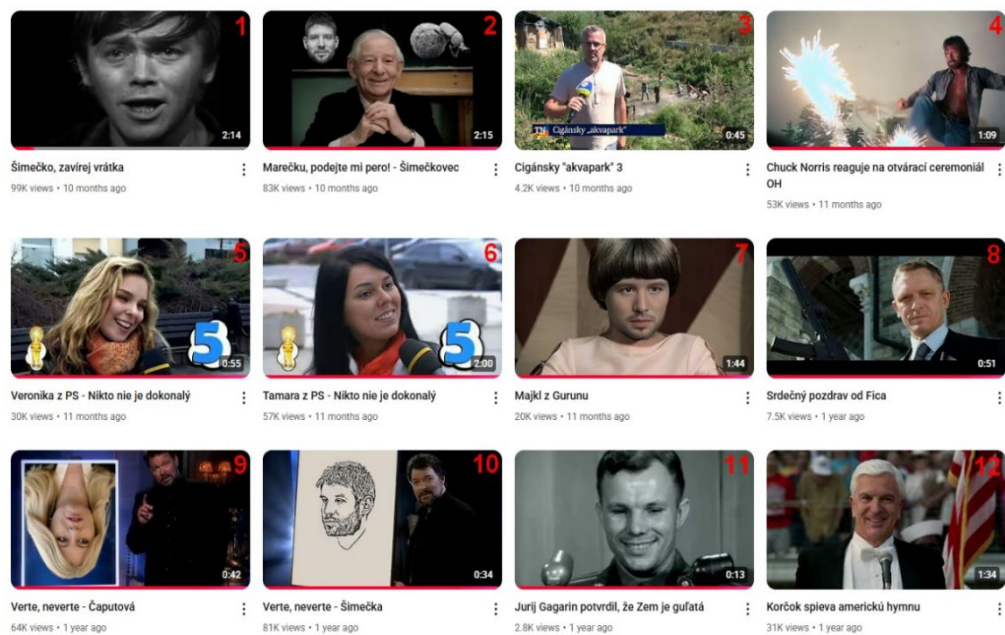


Figure 1: Screenshot of the video feed surrounding the analysed video (5)

Source: The authors added the red text (video numbers), see 99corgon99, n.d.a.

Figure 1 presents a screenshot from the video feed to illustrate the broader framing in which the analysed video (5) is embedded. At first glance, it is evident that the accompanying video content draws heavily on intertextual references such as genre stylisations, allusions to other media products, or the use of well-known public figures. This wide array of intertextual motifs signals a deliberate effort to engage viewers by leveraging their prior median knowledge and cultural familiarity. Genre-based intertextuality is evident in one video that mimics television news formats and utilises a contemporary broadcast style (4). Intertextual references to prominent individuals are also present with examples, including Czech musician and dissident Karel Kryl (1), American action star Chuck Norris (4), and Soviet cosmonaut Yuri Gagarin (11). A particular relevance to the video is the references to specific and widely recognisable domestic and international media artifacts. These include the Czechoslovak movie *Marečku, podejte mi pero* [*Marecek, Pass Me the Pen!*] (2), the children's sci-fi television series *Spadla z oblakov* [*She Fell from the Sky*] (7), the character James Bond (8), the American television series *Beyond Belief: Fact or Fiction* (9, 10), and finally the Slovak entertainment TV show *Nikto nie je dokonalý* [*Nobody Is Perfect*] (5, 6), from which the analysed

video originates. The last example (12) is a deepfake video of the liberal politician and unsuccessful presidential candidate Ivan Korčok, in which he is shown singing the American national anthem.

The intensive use of intertextuality reflects the content strategy employed by the user 99corgon99. These intertextual stylisations are not merely decorative; they function as cognitive shortcuts that anchor meaning making and enhance viewer engagement. By evoking familiar media forms of figures, the author aligns their communicative intent with accessible and widely recognised cultural references. From a technical standpoint, this pre-existing knowledge also serves as a convenient template for manipulation through AI tools, particularly in the creation of deepfake content.

The titles of the videos further indicate their thematic focus. While primarily denotative, the titles also highlight intertextual references that are semantically modified to align with the author's ideological or communicative objectives. A significant proportion of the videos (7 out of 12) focus on opposition politicians, with particular emphasis on Michal Šimečka, the leader of the Progresívne Slovensko party (Progressive Slovakia), who appears in four videos (1, 2, 7, 10). Two other female representatives of the same party are featured in items (5 and 6). One video (11) addresses the well-known "Flat Earth" conspiracy theory. Additionally, two videos explore themes of stereotyping: ethnic stereotypes related to the Roma community (Item 3) and gender stereotypes related to the opening ceremony of the Olympic Games in Paris, 2024 (Item 4). In Item 8, the current Slovak Prime Minister, Robert Fico, is portrayed as James Bond, showcasing his workmanship in a fictional confrontation with his real-life assailant Juraj Cintula.

