MEDIA LITERACY

A TRAINING MANUAL

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The publication is designed for journalism students and media experts aspiring to develop their professional competences in countering misinformation, to improve their critical thinking skills, and to contribute to the development of Ukrainian media landscape. The manual will also be useful for those interested in media literacy and striving to improve their own media competences in contemporary informational landscape.

CONTENTS

PREFACE

Development of media literacy is among priorities for Ukrainian support by OSCE, especially in the context of countering misinformation and manipulations. This training manual is a result of fruitful cooperation among professionals, combining the best global practices and standards with unique Ukrainian experience. We are convinced that forming a new generation of media experts armed by contemporary tools of critical analysis and ethical principles of content creation is a pre-requisite for development of sustainable democratic society in Ukraine.

Olga PROKOPENKO, manager of Media project in OSCE Support Program for Ukraine

In the age of growing informational challenges forming media literacy among journalists becomes a fundamental need for the development of Ukrainian journalism. Through joint effort of the Educational and Scientific Institute of Journalism, Filter project and the OSCE a training program was developed which has already proven its efficiency – about 1,000 students were trained by seasoned experts at our institute. Successful testing of the course confirmed its relevance and usefulness of integration into the main curriculum. Course developments became the basis for a training manual helping to master media literacy competences, responsible media consumption skills and creation of high-quality informational content.

Yurii BONDAR, director of Educational and Scientific Institute of Journalism, Taras Shevchenko National University of Kyiv

INTRODUCTION

Development of skills to critically perceive media content protects against manipulative information and helps to form analytical thinking. This is especially relevant for future journalists aiming to influence the formation of media field in Ukraine. In contemporary informational environment, ability to recognize fakes and create truthful media content becomes the main characteristics of responsible civil society.

This manual is prepared by a team of authors who are leading experts in media literacy, upon initiative of Filter, national media literacy project by Ministry of Culture and Information Policy of Ukraine and in cooperation with the Educational and Scientific Institute of Journalism of Taras Shevchenko National University of Kyiv and OSCE Support Program for Ukraine.

The manual aims to help future media professionals to master the skills of fact-checking, information verification and critical thinking, to teach them to identify manipulations and misinformation, create their own content according to ethical rules and professional journalism standards. It combines theoretical background and aspires to form practical skills necessary for efficient work in contemporary media environment.

The materials in publication will help to form media literacy and media content critical analysis skills in future journalists, which will protect them against misinformation, help to develop competences for identifying fakes, and facilitate responsible creation of media content and ethical approach to journalism.

The manual will serve as a foundation in training experts able to influence the development of Ukrainian media landscape and form conscious civil society in the context of current informational environment.

Thematic plan of the course

№	Topic title	Number of hours		
		lectures	practice	self-study
Content module 1. Media literacy				
1	New technologies and disinformation: from understanding to counteraction	2	8	8
2	Propaganda, disinformation, fakes	2	2	4
3	Media literacy and media	2	2	4
4	Media literacy: prevention of harmful informational impacts	2	6	6
5	How to learn to read data and avoid data manipulations	2	2	4
6	Final work			4
	TOTAL	10	20	30

Course volume: 60 hours (2 ECTS credits)

TOPIC 1

New Technologies and Disinformation: From Understanding to Counteraction

TERMS GLOSSARY

Fake means intentionally created and disseminated inaccurate information imitating truthful messages with an aim to deceive. It can often be a tool of misinformation and propaganda.

Deepfake originates from combining deep learning and fake. This is a realistic imitation of actual photos, audio and video files created with the help of machine learning and artificial intelligence. Deepfake as a term was introduced by a Reddit user who disseminated fake pornography under the nickname of deepfake. It was later spread to other digital works, e.g. realistic images of people who do not actually exist.

Shallowfake, or cheapfake means a low-quality photo or video processed using simple editing tools without complicated AI technologies. This content is created via basic editing, e.g. slowing down a video to distort person's words, changing signatures, manipulating content, or using old images in a new context. Due to accessibility and simplicity in making shallowfakes are disseminated in social networks more often than deepfakes, which makes them a serious threat for the informational space.

Fact-checking means a methodology to verify information through checking original sources, expert evaluations, and factual evidence. It is a process to check the factual truthfulness of messages and statements raising doubts. This is a definition by Lucas Graves and Michelle Amazeen provided by Cambridge Research Encyclopedia. Fact-checking can be done before or after publication or dissemination of text or content.

Internal or pre-publication fact-checking means a check performed by the publisher inside the media company to prevent the publication of false content. It aims to identify mistakes for them to be corrected before the publication.

External fact-checking means a text's analysis by a third party after publication (e.g., by an organization like StopFake).

Reverse image search means a technology used to search for an original source and previous publications of the image on the Net.

New Technologies and Disinformation: From Understanding to Counteraction

Lecture ⊘ 2 hours

1. Fakes and contemporary approaches to information checks.

2. Organizations and projects dealing with fact-checking.

3. Fact verification algorithm.

4. AI-generated texts and images in the work of journalists. Editorial policies when working with AI.

1. Fakes and contemporary approaches to information checks

What are fakes?

Fake is a word with the general meaning of something forged. **Cambridge Dictionary** gathers three terms under the word "fake".

- *fake* as an adjective: not real, but made to look or seem real;

- *fake* as a noun:
    - an object that is made to look real or valuable in order to deceive people;
    - someone who is not what or who they claim to be;

- *fake* as a verb:
    - to make an object look real or valuable in order to deceive people;
    - to pretend that you have a feeling or emotion.

Similar definitions are also provided by other well-known dictionaries. Journalists and fact-checkers in their work generalize those, defining a **fake** as *an intentionally created and disseminated inaccurate information imitating truthful messages with an aim to deceive*. Sometimes it could be a complete invention, like a fake about fight mosquitos grown in Ukraine as a biological weapon to destroy Russians. But not all fakes are overtly absurd. Many contain partially truthful facts. Such fakes do not attract too much attention in the daily news flow. However, their regular consumption gradually changes a person's attitude to a certain phenomenon, person, or a group of people. When, for example, in 2014 in Ukraine over one million of IDPs from temporarily occupied territories emerged, many fakes were aimed to quarrel them with the local population. Similar fakes were used against displaced persons and refugees after 2022.

How do fakes work?

Fakes become efficient through their mass dissemination. If someone without developed critical thinking sees fake photos and videos every day, they may believe in those without noticing. That is why it is essential to create barriers against penetration of fake news in the informational spaces. Otherwise, with time we may find ourselves in a distorted reality, which makes a person vulnerable against manipulations. Our decisions depend on the facts we know about. If these facts are distorted, the decisions we'll approve will be false. Another damage from fakes is their undermining trust in the media and journalists in general. Many people do not wish to explore which media provide truthful information and which ones deceive. However, this is also a mistake. It is important to learn to tell apart high-quality and low-quality media. To do this, one needs to master the skills of identifying the features of possible fakes, verifying information and recognizing main types of manipulations. This is what fact-checkers do.

2. Organizations and projects dealing with fact-checking

The first independent fact-checking organizations emerged in the US in the 1990s. The most famous project was established in 1994. It checked the so-called urban legends, i.e., stories based on the fears of contemporary people. This project is still among the most popular in the world. Later, also in the US, the first projects checking the statements of politicians and catching them out appeared. Among such projects is PolitiFact at Poynter media institute in Florida. Its journalists were awarded with Pulitzer Prize for their work during US elections in 2008. At that time they managed to check 750 political statements.

In 2010s, information consumption drastically changed. People started actively using social networks where they came across fakes much more often because the information was not controlled by media editorial offices anymore. This became a threat for independent elections and democracy. Ukraine was among the first to face a massive attack of fake news during presidential elections in 2004 and the following elections, and especially on the eve and in the beginning of the Russian aggression in 2014. During these years fact-checking started to rapidly spread all over the world. Today, there are over 200 fact-checking organizations in more than 80 countries. American researchers from Duke Reporters Lab created a database of such projects. There is a map on **their website** showing both active and inactive fact-checking initiatives. One also shouldn't underestimate the role of situational projects. For example, in France in 2017 several national and local media joined together to refute fakes. Similar initiatives also happened in Norway, Mexico, Sweden, Nigeria, the

Philippines and Argentina. The list from Duke Reporters Lab includes four Ukrainian organizations. However, currently Ukraine has much more fact-checking initiatives than that.

Organizations and projects dealing with fact-checking

👉 **StopFake** is a fact-checking project and informational hub fighting misinformation since 2014. During this time, it has disproved over 7,000 fakes from the Russian propaganda. It cooperates with Meta (Facebook, Instagram) as an independent fact-checking organization.

👉 **VoxCheck** is a fact-checking project from Vox Ukraine, an independent analytical platform. It cooperates with Meta (Facebook, Instagram) as an independent fact-checking organization.

👉 **Bez Brekhni** (Without Lies) is a project fighting dissemination of fakes, untruths, manipulations, propaganda, and informational myths in the public rhetoric of officials, media publications, and social networks.

👉 **On the Other Side of News** is an independent awareness-raising campaign on media literacy, fact-checking and critical thinking development.

👉 **Nota Yenota** (Raccoon's Note) is anti-fake brain games.

👉 **EUvsDisinfo** is an operational task force on strategic communications of the European External Action Service (EEAS). It analyzes Russian propaganda in the EU.

3. Fact verification algorithm

Fact-checking: how to start

There are certain signs allowing to assume that the content is fake even before we start checking it. Among the principal features of suspicious news is the emotional nature of headlines or descriptions under photos. For example, they can contain such words as "terrible", "shameful", "proud", "shocking", etc. They serve to indicate which emotion the audience should feel. There can be accusations, evaluative judgments, calls for actions, etc.

The lack of specific facts is also suspicious. These are answers to the following questions: when, where and who with the event we see on the photo or video happened. This also includes first and last names, time, address and any other information you can check, e.g. find on Google search. If no information source is provided, there is no hyperlink to it or it looks strange or unknown, this can also point to a fake. Everything of the above is not necessarily signs of a fake but still recommendations to carefully check the provided information.

If you see a suspicious photo, video or post in social networks, first you should see if a credible fact-checking organization (e.g., StopFake, VoxCheck, and others) has already refuted that information. If this is not the case, everyone can do their own fact-checking as there are lots of online tools helping to verify information directly from a smartphone or a laptop.

