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INFORMATION DISORDERS:
RISKS AND OPPORTUNITIES FOR DIGITAL
MEDIA AND INFORMATION LITERACY?

Divina Frau-Meigs

ABSTRACT *This paper analyses the major modifications created by the "social turn" i.e. the emergence of social media. It presents the drastic change of ecosystem created by the three "continents" of the Internet. This sets up the context of deployment for "information disorders" such as radicalisation and disinformation. The analysis then considers the risks and opportunities for Media and Information Literacy: on the one hand, the rise of fact-checking and the increasing interference of social media platforms; on the other hand, the augmentation of the Media and Information Literacy epistemology and the Media and Information Literacy paradigm shift entailed by information disorders. It concludes on an agenda for Media and Information Literacy in 21st century.*

Author note

Divina Frau-Meigs :: Sorbonne Nouvelle University, Paris, France **::** divina.meigs@orange.fr

The transition from Internet 1.0 (online mass media) to Internet 2.0 (pure player social media platforms) is a radical paradigm shift, a transformative moment that turns the postmodernist worldview around the linear organisation of society into legacy.[1] It points to the emergence of a "cyberist" worldview, where information as news, docs and data steers[2] the complex construct of our daily life. The demise of post-modernism (Baudrillard, 1981; Lyotard, 1979) and the dawn of cyberism are visible in the move from space constraints to de-territorialisation, from time constraints to ubiquity, from material constraints to simulation and from human constraints to dis-intermediation of services by data-driven platforms (Frau-Meigs 2011). The prefix "cyber-" connotes this change, with hyphenated words such as cyber-crime, cyber-activism, cyber-war and cyber-bullying that points to the relevance of cyberism to clarify online risks and opportunities. By contrast the prefix "e", as in e-war or e-crime, has not been commonly adopted. The prefix "cyber" implies a "space" while the "e" underlines an electronic technique, still attached to a modernist conception of power as a place linked to a bound territory.

Such major changes are a risk for democracies, if not properly catered by a new way of understanding the cyber ecosystem of media due to such digital augmentation because media help create public opinion and shape decisions related to voting and participating in society. The paradigm shift requires also a change in the way we perceive education and 21st century skills, which entails the update of Media and Information Literacy (MIL), from its old linear view of the press to the cyberist view of the multimedia participatory web (Jenkins *et al.*, 2009; 2016). Taking the scope of these changes requires a critical perspective on several competing narratives: the culture of consumption vs. the culture of participation, proprietary models that commodify content vs. open source models of free information, sharing by design vs. collaborative wiki contributions. In the media narrative, the editorial model of news vies with the information brokerage model where infomediaries (Google and Facebook mostly) collect advertising revenue (Moeglin 2007).

The MIL community of educators currently finds itself in a situation where it needs to effect the transition, even among its own ranks. The timing is not dissimilar to the "stagecoach effect" (Perriault, 2002), when the first train wagons were actually recycled stagecoaches, to make people less scared of the transition from horse power to steam power. With this transition too, the temptation is to apply old protocols to new platforms. But the resistance of pre-digital institutional models and mindsets may actually be a hindrance for understanding the tenets of the digital world and harnessing their opportunities and risks. Changing the vocabulary, the metaphors and the representations in people's minds is key to overcoming the stagecoach effect and to proving the creativity of the MIL community.

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[1] The contents of this article were first presented as a keynote speech at the Global MIL Week Conference, Kaunas, 23 October 2018; a shorter version was published in the Lithuanian language in *Lithuanian culture studies contemporary virtual space* 10 (2019): 46-62.

[2] The original Greek meaning of "cyber" is "to steer", "to govern".

A DRASTIC CHANGE OF ECOSYSTEM: GROUNDED VIRTUAL CONTINENTS

In this period of transition, the shift of metaphors applied to the Internet is also indicative of the changes in people's representations of the digital era. The early image of playful "surfing on the web" cohabits with the current vision of work as "data mining". The incredible lightness of virtual highways is grounded with the heavy pollution of diesel-powered data centres. The three layers of the Internet as described by Yochai Benkler (2000) contribute to this "grounding": the "physical infrastructure" layer through which information travels and is accessed, the "logical" layer of codes and protocols that organize the data into information and the "content" layer that conveys the information to networked communities (Benkler, 2000). These layers take into account the multilevel mental models of cyberspace and their interfaced thought-processes as engineered in digital computing (Leary, 1994). They help understand the new geo-politics created by de-territorialisation, ubiquity, simulation and disintermediation, a geo-politics that brings to mind yet another metaphor, the one of new continents – the continental scope stemming from the fact that social media like Facebook can boast up to 2 billion people online, with their own rules and terms of service, not to mention their own currency.