The technical and aesthetic quality of the video content presented on the channel is relatively modest. While it maintains a basic level of production competence, it does not reach any notable qualitative threshold. Instead, it reflects amateur production practices, marked by significant levels of exaggeration and stylisation. The overall time across multiple videos on the channel appears monotonous and thematically imbalanced, both in terms of content, selection, and narrative execution. Nonetheless, the hyperbolic and overly stylised nature of the video suggests a deliberate parodic intent when considered as a whole. Notably, all the referenced videos incorporate elements created or enhanced through artificial intelligence technologies, either in the visual domain, the audio domain, or both. It is essential to note that each video is accurately labelled as containing "altered or synthetic content" under platform transparency requirements.

Upon analysing the message, we observed that the media text exhibits the characteristics of a viral video published on the YouTube platform. The video, titled "Veronika z PS – Nikto nie je dokonalý" (Veronika from PS – Nobody is perfect), was published by the user 99corgon99 on July 19, 2024. At the time of analysis (June 2025), it had accrued 30K views, with 241 comments, 440 likes, and no registered dislikes. While the video is technically available in 1080p HD resolution, the actual quality of the footage is noticeably lower. This suggests the use of repurposed material from a previously aired television programme. This reinforces the impression that the content draws on older broadcasting aesthetics, likely to enhance its intertextual anchoring and evoke recognition in the target audience.



Figure 2: Frame capturing the dominant look of the analyzed video

Source: 99corgon99, n.d.b.

A critical dimension in analysing the video is its technical manipulation through deepfake processing. To assess this aspect, we applied Saussure's distinction between the vertical (synchrony) and horizontal (diachrony) axes of sign systems. The synchronic perspective examines deepfake at a specific point in time, regardless of its development or evolution. Through this lens, a frame-by-frame analysis revealed several technically flawed moments within the video. These include notable artifacts when the subject diverts her gaze from a direct frontal position. Specifically, poor synchronisation of the eyes is evident, where, at times, the iris of the pupil of the left eye appears naturally distorted. In other instances, the eye temporarily disappears during horizontal head movement. Figure 3 illustrates one such example.

Additionally, from a synchronisation perspective, the evaluation of audiovisual synchronisation focuses on the alignment between lip movement and the corresponding speech. Here, the video performs at a relatively mediocre level. However, the intentionally low image quality, evocative of archival television footage, may work to the creators' advantage. This stylistic choice likely reduces audience expectations regarding the technical precision of the content and masks imperfections in deepfake execution.



Figure 3: Technically mishandled frame – detail of the left eye

Source: 99corgon99, n.d.b.

The diachronic dimension of AI-generated video analysis focuses on temporal dynamics, including motion patterns, timing, inconsistencies, overall quality shifts, and the synchronisation of audio with visual elements across frames. Although the analysed video is relatively short (54 seconds), it exhibits notable anomalies. Most apparent is the unnatural rendering of rapid facial movements, which lack fluidity and realism, revealing limitations in the deepfake algorithm's ability to process dynamic visual transitions. Extending the analysis through Saussure's linguistic framework, we can also apply the decomposition of texts into paradigmatic and syntagmatic axes. Paradigmatic axes represent a vertical network of relations. In this case, the subject aligns with the culturally coded trope of young, inexperienced people, but also the stereotype of the "dumb blonde". These associations are further reinforced by shared cultural knowledge by allowing viewers to recognise the deep, fake subject as a real-life, well-known personality, a politician who speaks not only for herself, but also for the political party she represents. In a broader context, the mediated persona reflects the ideological and political positions she holds.

On the syntagmatic axis, our analysis now shifts to the text (horizontal composition). In our case, it is grounded in the conventions of television language. The structure of the video mimics the format of a single episode of a TV show. The video is composed of two sequences, both of which have a dialogic structure. The source material was condensed into a brief segment comprising two dialogue sequences, utilising a question-and-answer format. The repetition of incorrect answers functions rhetorically to reinforce the constructed incompetence of this respondent. This repetition diminished the possibility that a single error could be seen as incidental and built a narrative of intellectual inadequacy.

