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Document Version

Peer reviewed version

Citation for published version (Harvard):

Baissa, B, Fuoli, M & Grieve, J 2024, 'The news values of fake news', *Discourse and Communication*.

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The news values of fake news

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Abstract

Fake news poses a significant threat to society by undermining public trust and consensus on critical issues. Although there is a considerable amount of research on the linguistic features of fake news texts, a comprehensive understanding of how language is used to persuade and promote specific ideologies within them is still lacking. This study addresses this gap by analyzing fake news discourse through the lens of news values. We apply the Discursive News Values Analysis (DNVA) framework and key semantic domain analysis to a corpus of fake news stories on vaccination, climate change, and COVID-19. We identify a set of news values that differentiate fake from mainstream news discourse. Our findings reveal that fake news emphasizes negativity, unexpectedness, consonance, and facticity, while also relying on the previously undocumented news values of subversiveness, causality, religiosity, and historicity. These values form a powerful discursive toolkit exploited by fake news writers to craft compelling false narratives.

Keywords: disinformation, newsworthiness, polarization, corpus-assisted discourse analysis, semantic tagging

1. Introduction

Though not a new phenomenon, fake news has recently garnered significant attention due to its rapid spread online and its potential to cause serious harm to society. For example, fake news on vaccine efficacy has eroded public trust in immunization, leading to a decline in vaccine uptake and the resurgence of preventable diseases (Pertwee et al., 2022). Likewise, fake news about climate change, often deliberately disseminated by corporate lobbyists, undermines public consensus on the urgency of this problem (Al-Rawi et al., 2021). Fake news can also be weaponized for political gain, with potentially far-reaching consequences. Misleading claims about immigration, for instance, played a significant role in determining the outcome of the Brexit referendum (Parnell, 2024).

The growing concern about the impact of fake news has fueled a surge in research aimed at understanding its linguistic characteristics. A significant portion of this work has been undertaken within the field of Natural Language Processing (NLP), with the primary goal of developing automated tools capable of detecting fake news online. In this context, the study of fake news is approached mainly as a classification problem, where the central challenge is to identify the specific linguistic markers that distinguish fake from genuine news. For example, compared to real news, fake news has been found to use more personal pronouns and adverbs (Horne and Adali, 2017; Torabi Asr et al., 2024), hedges (Rashkin et al., 2017;

Volkova et al., 2017), words related to divisive topics (e.g. *Trump* and *liberals*) and abstract ideology-laden concepts (e.g. *truth* and *freedom*) (Rashkin et al., 2017).

While NLP studies often report relatively high classification accuracy, these results should be interpreted with caution. Datasets used to train NLP systems often lack rigorous control over register and content alignment between real and fake news stories and may therefore inadvertently detect other differences in writing style or subject matter – for example, finding that mainstream real news published by major news media outlets tends to be more carefully and professionally edited than fake news propagated over social media – rather than truly distinctive characteristics of fake news (Grieve and Woodfield, 2023). More importantly, as NLP research prioritizes maximizing classification accuracy over explaining patterns of language use, it rarely engages in explicit, in-depth linguistic analysis (Grieve and Woodfield, 2023; Jaworska, 2024). Thus, while NLP studies offer useful pointers to potentially distinctive linguistic markers of fake news, they do not provide a deeper explanation of why these features are used or what their intended rhetorical and ideological effects may be, which in turn should lead to less confidence in the validity of these classifications.

More recently, a new stream of discourse analysis research has emerged. This work seeks to better understand the discursive properties of fake news, including its stylistic features (Grieve and Woodfield, 2023), argumentation strategies (Alba Juez and Mackenzie, 2019), legitimation strategies (Igwebuikwe and Chimuanya, 2021), and evaluative language features (Trnavac and Pöldvere, 2024). Discourse analysis prioritizes explaining how language is strategically used in fake news to persuade, deceive, or indoctrinate, rather than simply identifying unique linguistic markers for automatic classification divorced from the discursive context in which they are used. For instance, Alba Juez and Mackenzie (2019) show that fake news discourse relies heavily on manipulating readers' emotions, particularly by evoking fear, envy, and hatred towards opposing social groups. Emotive appeals are not the only rhetorical device fake news writers deploy to promote their counter-mainstream narratives. Clarke (2024), for example, shows that fake news blog posts draw on scientific jargon and causal arguments to undermine trust in climatologists and cast doubt on scientific models on the impact of climate change.

These studies have begun to expose the rhetorical strategies used by fake news writers to appeal to their audiences and boost the credibility of their stories. However, a unified linguistic theory explaining the persuasive and ideological mechanisms of fake news discourse is still lacking. To address this gap, we propose a fresh approach: analyzing fake news through the lens of 'news values'. Our study investigates how fake news stories are discursively constructed as newsworthy, maximizing their persuasive appeal. To this end, we apply the Discursive News Values Analysis (DNVA) framework (Bednarek and Caple, 2017) and key semantic domain analysis (KSDA) (Rayson, 2008) to a corpus of fake news stories on vaccination, climate change, and COVID-19. The analysis uncovers the news values that set fake news apart from mainstream news discourse. We argue that studying the news values of fake news can help us gain a deeper understanding of how it functions, why it resonates with audiences, and how it might influence public opinion and discourse on critical societal issues.