From the surf...

Since the creation of the Internet, American commercial media have developed a whole dorsal or backbone along the three layers of the Internet. This dorsal creates a "blue continent" (Figure 1), complete with telcos and cable-operators (Cisco, Comcast...), exploitation systems (Apple, Microsoft...), navigators (Safari...), search engines (Google, Bing...) and social media (Facebook, YouTube, Twitter...).

▲ *Figure 1.*
The Blue Continent.
Source: Author, 2019

The shared blueness is partly a marketing strategy, as these entities tend to copy each other in their brand placement with recognition by their logos. Symbolically, the colour blue is not a haphazard choice: blue is a soothing colour that removes all angst about uses and practices. It also alludes to the metaphor of surfing on the airwaves of the information super-highways. It connotes a feeling of freedom, of ease and user-friendliness. It is the continent of conspicuous consumption, with commodified contents and services, where participation takes the shape of sharing by design and, increasingly, by obligation.

Another continent has emerged, that is also predicated on a real life sovereign country, the Red continent (Figure 2). The Chinese Internet also has its own three-layered continent: telcos (China unicom), exploitation systems (Huawei), search engine (Baidu), social media (Sina Weibo). In the Chinese context, red connotes luck and happiness, which implies that the Chinese are also sending the message to their users that the Internet is innocuous. And it refers to communism as well, with its specific control and censorship of information within the Great Digital Firewall. Both consumption and participation are carefully monitored and tailored.
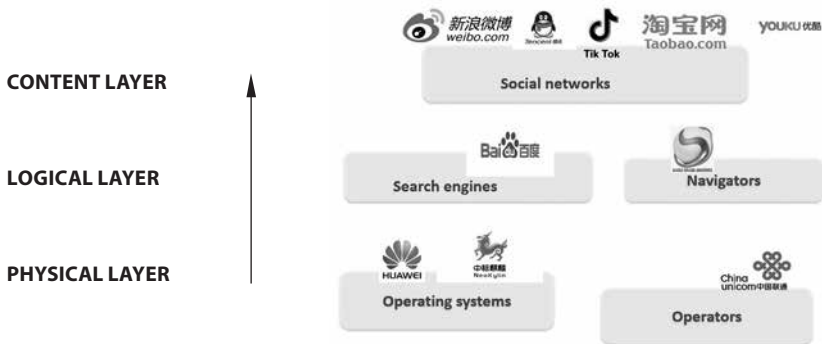
▲ *Figure 2.*
The Red Continent.
Source: Author, 2019

Both the blue and the red continent are sending their own ideological considerations about information and media, as mobilizing colours for political purposes is a proven ideological strategy in history, much beyond marketing symbols. Both continents differ from the orange continent (Figure 3) of open source standards. This continent is the least related to a sovereign state and refers rather to the transborder libertarian heritage of the early Internet (Barlow, 1990), with non proprietary protocols to liberate information, that can be developed in any country or region. Here too the colour code is meaningful: orange is a vibrant happy colour, representing the joy that raises the spirits and elicits creativity. It is also the colour of resilience and the colour of alternative, of "free" or "open source" code. This is a differently playful environment, mostly with a friendly bestiary (fox, gnu, duck, penguin, cat...). It recalls the early vision of online freedoms as opposed to information

processing via obscure proprietary algorithms. It is the continent of playful participation, open source exchanges and collaborative wiki contributions, where consumption is less conspicuous and more derivative.

▲ *Figure 3.*
The Orange Continent.
Source: Author, 2019

...to the mine

But alongside these relatively reassuring continents, another one has emerged, as data collection became data mining, the black continent, also called the "dark net" (Figure 4). Blackness evokes mystery and secrecy. But also deliberately chosen evil. It is connected with encryption, a view of information as power because secretly kept and used. It hints at illegal actions, by people with dark purposes.

▲ *Figure 4.*
The Black Continent.
Source: Author, 2019

It is a place where hackers and pirates reside, dealing in illegal drugs, illegal substances, illegal arm trade, *etc*. It contains some violet in it, the colour of hidden power and energy, that can be used both ways, as for cryptography (to protect anonymously, for good or bad purposes). In this continent, consumption and participation comingle in chaotic ways.