Algorithm for checking any information:

- Read/look at the whole message in an attentive manner.
- Does the headline match the content? This is a rather widespread method of manipulation.
- Find the original information source. Is it reliable?
- Check the links and publication date. Information can be outdated or nonexistent.
- Check the prejudices and biographies of the author and experts. To do that, review their social media profiles, websites of organizations they work in, their own research works.
- Check how it is reported by media/channels with solid reputation.
- Does the text contain grammatical errors? This is an indirect sign pointing to low-quality information sources. Besides, sometimes Cyrillic letters (like O) are replaced by Latin ones for the search engines not to find this text.

How does fact-checking on Facebook and Instagram work?

When a fact-checking **expert signals** information as a fake, it is displayed less in the news feed. This allows to decrease and eventually stop the spread of inaccurate content and also to minimize the number of people who will see it. Besides, there is less dissemination of fakes by pages or domains who do that regularly. Therefore, they lose opportunities for content monetization and ad placement. After the post is flagged as fake, people who see it or want to share it are warned that the information is inaccurate.

4. AI-generated texts and images in the work of journalists. Editorial policies when working with AI

Today all the more editorial offices establish rules of work with and use of AI-generated content.

Why is this important?

- Current AI tools are prone to errors and prejudices.
- Editing means deciding what is more or less important.
- AI does not understand the subject and readership.
- The journalist and media, not AI software, are responsible for the content.

The most respected media like Associated Press (AP), Reuters and The Guardian have developed internal codes on AI usage. Their key principles include obligatory labeling of AI content, preservation of human editorial control and transparency with informational sources. For example, AP allows to use AI for creation of basic news snippets on companies' financial reports but requires clear indication of the creation method and a check by human editor.

Visual content is a point of special attention as illustrated material has more trust from the audience. Reuters and AFP prohibit publication of synthetic images as photo journalism, allowing their use only in clearly labeled illustrative materials. Ofcom, British media regulator, recommends using watermarks and metadata for all AI images and also provides a technical possibility to identify such content. An interesting example is an approach by The New York Times which allows using AI images only for conceptual illustrations but prohibits them for representation of real events or persons.

Contemporary editorial codes also deal with copyright and liability for AI content. In its recommendations, European Broadcasting Union (EBU) stresses that liability for any published content created with the help of AI rests fully with the editorial house. SVT, Swedish public broadcaster, restricts the use of AI tools to materials not requiring high level of precision, e.g., entertainment content. Another practice worth noting is that of BBC, which has created a separate editorial council on AI issues and requires each case of generative AI use to be approved by the management and comply with their principles of accuracy, impartiality and transparency.

As the approaches to using AI in media are constantly changing, the editorial office should take into account several important dilemmas.

Some questions you can ask yourself:

- Who is responsible for the content created by AI and published in the media?
- Should one flag AI-generated stories as such?
- Are there any restrictions to type of stories AI can create? Is it stories about murders? Obituaries?
- What should the journalists do themselves without delegating to AI?
- What are the unique things a journalist can do but AI cannot?

In general, the company rules are concentrated on the need to flag content created with the help of AI. However, this rule often does not apply to such elements as headlines or descriptions to articles and videos written with AI assistance. When making a decision, it is necessary first of all to factor in the risks and potential damage done by not announcing AI involvement in the creation of certain content, e.g. deceit or manipulations.

PRACTICE

Practical class ⏱ 8 hours

1. What is a deepfake?

2. Visual signs of AI-generated photos and videos. Online instruments to identify deepfakes.

3. Tools for photo and video content checks.

4. Tools for checking websites.

1. What is a deepfake?

Deepfake originates from combining deep learning and fake. This is a realistic imitation of real photos, audio and video files created with the help of machine learning and artificial intelligence. In 2014, Ian Goodfellow, a student from Stanford University, came up with the technology of generative adversarial networks (GAN*), and in 2017 it became popular thanks to a Reddit user with the nickname of deepfake, who replaced the faces of porn actresses with those of celebrities. Deepfakes became one of the most discussed technologies of the recent years thanks to their ability to create extremely realistic content which is hard to tell apart from the real one. The main idea of it is AI analyzing a huge amount of data (e.g., photos, videos or audio clips) of a certain person to learn to replicate their facial features and expressions, voice, and other characteristics. This allows to create new content where this person "says" or "does" something they have actually never done.

*algorithms creating new content based on a certain provided data set

How is a deepfake created?

Deepfakes are created with the help of generative adversarial networks (GAN)*. They analyze thousands of records with the protagonist to create a new video with his/her facial features and expressions. One algorithm, the **generator network**, creates an image. Another algorithm, the **discriminator network**, checks the created image for credibility. If the discriminator identifies a fake, it reports to the generator about the errors made. This cycle repeats until the result becomes as realistic as possible.

The most popular ways to create deepfakes are the following:

Face replacement — the face of one person is replaced by that of an another, which creates an illusion that the video belongs to that person.

Lipsyncing — a person's mouth movements are arranged in a way to match a fake audio track.

Voice cloning — creation of a fake audio imitating the voice of a specific person.

Besides, technologies can be used for creation of totally new characters or implementation of scenarios which are not possible in real life. For example, using deepfakes you can "bring to life" historical figures, create realistic scenes with the participation of imaginary characters or even change a person's age on video.

Let us provide several examples. In 2019 Salvador Dali museum in Florida, USA used AI technologies to bring the artist back to life; all visitors could communicate with him.

The Dali Museum and agency GSP have created "Dali Lives," an installation that resurrects the artist so he can play "host" to visitors.
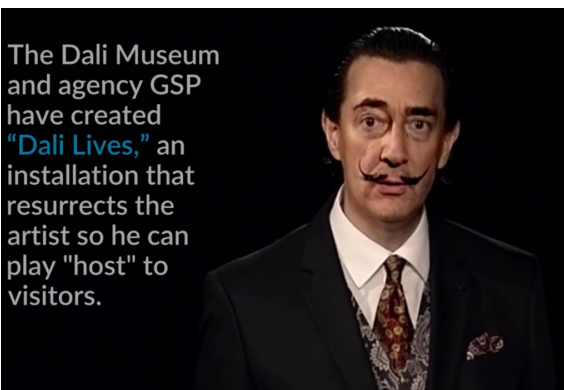
Source: Welcome AI.

Instead, Channel 4 in the UK which showed a **prankish video with greetings from Queen Elizabeth II** created using AI technologies was later forced to delete the video due to the audience's outrage and complaints.

However, along with significant potential for creativity and entertainment, deepfakes also bear serious risks. They can be used for spreading misinformation, manipulating public opinion and even fraud. Often, deepfakes are used to create fake speeches by politicians.

In future deepfakes will probably become even more advanced, so it is necessary to identify such content to avoid its negative impact.

2. Visual signs of AI-generated photos and videos. Online instruments to identify deepfakes

Along with the spread of deepfake technology many online instruments helping to recognize it emerge. For example, platforms like Deepware Scanner, Sensity AI or Microsoft Video Authenticator analyze videos and images and search

for signs of artificial tampering. These tools use machine learning algorithms to compare content with real data. But don't forget that with regard to quick development of deepfake technologies such services can become outdated and need constant updates for efficient fight against new methods of manipulation.

Here is the list of recommended instruments for content checking.

- Reverse image search tools: Google Images or TinEye;
- **Deepware Scanner**;
- ElevenLabs, AI language classifier (flags only clips created with the help of ElevenLabs tools);
- AI or Not is a free tool to search for AI-generated images and audio;
- AI Voice Detector offers additional features like filters for background music removal and the option for "traceless" search;
- DuckDuckGoose, language detector of synthetic sound (claimed accuracy is 93%);
- Resemble Detect, real-time sound verification

These instruments are rather efficient but yield only a certain percentage of true answers. That is why their use should be complemented by other verification approaches:

- Cross-verification of sound with native speakers (for videos and audio in other languages);

- Specialized expert sources: forensic organizations, university digital forensics labs and IT departments.

Many researchers recommend to view videos frame by frame and pay attention to the following:

face and facial expressions:

- Small details: hair, earrings, beard, wrinkles;
- Unnatural changes of light and shadows;
- Eyes, in particular issues with blinking.
- Face shape.

Despite rapid development of technologies deepfakes still have certain limits in recreating natural facial expressions. Look at those attentively and note if the blinking looks natural, if the emotions match the context of the conversation. The videos where a person almost never blinks or does that much too regularly are especially suspicious. Also pay attention to small movements of the lips during the conversation: they may not be fully synchronized with the sound or look a bit distorted.

transitions between the frames and anomalies

Deepfake technologies often create small anomalies that are noticeable with careful viewing. Look for unnatural transitions between the frames, blurs around the face or neck, and strange changes in lighting. Sometimes you may notice that the person's face remains unchanged while the background moves around them unevenly. Also check if the lighting of the face matches the general lighting of the scene as often deepfakes, "paste" the face with a different lighting.

sound and voice quality

Contemporary deepfakes can forge not just images but also the voice. Pay attention to unnatural pauses in speaking, robotic notes in the voice or sharp changes in the timbre. Compare the voice with the previous speeches of this person: does it sound the same? The videos where the voice sounds monotonous or with an unusual accent this person has not had before are especially suspicious.
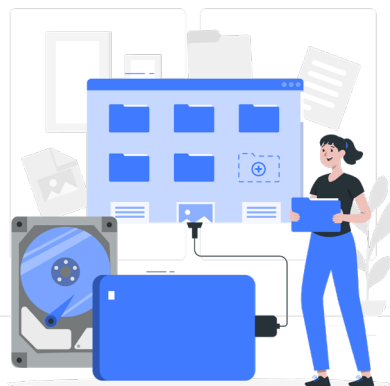
context and information source

Always analyze the context the video appeared in. Check the reputation of the source that published the material and search for confirmed information in other reliable media. If the video contains shocking statements or actions contradicting previous behavior of the person, this can be a sign of a fake. Use specialized platforms to check facts and tools to recognize deepfakes which rise in even bigger numbers in response to the spread of this technology.

Technologies are rapidly developing, and unfortunately, deepfakes are improving along with them. If before we could identify them by signs like unusual ear shape, unnatural lip movements of the protagonist or general low quality of the image, today these drawbacks are gradually removed due to growing technical capacities of video and photo processing software, in particular using AI. However, during content verification it is still important to have an eye for detail. It is recommended to use the following methods: reverse image search, special tools for AI identification, source check, search on other websites and in verified sources.

3. Tools for photo and video content checks

We'll review online tools to check three types of content: photos, videos, and websites. However, we'll start from the signs of fake content.

Signs of fake photos and videos:

- Original source not cited.
- It is unclear what is actually pictured there.
- It is unclear where, when and in which circumstances they were made.
- Photos/videos contain elements of staging, false-sounding dialogues, grave pronunciation errors, etc.

- Videos contain joints and signs of editing.
- Photos/videos have no signs of something attributed to them (false context).