2. Discursive News Values Analysis

News values have been a central focus in journalism and media studies for decades (Caple and Bednarek, 2013). Traditionally, they have been defined as a set of criteria that journalists

and editors draw on to decide if an event is worth covering (Harcup and O’Neill, 2001). For example, events that are timely, negative, or unexpected are more likely to be deemed newsworthy and get media attention (Galtung and Ruge, 1965). However, recent work within discourse studies challenges the notion that news values are inherent properties of events, emphasizing how language plays a crucial role in framing news stories, foregrounding certain aspects while backgrounding others. As Bednarek and Caple (2017: 43) put it, “[t]he question is not how an event is selected as news, but how it is *constructed* as news” (emphasis in original). This idea lies at the core of the DNVA framework (Bednarek and Caple, 2012, 2014, 2017; Caple and Bednarek, 2016), which we use in this study for analyzing fake news texts. While linguists (including Bell, (1991) and van Dijk, (1988)) have acknowledged the importance of news values in shaping news discourse, DNVA offers the most comprehensive framework for systematically examining how newsworthiness is discursively constructed. This approach recognizes the multifaceted nature of news values, including their material, cognitive, and social aspects (Bednarek and Caple, 2017: 43), but primarily focuses on their discursive dimension, exploring how journalists package news stories to resonate with their target audiences (Bednarek, 2016b: 31). Thus, DNVA investigates the “rhetoric of newsworthiness”, or how news outlets use verbal and visual resources to “sell” the news as news (Bednarek and Caple, 2017: 257).

The foundation of DNVA is a comprehensive typology of news values synthesized from extensive research in journalism and media studies (Caple and Bednarek, 2013), as shown in Table 1. The framework further identifies language patterns typically associated with each value. For instance, ‘negativity’ is often conveyed through negative affective and evaluative language, while ‘superlativeness’ might be expressed using intensifiers, quantifiers, metaphors etc. (for comprehensive lists of linguistic markers, see Bednarek and Caple (2017), Potts et al. (2015); Bednarek and Caple (2012)). Linguistic analysis thus allows us to unpick how news writers construe events, using linguistic and semiotic resources to emphasize certain news values to enhance the appeal of their stories for their audiences. Bednarek and Caple (2017) stress that their inventory of linguistic markers of newsworthiness should not be treated as a rigid checklist. This is because linguistic expressions can signal multiple news values simultaneously, and their interpretation depends on the context. News values are also influenced by the target audience. For example, an American audience will find a flood in St. Louis, Missouri more newsworthy than one in Tehran, with the reverse being true for an Iranian audience (Bednarek and Caple, 2017: 64). Therefore, analyzing the discourse of news values requires careful consideration of both context and audience.

Table 1. News values and their definitions in DNVA (reproduced verbatim from Bednarek and Caple, 2017: 55)

News value	Definition
Aesthetic Appeal	The event is discursively constructed as beautiful (visuals only)
Consonance	The event is discursively constructed as (stereo)typical (limited here to news actors, social groups, organizations, or countries/nations)
Eliteness	The event is discursively constructed as of high status or fame (including but not limited to the people, countries, or institutions involved)

Impact	The event is discursively constructed as having significant effects or consequences (not necessarily limited to impact on the target audience)
Negativity	The event is discursively constructed as negative, for example, as a disaster, conflict, controversy, criminal act
Personalization	The event is discursively constructed as having a personal or “human” face (involving non- elite actors, including eyewitnesses)
Positivity	The event is discursively constructed as positive, for example, as a scientific breakthrough or heroic act
Proximity	The event is discursively constructed as geographically or culturally near (in relation to the publication location/ target audience)
Superlativeness	The event is discursively constructed as being of high intensity or large scope/ scale
Timeliness	The event is discursively constructed as timely in relation to the publication date: as new, recent, ongoing, about to happen, or otherwise relevant to the immediate situation/ time (current or seasonal)
Unexpectedness	The event is discursively constructed as unexpected, for example, as unusual, strange, rare

While DVNA has proven valuable in analyzing real news as produced by the news media (e.g. Huan, 2024; Molek-Kozakowska, 2017; Wu and Pan, 2022), its application to fake news remains unexplored. We believe this analytical perspective has significant potential to enhance our understanding of the phenomenon and offer fresh insights into long-standing questions in the field. DNVA offers a theoretically coherent framework with both descriptive and explanatory power (Bednarek and Caple, 2017: 4). As such, it can help us move beyond “feature spotting” in fake news analysis and develop a deeper and more holistic understanding of the drivers, linguistic mechanisms, and potential effects of this discourse. DVNA can help us uncover the ideologies underpinning fake news texts, both in terms of what fake news producers and audiences deem newsworthy and the worldviews fake news texts endorse (Bednarek and Caple, 2014). This, in turn, can help us better understand how fake news may influence public discourse on important societal matters—a key concern both within and beyond academic research. Furthermore, as news values are shaped by expectations about the intended audience (Bell, 1991), DVNA can shed light on the systems of sociocultural values shared by the communities that produce and consume these texts. This insight is crucial for identifying the motivations and vulnerabilities that fake news exploits. Related to this, DVNA can help us dissect the psychological appeal of fake news by revealing the news values that make it persuasive, believable, and worth sharing to their readers. And while our primary focus is not on developing automatic classification systems, DNVA contributes to this effort by generating a catalog of linguistic features associated with dominant news values found in fake news.

Methodologically, DNVA typically applies established news value categories (Table 1), using corpus and discourse analysis techniques to identify, quantify, and examine the function of lexical resources associated with them (Bednarek and Caple, 2014; Potts et al., 2015). This

approach, however, presents a challenge for fake news analysis. Existing categories derive from the analysis of mainstream news practices, and fake news producers and consumers may hold differing values about what makes a story newsworthy. Limiting our analysis to existing categories therefore risks obscuring values that are unique to fake news. To address this issue, our study adopts a bottom-up approach using KSDA. While KSDA has been previously used to analyze news values (e.g. Potts et al., 2015), our approach differs by not only mapping semantic features onto established categories but also searching for patterns indicative of potentially “novel” news values specific to fake news discourse. We assume the taxonomy of Bednarek and Caple (2017) is adaptable. Language and culture are interconnected: culture shapes the values within our language, and variation in language reflects differences in cultural values across discourse communities (Fairclough, 1995). Moreover, as Richardson (2007) points out, news values can evolve and change over time to satisfy the evolving preferences of the anticipated audience. Indeed, the dynamic nature of news values is evident in the variety of category sets proposed by different researchers (Caple and Bednarek, 2013). Our inductive approach thus offers a valuable methodological extension to DNVA, broadening its applicability beyond mainstream news registers. Further details about this approach are given in Section 4.