These virtual continents reflect real life realities that are invisible to the general public and the Internet user, as evinced by the mapping of data centres in the world (Figure 5).
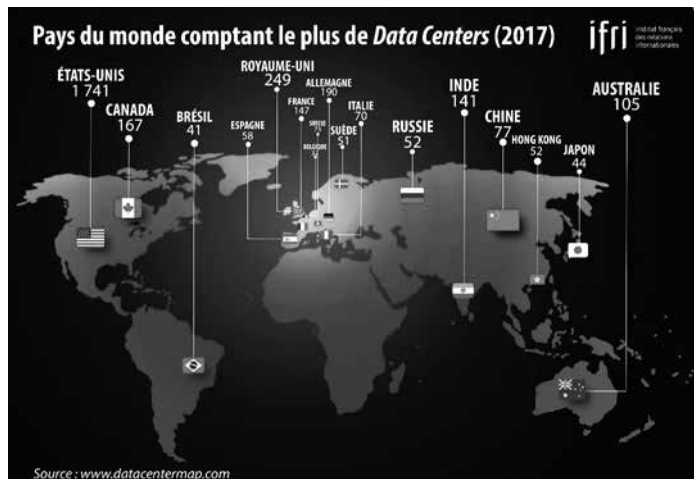
▲ *Figure 5*.
Countries with most data centres (2017).
Source: IFRI, 2017

Their distribution is reflective of the asymmetries in information and data flows that affect sovereign states worldwide. The blue continent (1741 centres in the USA) is very richly endowed (40% of the total of data centres), whereas the red continent (77 centres in China) is much less so, in spite of its billion users. As for large countries like Russia (52), they are under-endowed in proportion to their size or their population, in contrast with neighbouring Sweden (51). As for the other real life continents, such as Latin America or Africa, the information divide is wide, while the grid of the orange and black continents is very distributed across regions. Hence, South Africa and Brazil are quite rich with Free and Open Source (FOSS) communities; communist and post-communist countries are home to information hackers and pirates; so are theocratic regimes in the Middle East. Such a distribution points to a geostrategic reality of the Internet that comingles figments of the cold war and elements of neo-colonialism, and explains the emergence and persistence of "Information disorders".

EMERGENCE OF INFORMATION DISORDERS

This grounded continental geo-political view of the Internet conveys the huge reorganisation of governance and power undergone by information and media in the digital world. These continents have porous borders, nonetheless, especially due to the agility of the logical layer. Events happening in one have repercussions in others, with offline consequences. This porosity has increased with the "social turn", *i.e.* the advent of social media, in 2004-06. Their incorporation in the US stock exchange in 2012 also created porous borders with real life societal issues, as the stockholders require results and exert pressure on the digital ecosystem. Since then, the virtual continents have been increasingly overlapping with some of the geo-political continents. 2012 is the point in time that marks the beginning of two specific unheard-of "information disorders" that shook public opinion worldwide: online radicalisation and online disinformation.

But it is really since 2017 that the notion of "Information disorder" has made its appearance in research and in MIL circles, supported by researchers in the field of journalism and data. It has been defined around three types of warped information: "disinformation, misinformation and malinformation" with various degrees of deliberation and of intention to harm (Wardle and Kerdhashan, 2017; Marwick and Lewis, 2017; Frau-Meigs, 2019). However, the plural information disorders seems necessary to take into account the interconnectedness of information orders of different kinds (news, docs, data), as well as the asymmetries of information flows across the various blue, red, orange and black continents. They have their own actors, motivations and rhetoric that may lead to hate speech, incitement to terror and downright attacks on notions of truth, peace and democracy.

Radicalisation on the black continent

The war in Syria started a series of ISIL terrorist attacks against the Western world from 2012 on. Online radicalisation tended to develop mostly on the black continent. Terrorists turned out to be early adopters of the Dark net. They used Virtual Private Networks (VPNs), for several purposes, mostly organizing and training. They were empowered to act under cover of the "dark social" platforms like Telegram and used encryption for undercover anonymity while taking advantage of the decentralised nature of the web (Alava *et al.*, 2017).

But cyber terrorists also use the blue continent, for recruitment, propaganda and disinformation, as they are offered a worldwide stage for their otherwise rather secretive activities. With young people as their main target and audience, they utilise all the different platforms at their disposal, like social media, websites, *etc*. They operate with professional quality tools that are vital for their seductive mediatisation activities (viral videos of killed journalists, modified video games, *etc.*). They can adjust their storytelling according to different purposes: to convey victimhood, sense of belonging, calls for war, utopian actions to redress torts.

Research shows that social media do not radicalise on their own but are rather propitious for grooming, and one-on-one messaging. Social media can act as facilitating environments rather than a driving force: they can create echo chambers (Quattrociocchi, *et al.*, 2016); they can isolate young people in filter bubbles (Pariser, 2011; Flaxman *et al.*, 2016); they can build a collective construct of "us vs. them" that polarizes social spaces online and offline (Weimann, 2015).