If we consider the pragmatic syntagmatic perspective, one may also note the standardised video length. At 54 seconds, this video is comparatively short compared to the broader content of this channel (see Figure 1). For example, a similar deepfake targeting another progressive Slovak politician, Tamara Stohlová (item 6), runs for nearly twice as long. The brevity of the analysed video suggests a strategic adaptation to be platform-specific because audience consumption habits favour concise, high-impact media. Videos such as this are designed for rapid circulation and viewer retention.

Regarding the communication channel, the video is disseminated on YouTube through channel 99corgon99. In this case, the channel and its creator are indistinguishable, as the user's identity is not revealed through the content published on this platform. YouTube serves as a suitable platform for both creators and consumers (prosumers) because it enables dynamic engagement through features such as subscriptions, algorithmic recommendations, and interactive affordances, including likes, shares, and comment sections. This platform allows for continuous interaction between users and creators through subscriptions, as well as algorithm-driven video recommendations tailored to users' potential interests. Since its inception, a fundamental feature of YouTube has been affordances that encourage not only passive content consumption but also co-creation, as reflected in the ability to engage in discussions or rate content through likes. While 99corgon99 does not have a large subscriber base by national standards, the channel demonstrates a high level of engagement activity as previously noted. This indicates that despite its relatively modest reach, the channel is capable of exerting disproportionate influence through virality and audience interaction with ideological communities.

The analysed video is aligned with a specific entertainment television genre, one that Slovak audiences recognise through the format of the formerly popular TV show *Aj múdry schybí* [*Even the Wise Will Fail*]. Viewers are drawn into a clearly defined communicative situation, relying on a single, culturally embedded frame of reference: the general knowledge of the TV show's format and style. Within this framework, a comprehensive replication of the genre is neither necessary nor technically feasible. Instead, the producer selects key, iconic fragments that characterise the show, in this case, the stand-up segment in which an unsuspecting interviewee is asked trivial questions and responds with incorrect or absurd answers. The dynamic, in which the intellectual dominance of the host (and by extension, the audience) is juxtaposed with the humiliation of the respondent, forms the central motive of the parody. The intertextual framing of the video is reinforced through several commutative cues. These elements include an opening graphic accompanied by applause. This voice-over mimics the original show host, triggering audience laughter with the respondent's incorrect answers, a stylised character, and an introduction featuring a figure with a light bulb for a head, all of which repeat this question-answer-laughter pattern. These elements collectively simulate the structure and atmosphere of the original TV program with an unmistakably nostalgic frame.

At the core of the video symbolic code is a real person: Veronika Cifrová-Ostrihoňová, a well-known public figure and politician. She has frequently been the target of both online and real-life harassment, mainly due to her political affiliations and public persona. As a representative of the progressive opposition, she has become a recurring subject of division in Slovak disinformation narratives. What sets this video apart from other instances of character assassination is the stylistic innovation employed to manipulate her image and context. Cifrová-Ostrihoňová is portrayed within the setting of a pre-2010 television show, suggesting a time when she was a teenager or in her early 20s at most. Her image is artificially rejuvenated through AI tools, giving her a youthful, naïve appearance that aligns with a stereotypical adolescent girl. The character in the video answers two voice questions: “What is the origin of the abbreviation WC?” and “Who is a pacifist?” Both her answers are incorrect, in keeping with the format of the original TV show. These responses, both naïve and inaccurate, served as a constructed persona of incompetence.

Beyond its focus on Cifrová-Ostrihoňová as an individual, the video draws on a broader stereotype, that of the “dumb blonde”, a trope rooted in power-based humiliation (Lacey, 1998). According to Lacey, the stereotype arises from the intersection of physical distinctiveness (being blonde is a relative rarity in Slovak society) and a perceived threat to male dominance. When a woman is both physically striking and intellectually competent, she may challenge traditional gender hierarchies. The dumb blonde stereotype acts as a mechanism of control, reassuring masculine superiority by reducing such women to objects of ridicule. In this instance, the stereotype is mobilised in its most reductive form, targeting Cifrová-Ostrihoňová as “blonde”, who is imagined as an ignorant source, a justification for mockery. In the case of the analysed video, multiple levels of anchoring can be identified. The most prominent is “genre anchoring”, which positions the footage within the role of political satire. However, as discussed later, this anchoring appears to be only partially recognised by viewers as reflected in the comments section. Audience reactions more frequently interpret the content as literal, aligning it with archival footage from a genuine television broadcast rather than as a satirical or fabricated piece. This suggests that the intended intertextual cues were either misread or overlooked by a portion of the audience.