3. The corpus

Table 2 provides an overview of the corpus we have built for this study. It includes a balanced sample of fake and real news articles focusing on three topics that have been significant targets of misinformation: climate change, vaccinations, and COVID-19. Collecting both fake and real news texts was essential for the KSDA, which involves comparing a ‘focus’ corpus with a suitable ‘reference’ corpus to identify significant meaning differences between them (Rayson, 2008). As explained below, these differences were explored as potential evidence of prominent news values.

Table 2. Corpus details

		No. of articles			Average text length (words)	Total size (words)
		Climate change	Vaccination	COVID-19		
Focus corpus	Fact-checked fake news	20	27	90	779	106673
Reference corpus	Broadsheets	20	27	90	683	93533
	Tabloids	20	27	90	600	82183
	Web-based Publications	20	27	90	700	95884
	Blogs	20	27	90	578	79198

Following common practice in fake news research (e.g. Torabi Asr et al., 2024; Trnavac and Pöldvere, 2024), we used reputable fact-checking websites (Snopes, PolitiFact, FactCheck.org, AFP Fact Check, and Reuters) to find fake news articles. We consulted the existing archives on our topics of interest within these sites and complemented that with extensive keyword searches to capture as many relevant articles as possible. Articles had to be in a news format (not social media, WhatsApp messages, memes, etc.) and be rated as ‘Pants on Fire’, ‘False’, or ‘Mostly False’ to be included. The complete list of fake news articles included in our corpus and their corresponding URLs, veracity label, and individual wordcount is available via the Open Science Framework repository at the following URL: https://osf.io/akx56/?view_only=2bc8b16c51b44849b2c1e1d3d5e93d67.

The reference corpus is made up of topic-matched texts from reputable mainstream news sources. A complete list of the sources used is found in Appendix 1. We used mainstream news sources because the amount of real news available from fact-checking websites is very limited. It is important to acknowledge, however, that even reputable sources sometimes publish inaccurate content (e.g. Grieve and Woodfield, 2023). We included articles from four distinct news registers: broadsheets, tabloids, web-based publications, and news blogs. This enabled us to help isolate linguistic variation driven purely by stylistic differences from variation likely motivated by news writers’ communicative intent. We used Nexis Advance UK to identify articles, searching for relevant keywords like *vaccine(s)*, *climate change*, *coronavirus* etc. We focused on printed broadsheets and tabloids, along with established online news sources from the US, UK, and Australia (5-7 sources per news register). News blogs were sourced from Newstex LLC, which provides full-text content from various high-quality blogs. The texts were selected randomly, and care was taken to ensure a match to the fake news corpus in article count, publication dates, and text length.

4. Method

As discussed above, this study departs from the traditional, top-down approach in DNVA of applying pre-established categories of news values and mapping out their linguistic realizations. Instead, we propose a novel, bottom-up approach that inductively identifies news values specific to fake news discourse through key semantic domain analysis (Rayson, 2008). KSDA is a technique used in corpus linguistics to analyze meaning patterns in texts by identifying prominent groups of words related to a particular meaning or field. KSDA goes beyond the traditional ‘key word’ approach by leveraging the tagging program Wmatrix5 (Rayson, 2008) to automatically classify words and highlight statistically salient categories of meaning. This technique is ideally suited for DNVA because news values are meaning-based categories. KSDA offers a statistical method for quantifying the prominence of various meanings within a text. By doing so, it provides robust empirical evidence to support claims regarding the relative importance of particular news values within a given corpus.

The first step in KSDA is automatic semantic tagging. Wmatrix5 assigns semantic domain tags to each word in a corpus based on an extensive set of 21 major semantic fields (e.g. ‘emotion’, ‘life and living things’, ‘time’) and 232 subfields (Archer et al., 2002), sometimes adding plus or minus signs to indicate position within a binary or linear scale (e.g. ‘T3’ for ‘time: old, new...’, with ‘kid’ as T3- and ‘pensioner’ as T3+). After the tagging process, a keyness calculation (log-likelihood test) is performed on the semantic tags, rather than individual words, to highlight domains significantly overrepresented in the focus corpus

compared to a reference corpus. This focus on semantic tagging provides a broader, more interpretable view of corpus content than simple keyword analysis.

In this study, we complemented the results of the KSDA with a systematic qualitative concordance analysis of the words included in each key semantic domain category to explore their role in construing the news values of fake news. As shown below, the combined quantitative and qualitative analysis helped us uncover both traditional news values within fake news and potential “novel” values unique to this register. These novel values may be key in understanding the distinct characteristics of fake news compared to mainstream reporting.

5. Results

In this section, we present the findings of our analysis of the fake news corpus. We begin by identifying the key semantic domains and illustrating the linguistic resources within each domain using examples from the corpus. Next, we examine the news values that emerge from these domains and discuss their rhetorical and ideological implications.

5.1 Key semantic domains in the fake news corpus

Using Wmatrix5, we extracted the key semantic domains in our fake news corpus by comparing it against our real news reference corpus. To ensure both statistical significance and a meaningful effect size, we filtered the results in two ways. First, we retained only domains with a log-likelihood value of 7.00 or higher ($p < 0.01$). Next, we ranked the remaining domains by Log Ratio, discarding those below 0.50. This resulted in a shortlist of 54 key semantic domains, as shown in Table 3 (Appendix 2 provides a full breakdown of the key domains and statistics. Semantic domains sharing tags and signs, such as A6.2-- and A6.2-, were merged). To gain a broader understanding of patterns in our data, we then categorized these domains according to their shared meanings. Through careful, context-sensitive analysis of linguistic items, we identified seven major semantic themes.