Young people and adults as well can be attracted to such interactive user-friendly platforms that rely on the assumption that everyone can participate. They can be easy targets for propaganda, plot theory and misinformation, with extremist and criminal content that creates the feeling of belonging to a "cause" (Weimann, 2015). Social media can facilitate the process of radicalization post-recruitment, through tactical learning, confirmation biases (*i.e.* re-enforcing previous opinions), gathering data and even planning attacks. Social media can foster one-on-one dialogue with individuals that isolate themselves from their real life friends and can be inducted into a new brotherhood with its own ideology (Alava *et al.*, 2017).

However, the role of social media cannot be taken separately from the context of the wider media ecosystem (Hassan *et al.*, 2018). News and entertainment media also share a responsibility in propagating alarmist reports and focalizing on the role of social media. They tend to present them as one of main explanations of the issue, to the detriment of other societal causes such as religious strife, racism, segregation, unemployment or a deep sense of injustice (Alava *et al.*, 2017).

Disinformation on the blue continent

The "fake news" phenomenon came to full public attention in 2016 (US Elections, Brexit), but in fact it had already started in 2012 during the Obama election. "In all cases, the role of social media platforms as major vectors of such disruptive phenomena has been questioned, especially with scandals such as Cambridge Analytica" (Frau-Meigs, 2018) and trials such as the Internet Research Agency vs. the United States of America, that point to Russian interference with Western politics.

The social media of the blue continent have been called to question because they are perceived as a threat to the integrity of information, with damages to trust, opinion-making and democratic societies. Numerous asymmetries existing between Internet 1.0 mainstream mass media and Internet 2.0 social media platforms appeared, such as differences in tax obligations, social responsibilities, advertising constraints and public service obligations (such as diversity, pluralism, and protection of minors). Nothing hinders the social media on the blue continent in their spread of disinformation for traffic and for profit, especially in a context of concentration of ownership and pressure from shareholders on the stock exchange (Frau-Meigs, 2018).

Though it seems mostly a phenomenon of the blue continent, the black continent is also concerned when it comes to disinformation as "hybrid threats", *i.e.* a mix of subversive activities, using conventional and non conventional methods and tools, in a coordinated

manner by state actors or non-state agents, that are used in time of peace but with war-like objectives of propaganda and destabilization (High level group report, 2018). Cyber hybrid threats mostly deal with the integrity of elections, with implications for trust in institutions and elected representatives. Some rogue state and non-state agents use VPNs and social media alike to launch covert campaigns in favour or against candidates. Fake news is spread through social media posts to be re-amplified by users and white-washed by main stream media, via trolls and bots, that can create the illusion of a vibrant support and a powerful militancy for minority ideas or minority candidates (Frau-Meigs 2018; 2019). As in the case of radicalisation, the digital ecosystem can act as a facilitating environment, with echo chambers, filter bubbles and polarization of ideas and groups.

Converging results

The existence of the grounded virtual continents thus creates challenges for the sovereignty of member states that are complex and may have far-reaching consequences, as they point to information disorders related to the "transverse effect" of information disorders, *i.e.* the transborder, translingual and transmedia nature of Internet networks (Frau-Meigs, 2019). The direct and indirect impacts of "fake news" may lead to long-term deterrence effects with gelling consequences on freedom of speech and freedom to receive and impart information, with inhibiting damages on democratic processes. The overall democratic cost, distilled and hard to evaluate as it is, comes to a lack of trust and reliability in institutions and media, with the added paradox that social media are least trusted while most used.

Most of the research results, be it about radicalisation or disinformation, point to the need to develop resilience in the population and the need to equip young people to be responsible and mindful of online freedoms. Being able to separate fact from fiction, legitimate sources from disreputable sources appears as necessary for preparedness, to anticipate any forthcoming issues. The analysis of existing responses point to self-regulation as the preferred action of the private sector of mass media and social media alike while regulation is the favoured solution of the public sector. Education is the response most wanted by the civic sector, the states and the users. Media and Information literacy more specifically is the plebiscited response, to elicit valid counter-narratives. The information disorders paradigm has given MIL center-stage and has displaced the parallel conversation that was going on about coding and data-mining in schools.

The democratic context suggests that information disorders should not be fought with "hard" legislation (which might lead to censorship) but rather "soft" and "smart" actions (guidelines, codes of good conduct, good practices...), together with transparency, accountability, proportionality and revision mechanisms. As a result, fact-checking has emerged as the new response from both mass and social media while digital MIL appears as the favourite solution from all sectors. It is supposed to stimulate critical thinking, to elicit effective counter-narratives, to provide new engagement models and to do so with multi-stakeholder involvement (including private/public/civic partnerships).