Image verification tools

Reverse image search tools

Using contemporary image editing software it is not too hard to create a photo fake. However, checking such fakes is also a rather simple task. Among the most efficient ways to find out whether the image is original or was used before is reverse image search. To do this, you can upload the image or insert its URL in the search engine, e.g. Google Images or TinEye, and view the results. During the verification compare the date, location and context of the image with the information in the original source or other sources that used it before. You can also find out whether the image was edited, cropped or changed in any way.

Google Images

This tool is simple to use and rather informative.

Let us look at an example of a train that got off the rails. Fake messages claimed that it was a train ditched by pro-Russian "guerrillas" in Odesa region in May 2024. Such fakes are created to convince the audience that Odesa region is waiting for the Russians. Let us try to find out where this photo appeared for the first time.

Photograsph of the carriages of a derailed freight train in Google Images

If the image you are checking is published in social media, first download it to your computer. Enter Google Images and add the photo in Image Search. Presently Google allows to choose for search the whole photo, its part or a certain object on it. To do this, it is necessary to delineate the necessary zone on the image and review intermediary search results. If you want to check a photo on a smartphone, you have to open this website in Google Chrome and hold the finger on the photo. In context menu, choose "Google Lens Search".

According to search results we see that the analyzed image has been actively used by Russian, Kazakh and Ukrainian media since at least 2016 in their publications about railroad accidents. You can also get additional results using "Find image source" function. This will allow to see the list of materials containing full matches with the uploaded image.

You can also install **RevEye** extension in your browser that will allow you to do reverse search in one click not only in Google but also in other search engines, by images on websites or in social media (except Telegram). If you have already installed RevEye extension, right-click the image, choose Reverse Image Search from the menu and Google Reverse Search from the list. The software will provide lots of variants how this photo was used.

TinEye 👆

This is a special search engine for images. It can sort results by chronology, which Google Images does not do. To do this, we choose respective option and find in the results where the specific photo emerged first on the Net. So as we can see, the photo of the derailed train has been all over the Internet since at least February 2014.

Analysis of image meta data

Another way to check an image or a video is to analyze its metadata, i.e., information built into the file with such details recorded as date and time the photo or video was made, camera model, GPS coordinates, and other technical data.

Pic2map.com

After the photo is uploaded on the website, except the information on place and time the photo was made it will show a point on the map with its location. A thing to note: after editing in some programs or after publication in most social networks this information is deleted.

Digest
ELA
Games
Hidden Pixels
ICC+
JPEG %
Metadata
Strings
Source

**Screenshot of
FotoForensics
interface**
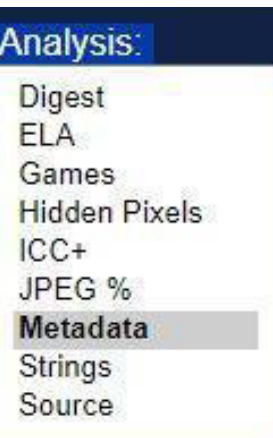
FotoForensics

Another convenient tool is FotoForensics. To get results you should choose "Metadata" parameter in the program menu.

Analysis of editing traces (forensic analysis)

Sometimes you may need to go deeper and search for hints indicating that the image or video is forged or AI-generated. You can use such tools as Forensically or FotoForensics to find out signs of manipulation like suspicious lighting, shadows, pixels, compression or visual noise.

A case of burning house

Let us look at an example. After a terrorist act in Crocus City Hall in Russia social media users started sharing a photo with a child's drawing showing a burning building and people; above the image it is written that this is allegedly Crocus City Hall. As the authors of the fake claimed, this topic was a task for a drawing during a lesson in a Ukrainian school.

ВЛАДИМИР, КРАСНОЯРСК! ЕНИСЕЙ!
@O45SwNQkQ8yk9nW

В украинской школе на уроке рисования детям задали рисовать горящий «Крокус Сити»

Кот😾Костян
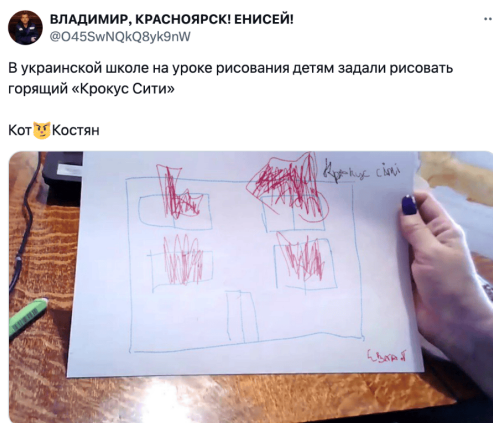
**Screenshot of an
Instagram post**

Instead, the words "Crocus City" were added to the photo with the help of a photo editor as FotoForensics shows.

To use it, let us upload the image to fotoforensics.com and click on ELA section in the left side menu. The program has marked "external" interventions in the photo with a red frame.

Video verification tools

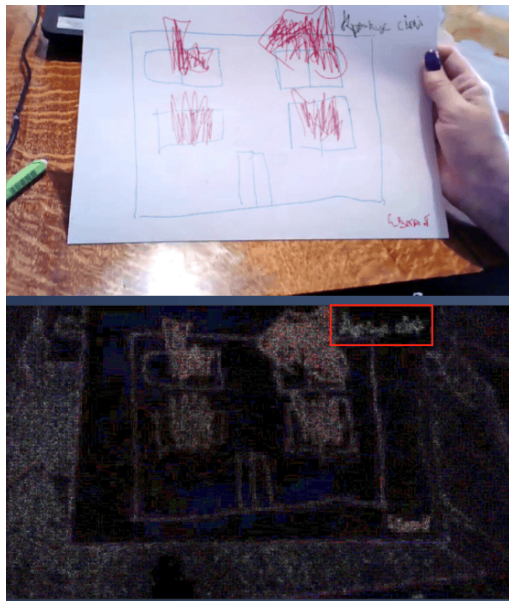### *Reverse image search tools*

We have already discussed these tools for photo verification. They can also be used to check a video using its screenshots. Google Image, TinEye, etc. are a good choice. You can make a video screenshot by pressing Shift + Windows + S if you use Windows OS. You can also do it in any browser and in iOS.

Screenshot of photo verification results using FotoForensics

A case of Sophia the robot

Let us look at an example. In May 2024 a misinformation campaign was identified where pro-Russian channels spread forged video material with Deutsche Welle logo. The video claimed that in April 2024 during GISEC Global in Dubai Sophia the humanoid robot called on Ukrainians to capitulate before Russia. **Stopfake** analyzed this case in detail. Google Images search showed that the material was disseminated exclusively through anonymous Telegram channels and pro-Russian resources. Scammers used real footage from **GISEC Global** where Sophia the robot was actually present but made an untruthful story out of it. It is worth noting that authentic Deutsche Welle video materials belonging to this German public media company have a totally different format and style.

Video metadata analysis

InVID ☞

Technologies are constantly developing, and newer instru-
ments keep emerging. That is why we should regularly
update our knowledge about relevant verification tools.
You can check videos just like photos by analyzing meta-
data. This is convenient with the help of InVID service in
the form of Chrome browser extension. It enables us to
analyze videos published on such platforms as YouTube or
Facebook and receive their metadata and also to automati-
cally divide videos into frames and use reverse image search
for those. You can choose search engines to be used. This
plugin is available at the following **link**.
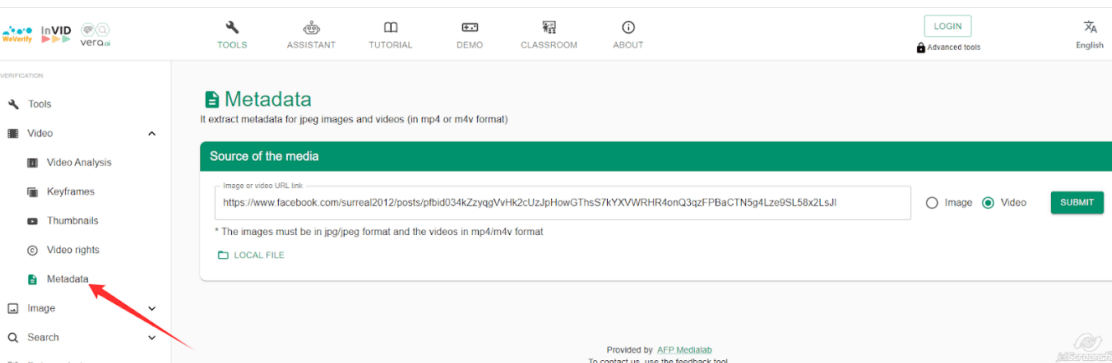
InVID interface screenshot

You can upload the video for analysis from your computer
or insert a link to Facebook or YouTube. The metadata
can help you confirm or refute the claimed origin, date
or location of the image or video.

Tools to verify geolocation

You can use such geolocation tools as Google Maps and Google Earth to compare landmarks, buildings, roads or peculiarities of landscape on the image or video with a real location. It is also possible to use such verification tools as SunCalc or Wolfram Alpha to find out the angle of the Sun, the Moon or the stars on the image/video and whether they match the claimed date and time.

4. Tools for checking websites

You can check online such information sources as websites and web portals. Two main tools are useful for this task.

Archive.org 👆

This is an online archive where you can see when the website was created and analyze its activity in different periods as well as check what this or that website reported on a specific day and at a specific time.

Who.is 👆

This is a tool showing registration data of the website if they are not hidden. With the help of this instrument you can check the country this website is registered in and compare this with the claims of website owner.

Signs of a fake website:

- Impossible to identify the author of materials, no information about editorial office provided;

- Too many ad banners; the website may disseminate clickbait content, i.e. non-verified news which is given artificial resonance;

- The website has no links to pages in social media or its quantity of subscribers there is very small;

Analysis:
Digest
ELA
Games
Hidden Pixels
ICC+
JPEG %
Metadata
Strings
Source

- The website was created recently and registered not in Ukraine or in a country different from claimed one;
- The website spreads news not mentioned by verified media. In particular, you can find a **White List** of Ukrainian media complying with journalistic standards in materials published by Institute of Mass Information;
- The website has very few visitors (can be checked via **Similarweb**).

Tools for information check

- **Google Images**
- **TinEye**
- **FotoForensics**
- **Pic2Map**
- **Forensically**
- **Google Street View**
- **Google Earth**
- **inVid**
- **Archive.org**
- **Who.is**

Tasks for a practical class

1. Put students into groups; provide each group with a video/image and news material associated with it. The task for the group is to analyze and establish whether this object is a deepfake, and if so, which signs point to that.