Table 3. Key semantic domains in the fake news corpus

Major semantic themes		Key semantic domain tags	Linguistic examples
Connecting ideas	Cause-effect Relation	Cause and effect/connection	<i>Cause, why, caused, because of, effects, due to</i>
	Comparative relation	+Comparing: unusual	<i>Novel, unprecedented, mysterious, unusual, exotic, abnormal</i>
		Comparing: usual	<i>Natural, common, usually, normal, commonly, generally</i>
		+Comparing: similar	<i>Same, replicated, identical, equal</i>
		Unexpected	<i>Surprise, wonder, unexpected, astonishing, surprised, astoundingly</i>
		Degree: non-specific	<i>Degree, even, so-much-as</i>
Evidentiality	Spoken evidence	Speech: not communicating	<i>Kept quiet, speechless</i>
		Sound: quiet	<i>Quietly, silent, quiet, silently, silence</i>

	Written evidence	The media	<i>Published, media, editor-in-chief, edition, censorship</i>
		The media: newspapers etc.	<i>Article, journal, magazine, newspaper, press release, press conference</i>
		The media: books	<i>Book, authors, literature, readers, co-authors, public library</i>
		Knowledge	<i>Data, database, databases, informative</i>
		Information technology and computing	<i>Program, website, computer, dataset, internet, online, datasets</i>
	Sensory evidence	Seen	<i>Notice, look outside, noticed, noticeably</i>
		Inattentive	<i>Ignored, ignoring, ignore, in dream, disturbed, distraction</i>
		Open; finding; showing	<i>Found, discover, revealed, showing, findings, exposed,</i>
	Deductive evidence	Seem	<i>Appear, seems, apparently, looks, reportedly</i>
		Probability	<i>Perhaps, maybe, odds, probability, likelihood</i>
Evaluation	Evaluation of credibility	Evaluation: authentic	<i>Actual, effectively, authenticity, proper, really, authentic</i>
		Evaluation: unauthentic	<i>Fake, forged, forgery, copy, pretended, unconfirmed</i>
		Evaluation: true	<i>Evidence, fact, in fact, truth, facts, TRUE</i>
		Evaluation: false	<i>Hoax, lie, FALSE, misleading, lies, fabricated</i>
	Evaluation of rationality	Foolish	<i>Stupid, gullible, mindless, absurdity, lunacy, baloney</i>
	Evaluation of morality	Unethical	<i>Scandal, scam, tricks, corruption, trick, rogue</i>
		Bravery	<i>Courage, dare, courageous, courageously</i>
		Crime	<i>Fraud, crime, terrorism, criminal, illegally, murderous</i>
	Evaluation of emotion	Fear/shock	<i>Alarmists, shock, panic, scare, fear, scary</i>
	Religion and supernatural	Religion and supernatural	<i>Churches, God, pray, prophet, catholic, pastors</i>
Science	Science and technology in general	<i>Scientists, science, scientific, laboratory, technology</i>	
	Substances and materials generally	<i>Protein, Toner, fuels, substance, formaldehyde, hydrochloride</i>	
	Substances and materials: solid	<i>Ferrous, aluminium, sodium, plastic, zinc, soils</i>	

	Substance and materials: liquid	<i>Oil, water, calcium chloride, mercury, moisture, saline</i>
Time	Time	<i>Time, never, times, watch, timeline, never ever</i>
	Frequent	<i>Always</i>
Corpus-specific topics	Temperature	<i>Temperatures, temperature, melted</i>
	+Temperature: hot/on fire	<i>Warmer, blistering, warming, fires, burning, heat</i>
	+Temperature: cold	<i>Colder, cooler, frozen, freeze, icy, chilly</i>
	Life and living things	<i>Biological, wildest, lifesaving, life threatening, mortal, wild</i>
	Food	<i>Peanuts, food, eating, sugar, seafood market, salt</i>
	Plants	<i>Trees, seeds, plant, palm trees, pollen, plant life</i>
	Geographical terms	<i>Global, earth, sea, sea level, earths, fossil</i>
	Weather	<i>Climate, weather, flooding, hurricanes, cloud, drought</i>
	Sailing, swimming, etc.	<i>Launched, buoys, ships, launch, yachts, sail</i>
	Damaging and destroying	<i>Harm, bushfires, destroy, broke, damage, victim</i>
	Warfare, defence and the army; weapons	<i>Shot, military, biological warfare, soldiers, raid, bombs</i>
Miscellaneous	No people	<i>Depopulate</i>
	No constraint	<i>Release, leaked, freedom, leak, loose, liberal</i>
	Weight: heavy	<i>Heavy</i>
	Participating	<i>Interference, interfere</i>
	Non existing	<i>Missing, non-existent</i>
	Being	<i>Phenomenon, phenomena, availability</i>
	Using	<i>Use, used, using, uses, function, utilizing</i>
	Games	<i>Trumps, checkers, volleyball, checker, softball</i>
	Discourse bin	<i>However, of course, right, in other words, on the other hand, etc., once again, basically</i>

Connecting ideas

The first group of prominent meanings in the fake news corpus involves connecting different ideas or concepts by using words that indicate cause-effect and comparative relations. Cause-effect relationships are a powerful tool for building persuasive arguments because they

appeal to the audience's sense of logic (Fahnestock, 2011). For instance, in Example (1), the writer attempts to establish a causal link between vaccines and alleged population control efforts, drawing on a conspiracy theory about Bill Gates' philanthropic activities.

(1) How would vaccines **lead to** [cause and effect/connection] depopulation, when they're ostensibly designed to make people healthy? Well, Gates is spending a whopping sum on contraception, abortion, and sterilization in Third World countries, but there's a little secret about his vaccines as well. Bill Gates vaccines have made news reports in recent days for (supposedly inadvertently) containing sterilization meds.

Comparative meanings are similarly used to create persuasive narratives, deceptively highlighting patterns, trends, and relationships to lead readers towards desired conclusions. For instance, the word *same* in Example (2) is used to undermine the credibility of three major international organizations by claiming that they all use identical, supposedly "corrupted" climate data. In (3), the words *natural* and *normal* emphasize that the changes occurring to planetary weather patterns are not unusual or extraordinary, thus challenging the idea of human-induced global warming.