The video title, “Veronika z PS – Aj múdry schybi” (“Veronika from PS – Even the Wise Will Fail”), functions on several denotative levels. It identifies the subject by first name, associates her with the Progressive Slovakia (PS) political party, and references a well-known TV show. Notably, the absence of Veronika’s surname can be read as a deliberate rhetorical strategy, subtly shifting her perceived identity from that of a public political figure to that of a generic, possibly minor, contestant in a light-hearted game show from the past. This depersonalisation supports the videos’ offer, arching, intent to tribalize, and ridicule. Upon clicking on the video, the recipients are provided with additional anchoring information, including the username of the uploader, the viewer account, and the posting date. These elements contribute to the recipient’s overall contextual framing of the video, but also serve as part of the digital text, reinforcing the platform’s mechanism for reception, interpretation, and dissemination.

Veronika z PS - Nikto nie je dokonalý



99corgon99.
7.12K subscribers

Subscribe

440



30K views 11 months ago

Video je upravené, nejedná sa o skutočnosť. ...more

Figure 4: Textual anchoring of analysed video (initial view)

Source: 99corgon99, n.d.b.

The username “99corgon99” plays a significant role in shaping the audience’s participation in the video, signalling that the content originates outside official or institutional communication channels (such as the politician’s profile) or is affiliated with reputable news sources. This framing encourages viewers to receive the video as a product of alternative or fringe discourse, rather than part of the mainstream or authoritarian narrative. From the standpoint of audience segmentation, recipients of the videos could be broadly categorised into two groups: subscribers, who are familiar with 99corgon99’s content and have actively subscribed, and those who come across the video later, primarily through social media recommendation algorithms. The latter group is susceptible to misinterpretation, as

they lack contextual awareness of the channel’s broader satirical or parodic positioning. Conversely, it can be assumed that channel subscribers will perceive the video primarily as satire and may reflect this understanding in their discussion. A further layer of textual anchoring is present in the form of an onscreen disclaimer which states in Slovak “*Video je upravené, nezobrazuje realitu*” (“*The video is edited, it does not depict reality*”) with an option to click “more” as shown in Figure 4.

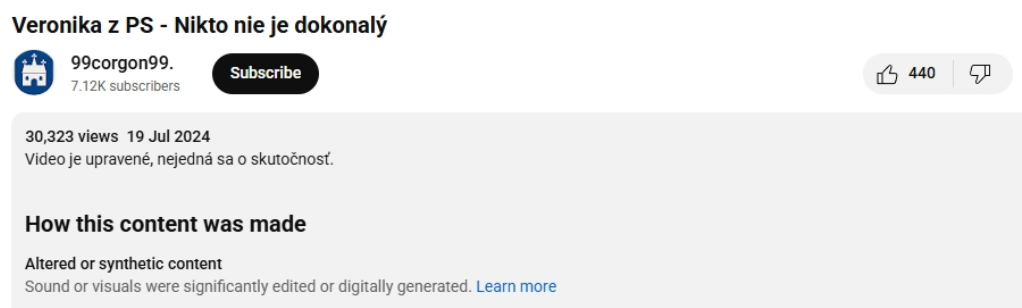


Figure 5: Textual anchoring of analysed video (expanded view)

Source: 99corgon99, n.d.b.

Upon clicking the disclaimer (Figure 5), additional details are revealed, explicitly stating that the video has been significantly altered through audio, visual, or digital manipulation. This indicates that both 99corgon99 and YouTube have formally fulfilled their responsibility to inform users about the synthetic and edited nature of the content. However, a critical question remains: to what extent did viewers register and internalise this anchoring? As our subsequent analysis of the audience reveals, such awareness among recipients was notably limited.

5 Discussion

The analysis indicates that the examined visual media text operates within a complex communicative ecosystem, one that actively shapes perceptions of reality along the creator-receiver axis. The integration of artificial intelligence within this media ecosystem creates new challenges for effective communication and social integration, particularly affecting how we interpret and process visual information (Bierzyński, 2024a). The video is embedded into a broader matrix of general stereotypes (notably, the “dumb blonde” stereotype), media portrayals of the subject (Veronika Cifrová-Ostrihoňová constructed by disinformation networks), and the emotionally charged and often distorted representation of liberal and progressive values associated with her political affiliation, Progresívne Slovensko (Progressive Slovakia). In the context of deep fake communication, contextual awareness is just as vital as textual content, perhaps even more so. Ignoring the context can completely distort how the meeting is perceived. In this case, YouTube’s current mechanisms, such as a short disclaimer acknowledging manipulation, prove insufficient. Audience reactions in the discussion section revealed a significant failure in decoding. Most viewers interpreted the videos as authentic archival footage, demonstrating a widespread reading of its satirical intent.