2. View several proposed images or videos (to be chosen by the teacher) which include both real and deepfake ones. The group should identify deepfakes according to visual signs. They should describe their sequence of actions during the

check. You can complicate the task by providing a set of images and video with different quality (low, average, high).

3. Analyze the proposed case about the use of AI-generated texts or images in the work of an editorial office. The students should describe in which conditions such use would be ethical.

Tasks for self-study

Master photo and video verification with the help of instruments reviewed in class. Check one of well-known photo or video fakes (student's choice) with the help of online instruments to identify deepfakes (e.g., AI-based tools, browser extensions, file metadata analysis).

Questions for self-chek:

What is a fake and how it impacts informational environment?

Name the main Ukrainian fact-checking organizations.

Which stages of information verification do you know?

What is a deepfake and how is it created?

Which online instruments will help to check an image?

How does the technology of generative adversarial networks function?

Name the signs that may point to artificially generated content.

How can you check the credibility of video materials?

What are the algorithms to counter misinformation?

Information education

Misinformation: types, tools and protection methods. Prometheus online course.

How to start working with ChatGPT. Prometheus online course

Recommended sources

Main:

Higgins, E. We are Bellingcat. Online investigation of international crimes and informational war with Russia. Kyiv: Nash Format, 2022. 242 pp.

Pomerantsev, P. This is not propaganda. A trip to war against reality. Kyiv: Yakaboo Publishing, 2020. 288 pp.

Urbani, Sh. Verifying online information. Essential guide.

Potseptsov, H. Fake. Technologies for distorting reality.(in Ukrainian)Verification manual. Edited by K. Silverman. European Journalism Center

Optional:

Baranivska, M. Deepfake technology used in pro-Chinese misinformation campaign. Detector Media. 7 February 2023. (in Ukrainian)

Deepfake: AI serving the propaganda / Ukrainian Crisis Media Center.

Kuleba, D. A war for reality: how to win in the world of fakes, truths and communities. Kyiv: Knygolove, 2022. 384 pp. ISBN 978-617-7563-65-4 (in Ukrainian)

Moroz, M. How to recognize a deepfake: notes from a webinar by Mykhaylo Koltsov / 4 February 2022. (in Ukrainian)

Nanovska, V. The New York Times vs. OpenAI: has AI really violated copyright? Mediamaker. 9 July 2024. (in Ukrainian)

Recommendations of Ministry of Digital Transformation and Digital Security Lab NGO on responsible use of AI in the media. Voyuta, D. AI and media: movement trajectory. CEDEM. 19 March 2024. (in Ukrainian)

Walorska, Agnieszka M. Deepfake and misinformation. Library of mass communication and media literacy at the Academy of Ukrainian Press. Center for Free Press, 2020. 36 pp.

TOPIC 2

Propaganda, disinformation, fakes

TERMS GLOSSARY

Propaganda means systemic communications activities to disseminate in various ways and using various information and communication channels certain knowledge, ideas, or views which can be interpreted depending on the opinion of the subject as right or wrong, to socialize a person and society in general, performed consciously and according to plan.

Counterpropaganda means dissemination of information, ideas and viewpoints contrary to the ideology of the adversary as well as activities to counter propaganda of the enemy, to right it. Counterpropaganda is a function and form of propaganda as such.

Disinformation means false information, fake content, fake cause and effect relationships between the facts, or invented facts spread to sow doubts in the society and harm it.

Misinformation means false information spread without an intention to harm; instead, it is accidental errors, misprints, etc. Malinformation means truthful information spread to harm.

Narrative means a description of events from a certain angle, a set of facts (not necessarily truthful) or events which create a certain perception of the image of the world.

Message means a meaning that has to be conveyed in a certain way: by a word, image, design or "between the lines". That is why message can be both verbal and non-verbal.

Propaganda, disinformation, fakes

Lecture ⏲ 2 hours

1. Propaganda: notion and types
2. Propaganda and disinformation: how the notions correlate
3. Disinformation, misinformation and malinformation.
4. Propaganda in different fields of culture
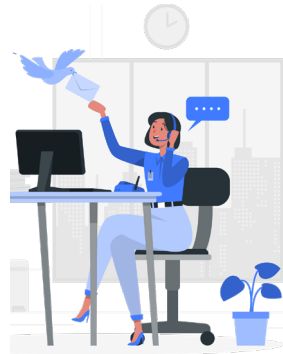
1. Propaganda: notion and types

Historically, the "invention" of propaganda is attributed to Jesuits; the founder of this order Ignatius of Loyola (1491 – 1556) offered principles of sense coding laid out in his work "The Spiritual Exercises" developed in later times and used until now.

The author of the "manual" church propagandists studied by claims the possibility and even necessity to put in a person's mind certain sense "hints", the "population" of a human by "spirits he/she will have a hard time getting rid of" as spirits are more resilient than any convictions and the best doctrines; they are able to be reborn from the deepest hiding places of the soul even after many years, mastering a person's will with such force that he/she will be forced to follow emotional "instructions".

Directions inside the mind may both emerge by themselves and be artificially activated, brought from outside (e.g., through visual symbol as triggers), "ignoring" "rational" objections and arguments speaking against them. Actually, the reaction of a "groomed" person to such triggers is automatic and non-critical about the information.

As IT experts say, Loyola invented a method of managing human conscience, a "machine" on forming the necessary

matrix which defines human thinking and behavior. Using the technology of "populating a mind" and "implanting" "spirits" (or, more precisely, introducing sense codes one can appeal to) is illustrated by a story with the so-called parade of POWs in Donetsk where the "spirits" were the images of German POWs in Moscow in July 1944.

The origin of the "propaganda" term (stemming from Latin "propago" which means "I spread") goes back to 22 June 1622 when Pope Gregory XV founded Congregatio de Propaganda Fide, a Catholic organization aiming to convert believers from other religions and also those who lost faith into Christianity. In 1627, a seminary college was also established teaching missionaries to do propaganda work, in particular how to achieve the desired results by managing human thoughts and therefore actions.

Many well-known historical figures went through Jesuit schools or other schools reporting to them. They include Rene Descartes, Mollier and Voltaire, Iosif Stalin, Fidel Castro, Bill Clinton, etc. The "Jesuit trace" is also noticeable in Ukrainian history. Petro Mohyla most probably had Jesuit upbringing; even though he was against opening Jesuit schools in Ukraine, while creating Lavra school (later Kyiv-Mohyla Academy) he took their model as an example. There is information about Ivan Mazepa graduating from a Jesuit school in Warsaw (according to another version, it was in Polotsk). Khmelnytskyi also studied in a Jesuit school.

The volume of this notion, as well as the practice of its use in different historical periods with different goals and in different fields impacts the understanding and terminological definition of propaganda which, in its turn, causes numerous interpretations of this phenomenon.

In some interpretations propaganda acquires a negative connotation, which is conditioned by a specific practice

of using propaganda means. There are propaganda definitions also existing in the framework of this or that "specialized" propaganda.

For example, in the military field, except military propaganda which is understood as the use of informational channels for political support of warfare, the following notions are also proposed for use:

Conversional propaganda means intensive informational pressure aiming to transform the system of values in a given person or social group to change their attitude, convictions and views on the political course of the state's military and political governors.

Divisionary propaganda means intentional informational events strengthening existing controversies on religious, ethnical, professional and other grounds to weaken integrity or cause a rift in the opponent's environment (intentional dissemination of false information is often used as an efficient method).

Demoralizing propaganda means systematic psychological impact activating self-preservation instinct, disrupting morale and encouraging to refuse from participation in military operations.

To sum up we should note that propaganda (just like any social phenomenon which has a considerable history behind it) is to be viewed in specific historical context, with regard to all factors which may impact its understanding according to this or that period, goals and conditions of practice.
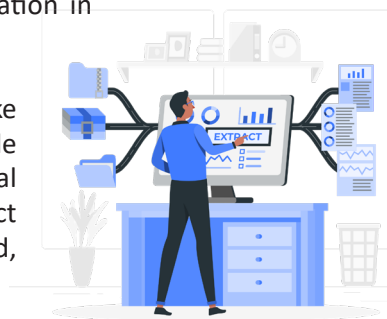
At the same time, propaganda surely has permanent characteristics which allow us to propose its wider definition: propaganda means systemic communications activities to disseminate in various ways and using various information and communication channels certain knowledge, ideas, or views which can be interpreted depending on the opinion of the subject as right or wrong, to socialize a person and society in general, performed consciously and according to plan.

In 1931 William Biddle, an American social scientist singled out four principles of the propaganda in his article "A Psychological Definition of Propaganda":

1) stress on emotions and never argue;
2) form a division into "us" and "them";
3) work with groups and separate people;
4) hide the propagandist.

An information technology and weapon adjacent to propaganda is campaigning which is sometimes interpreted as a form of propaganda in special conditions.

Campaigning is more specific and narrow; it is often limited in its action (e.g., pre-election campaigning), more aggressive in informational aspect which to a certain extent conditions priorities in the means used by campaigners in delivering informational messages.

The task of propaganda is to impact the foundations of outlook and actually change it, so it needs well-reasoned texts of influence which often have an impact "delayed" in time; instead, campaigning is oriented more at "exploitation" of already formed views and introduced senses which can be activated "orally", with the help of slogans, printed publications, etc. The result of campaigning is actually a confirmation of propaganda's impact, a marker of its efficiency.

Counterpropaganda is something to be denoted separately: it is an antipode and at the same time an extension of propaganda.

Counterpropaganda means dissemination of information, ideas and viewpoints contrary to the ideology of the adversary as well as activities to counter propaganda of the enemy, to right it. Counterpropaganda is a function and form of propaganda as such.

2. Propaganda and disinformation: how the notions correlate

At **Davos Forum** in 2024 disinformation was recognized among the biggest threats for the nearest years. All of us have felt the ruining impact of disinformation during full-scale assault on Ukraine on 24 February 2022. Before that, there had been many waves of directed dissemination of fakes, e.g., during COVID-19 pandemic, presidential and parliamentary elections, voting for the Law "On Language", or during the Revolution of Dignity and since the beginning of Russian-Ukrainian war in 2014. In this topic we'll try to understand how disinformation is different from propaganda and whether propaganda is always bad.

As for **disinformation**, its main goal is to sow doubts and uncertainty, often through dissemination of ideas like "we'll never know the truth" or "something smells rotten here".

Instead, **propaganda** works differently: it aspires to actively form specific views and convictions in the society, impacting the way people perceive and evaluate various events and phenomena.