(2) What this means, the report concludes, is that claims by NASA, NOAA, and the UK Met Office that the world is experiencing unprecedented and dramatic warming should be taken with a huge pinch of salt: they all use the **same** [comparing: similar] corrupted global average temperature (GAST) data.

(3) For more than 60 years, the National Aeronautics and Space Administration (NASA) has known that the changes occurring to planetary weather patterns are completely **natural** [comparing: usual] and **normal** [comparing: usual]. But the space agency, for whatever reason, has chosen to let the man-made global warming hoax persist and spread, to the detriment of human freedom.

Other expressions emphasize the unexpected nature of events. In Example (4), for instance, the adverb *amazingly* frames the decision to give a child additional inoculation after a negative reaction to the first vaccine as surprising. This word choice amplifies the seemingly illogical nature of the situation, positioning the reader to feel surprised or even outraged.

(4) Reports indicate that after the initial inoculation Marcella had, lost her appetite, and became feverish and fatigued. **Amazingly** [unexpected], more inoculations were given despite her negative reaction from the first jab.

Evidentiality

The second group of dominant meanings in the fake news corpus relates to how evidence is presented, known as evidentiality. This can be categorized into spoken, written, sensory, and deductive forms. Concordance analysis reveals that spoken evidence expressions are often used to accuse scientists and established authorities to deliberately hide evidence that contradicts their theories and recommendations. For example, the words *quiet* and *quietly* are used in (5) to suggest the National Snow and Ice Data Centre intentionally concealed "accurate" climate data and was not transparent when correcting the figures.

(5) HOW NSIDC GOT ITS FIGURES WRONG AND THEN **KEPT QUIET** [speech: not communicating]

Since publication of the original version of this article, the US source of the figures the NASA-funded National Snow and Ice Data Centre (NSIDC) - was discovered to have

made a huge error and then **quietly** [sound: quiet] corrected the figure without mentioning it.

Expressions pertaining to the written evidence category are predominantly used to support and boost the credibility of counter-mainstream theories, as illustrated in (6).

(6) The following chart, **published** [the media] on the EPA.gov website (4), clearly shows modern-day heat waves are far smaller and less severe than those of the 1930's.

Similarly, sensory evidence is used to either support the argument made in the fake news story or to emphasize the deliberate suppression of counter-evidence. In Example (7), the sensory evidential *notice*, attributed to multiple doctors, is used to boost the credibility of the claim that vaccines can trigger side effects similar to food poisoning. In Example (8), the words *find* and *found* suggest the authors actively searched for and unearthed hidden evidence supposedly linking flu shots and coronavirus. In Example (9), the word *ignored* is used to suggest the intentional suppression of evidence that undermines mainstream theories.

(7) Soon other doctors began to **notice** [seen] striking similarities between food reactions and the serum sickness that was associated with vaccines.

(8) In searching the literature, the only study we have been able to **find** [open; finding; showing] assessing flu shots and coronavirus is a 2020 US Pentagon study that **found** [open; finding; showing] that the flu shot INCREASES the risks from coronavirus by 36%.

(9) When Milankovitch first put forward his model, it went **ignored** [inattentive] for nearly half a century. Then, in 1976, a study published in the journal *Science* confirmed that Milankovitch's theory is, in fact, accurate, and that it does correspond to various periods of climate change that have occurred throughout history.

Deductive evidentials, which are typically used to indicate conjecture, reasoning or to make predictions about the future, imply low reliability of knowledge (Chafe, 1986) and often function as hedges (Hyland, 2005) to communicate tentativeness and leave room for disagreement. In Example (10), *seem* is used to suggest the possibility that medical organizations intentionally use flu shots to suppress immune systems. Similarly, the adverb *perhaps* in Example (11) frames the claim that current emissions-mitigation policies may not only fail to achieve their goals but actively harm the environment. Thus, deductive evidentials appear to be used rhetorically in fake news as hedging devices to display caution and avoid suspicion while still promoting outlandish claims.

(10) Flu shots are being hyped to suppress immune systems and create an explosion in coronavirus infections. Flu shots, it **seems** [seem], are one more way the medical establishment can literally murder children and adults, creating widespread vulnerability to the coronavirus pandemic which will no doubt surge back this Fall as flu shots work to suppress the immune systems of millions.

(11) And current emissions-mitigation policies, especially related to the advocacy for renewables, are often costly, ineffective, and **perhaps** [probability] even harmful to the environment. On the other hand, elevated CO2 and a warmer climate provide unheralded benefits to the biosphere (i.e., a greener planet and enhanced crop yields).

Evaluation

Fake news frequently employs evaluative language to shape reader perception. Four key categories of evaluation were identified: credibility, rationality, morality, and emotion. Evaluations of credibility are often used to discredit established theories, as seen in Example (12). Conversely, fringe theories and their supporting evidence are presented as genuine and credible. This is exemplified in (13), where the word *proved* is used to assert the alleged existence of Saint Corona.

(12) In other words, the so-called Consensus on global warming is a massive **lie** [evaluation: false]. And Donald Trump was quite right to quit the Paris agreement which pretended that the massive **lie** [evaluation: false] was true.

(13) Two investigations in 1943 and 1981, **proved** [evaluation: true] that the relics belong indeed to a man and a woman. Cedar pollen was found confirming an original burial in Syria and then in Cyprus. Saint Corona is especially venerated in Austria and Bavaria as the patron-saint of treasure hunters and against epidemics.

Fake news also attacks the perceived rationality of mainstream ideas and their supporters. For example, in (14), the evaluative word *mindless* is used to describe mainstream media coverage of the measles resurgence. This implies the media is uncritical and prioritizes sensationalism over factual investigation.

(14) Once again, the media is discarding factual reporting in favor of **mindless** [foolish] sensationalism, attributing an alleged measles resurgence -- even this claim is specious -- to the unvaccinated.

The third type of evaluation is concerned with morality. Evaluative language is used to portray governments' and health organizations' practices as fraudulent, corrupt, and even *criminal*, as seen in (15). Conversely, those who challenge established narratives are often framed as brave truth-seekers (Example 16).