The decoding of the analysed video by the discussion community showed that the dominant interpretative framework was entirely incorrect. Therefore, context and its clear articulation are fundamental for understanding deepfake communication, significantly influencing its perception. On YouTube, a platform defined by audiovisual content, textual elements like disclaimers often function as peripheral add-ons, which are easily ignored and visually buried within the user interface. As Reichstein and Dost (2024) note, the extreme brevity of such labels may render them ineffective, as short texts are less likely to capture their attention compared to longer or moderately lengthy ones. Evidence from the comments section further underscores this. Very few users referenced the anchoring text. Those who recognised that the video was manipulated did so not because of the disclaimer, but because of the observable technical flaws, typical of amateur deepfake productions, such as poor synchronisation of audio and visuals

or less convincingly animated eye expressions. Even these so-called expositors failed to explicitly acknowledge the textual anchoring.

Within the broader context of videos presented by 99corgon99, there is no evident effort to achieve high-level simulation. Instead, the creator relies on the accessible and increasingly common use of deepfake technologies. The analysed video illustrates that even with minimal resources, it is possible to produce a deepfake that appears convincing enough for casual viewers. This finding is consistent with the inherent responsiveness of social media mechanisms to individual expressions of creative user-generated content (Fichnová & Spálová, 2023). Notably, 99corgon99 made no visible effort to moderate the discussion or clarify the use of AI, leaving communication ambiguous. This absence of clarification raises important questions, such as whether the creator is primarily motivated by entertainment or whether a persuasive or disinformation agenda is at play. Their passivity suggests the latter.

Jakobson's classic communication model does not account for the deliberate simulation or manipulation of reality at the denotive level. Yet, in this case, the simulated character of the content is central to understanding the broader communication process. As shown in Figure 3, several frames feature visibly distorted renderings of the subject's face. From a static perspective, such imperfections would likely be dismissed as a result of poor quality. Within the context of the Uncanny Valley, it would fall into the lower values of the curve, where visual inconsistencies are typically expected to trigger discomfort or rejection. However, our analysis of the video discussion revealed no such reactions. However, some commenters and viewers noted technical flaws, unused language, and emotional aversion or unease. This absence of a negative emotional response can be attributed to several key factors. First, people generally apply less scrutiny to moving images than to static ones, making it easier for visual imperfections to go unnoticed. Second, the widespread use of mobile phones as viewing devices reduces perceptual detail due to limitations in screen size. YouTube's metrics indicate that as much as 72% of its traffic comes from smartphones. The statistics support findings from media behaviour research outlined in our theoretical section. Taken together, these insights help explain why even technically flawed deepfakes can be successfully mistaken for authentic. This is particularly relevant in mobile-first, low-attention, and digital environments.

A limited yet telling insight into audience perception can be drawn from the video's comments section. This is an integral part of YouTube's infrastructure. Among 241 comments analysed, the majority focus on identifying the video as a deepfake. However, this recognition does not appear to mitigate the overwhelmingly hostile tone of the discussion. The discussion predominantly attacks the subject of the video, with no indication that participants perceive the video as manipulative. In many cases, the attacks are even explicitly vulgar, directly targeting Veronika Cifrová-Ostrihoňová. For example,

"A táto primitívna , hlupaňa zastupuje SR v EP. No ešte hlupejši a primitívnejši musia byť nej voliči" ["And this primitive, stupid woman represents Slovakia in the European Parliament. But her voters must be even more stupid and primitive"] (jaroslavanovotna1353, n.d.);

"KURVA JE TO!!!! LESBICKA" ["SHE IS A BITCH!!! A LESBIAN"] (josefbacik3802, n.d.);

but also her husband, who is a well-known media personality under the nickname Sajfa: "Skaredý sajfa na nu musí byť hrdý 🍆" ["Ugly Sajfa must be proud of her 🍆"] (d.p3366, n.d.);

and on the political party Progressive Slovakia: "PS dementi sfetovani" ["PS drugged up idiots"] (JP-gj5gn, n.d.); "iQ hojdacieho koníka ako celé PS 🤪🤪🤪" ["iQ of a rocking horse as the whole PS 🤪🤪🤪"] (Kofola1975, n.d.).