Propaganda can be a tool of disinformation and manipulation of human mind and society in general (political, military, hidden propaganda, etc.) but also of enlightenment, affirm-

ing democratic values and other "positive" things (propaganda of healthy lifestyle, family values, etc.). Actually, any information can become propaganda if a person spreading it does so consciously with a certain goal in mind.

There is no point fighting propaganda (as a form of activity and communications); instead, we should counter the use of propaganda with destructive purpose, which can acquire various forms and methods – legal, organizational, informational, etc.

There is an international ban on war propaganda; in 1947, UN General Assembly declared it a crime. According to international law, this propaganda includes spreading open calls in mass media and public speeches of certain persons to attack other states with the help of armed forces.

Other international, including regional organizations also fight destructive propaganda. In September 2017, Helsinki opened a European Center of Excellence for Countering Hybrid Threats founded by 12 EU and NATO member states: Finland, Sweden, Norway, USA, France, Germany, UK, Spain, Poland, Estonia, Latvia and Lithuania. Hybrid threats are understood inter alia as dissemination of false information, attacks on informational systems and also other types of attacks with the help of contemporary technologies viewed as hostile actions aiming to destabilize the state without the formal declaration of war.

General and separate issues of propaganda activities are also regulated in national legislations. Every country establishes its own rules functioning in the field of informational activities and propaganda in particular. For example, France has approved a draft law on fighting fakes in the media. In case such news are found the activity of responsible media will be suspended by courts according to an accelerated procedure. Such regulations, the initiators have stressed, are to fight propagandist activities in the media influenced by foreign states.

Ukraine also has its experience of countering destructive propaganda, in particular, registration of Russian media activities and dissemination of propagandist publications from Russia.

3. Disinformation, misinformation and malinformation

To identify destructive threats, we should understand their nature. In particular, international organizations which professionally study and counter hostile influences divide informational chaos into the categories of misinformation, disinformation, and malinformation. Let us look at these notions in more detail.

Misinformation is erroneous or imprecise information that has no intention to harm.

Here is an example. Journalists wrote a news piece about Olga Stefanishyna appointed as Vice Prime Minister for European and Euro-Atlantic integration but illustrated it with a photo of a different Olga Stefanishyna who is an MP from Holos party. Has this done any harm? Possibly, to the reputation of Olga Stefanishyna or that of editorial offices who haven't checked who has actually become the Vice Prime Minister. However, the journalists never intended to do harm. They simply made a mistake. We all make mistakes and often wish no harm to anyone. Therefore, such information spread without an intention to harm is called misinformation.

Disinformation is false information, false context, false cause and effect relationships, manipulative information aiming to harm.

Please view the video about an allegedly crucified boy in Slovyansk (you can read more **here**). The story came out on Russian television in summer 2014 when the hottest fights were going on in Donbas. This is a classical exam-

ple of disinformation, an artificially generated news piece, a scripted story where the "protagonist" tells a made-up story to the propagandist playing the role of a journalist. This information is created with an intention to harm: to create an image of "Ukrainian torturers" killing innocent children with unspeakable cruelty.

Which category does the fake belong to, disinformation or misinformation?

Actually, to both. A fake is a message where the main fact does not match the reality, i.e., it is false. Therefore, fakes which are spread intentionally belong to disinformation, because their aim is to deceive and to provoke for certain actions. However, if fakes are disseminated unconsciously, users (and sometimes those can be journalists, representatives of authorities, etc.) still play into the hands of those creating fakes.

Malinformation is a truthful information disseminated with an intention to harm.

Unlike the first two notions, **misinformation** and **disinformation**, which are based on false information, malinformation is based on facts but the goal of spreading this information is to do harm. What kind of information could this be? For example, a journalist conducts an investigation uncovering corruption schemes in a government office. To avenge, they find compromising information about this journalist and disseminate it. Another example: after the article is published, journalists face their personal data spread in social networks without their consent after which the public starts mobbing them based on the journalists' religious beliefs, preferences, etc.

4. Propaganda in different fields of culture

Propaganda in culture and media has always been a powerful instrument of forming public opinion and national identity. As it has been noted, propaganda may have both positive and negative goals. It is manifested not just in political discourse but also penetrates in such fields of culture as music, cinema, or sports.

For example, Russian propaganda manifests itself through numerous films which, in particular, form a distorted image of Ukraine and Ukrainians. Countering such propaganda requires a comprehensive approach, which includes development of critical thinking, deep understanding of historical context, an ability to recognize manipulation mechanisms, preservation of own cultural identity, and creation of high-quality Ukrainian content.

International cultural events become an important platform for intercultural dialogue. For example, STEFANIA, a song by Kalush Orchestra who won at Eurovision 2022 turned the world's attention towards Ukrainian culture. Another song, "Good evening, we are from Ukraine" became a musical symbol of Ukrainian resilience.

Sports also play an important role in intercultural communication, and athletes often serve as cultural ambassadors of their countries.

PRACTICE

Practical class 🕐 **2 hours**

How fakes become "facts"

1. Structure and signs of a fake message.

2. The notion of informational vacuum. Emotional and rational thinking.

3. "Fake – Message – Narrative" system.

1. Structure and signs of a fake message

As a rule, professional journalists build news materials according to a clear structure of information presentation. A fake can also be recognized by its structural elements and signs. Let's look at an example.

Case of Martinelli virus

Watch the video, which was broadcast on Rada TV channel in the end of February 2024, in the presentation to the topic.

Dozens of media spread information with a link to this video telling about a possible emergence of a dangerous virus among WhatsApp users, which formats a smartphone.

What do you think, is it true or fake? What are the signs that the information should not be trusted because it is fake? Let us analyze the structure of this fake according to a provided scheme.

The managers are to bring available information to their teams urgent! For everyone who using WatsApp messenger 👎

Which agency?

‼ URGENT - Tomorrow a video is coming out on WhatsApp called Martinelli

Urgency may be a sign of information fraud

Don't open it, it will brick your phone and you won't be able to change anything

Scarecrow fake

If you received a notification about the update of WhatsApp and Whats App Gold, do not press the button!!

Abscence of an exact date is a sign of dubious information

Please inform all your contacts

Call to action

❗ Also, do not open the video called Dance of the Pope

Scarecrow

This is the virus that formats your mobile phone.

Be careful it is very dangerous. It was announced today on BBC radio.

Backed by authority from a well-known media outlet

The information is preventive to avoid negative consequences.

Text of a fake message and its analysis

Let us look at the method of building this fake in more detail.

In the beginning of the message, there is a sentence in an official style: "The management should pass the following information to their teams". Let us recall 24 February 2022, problems with communications, chaos and fear – people forwarded this message because they considered it important and the first sentence confirmed the serious nature of the message.

A question you should ask at this stage is the following: what is the organization where the management should pass this information?

Then we see triggers: a word "urgent" and exclamation points. This appeals to emotions. From the previous sentence we understand that there is some important information; in the following, it becomes clear that this is

something urgent and probably concerns everyone using WhatsApp messenger. Its pool of users amounts to over 2 billion people all over the world.

The message has no specific data; instead, there is a word "tomorrow", and this can be any date. Lack of a specific date is a sign of dubious information.

Then, there is a false scare face: "Martinelli virus has appeared that hacks your phone and you won't be able to change anything". This scare appeals to the emotions of fear and an understanding that without a phone a person in a challenging situation will be left without information and communication with their family and friends.

And only after that the message has a call to action; don't press the button (don't update the mobile app though no updates have been published) and also "Please inform all your contacts". In fact, the method of building this message looks like this: quiet the vigilance; stress on importance and urgency; add a false fact that scares and introduce a rescuer's hook – what can you do? Inform all your contacts. No money or extra effort is demanded from a person: it's simple, forwarding the message is enough. When people have to make a decision in a limited timeframe, they are much easier to manipulate.

If this hasn't worked, the authors of the message engage another false scare fact: there is also a video with a title "Dance of the Pope" that formats your mobile phone. So it is better to inform your contacts and keep them safe from this problem. Then another method is used, namely "referral to authorities": the authors refer to a source calling it "BBC radio". However, there is no radio with this name in Ukraine though this media brand is recognizable even among those not interested in journalism. The message is concluded by a sentence: "This is preventative information to avoid negative consequences", in official style again.

Instead, a fake about Martinelli virus has been going around since 2017. It entered Ukrainian media environment in 2020 in the beginning of COVID pandemic. Why has a news anchor of a national TV channel spread this fake information? Probably because the space for manipulations, emergence and spread of fakes appears in the conditions of "informational vacuum". So what is this vacuum? We'll discuss it below.

3. The notion of informational vacuum. Emotional and rational thinking

When three factors coincide – significant public interest in the topic, lack of credible official data, and general disorientation of the society or some of its groups about the situation – the **phenomenon of informational vacuum** emerges. A vivid example of it are initial weeks of full-scale Russian invasion in 2022. Though the national authorities put effort into informing the public, people still felt an acute deficit of official clarifications. There was general uncertainty about further actions, duration of events and correct behavior. At that the interest in understanding the current situation has reached its maximum. It is worth noting that increased interest in any topic creates a favorable environment for manipulations. With no clear understanding of the situation (as it was, for example, in the beginning of COVID-19 pandemic) people are prone to trust the first thing that comes to their attention. That is why timely official messages from national authorities and clarifications from experts in the field are critical.

Emotional and rational thinking

When talking about fakes, disinformation and propaganda, we should remember that people have two types of thinking, emotional and rational. When we ask questions, analyze information and look at the facts, we use rational type

of thinking. However, every person has their triggers, i.e., something automatically activating an emotional reaction in response to some event.

What evokes emotions?

Моя Україна
2 січень о 13:49 · 🌐

Шкода, що це фото набере менше, ніж якась гола співачк

⚙ · Переглянути оригінал · Оцініть цей переклад

These can be cats, dogs, family, friends, the military, personal security and security of your family, or extraordinary events. Those who spread fakes use this when attacking social media users by bot farms: they turn to triggers the audience reacts to. Let us look at another example of emotional reaction in social networks: AI-generated photo fakes spread by disinformers in social media with emotional captions like "Pray for Avdiyivka", "Too bad this photo will get fewer likes than some naked singer", etc.

Screenshot of a post with an AI-generated fake image

People often like, comment and share such photos not even stopping to think that those are fake. Therefore, when analyzing information that can turn out to be fake one should use a three-component model of informational vacuum.