(15) The drug companies will cash into the tune of hundreds of billions of dollars while innocent children and adults all across America needlessly suffer and die. As usual, it's all about the money, and the vaccine/drug cartels are murderous, **criminal** [crime] regimes that twisted science (Dr. Fauci ?) to maximize profits at any cost.

(16) Last night Mr Smith thanked Dr Bates for **courageously** [bravery] stepping forward to tell the truth about NOAAs senior officials playing fast and loose with the data in order to meet a politically predetermined conclusion.

The fourth type of evaluation is concerned with emotion, and meanings of 'in/security' (Martin and White, 2005) such as fear and shock in particular. Fake news writers use language that evokes fear and shock to elicit strong negative emotions in readers and antagonize them towards governmental and health organizations, as shown in (17).

(17) Mainstream investigators have found that these vaccine trials in India led to thousands of injuries and deaths of young women. The philanthropist has also funded secretive sterilization programs, and says we should form death panels to differentiate between those who are worthy of life and those who have no benefit whatsoever to society. This cold, skewed psychopathic logic is **terrifying** [fear/shock] and brings to mind the worst excesses of the 20th century's most evil regimes.

Religion and supernatural

Fake news articles in our corpus frequently tap into the religious and supernatural themes, referencing religious figures, locations, practices, and legends, particularly concerning climate change and COVID-19. For instance, Example (18) cites a self-proclaimed prophet claiming divine power to stop natural disasters like Hurricane Florence and California wildfires. Example (19) alleges a conspiracy theory where the Kansas City mayor, presumably a Democrat, ordered pastors to hand over church member details, implying religious surveillance during COVID-19.

(18) Similarly, self-proclaimed **prophetess** [religion and supernatural] Kat Kerr declared that her guarantee of a red tsunami had also been accurate [...] Kerr also claimed she had **divine** [religion and supernatural] authority to stop natural disasters such as Hurricane Florence and the California wildfires.

(19) Kansas City Mayor Quinton Lucas, a Democrat, has ordered **pastors** [religion and supernatural] to turn over the names, address and phone numbers of anyone who enters **church** [religion and supernatural] houses. [...] “Never in our wildest dreams could we have imagined Nazi-like measures designed to surveil, track and spy upon what was once a FREE American people,” Liberty Counsel founder Mat Staver said.

The presence of religious and supernatural themes in fake news suggests that creators seek to tap into deeply rooted belief systems and mystical narratives to manipulate readers. This tactic aims to boost the perceived credibility of fabricated stories and elicit strong emotional responses, which can be used to foster distrust toward particular political figures or groups, as seen in Example (19).

Science

Science is another prominent semantic domain in our corpus, mirroring findings by Clarke (2024). Writers often incorporate scientific terminology, like *glucose* (Example 20) and *mercury* (Example 21), to craft seemingly authoritative explanations to support controversial claims. Scientific discourse is thus deployed strategically to create an impression of expertise and build trust with readers.

(20) In addition, oxygen deficiency causes **glucose** [substances and materials generally] breakdown and endangered lactic acid rise. Some people drive their car with the mask on, that is very dangerous, because, the stale air can make the driver lose consciousness.

(21) For most people, says Dr. Blaylock, flu vaccines don't prevent the flu but actually increase the odds of getting it. The **mercury** [substances and materials: liquid] contained in vaccines is such a strong immune depressant that a flu shot suppresses immunity for several weeks.

Time

The analysis of our fake news corpus reveals time-related expressions as another prevalent theme. These expressions are often used to revisit past events and challenge established narratives. For example, in (22), the adverb *always* is used to suggest that climate change is a natural phenomenon, not caused by human activity. Interestingly, this example demonstrates the convergence of time and science themes. The claim seems to be based on a distorted

interpretation of the Milankovitch Cycles theory, a well-established concept in climate science. The adverb *never* is used in (23) to challenge one of the prevailing origin stories of COVID-19 according to which the virus originated in the Wuhan wet market, where infected bats were allegedly traded, and to argue instead that a genetically modified pathogen was leaked from a research lab in the city.

(22) Based on these different variables, Milankovitch was able to come up with a comprehensive mathematical model that is able to compute surface temperatures on earth going way back in time, and the conclusion is simple: Earth's climate has **always** [frequent] been changing, and is in a constant state of flux due to no fault of our own as human beings.

(23) According to municipal reports and the testimonies of 31 residents and 28 visitors, the bat was **never** [time] a food source in the city, and no bat was traded in the market. There was possible natural recombination or intermediate host of the coronavirus, yet little proof has been reported. The researchers screened the area around the seafood market and identified two laboratories conducting research on bat coronavirus.

Corpus-specific topics

The final category of prevalent meanings in the fake news corpus comprises topic-specific vocabulary. Examples include *weather, temperature, plants, and geographical terms* for climate change; *warfare, defence and the army, weapons* pointing to metaphorical representations of COVID-19 (Semino, 2021). Interestingly, even though both the target and reference corpus discuss similar topics and with comparable distribution across those topics (as detailed in Section 3), our analysis reveals a higher concentration of topic-specific vocabulary in the fake news corpus, particularly for climate change. This can be attributed, at least partially, to the repetitive nature of fake news content, as observed by Horne and Adalı (2017) and evident in our data. Moreover, a significant portion of the topic-specific keywords carry negative connotations. Example (24), for instance, mentions China's alleged *biological warfare* program, alluding to an intentional lab-leak conspiracy theory.

(24) China's **Biological Warfare** [warfare, defence and the army; weapon] Program is believed to include full range of traditional chemical and; biological agents with a wide variety of delivery systems including artillery rockets, aerial bombs, sprayers, and short-range ballistic missiles.

5.2 The news values of fake news

The key semantic domain analysis has identified a set of meaning categories that are statistically prominent in fake news texts compared to mainstream news. In this section, we interpret these results through the lens of newsworthiness. Our objective is to identify and discuss the news values that characterize fake news, shedding light on the distinctive qualities that set it apart from mainstream news discourse. Building on our analysis, we also offer a series of tentative explanations for how these distinctive news values may contribute to the allure, adoption, and propagation of fake news stories.