RISKS FOR MIL

The representation of MIL as the panacea is both gratifying and worrying, as it is not devoid of risks of recuperation by actors outside the field. This is particularly true of the journalistic profession and of the platforms themselves. Journalists have re-invented themselves as fact-checkers and have put the emphasis on their processes, making them more visible to their own constituency and to the larger public. Platforms have endorsed MIL by actually claiming that they perform it. None of these actors recognize MIL competences and MIL pedagogical stances, though they can prove to be complementary allies.

The rise of fact-checking

Fact-checking has emerged as a kind of Media Accountability Systems (MAS) besides press councils or ethical guidelines (Bertrand, 2003). The Poynter Institute for Media Studies has facilitated the process by providing a norm for excellence in fact-checking for the new international fact-checkers network (IFCN). Many national and transnational initiatives adjust to the "transverse effect" of information disorders (Table 1).

Table 1. **Some international initiatives in fact-checking**

Citizenevidence.org (UK):	Amnesty International with YouTube Data Viewer
Crosscheck (USA):	First draft projects for election monitoring
FactCheckEU (EU):	European crowdsourced platform for users
Faktabaari (Finland):	Verification by journalists for elections
FirstDraftnews.com (USA):	Coordination of verification with research
Full Idea Project (Latvia):	Baltic Center for Media Excellence
InVid (EU):	European plug-in to verify online videos
Reality Check (UK):	BBC programme
RevEye (USA):	Google plug-in to verify images
TinEye (Canada):	Website to check images
TweetCred (USA):	Plug-in with credibility scores provided by crowdsourcing

These cyberist initiatives differ from traditional journalistic fact-checking in their use of digital tools as well as in their call on participation and crowd-sourcing. The participating actors can be either journalists or other citizens (researchers, politicians, …), which may create a tension between the internal processes of the profession and the external contradictory processes of amateur and semi-professionals. Social media platforms have also been funding and sponsoring fact-checking as in the case of FirstDraft or Crosscheck. Besides, calling on the participation of their users, they are also developing machine learning to push for automated fact-checking, with credibility scores as the final aim.

Fact-checking initiatives have been increasingly presenting themselves as media literacy practices. Journalists have been turning towards schools as a means of sensitizing young people to the importance of verifying information (Table 2).

Table 2. **Some MIL "sensible practices" to counter "fake news"**

Bad News Game (UK):	Game to construct "fake news"
Factbar EDU (Finland):	Journalists in classrooms to teach how to detect fakes
Info hunter (France):	Spicee and Tralalère offer pedagogical tools to decode news
Lie Detectors (Belgium, Germany):	Journalists in classrooms to teach how to detect fakes
Literacia dos media e jornalismo (Portugal):	Journalists training teachers in schools
Mind over Media (USA, EU):	Platform with crowdsourcing strategies to detect propaganda
MOOC DIY MIL (France):	Massive Online Open Course to build MIL projects
News Literacy Project (USA):	Journalists in classrooms to train in news literacy
Youcheck! (EU):	InVID plug-in to be used in classrooms and at large

However, fact-checking could turn out to be an echo chamber for journalists as they discuss their own business among themselves. They have used it to prove the utility of their profession and revise their ethical practices and guidelines. The process could be assimilated to a "Columbo effect" where the users already know the answer to the fake, but look at how the journalists conduct their detective work. They still behave very much in a linear and vertical manner rather than in a multilevel networked manner that would also take into account distributed communities of transmission and viral propagation. It has also led many conspiracy websites to undermine the results and use them to re-enforce their own confirmation biases. These limitations are confirmed by the COMPACT report, an H2020 research project. The report points to the lack of transparency in terms of methodology and stresses the problems of sustainability due to the fragility of funding and the lack of human resources while underlining the low use of automated solutions (Pavleska *et al.*, 2018).

More importantly for MIL, these initiatives ignore the history of the field and the development of specific competences beyond critical thinking about news. So their contribution, though useful, could be detrimental in the long run: they attract funds that could otherwise be attributed to full-fledged MIL projects; they provide one-shot school interventions without much follow-up; they do not scale-up to a national level and reach a limited amount of students. "Literacia dos media e jornalismo", a sensible good practice from Portugal points to potential holistic strategies: it aims at empowering teachers to be fact-checkers, with certification, involving both actors from the beginning, with a monitoring guaranteed by public authorities.

The role of social media platforms

Social media platforms have also appropriated MIL. Google and Facebook have been supporting their own media literacy projects. Google for instance proposes projects in Europe, via YouTube, like "Be internet awesome" (for children 9-11 year old)[3] or "Digital citizenship" for cyber safety[4]. They tend to be confused with operational digital literacy and aim more at creating entrepreneurship online than at exerting critical thinking over the social media. Hence the deep concern of experts about the independence of MIL when provided by the private sectors and actors whose interest are not educational nor vocational but rather economic and market driven through the hidden agenda of branding and marketing.