Only thirty-six (less than a quarter) responses explicitly acknowledge the use of AI manipulation in the video. Several of these posts appear to have been written in frustration at the broader audience's lack of ability to recognise the content is artificial. For example, user @LioAvalon writes: "Vy ste úplne mimo. Ved to nie je ona ale AI video!

To ste tak hlúpy že si neprečítate to čo chcete komentovať?” [“You are entirely out of line. It’s not her, it’s an AI video! Are you so stupid that you don’t read what you want to comment on?”] (LioAvalon, n.d.).

These findings suggest that even a technically mediocre deepfake video can have a powerful resonance within an ideologically predisposed audience. The enthusiastic acceptance of the videos’ message, coupled with a widespread failure – or perhaps an unwillingness to identify its manipulative nature – points to the influence of confirmation bias (see, e.g., Nickerson, 1998). It also reflects broader phenomena discussed in our theoretical framework, including information overload, fragmented attention, and rapid perception of media consumption. Notably, the potential for a negative response triggered by perceptual dissidence, predicted by the Uncanny Valley effect, was not observed, despite several technically flawed frames in the video. This underscores a key insight: audience perception of deepfake content hinges less on technical sophistication than on the viewer’s readiness to assimilate the video into their existing belief structure. This phenomenon aligns with research suggesting that AI increasingly shapes social communication patterns, creating both opportunities and barriers that can either enhance or impede information processing depending on the recipient’s media literacy (Bierzyński, 2024b).

As outlined in the introductory section, recipients’ excessive self-confidence in their ability to interpret media content has far-reaching consequences. Most notably, the subject exhibits an increased susceptibility to disinformation. This overconfidence has profound implications for society, as it reduces individuals’ motivation to verify information and critically evaluate media content. The belief that one is immune to manipulation not only fosters complacency but also undermines the effectiveness of educational or corrective interventions aimed at combating disinformation, as individuals often reject the notion that they require such support.

Our analysis reveals that overconfidence does not merely affect the interpretation of large-scale narratives such as conspiracy theories. It also applies to more minor, seemingly inconsequential examples, such as the video analysed in this paper. However, these small cases collectively contribute to a distorted mosaic of reality. They subtly reinforce manipulative frames and narrative patterns, creating a diffuse and difficult-to-trace structure of influence that complicates public understanding and weakens the foundations of informed discourse.

6 Conclusion

This case study demonstrates that disinformation is not exclusively the product of large-scale, centrally managed operations. Instead, it can emerge and propagate through decentralised, small-scale actors operating within digital ecosystems. While the video in question does not function as a “pars pro toto”, it nevertheless forms part of a broader media mosaic that actively shapes public discourse. It illustrates how individual agency, platform dynamics, and algorithmic amplification intersect within the contemporary social media environment. Fragmented as they may seem, these pieces are held together by the cohesive logic of today’s media infrastructure, enabling even marginal content to contribute meaningfully to the circulation of distorted narratives.

Social media has blurred the lines between mass and individual communication. From this new space, a new form of expanded individual communication has emerged (Adamski, 2010). With the low technical threshold, amateurs and hobbyists are now actively creating deepfake content. Westerlund (2019) refers to this as “communities of deepfake hobbyists”. This technological accessibility accelerates the spread of deepfakes, which often operate through decentralised and overlapping channels rather than through clearly identifiable sources. Though seemingly fragmented, these pathways exert a considerable cumulative influence on public perception. Scholars like Laurent (2024) have warned of the rapid proliferation of deepfakes, while others, including Timmerman et al. (2023), highlight the regulatory challenges posed by their virulent and decentralised nature. Viral deepfakes often spread without attribution, context, or anchoring points, making it exceptionally difficult for recipients to assess their veracity, thus further compounding their manipulative potential within the digital media landscape.

Deepfake technology has undeniably compelling possibilities for creative media production; however, it also introduces profound risks related to novel forms of visual media manipulation. By destabilising traditional systems of

visual reference, deepfakes disrupt traditional reference mechanisms, challenging the visual perception systems that have historically been linked to direct interactions with reality. Ideally, content creators should take responsibility for clearly articulating manipulated messages, but in practice, this responsibility will likely fall on communication platforms. Our analysis confirms that brief and inconspicuous labels are ineffective in offsetting the persuasive power of emotionally charged visuals. The cognitive immediacy of imagery frequently overwhelms verbal disclaimers, particularly among audiences susceptible to confirmation bias. These audiences often operate within ideological echo chambers and become entangled in what Noelle-Neumann (1974) described as the “spiral of silence”, where dominant, usually aggressive or misleading voices drown out dissenting or corrective perspectives. Social media mechanisms further reinforce manipulative viral strategies. Controversial and misleading content attracts audience engagement, making it highly valuable within the social media ecosystem. The use of AI amplifies this process. The vast scale of disinformation strategies and their evident synergistic effects pose a significant challenge for ongoing research in media studies.