Our analysis suggests that fake news emphasizes three news values included in the DNVA framework: negativity, unexpectedness, and consonance. Negativity is constructed using evaluative and topic-specific, negatively connoted words. This finding aligns with previous

research that has identified negative affective and evaluative language as a defining characteristic of fake news discourse (e.g. Alba Juez and Mackenzie, 2019; Horne and Adali, 2017; Maci, 2019; Torabi Asr et al., 2024; Trnavac and Pöldvere, 2024). Unexpectedness is conveyed through comparative terms and negative affective words denoting shock. The combination of negativity and unexpectedness could be a major factor in making fake news more effective and widespread. Studies have consistently found that negative and surprising news stories are more likely to be read and shared (e.g. Bednarek, 2016a; de León and Trilling, 2021; Robertson et al., 2023). Moreover, research shows that when people feel negative emotions while reading fake news, they are more prone to believe the stories are true (Fernández-López and Perea, 2020; Martel et al., 2020). Thus, the combination of negativity and unexpectedness in fake news may create a powerful emotional response that encourages readers to consume, believe, and share it.

Consonance is reflected in comparative words used to describe how typical or similar things are, and the time adverbial *always*. In our corpus, this type of lexis is used to support contentious arguments and crucially to challenge mainstream narratives. This is especially evident in relation to climate change, where fake news writers repeatedly claim that current climate patterns are normal and consistent with long-term trends. Consonance can boost the credibility of fake news stories by tapping into readers' 'confirmation bias', the human tendency to favor and remember information that aligns with our beliefs while dismissing contradictory evidence (Nickerson, 1998). Confirmation bias has been found to exert its strongest influence in situations involving emotionally laden subjects and deep-seated beliefs (Lord et al., 1979; Westen et al., 2006) – precisely the kinds of elements that frequently appear in fake news.

In addition to negativity, unexpectedness, and consonance, our analysis also revealed that fake news places a strong emphasis on evidentiality, offering a wide range of different types of evidence (written, spoken, sensory, deductive) to frame facts as maximally accurate and reliable. This suggests that fake news writers are aware of the unconventional and contentious nature of the information they present, and therefore invest extra effort in providing ample evidence to support their claims. However, in fake news, evidence is not just backup for the story; it is often the main event, presented as the reason the story matters in the first place. In other words, evidentiality is deployed strategically to make stories newsworthy. The DNVA framework lacks a category to capture the strategic emphasis on evidence as a factor enhancing newsworthiness. However, Bell's (1991) concept of 'facticity' as a news value effectively fills this gap. Bell (1991: 158) defines facticity as "the degree to which a story contains the kinds of facts and figures on which hard news thrives: locations, names, sums of money, numbers of all kind". Here, we extend this definition to encompass evidentiality as a key set of linguistic devices used to construct news stories as factual and credible. By highlighting the value of facticity, fake news writers respond to an anticipated need of their target readers, who may be drawn to these texts precisely because they offer seemingly strong evidence in support of counter-mainstream narratives. Such evidence may serve multiple purposes for readers, such as confirming pre-conceived ideas, reassuring them about the credibility of the controversial narratives reported, and equip them with rhetorical tools to argue more persuasively about divisive topics when engaging with those they view as political adversaries (Osmundsen et al., 2021).

Beyond the "traditional" news values discussed above, our findings reveal that fake news discourse is also characterized by unique values that do not seem to fit neatly into any of the categories of the DNVA framework. One of these is what we term 'subversiveness': the

discursive construction of a story as revelatory and disruptive, challenging standard assumptions and debunking accepted wisdom. Subversiveness is arguably the most dominant and pervasive news value across our corpus. It manifests at various levels and across multiple semantic domains, from evidential expressions employed to undermine mainstream theories to lexical items that convey negative evaluations of the credibility, morality, and rationality of established narratives and their proponents. The prevalence of subversiveness as a news value in our corpus underscores the centrality of truth as a contested concept in fake news discourse; much of the discursive work in these texts revolves around relativizing, problematizing, and questioning the veracity of mainstream narratives. This finding is consistent with prior research demonstrating that discrediting traditionally reliable sources and promoting conspiracy theories are common themes in fake news (Golbeck et al., 2018). Subversiveness provides fake news writers with a means to present themselves as authoritative figures who uncover hidden truths and possess knowledge beyond the reach of their readers. This, in turn, could help them enhance their social status within their online community. For target readers, subversiveness can be especially appealing to those who are inclined to distrust “the establishment” and seek out information that validates their skepticism.

But the communicative purpose of fake news texts, as our analysis reveals, goes beyond merely debunking mainstream stories. These texts concurrently aim to “sell” a plausible counter-narrative. This is especially apparent in the statistical overuse of words that convey cause-effect relationships and words related to science. Thus, we propose that another distinctive news value of fake news is ‘causality’. Causality packs explanatory power into the story by highlighting alleged links between events, such as between mercury in vaccines and reduced immunity (Example 20), to build a seemingly credible, logically coherent alternative to mainstream theories. Causality thus works in tandem with the news value of subversiveness; fake news stories sow doubt about the prevailing narrative, creating an opening to supplant it with an alternative explanation. As seen above, these counter-narratives typically identify a clear enemy, such as Bill Gates or climate scientists, who is portrayed as responsible for the events and accused of hiding the truth. By assigning blame to specific individuals or groups, fake news stories tap into target readers’ desire for clear-cut explanations and their suspicion of powerful actors.