As with fact-checking, the role of platforms in MIL can be double-edged: they can provide powerful tools and resources while playing up to young people's online engagement and empowerment. But they tend to ignore the history of the field and the development of specific competences, including critical consumption (that can potentially lead to dis-engagement and dis-connection). Therefore, their contribution, though seductive and expedient, could be detrimental in the long run: they have such funds that they could incite the public sector and state actors to disengage and delegate MIL to them; they could substitute the slow scaling up of competences and values in schools with their rapid instrumental and operational strategies.

This overall recognition and legitimacy of MIL then calls attention to its implementation, and its independence from platforms, with the same attendant risks for researchers in the field, as the platforms are funding a lot of MIL-driven projects. The construction of independent knowledge and development remains key to a healthy and independent MIL research field that determines its own agenda and its choice of controversies and methodologies. The question of access to data from the platforms is crucial if MIL is going to provide clues about the information disorders, their production, their reception and their amplification (Frau-Meigs, 2019). It is also crucial to "reduce the attraction of the storytelling engaged by "fake news" and to propose attractive counter-narratives in response, using critical thinking and reducing the cognitive biases on which disinformation relies. On its own terms, MIL can help detect cognitive biases in oneself and in others and can sensitize to the utility of journalism and the benefits of a healthy democracy with its attendant online freedoms" (Frau-Meigs, 2018), of which social media platforms are part and parcel.

OPPORTUNITIES FOR MIL

The existence of cumulative information disorders can be an opportunity for a better understanding of the current situation, where data impact media and media impact data. The agency of users, their uses and practices, cannot be separated from platform designs and constraints (algorithms, interfaces, terms of service, …), from ownership issues

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[3] https://beinternetawesome.withgoogle.com/fr_all/interland
[4] www.google.com/safetycenter

(business models, non-proprietary alternatives) and from regulatory problems (hard law vs. soft law, government vs. governance), as the existence of the grounded virtual continents suggests.

Connected MIL

MIL has evolved since its pre-digital stages, where it mostly focused on the written press and television. It has been enriched with the three cultures of information (as news, as docs, as data) and it needs to monitor both media 1.0 (mass media online) and media 2.0 (pure player social media, transmedia storytelling and video games). The two types of media coexist in a shuttle screen situation, where contents and comments coexist, where audiences and communities cohabit, where data mining and its social profiles affects the communication processes of exchanging news and docs (Figure 6).
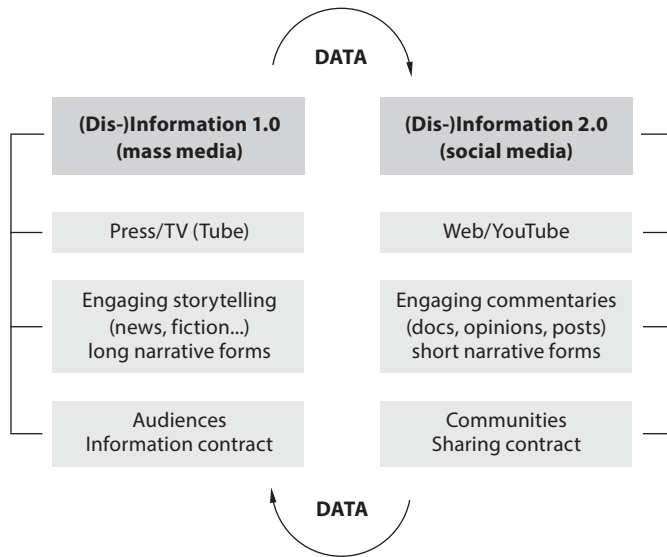
▲ *Figure 6.*
The shuttle screen situation.
Source: Author, 2019

As a result, the main characteristics of information turn out to be reversible and usable by disinformation, as they can coexist in the same spaces (Merzeau, 2017). The equal access to both information and disinformation is what enables the disorders to play havoc across the continents, especially in the blue continent where both are so dependent on clickbait and advertising for generating traffic and profit. Ultimately, unsupported allegations, distorted opinions turn to accepted "alternative facts", shaking the very value chain of information and its supporting media organs from the postmodernist era. In the cyberist

era, the information contract coexists with the sharing contract. In the information contract, based on investigation, the professional expert identifies a problem, analyses it and proposes solutions with reasoned arguments. In the sharing contract, based on experience and engagement, any online participant is surprised/angered by a scandal, calls for change and a desire to alter the agenda and the frame to finally propose reasoned arguments. So even though the end-aim is the same, the validation process and the ratio between empathy/reason, proximity/distance is different.