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BIBLIOGRAPHY:

- 99corgon99. (n.d.a). *Home* [YouTube channel]. YouTube. Retrieved July 14, 2025, from <https://www.youtube.com/@corgon-uf7zq>
- 99corgon99. (n.d.b). *Veronika z PS – Nikto nie je doskonały* [Video]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- Adamski, A. (2010). Internet–medium, prasa czy środowisko komunikacyjne? *Zeszyty Prawnicze*, 10(1), 247-265. <https://czasopisma.uksw.edu.pl/index.php/zp/article/view/1044/1071>
- Baudrillard, J. (1981). *Simulacra and simulation*. University of Michigan Press.
- Bierzyński, T. (2024a). Perspektywy indywidualizacji procesu nauczania i integracji społecznej. Sztuczna inteligencja w procesie rozwoju edukacji i społeczeństwa. *Spółeczeństwo-kultura-wartości. Studium społeczne*, 15(25), 102-117. <https://studiumspoleczne.pl/wp-content/uploads/2024/06/S-K-W-252024.pdf>
- Bierzyński, T. (2024b). Od interakcji do wpływu: rola sztucznej inteligencji w kształtowaniu komunikacji społecznej. *Spółeczeństwo-kultura-wartości. Studium społeczne*, 15(25), 166-181. <https://studiumspoleczne.pl/wp-content/uploads/2024/06/S-K-W-252024.pdf>
- Biology Online. (n.d.). *Virulence*. Retrieved July 9, 2025, from <https://www.biologyonline.com/dictionary/virulence>
- Phillips, M., Mays, C., & Wormser, G. (2024, October 21). *Navigating misinformation in 2024: Americans' experience and divides with false and misleading information*. <https://web.archive.org/web/20250319152854/https://citizendata.com/report/navigating-misinformation-in-2024-americans-experience-and-divides-with-false-and-misleading-information/>
- Csöngé, T. (2023). Medium specific uncanny in contemporary video games. *Acta Universitatis Sapientiae, Film and Media Studies*, 24, 185-202. <https://doi.org/10.2478/ausfm-2023-0020>
- Davison, W. P. (1983). The third-person effect in communication. *Public Opinion Quarterly*, 47(1), 1-15. <https://doi.org/10.1086/268763>
- d.p3366 (n.d.). *Skaredy sąfa na nu musi byt hrdy* [Comment on YouTube video “Veronika z PS – Nikto nie je doskonały”]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- De Vreese, C. H., & Neijens, P. (2016). Measuring media exposure in a changing communications environment. *Communication Methods and Measures*, 10(2-3), 69-80. <https://doi.org/10.1080/19312458.2016.1150441>