Three-component model of informational vacuum

Topic relevance	Lack of official clarifications	Lack of understanding what is happening
Why? *For whom?*	*What is the reaction of authorities?* *Which dissemination channels were chosen for comments?* *How efficient were they?* *When did the fake appear and when were there official clarifications on this topic?*	*What does the audience know on a specific topic?* *How does it perceive a specific fact?* *What doesn't it understand?* *What doesn't it know?*

On the eve of full-scale invasion Russia made targeted attempts to limit the access of Ukrainians to public information sources. That was the goal of cyber attacks on 23 February 2022 on official web resources of key government institutions: Ukrainian Security Service, the National Bank, Cabinet of Ministers and other ministries. The attackers published a message in three languages, Ukrainian, Russian and Polish, on hacked websites.

Media also become targets of cybercriminals. Their methods include DDoS attacks, website hacking, interventions in broadcasts, and attempts to gain access to media accounts in social networks through their employees: administrators, SMM managers, and editors.

An example of a message published on hacked websites

As of now, the most efficient protection method against such threats is the use of **two-factor authentication**.

Another widespread disinformation tactic is operations "under a false flag". In contemporary digital space this manifests as creation of forged websites and pages in social networks imitating respected media resources like BBC, Spiegel, The Guardian, Ukrayinska Pravda and RBC-Ukraine. This tactic has a long history. A well-known historical example is the Gleiwitz incident of 1939. During this provocation German special services wearing Pol-ish military uniforms attacked a German radio station. The goal of this operation was to create a false pretext for the beginning of war, accusing Poland of aggression against Germany.

3. "Fake – Message – Narrative" system

Fake is a false fact, a fact not matching the reality, a fabricated message, a false message which can often be an instrument of disinformation and propaganda. But fakes are just soldiers in an informational army. Frequently it seems to us that fakes are very naïve and nobody believes in them. However, these fakes are disseminated to be later referred to in other messages and materials, and these fakes, even stillborn, help to form a narrative.

What is a message? **Message** *is a clear gist of something said or to be said. It is a short and understandable statement the information from which is sufficient to point to challenges or problems; it can also be divided into various secondary messages*. A range of messages (which can often be based both on fakes and on truthful or partially truthful information) are united by one narrative. **Narrative** *is a*

story, a combination of mutually connected real or made-up events, facts or impressions forming a tale; a way of perceiving certain phenomena in a simple and short form. Actually, the image of the world consists of such stories.

The case of "biolabs"

Let us analyze how the fake about secret American biolabs transformed in different periods. Since 2014, dozens of fakes about secret American biolabs on the territory of Ukraine have been spreading in Ukrainian media field. These fakes were introduced via trash websites as well as messengers and social networks. The information was quickly caught and passed on: not as a fake but as a newsbreak important to the society due to the pandemic. As we can see, a whole arsenal of manipulations was used to disseminate this fake: a mix of truthful and invented facts, false investigations, dozens of details and comments from pseudo-experts, messages on behalf of traitorous MPs, emotional pressure, intimidation, construction of an enemy image – and in the end this little lie transformed into something allegedly posing a threat to Russian security and one of the reasons of its invasion in Ukraine.

This example demonstrates that disinformation system works as a complicated multi-level mechanism where each element strengthens others. On the lowest level, there are fakes – isolated false messages or facts that may seem primitive or even absurd. These fakes become building blocks for forming clear informative messages that already contain a certain idea or a statement. In their turn, messages get accumulated into narratives – big stories forming an integral image of the world and impacting the perception of reality by the target audience. It is important to understand that even the most primitive fake can be a part of a much bigger system of influence, and its dissemination means playing into the hands of the enemy's propaganda. That is why it is critical to recognize and stop the spread of disinformation at an early stage – i.e., the level of fakes, not allowing them to transform into well-established narratives in public mind.

Additional materials to the topic

Presentation ☞

Tasks for self-study

1. Review the model of 4D informational war. Find the examples of its use.

2. Prepare the glossary of the most popular manipulative technologies.

Questions for self-check

What are the three main components forming informational vacuum?

How is misinformation different from disinformation?

What is malinformation and how can it harm?

Explain the connection between the notions of "fake", "message" and "narrative" in the disinformation system.

What are the main features of fake message one can define using "Martinelli virus" as an example?

What are operations "under a false flag"?

How does emotional and rational thinking work when perceiving information? Please provide an example.

Which measures are recommended for protection against cyber attacks on media resources?

Recommended sources

Main:

- Biddle, W. W. A psychological definition of propaganda. The Journal of Abnormal and Social Psychology, 1931. 26(3), pp. 83–295.

- Journalism, fake news & disinformation: handbook for journalism education and training. UNESCO Series on Journalism Education. 2018. ISBN: 978-92-3-100281-6.

- Pamment J., Lindwall A. K. Fact-checking and debunking: a best practice guide to dealing with disinformation. NATO Strategic Communications Centre of Excellence, 2021.

- Yakovliev, M. Conspiracy theories. How (not) to become a conspiracist. Kyiv: Vikhola, 2023. 352 pp. ISBN: 978-617-7960-96-5. (in Ukrainian)

Optional:

- Bondar Yurii. War and propaganda: monograph/ Sherman Oaks, California: GS Publishing Services, 2023. – 200 pp.

- How to recognize a fake? Ministry of Informational Policy of Ukraine, jointly with Association4U.

- Kahneman, D. Thinking Fast and Slow. Kyiv, Nash format, 2019.

- NotaYenota (cases for analysis) (in Ukrainian)

- Rosling G. Factfulness: Ten Reasons We Are Wrong About the World. Kyiv: Nash format, 2020.

- Pomerantsev, P. This is not propaganda. Kyiv: Yakaboo, 2020. (in Ukrainian)

- Zharykova, A. In 2023, the quantity of cyber attacks has grown by 16%. - State service of special communications. Ekonomichna Pravda. 31 January 2024.

TOPIC 3

Media Literacy and Media

TERMS GLOSSARY

Balance of opinions means presentation of different viewpoints about a problem with impartiality and equality of coverage.

Hermeneutic circle means a principle for understanding a text according to which its parts are interpreted through the whole, and the whole, through its parts.

Filter bubble means personalized information space of a user formed by algorithms and own preferences, which limits access to alternative views.

Media consumption culture means a set of skills for critical perception, analysis and use of media content.

Prior knowledge means available experience and knowledge influencing the perception and understanding of new information.

Pre-understanding (also prior understanding) means a set of preliminary knowledge, experience and ideas a person has before starting to understand or interpret something new.

Public interest means issues important for the society and requiring open coverage and discussion.

Polysemanticity means the plurality of meanings in a word or message, which allows different interpretations depending on the context.

Senses means significations and interpretations formed in human mind when perceiving information.

Media Literacy and Media

Lecture ⏲ 2 hours

1. Senses, nature of understanding, and conditions enabling manipulations.

2. What can be defined as manipulations in media?

3. Professional standards and journalism.

4. Significance of journalism ethics and professional standards in preventing manipulations.

1. Senses, nature of understanding, and conditions enabling manipulations

In public discourse, our time is often called the age of post-truth where manipulations and appeals to emotions overtake objective facts.

In a wide sense, manipulations always work (or play) with certain senses, replacement of one sense by another. Senses live in the field of human understanding. Therefore, we have to review how a sense is created and the understanding moves. In hermeneutics they say that understanding moves along the so-called **hermeneutic circle**. What does it mean? First, to understand some object or phenomenon we need to have a pre-understanding of the general context in which this object or phenomenon may arise for us. And this **pre-understanding** does not have to be clear or articulated. It works in the background. Some philosophers provide the following example: before inventing internal combustion engine R. Diesel had a pre-understanding that nature as a whole can be divided into parts, with these parts later combined and something new created. Therefore, first we have a so-called horizon of pre-understanding in which this or that object may arise. Then we start studying this specific object, clarify its details, and these details also influence

the understanding of that wide context our learning started from. That is, we constantly update our knowledge about both the specific and the general. In its turn, this new changed pre-understanding and new contextual horizon significantly impacts the way we see and understand isolated objects and phenomena in this horizon. Therefore, there is constant fluctuation between old and new understanding. So we always have prejudices and prior knowledge, and this is what manipulators can use.

Based on the provided theory we can define that manipulations are:

- A play with senses of a specific object. Each object has multiple components; sometimes one feature can be more articulated than others, and some of them may be concealed. Sometimes totally different features can be attributed to an object. This means playing with the senses of an object.

  OR

- A play with senses of the context the object is embedded in. We can fully describe the object from all sides but embed it in a context where the sense of the object or phenomenon changes somewhat or radically. Besides, as we have already said, we can influence the context itself by describing a certain object in a way that it changes our pre-understanding of the general.

The most dangerous manipulation that we observe in different political discussions is the **blurring of sense** as such. This is an attempt to show that there is no anchor or reference point we can attach our representations and appeal to. Instead, there are many interpretations, all of them have the right to exist, and there is nothing stable.

Polysemanticity, which is an attribute of contemporary culture and philosophy, gives an opportunity to different manipulators to organize informational attacks against sense as such and also conduct special information sweeps to form certain discourses.

The notion of **objectivity** also creates a fertile soil for manipulations. Let us provide an example of observer effect in quantum mechanics when the observers influence the characteristics of an object they observe. The production of information is always connected with the need to choose several facts from a huge amount to publicly cover those. Such selection takes place based on certain criteria, and the stricter and more professional these criteria are, the better quality of published information we can expect. However, even though there is a whole system of procedures minimizing subjectivism in many fields and therefore in journalism, the choice is made by people with their subjective pre-understanding, preferences, and prejudices. This is the way civil journalism takes. Bloggers, opinion leaders and content authors use subjective evaluation of events and phenomena for selecting information. Mostly they work according to the principle of "I see this way", "I think this way", "This is what I believe in". At the same time, often they do not task themselves with searching for objective image, causes or effects, do not use the principle of impartiality. Such information is not only not subject to certain procedures of selecting news adopted in professional editorial offices but also fully depends on the preferences and understanding of a specific author proposing us their content. Besides, often the consumer of information acts according to the principle of **economical thinking**. They want to obtain ready-to-use recipes and easy solutions for complicated problems because they are not ready to reflect at length. Instead, they aspire to obtain a recipe from a person who they respect. All this creates a favorable environment for manipulations – both today and in the ancient

times. Just remember the Spartans who sent "fake news" to the camp of Athenians to confuse them. So why is it today that we have started talking about the age of post-truth? The reason is that new technologies greatly simplify the opportunities for creating manipulations and multiply effects from all approaches that have existed for centuries.

Still, the opportunities for manipulations often hide in the very nature of **perceiving information**. The latest research in behavioral economics, which studies the psychology of decision-making, tells us that humans are not as rational as they used to believe. Human perception and thematic understanding happen on an emotional level, just like decision-making. This is where the demand for **emotionality** and coloring of certain information originates; in this way, we perceive it better than when it is "dry" and neutral.