Ideally, both contracts combined could yield a cyber-contract of the type: identify a problem/scandal; call for change of agenda and framework; engage experts and participants to test changes; adopt solutions with shared and reasoned arguments. This could lead to a newly found balance in the circuits of trust and those of truth, where information quality and integrity would be co-shared and co-cared, in a process of deliberation and contribution (along the model of Wikipedia). In so doing, information becomes again part of the political process and the basis for democratic societies where truth and trust are reached via a lot of mediations.

Because it applies critical thinking to the political, cultural and societal sphere, MIL has also developed its own set of research questions and controversies based on societal stakes, such as protection of minors, well-being on line and off-line, privacy and freedoms... (Livingstone *et al.*, 2012; Hobbs, 2011). Such specificities place MIL as the most adequate field to address issues of information disorders and it has been called to the rescue in this capacity with the emergence of radicalisation and disinformation. In fact, these issues are part of the larger paradigm of "harmful content and harmful behaviour" (Millwood Hargrave, 2006), to take into account issues of violence, pornography, harassment... Such issues have led to policy-making decisions to protect young people. They have been a classic in MIL research, especially on the reception side (effects of televised violence on young people, over-consumption of media, unexpected results of video games...). They have been extended to online harms with the effects of radicalized online media on youth and of propaganda on public opinion at large, due to the porosity between the grounded virtual continents.

MIL and the paradigm shift around information disorders

As a result, MIL is ideally placed to provide a comprehensive view of information disorders and to place them in a whole ecosystem of "malinformation", the suffix "*mal-*" alluding to three dimensions of the current ills and evils on line: human *mal*evolence, industrial *mal*practice, and technological *mal*ware. Malevolence is rife because the motivations and rhetoric of the providers of disinformation is human-based and calls on conspiracy, destabilisation, *etc*. Malpractice is high because the creators and users of disorders can monetize them using the usual business circuits of advertising online and the profiling power of algorithms. Malware is on the rise as more and more robotized tools are available for hacking, astro-turfing and capturing information systems unbeknownst of their users (Frau-Meigs, 2019).

Malinformation takes advantage of the three cultures of information (as news, as docs, as data): news can be faked, docs can be modified without visible trace, data can be trumped with robots acting as humans and pushing some contents more than others. It takes the guise of rumours, satires, urban legends, *etc*. to bring doubts on people's beliefs, institutions and ultimately value systems, being a threat to democratic regimes that are based on trusted information and media.

MIL can provide maps and classifications of information disorders within the larger orbit of harmful content and harmful behaviour (see Figure 7). They are part of the citizenship societal issue, associated with online and offline freedoms, especially freedom of expression. They relate to this "grey zone" of harms that are not illegal or illegitimate in most countries, except within the EU vision of human rights, where the notion of dignity tends to dominate over the notion of freedom of expression. They comingle with hate speech and with other inappropriate discourses and behaviours, around terrorism and racism throughout the different virtual continents
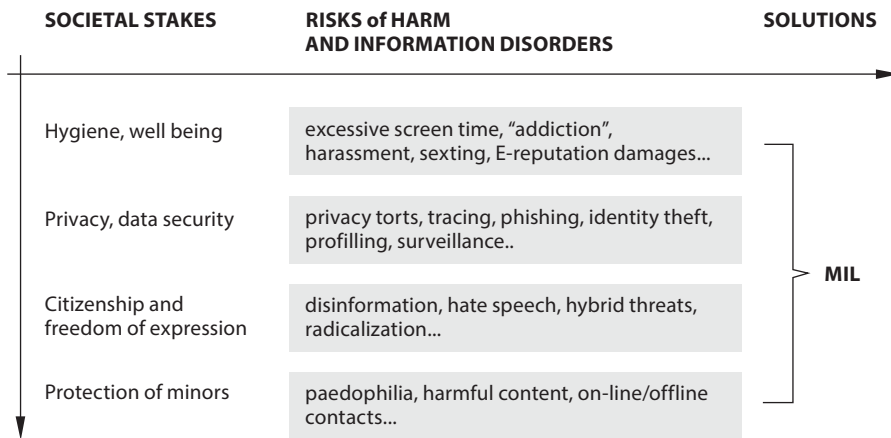
▲ *Figure 7.*
Classification of information disorders.
Source: Author, 2019

By providing comprehensive and articulated models and maps, MIL makes it possible to have a larger understanding of the bigger picture, and consequently to stifle rising media panics. It can also propose pedagogical strategies for creating resilience among young people and fostering diversified refutation techniques and counter-narratives that do not alienate the adepts of malinformation but bring them back to the fold of contradictory debates, to inhabit the virtual continents in a responsible manner.