- Ebaid, D., & Crewther, S. G. (2019). Visual information processing in young and older adults. *Frontiers in Aging Neuroscience*, 11, 449620. <https://doi.org/10.3389/fnagi.2019.00116>
- Fichnová, K., & Spálová, L. (2023). Participative art marketing communication and creativity of user-generated content. *Central European Journal of Communication*, 16(1/33), 117-132. [https://doi.org/10.51480/1899-5101.16.1\(33\).7](https://doi.org/10.51480/1899-5101.16.1(33).7)
- Gawel, A., Mańdziuk, M., Żmudziński, M., Gosek, M., Krawczyk-Suszek, M., Pisarski, M., Adamski, A., & Cyganik, W. (2021). Effects of pope Francis' religious authority and media coverage on Twitter user's attitudes toward COVID-19 vaccination. *Vaccines*, 9(12), 1487. <https://doi.org/10.3390/vaccines9121487>
- Ipsos European Public Affairs. (2024). *European public affairs digest: The disinformation edition*. Ipsos.
- jaroslavnanovotna1353. (n.d.). *A táto primitívna , hlupaňa zastupuje SR* [Comment on YouTube video "Veronika z PS – Nikto nie je dokonalý"]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- josefbacik3802. (n.d.). *KURVA JE TO !!!! LESBICKA* [Comment on YouTube video "Veronika z PS – Nikto nie je dokonalý"]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- JP-gj5gn. (n.d.). *PS dementi sfetovani* [Comment on YouTube video "Veronika z PS – Nikto nie je dokonalý"]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- Kemp, S. (2024, January 31). *Digital 2024: Global overview report*. <https://datareportal.com/reports/digital-2024-global-overview-report>
- Kofola1975. (n.d.). *IQ hojdacieho konika ako celé PS* [Comment on YouTube video "Veronika z PS – Nikto nie je dokonalý"]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- Lacey, N. (1998). *Image and representation: Key concepts in media studies*. Palgrave Macmillan.
- Laja, U. L., & Manaf, A. A. (2015). Overcoming the uncanny valley theory in digital characters based on human attitudes. *Pertanika Journal of Social Sciences and Humanities*, 23(S), 13-22.
- Laurent, A. (2024, January 22). *Blockchain takes on deepfakes: Ushering in an era of digital veracity*. <https://incyber.org/en/article/blockchain-takes-on-deepfakes-ushering-in-an-era-of-digital-veracity/>
- LioAvalon. (n.d.). *Vý ste uplne mimo. Ved to nie je ona* [Comment on YouTube video "Veronika z PS – Nikto nie je dokonalý"]. YouTube. <https://www.youtube.com/watch?v=DZe1btyZqlw>
- Medina, J. (2014). *Brain rules: 12 principles for surviving and thriving at work, home, and school* (2nd ed.). Pear Press.
- Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2(2), 175-220. <https://doi.org/10.1037/1089-2680.2.2.175>
- Noelle-Neumann, E. (1974). The spiral of silence: A theory of public opinion. *Journal of Communication*, 24(2), 43-51. <https://doi.org/10.1111/j.1460-2466.1974.tb00367.x>
- Paivio, A., & Csapo, K. (1973). Picture superiority in free recall: Imagery or dual coding? *Cognitive Psychology*, 5(2), 176-206. [https://doi.org/10.1016/0010-0285\(73\)90032-7](https://doi.org/10.1016/0010-0285(73)90032-7)
- Potter, M. C., Wyble, B., Haggmann, C. E., & McCourt, E. S. (2014). Detecting meaning in RSVP at 13 ms per picture. *Attention, Perception, & Psychophysics*, 76(1), 270-279. <https://doi.org/10.3758/s13414-013-0605-z>
- Radošinský, M., Najjar, S., & Wojciechowski, L. (2025). Online fraud: Security challenges and preventive measures for accommodation platform users. *Lumina*, 19(1), 120-138. <https://periodicos.ufjf.br/index.php/lumina/article/view/46982>
- Reichstein, T., & Dost, F. (2024). Attention please! How attention drives social media engagement. In A. Pastore, J. Schmitt, J. Jimenez, & K.-P. Wiedmann (Eds.), *Proceedings of the 23rd International Marketing Trends Conference* (unnumbered). Paris-Venice Marketing Trends Association. <https://archives.marketing-trends-congress.com/2024/pages/PDF/37.pdf>
- Salvesen, B. (2021). Confirm you are a human: Perspectives on the uncanny valley. *International Journal for Digital Art History*, (6), 2.2-2.15. <https://doi.org/10.11588/dah.2021.6.81164>

- Spálová, L., & Račková, L. (2022). Coverage of migration in the most visited Slovak online medium in the first half of 2021. *Media Literacy and Academic Research*, 5(2), 178-195. https://www.mlar.sk/wp-content/uploads/2022/12/11_Lucia-Spa%E2%95%A0ulova%E2%95%A0u_1%E2%95%A0iubica-Rac%E2%95%A0ickova%E2%95%A0u-.pdf
- Tandoc, E. C., Lim, Z. W., & Ling, R. (2018). Defining “fake news”: A typology of scholarly definitions. *Digital Journalism*, 6(2), 137-153. <https://doi.org/10.1080/21670811.2017.1360143>
- Timmerman, B., Mehta, P., Deb, P., Gallagher, K., Dolan-Gavitt, B., Garg, S., & Greenstadt, R. (2023). Studying the online deepfake community. *Journal of Online Trust and Safety*, 2(1), 1-28. <https://doi.org/10.54501/jots.v2i1.126>
- Tkáčová, H., Pavera, L., Pavliková, M., & Králik, R. (2024). Where there is smoke, there must (not) be fire: An analysis of the effects of Fake News on recipients in the online environment. *Świat i Slowo. World and World*, 43(2), 159-176. <https://swiatislowo.publisherspanel.com/article/01.3001.0054.9427/en>
- Westerlund, M. (2019). The emergence of deepfake technology: A review. *Technology Innovation Management Review*, 9(11), 39-52. https://timreview.ca/sites/default/files/article_PDF/TIMReview_November2019%20-%20D%20-%20Final.pdf