In addition to the above, our analysis has revealed that fake news texts often incorporate religious and supernatural elements. This finding supports Douglas’s (2018) observation that religion is a common subject of fake news and that religious believers are among its targeted audiences. In light of this, we propose that ‘religiosity’ can be considered a distinctive news value of fake news. Religiosity can serve multiple purposes. First, for readers with religious beliefs, it can enhance the perceived credibility of the stories by resonating with their pre-existing faith in supernatural phenomena (Bronstein et al., 2019; Pennycook and Rand, 2021). Second, religiosity taps into readers’ need for comfort and security that can derive from faith and religious practice, especially in times of uncertainty or distress. Moreover, the use of mystical elements can make fake news stories more engaging and memorable. The allure of the supernatural and the promise of hidden knowledge can draw readers in and keep them interested, even if the claims being made are baseless. In this way, religiosity can help fake news stories stand out and increase their chances of being shared.

Finally, our analysis shows that fake news strategically deploys historical narratives, incorporating specific historical facts, figures, and records. These features foreground ‘historicity’ as a key value in fake news. The inclusion of historical evidence, even if it is

distorted or fabricated, lends an air of credibility to the fake news narrative. Historicity appeals to readers' desire for a comprehensive understanding of the timeline of an event. By providing historical context and tracing the origins of current situations, fake news stories give readers the impression that they are receiving a complete and well-researched account. The news values of historicity and subversiveness complement each other. Fake news stories often present themselves as revealing long-buried secrets or exposing conspiracies that have been concealed from the public. By claiming to offer exclusive access to historical knowledge, these stories can attract readers who are eager to learn about the "real" history behind current events.

6. Conclusion

Tackling the pressing problem of online fake news requires a deeper understanding of the factors that drive its production and consumption and that shape its language. In this study, we have argued and sought to demonstrate that such understanding can be gained by analyzing fake news discourse from the perspective of news values. This perspective provides a holistic and coherent explanatory framework for understanding the linguistic and rhetorical mechanisms of fake news, helping us move beyond the "feature spotting" approach that has characterized much of the linguistic literature on this phenomenon, especially in NLP. A news values perspective is appropriate and critically needed because fake news is a type of news and is therefore likely to be driven by dynamics similar to those of other forms of news. However, until now, the ways in which the values of fake news differ from those of mainstream news have remained unexplored.

Employing the DNVA framework (Bednarek and Caple, 2017) and KSDA (Rayson, 2008), we have identified a set of news values that differentiate fake news discourse from mainstream news discourse, as well as a corresponding set of linguistic features that fake news writers use to discursively construct their stories as newsworthy, thereby maximizing their persuasive appeal. Our findings reveal that fake news strongly emphasizes four traditional news values: negativity, unexpectedness, consonance, and facticity. Moreover, we have uncovered four "novel" news values that appear to be distinctive of fake news and are not accounted for in established taxonomies: subversiveness, causality, religiosity, and historicity. Subversiveness, as a news value, refers to the way fake news is discursively constructed as revelatory, challenging mainstream narratives and established truths. Causality highlights often misleading cause-and-effect relationships, providing readers with a seemingly plausible alternative explanation of events and a satisfying sense of understanding complex issues. Religiosity is evoked through the use of enigmatic or supernatural elements, appealing to readers' fascination with the unknown. Finally, historicity involves framing the fake news story within a historical context, lending it an air of authenticity and significance. These novel news values, in combination with the traditional ones, form a powerful discursive toolkit that fake news writers exploit to craft credible and compelling counter-mainstream narratives.

Our analysis not only sheds light on the rhetorical aspects of fake news discourse but also offers valuable insights into the ideological framework underpinning this type of discourse, both in terms of what is considered newsworthy and the worldviews that inform and are perpetuated by fake news texts. As far as the former is concerned, our analysis shows that fake news writers place special emphasis on the value of evidence, questioning received wisdom, and approaching topics analytically and seemingly scientifically. This is a

concerning finding, because these values are inherently legitimate and, in fact, form the foundation of established science. Thus, fake news discourse appears to draw on the 'discursive order' (Foucault, 1969) of science, exploiting widely accepted sources and modes of knowledge to project credibility and disseminate misinformation more effectively. Regarding the broader worldviews promoted by fake news, our analysis suggests that fake news promotes a worldview characterized by distrust towards established knowledge, polarization, conspiratorial thinking, and sometimes even xenophobic attitudes. More broadly, our analysis underscores the deeply ideological nature of online fake news discourse. The primary function of these texts, as evident from the analysis, is to undermine and supplant mainstream understanding of events such as climate change, vaccination, and the COVID-19 pandemic.

Recognizing the rhetorical and ideological underpinnings of fake news discourse is crucial for developing effective counter-strategies. By understanding the values and worldviews that fake news promotes, we can better identify and address the root causes of its appeal and develop targeted interventions to combat its spread. This may involve promoting media literacy, fostering critical thinking skills, and providing news narratives that address the concerns and anxieties exploited by fake news, while upholding the principles of truth, accuracy, and responsible journalism.

In conclusion, several limitations of our study should be noted, which, in turn, provide opportunities for future research. The novel news value categories we have proposed here should be regarded as tentative, representing our best interpretive effort to capture the discursive strategies used to make fake news stories newsworthy. Future research should build on and expand this work, validating and refining our taxonomy across diverse fake news topics to confirm how universal these news values are, and identify any topic-dependent variation. It is also important to acknowledge that our analysis focused exclusively on a specific register of fake news: false articles presented in a traditional news format. However, fake news proliferates through various channels and formats, with social media playing a particularly significant role. To develop a more comprehensive understanding of this phenomenon, future studies should apply our analytical approach to these alternative forms of fake news. Finally, another promising direction for future research lies in examining qualitative differences in how news values common to both authentic and fake news are discursively realized. For instance, while as we have shown negativity is overrepresented in fake news, it is of course a central feature of real news as well. Future studies could explore whether there are any linguistic differences in how events are negatively framed across these two types of news. Similarly, we have observed that fake news mimics and exaggerates strategies underlying the professional ethos of scientific news reporting, particularly in its emphasis on facticity and causality. Further investigation is needed to uncover potential distinctions in how evidence is discursively framed and the types of causal constructions employed in real versus fake news stories. Such research could inform the development of critical media literacy interventions, empowering readers to discern subtle differences in rhetorical strategies and enhance their ability to identify fake news.

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