Towards a MIL agenda

The European Union seems to have understood this role and it has placed MIL under the auspices of the DG-Connect, the division in charge of implementing the digital agenda (not, as would be expected, under the division of education and culture). The newly-revised AudioVisual Media Services Directive (2018) has rekindled the role of MIL that was being side-lined by the conversation on operational digital skills and coding. The Directive makes Media Education mandatory in the member states (Article 33) asking them to take measures for the development of media literacy skills. Additionally, video sharing platforms have the obligation to provide for effective media literacy measures and tools and raise users' awareness of these measures and tools (Article 28j). As with all directives, this entails a series of harmonisation laws in the member states in the years to come.

However, research shows that MIL suffers from several constraints that hinder its efficacy to counter malinformation and address information disorders while also providing basic cultural knowledge of the grounded virtual continents:

1. the lack of visibility in the curricula and the absence of integration of MIL sets of competences in the other disciplines;

2. the lack of teacher training, be it as initial or continuous stage, that does not prepare teachers to address old and new mechanisms of malinformation;

3. the absence of recognition at the university level where proper research could be conducted;

4. the lack of governance at the ministerial levels where no co-regulatory mechanisms coordinate the work of national agencies, educators and researchers;

5. the chronic deficit of funding and of evaluation that makes it difficult to prove its effectiveness and transferability beyond "sensible practices" (Frau-Meigs *et al*., 2017).

These constraints point to the reverse agenda that needs to be put in place for MIL to scale up beyond sensible practices:

1. the lack of visibility in the curricula could be palliated by making MIL part of the core curriculum of young people in schools, from K1 to K12;

2. the lack of teacher training can be resolved by having MIL be part of the requisite competences to be evaluated by PISA, to gain more visibility and legitimacy while enabling teachers to engage with it;

3. the absence of recognition at the university level could be mitigated by better cooperation between secondary education and higher education, as teacher training programmes are key while research would also benefit from the opportunity to test and observe new pedagogies and new responses to malinformation;

4. the lack of governance at the ministerial levels requires the creation or rebooting (when they exist) of agencies that look after digital education in a cross-sectorial manner;

5. the chronic deficit of funding and of evaluation rests in the responsibilities of states, as they are starting to take stock of the risks to democracy of attacks on information integrity and elections integrity. Social Media Platforms taxation could certainly be a means of ensuring that they are part of the solution after having been part of the problem.

Overall, MIL needs to assert itself as one of the major transliteracies to master soft skills in the 21st century. MIL has to be placed in a shared vision around information culture, digital humanities and creative industries. So as to showcase such a change of framework, the Sorbonne Nouvelle University has created MILCITIZEN, the first research master in MIL, Information Disorders and Digital Citizenship, in 2019. It has placed it within the emerging scholarly domain of "Digital Humanities", so as to stress the transdisciplinary dimension of MIL, intersecting with information and communication sciences, media studies, education, political sciences and governance studies. Such initiatives point to the need to reboot and retool MIL with a forward-looking vision of the "Information Society", and calls for the coordination of all actors so as to promote democratic values in the cyberist era.

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INFORMACIJSKI POREMEĆAJI, RIZICI I PRILIKE ZA MEDIJSKU I INFORMACIJSKU PISMENOST

Divina Frau-Meigs

SAŽETAK *Ovaj rad analizira velike promjene izazvane „društvenim zaokretom“, odnosno pojavom društvenih medija. U radu se predstavljaju drastične promjene ekosustava koje su izazvala tri "kontinenta" interneta, što je dovelo do razvoja "informacijskih poremećaja", poput radikalizacije i dezinformiranja. Analiza zatim razmatra rizike i prilike za medijsku i informacijsku pismenost: s jedne strane, porast provjeravanja činjenica i pojačana interferencija platformi za društveno umrežavanje; s druge strane, povećanje polja znanja, vještina i stavova u okviru medijske i informacije pismenosti te pomak paradigme medijske i informacijske pismenosti koji sa sobom povlači informacijske poremećaje. Zaključno se donosi agenda medijske i informacijske pismenosti u 21. stoljeću.*

KLJUČNE RIJEČI

LAŽNE VIJESTI, INFORMACIJSKI POREMEĆAJI, DRUŠTVENI ZAOKRET, MEDIJSKA I INFORMACIJSKA PISMENOST, PROVJERA ČINJENICA

Bilješka o autorici
Divina Frau-Meigs :: Sveučilište Sorbonne Nouvelle, Pariz, Francuska **::** divina.meigs@orange.fr