The effect of "**filter bubble**" also plays its role. This term was first coined by Eli Pariser in 2010. It is also connected with hermeneutic circle of pre-understanding we have already mentioned. People are prone to search for information that confirms their theories and statements. Therefore, this is how algorithms of all search engines work, creating an imaginary "bubble" with content relevant to the person's convictions and views. They present us with something we are prone to take in. And this happens in aesthetic context when algorithms propose us films, music and products we'll most probably like and in political context when algorithms help to find content which strengthens our theories and convictions. In this way we clam up inside our pre-understanding and remain aside from other alternative views, theories, and decisions.

Like with healthy nutrition when you cannot satisfy the needs of your body just by eating only desserts, in information menu you cannot rely exclusively on the content from your bubble because it won't give complete information. Instead, such menu can greatly, up to harmful consequences, increase the content of some sub-

stances at the expense of others and not provide enough nutrition to your personal muscle of analytical capacity. Therefore, we have described the conditions for development of manipulations.

2. What can be defined as manipulations in media?

They are concealment, **exaggeration** or **partial coverage**. In the system of these manipulations one sense is articulated too much compared to the others. Or the senses which are much more important for understanding of the object and context are not covered at all. Such approach creates a distorted image of reality when the audience receives incomplete information and therefore forms a distorted idea about the events or phenomena. For example, it can be highlighting just negative aspects of a certain event with positive consequences hushed up, or vice versa.

Excessive **emotionality** is also a manipulation. In bloggers' publications, emotionality is often mixed in as it is a cognitive and biological pre-requisite to rationality (as the latest behavioral economics research confirms), it adds certain color to the content thanks to which it can compete for popularity. Emotionally charged content has much higher popularity in social networks, which makes this approach especially attractive for those striving to reach the biggest audiences. And emotionality, or the so-called "emotionogenes", is among the main markers of disinformation content, when it appeals mostly to primary emotions and basic feelings, minimizing the consumer's ability to rationally and critically evaluate the information and make a level-headed decision.

Another type of manipulations is the so-called "**chaos of versions**". We talked about blurring of senses when a huge

amount of perspectives on the same event or object is provided, and in this way the ability of information consumer to understand what actually happened is undermined. This manipulation technique is actively used in cases when there is a need to conceal real facts or turn public attention away from the real reasons of the event. Creation of informational noise with countless contradicting versions leads to cognitive overload among the audience and forms a feeling it is impossible to establish the truth. In this situation, information consumer often either chooses the most convenient version or refuses to search for the truth altogether. An example of this can be the way information was presented after MH17 crash in 2014. A huge amount of information with different versions was provided so that it would be impossible to understand who shot down the passenger plane flying from Amsterdam to Kuala Lumpur.

Another frequently used method of manipulations is **distraction of attention**. In this situation media discourse consciously turns attention away from internal problems to some external informational triggers. This strategy is often used by government structures and corporations to hide unseemly facts or distract public attention from serious problems. Typical examples are the launch of sensational news with little significance during political scandals or economic crises. Another widespread practice is that of "information cascades" when media create a quick succession of various news not giving the audience the time to reflect on really important events. Another type of manipulation is "**pseudo-expertise**" when media engage so-called "experts" who are not qualified in issues they talk about. Such pseudo-experts make the information seem well-grounded and scientific though actually their conclusions may be non-justified or biased. This manipulation becomes especially dangerous in specialized fields like medicine, economics or national security where a regular information consumer cannot independently verify the received data.

There are many other types and subtypes of manipulation. We just wanted to draw your attention to the fact that manipulations are a conscious play with senses, which works with elements of human understanding and is enabled by peculiarities of information production and consumption.

"Contextual manipulations" are also worth mentioning; this is when facts are provided separately from their initial context or embedded in a different one which changes their perception. For example, quotes are taken out of context, historical events are described not taking into account the reality of the time, or statistical data are presented in a selective way, without an explanation how those were collected. Manipulators use a natural tendency of people to perceive information in a proposed frame, not resorting to a search for wider context.

Now we'll discuss the features of professional and high-quality information.

3. Professional standards and journalism

Professional journalism standards, which are basic principles for the profession, are also extremely important for media literacy, as the grounds for manipulations often appear when professional standards were not respected during information production and publication. **Journalism ethics** *is defined as a set of principles and rules creating moral grounds for compliance with professional standards in the work of journalists*. The main task of ethics is to ensure truthfulness, objectivity, and completeness of information presented to the public. If *professional standards* define what the material would be, the ethical grounds dictate the way this material will be prepared. Now we'll look at the standards creating the frame of journalistic materials.

Accuracy

Information provided in a journalist's product has to correspond to real facts. To ensure accuracy, the journalist must either be an eyewitness or carefully check information from participants and witnesses. Normally information check is performed with three sources or at least two. This verification is among the main values of journalistic information. Besides, the accuracy standard concerns not only the facts of the event but also the words of key participants and visual materials. Journalists have to quote opinions of persons they cover in the most literal way when it is possible. That is why the so-called "soundbites" are so important in TV journalism because they allow the audience to take in how exactly the person pronounced the content of their phrase.

The accuracy of video materials is also characterized by the presence of natural sound, which recreates the ambience of events. In radio stories or podcasts journalists pay special attention to this aspect to convey the realism (e.g., the noise of pebbles under feet or a squeak of opening door).

Completeness

Manipulations and information distortion often take place not just in the sense of "absolute untruth" but also in the form of evasion or concealment of important details. That is why professional journalists preparing their materials have to answer these key questions: What? Who? Where? When? How? At the same time, no less important than facts is the context of event, both past (causes) and future (effects). Here we add questions Why? and What does it mean? Why is this important? The value of journalists is that unlike regular observers they have a wider picture and see an event in a cause-and-effect context. And this is the context the journalist has to recreate. To do this, full presentation of details is important as it greatly decreases the chances for manipulation.

Credibility

This standard has three main components: knowledge about the source, credibility of the source, and message about the source. Therefore, in ideal conditions journalists should have a clear vision of their information source, check its credibility and inform about this source in their material. When checking the credibility of the source one should use the method of confirmation in other sources and retrospective analysis of the source's reliability (quoting index, trust rank, etc.). Depending on circumstances journalists do not always manage to comply with all points. For example, a journalist is not always able to name the information source (especially in investigative pieces or in the conditions of armed clash if this information is secret). When covering military activities, reporters often resort to anonymity not just of sources but also direct participants of the stories: protagonists and witnesses. If identification of participants can potentially threaten their life and health, the journalist must take care of preserving confidentiality through changing the voice, "blurring" the face, providing an alias, etc. However, in this case the editorial office shall clearly inform the audience about it and explain the reasons. Unfortunately, anonymity is often abused and manipulated by those spreading disinformation; they use it to create fake protagonists and form public opinion while ducking responsibility. That is why diligent compliance with the principles of knowing and verifying the sources is a pre-requisite for preparing a professional journalistic material, avoiding mistakes and supporting reputation of both journalist and media.

Balance

This standard is probably among the most important but also the most contradictory. Why? We often hear that the best journalistic material is the one uncovering adversity between two parties, and we are to give an opportunity to both to voice their viewpoints. This seems

simple but the journalist faces the following problems: not every different viewpoint is opposite (alternative); not every opposite viewpoint has the right to be voiced (in some circumstances).

So the journalist has the task to search for real, not imaginary or fabricated balance. To do this, it is necessary to check the credibility of invited experts and to see that they really present an opposite (alternative) stand or viewpoint. We need to remember that manipulative materials often involve pseudo-experts lacking respective competence and can broadcast the viewpoint of other stakeholders.

Separation of facts from comments

This approach envisages that journalists are mostly **broadcasters** of (verified) facts and in no way **give them their own assessment**. In journalistic materials, this is what the story protagonists, witnesses or experts do. Besides, excessive emotionality in stories or descriptions can be a sign of manipulation, even if the author does so for "good" reasons. The information consumer can easily, almost physiologically feel an object of influence, a play on emotions and nerves, and instinctively resist the provided information. Instead, in civil journalism authors often demonstrate their own stand but it has to be clearly separated from the facts for the audience to decide whether they need just the information or its assessment as well.

Impartiality

Impartiality enables information consumers to independently draw conclusions and make decisions based on the publication. Journalists should refrain from any personal or political preferences and aversions in their work. Impartiality also envisages no conflict of interest in journalistic activities. Journalists have to avoid situations where their personal or financial gains may influence their ability to present objective information. Such approach helps to preserve public trust towards journalists and media.
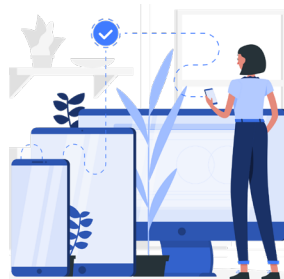
Timeliness

Traditionally timeliness in media, especially with great competition of resources in contemporary media field, has a high value. Timeliness is also **important to avoid manipulations** because the smaller the interval is between the event and its coverage, the fewer opportunities manipulators have to add their own assessments and comments, to put the necessary accents or to create a fake reality in general. However, in the context of war some materials can be published with a certain delay for security reasons. At the same time, one should always indicate when this event happened or became known to have greater trust of the consumer in such material and smaller probability of manipulations.

There are also other journalism standards that should be discussed separately in the context of professional ethics.

4. Significance of journalism ethics and professional standards in preventing manipulations

In contemporary information field where news spread with incredible speed, the role of journalism ethics and professional standards becomes key. They do not only ensure the credibility of information but also prevent manipulations that may influence public opinion, violate human rights or even threaten national security. Journalists complying with ethical norms become guarantors of transparency and trust in the society.

Protection of privacy and children's rights

Protection of privacy is an integral part of journalists' ethical rules. When collecting and disseminating information about personal life, journalists preserve confidentiality, avoiding publications that may do harm. Public figures

have restricted privacy but their personal life remains under protection if it doesn't concern public interests. At the same time, lifestyle or business relationships of officials can become an object of journalistic investigation, especially if they are publicly funded.

Officials' health issues can also come to attention because they impact their ability to perform work obligations. That is why at the time media widely publicized the accidentally revealed information about hospitalization of Lloyd Austin, US Secretary of Defense, which was unexpected for most of the White House. As the official approves key decisions for the state's security and defense, he admitted himself that hiding information about his health caused natural concern from the media and public.

Journalists should pay special attention to protecting the rights of children. According to respective legislation, **media must obtain written consent of children's parents** (or legal guardians) before publishing information allowing to identify the children. For example, when covering a scandal about a certain type of concrete used for construction of schools in the UK which caused caving-in and destruction, BBC journalists blurred children's faces when showing wide shots of schools. Special rules developed by UNICEF prohibit to mention real names of children who became victims or perpetrators in a crime. Journalists should be especially careful in interviewing children victims of crimes. It is advisable to involve psychologists in preparing and holding the interviews, the questions should be carefully worded and a child's emotional state during the interview closely monitored, avoiding any pressure from the journalist.

Non-discriminatory approach

Journalists must **avoid statements or actions that can be treated as discrimination** based on race, ethnicity, religion, gender or other features. However, wishing to

draw public attention or due to social stereotypes they often use unacceptable turns of phrase. A vivid example of that is gender discourse and gender vocabulary which often contains well-known but absolutely unacceptable phrases like "fair half of humanity", "the strong sex", "male/female business", etc. The same is true for ageist and racist vocabulary. So the journalists should work carefully with their thesaurus, maintain critical attitude to traditions and stereotypes in speech and actively work on the conscious use of each word in their texts.

Labeled ads (sponsorships), inadmissibility of infomercials

Another ethical principle of professional media is respective labeling of materials published or developed as advertising or in the framework of sponsorship projects. "**Native advertising**" organically embedded in the content of a journalist material should also be labeled to avoid manipulations. Any advertising (direct, native, or sponsorship), if it is not labeled, is actually an infomercial, i.e., hidden advertising. Professional journalist community supervises the "cleanliness" of media and tracks those materials down. Such monitoring results are often published by CSOs like Detector Media, Institute of Mass Information, etc. Based on these "white" or "black" lists of media the consumers can choose which media they can trust more and which they should treat with care and critical approach.

Correcting mistakes and their disclosure

Professional journalists also at times make mistakes: they are humans working in the context of strict deadlines and a huge amount of information. Mistakes can happen accidentally due to inattentiveness, lack of time, incomplete knowledge of the context, etc. or be intentional (in this case we can refer to manipulations). Naturally, unlike amateur content professional media who care about their
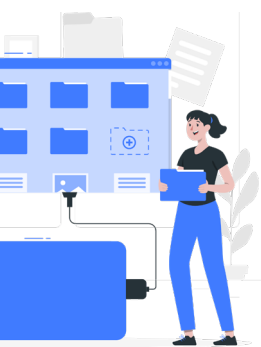
reputation use the whole system of quality assurance to supervise the compliance with professional and ethical standards by the team of journalists. But mistakes still happen. Their timely correction improves the trust in media, demonstrating the openness and responsibility of editorial office.

PRACTICE

Practical class ⊙ 2 hours

From standards to responsible media consumption

1. Codes and self-regulation
2. Socially necessary information and freedom of speech
3. Role of media in forming a culture of knowledgeable media consumption

1. Codes and self-regulation

In Ukraine, due to long and painful heritage of Soviet journalism system and national monopoly for public word there have been lengthy discussions who can regulate these issues and how: media as institutions or professional quality standards for journalist materials and rules of behavior. We won't be covering legal aspects of regulating media here; the only thing to note is that media in the context of their standards and **rules of behavior** have a **self-regulating** nature in principle, as a platform among different sectors of society that ensures their equilibrium.

Self-regulation of journalism covers definition, development and analysis of behavioral rules for journalists. This can be reflected through ethical codes establishing standards for professional behavior and also through organizations solving

disputes and providing recommendations on ethical issues. A generally accepted collection of ethical grounds and rules of journalism in Ukraine is **Code of Ethics of the Ukrainian Journalist**. The latest version of this document that had been first drawn up in 2004 was approved by journalists and their organizations in 2013. Naturally, the code can be reviewed and changed depending on the demands of the time and peculiarities of its use. The generally accepted documents with ethical norms of journalistic activities have also been developed. Those include Global Charter of Ethics for Journalists approved on 12 June 2019 at the Congress of International Federation of Journalists (IFJ) laying down the main professional standards for journalists.

Presently, two self-governing organizations supervise the compliance with professional standards in Ukraine: **Commission on Journalistic Ethics** and **Independent Media Council**. They include well-trusted journalists and media experts reviewing conflict situations of ethical and professional nature based on petitions from journalists, regular citizens, or authorities. Decisions of these institutions are in fact recommendations and non-binding but they still significantly influence the general media discourse in Ukraine and reputation of media or certain journalists.

2. Socially necessary information and freedom of speech

Journalism is among the key components of a democratic society because its main function is to find, check and publish socially necessary information, thereby providing citizens with facts and data those can use for decisions in political, public and personal life.

Socially necessary information envisages presentation of facts and analysis of events of **public interest**. In its turn, public interest is something influencing life and welfare of

society or its group, unlike individual interests of citizens. Journalists, just like politicians, deal with public interest and everything that can be categorized as such normally comes to their attention. Employees of editorial offices work as intermediaries among sectors of society (citizens, authorities, and business), ensuring transparency and openness of government structures and business (the latter predominantly private sector) if their actions directly impact the life, health and welfare of citizens. Naturally, definition of public interest is very wide, and the boundary between public and individual interest is rather narrow. To define where information belongs to the field of public interest, the journalist should answer the following question: "Does this event/information influence several people, a business company or touches interests of a whole population category or the society in general?"

Not everything can and should be public. Some information of public interest **can be classified and will be a secret** due to its strategic significance, mostly for security issues. That is why during martial law there are many legal restrictions to spreading certain categories of information. At the same time, both during peace and war some information of public interest can be intentionally hushed up or distorted. The task of journalist is to discover public interest, clean it from all extra layers and present it to the audience so that they form their own opinions, conclusions, and actions. These actions can be different but elections are the most illustrative example, both political (by voting) and commercial (by buying or not buying a product or service). That is why freedom of speech and protection of journalists from any influences are values forming the basis of this profession.

Freedom of speech allows journalists to freely practice their profession and study issues concerning society without any obstacles. It also allows to ensure the diversity of views and a public dialogue. Why is this important? In this way journalists create space where events and phenomena of public interest become visible; people start exchanging

views about these phenomena, and therefore there is competition of ideas and solutions to certain problems for the citizens to choose the best ones in their opinion.

3. Role of media in forming a culture of knowledgeable media consumption

Information, especially in the time of great crises and clashes like the war, has a direct value. Our health and sometimes even life can depend on it. So if we need vital information it is better and more reliable to take it from a professional supplier, i.e., registered media obliged to comply with legislation and professional regulations with respective authorities and professional self-governing organizations watching over them. Naturally, professional producers and suppliers also include those who do not always respect the standards. However, if we know the general rules of production and consumption, we can better protect ourselves from various information threats.

Becoming a literate media consumer is profitable both for the consumer and media because promotion of media literacy is a sort of advertising or, even better, advocacy of their profession and products. Media organizations and editorial offices have to be as active as possible in telling about their rules, standards and "secrets of the trade" because if everything is clean and in order the client will be more willing to buy. In this case media literacy becomes an Ariadne's thread leading the consumer into the world of professional media products, allowing to differentiate between high- and low-quality media and make an informed choice.

Contemporary media have many instruments at their disposal to improve the literacy of their audience. These can be special sections dedicated to uncovering fakes and manipulations, educational projects for different ages, and interactive formats for keeping in touch with the audience. It is especially efficient to involve the audience in content

production – e.g., through fact-checking communities where readers can participate in information verification themselves under the leadership of professional journalists.

In the end, media literacy is not just a set of skills for safe information consumption but a foundation for a functioning democratic society. Only mindful citizens are able to tell facts from manipulations, can make informed choices and participate in public dialogue. Cooperation between the media and audience based on media literacy becomes a pre-requisite not only for individual information safety but also for the resilience of society as a whole against information threats and manipulations.

Tasks for self-study

1. Prepare an essay on a chosen topic (options provided below):

- Why are manipulations possible?
- In your opinion, which journalism standard is the hardest to comply with in times of peace? Why?
- Which journalism standards transform during the war and in which manner?
- What is the significance of "public interest" notion for journalism?

2. Define two most burning ethical dilemmas for journalists. Describe how you would solve them in their place.

Questions for self-check

What is a wide definition of manipulations and how are they associated with senses?

How does the hermeneutic circle of understanding work and how can it be used for manipulations?

Explain what a "filter bubble" is and how it impacts the perception of information.

Why can emotionally charged content be a sign of manipulation? How is it connected with peculiarities of human perception?

Which main professional journalism standards help to counter manipulations?

What does a standard of separating facts from comments mean and why is it hard to comply with it in extreme situations?

What is an Code of Ethics of the Ukrainian Journalist and what is its role in regulating professional activities?
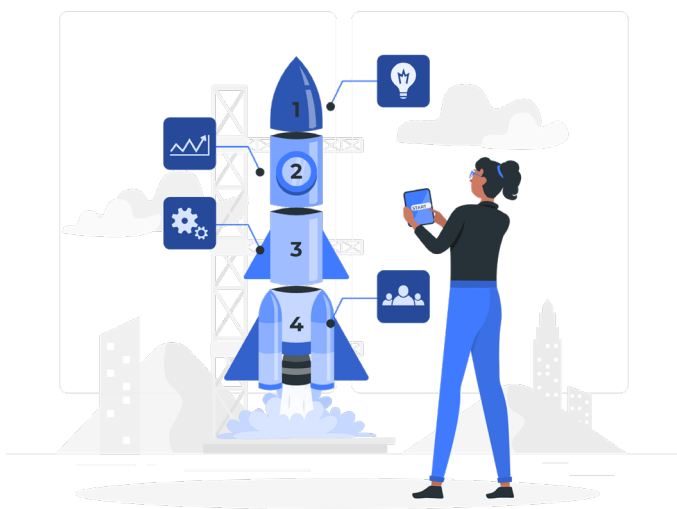
Recommended sources

Main:

- BBC editorial guidelines for authors of news and information programs.

- Christians, K.G., Falkler, M., Richardson, K.B. et al. Media Ethics: Practical Cases and Moral Reasoning Lviv: Ukrainian Catholic University publishing house, 2014. 592 pp.

- Kulyas, I., Makarenko, O. Efficient production of TV news: standards of informational broadcasting; professional ethics of the informational journalist. Practical manual for journalists. Kyiv, Internews-Ukraine, 2006. 120 pp. (in Ukrainian)

Optional:

- Code of Ethics of the Ukrainian Journalist. Commission on Journalistic Ethics. (in Ukrainian)

- Ethical grounds for covering activities of terrorist organizations and their leaders in the media – expert discussion. Internews Ukraine. 11 November 2020. (in Ukrainian)

- Global Charter of Ethics for Journalists, 12 June 2019

- Jones, Alex S. Losing the News. Oxford University Press, 2009.

- Kulyas, I. Standards and Ethics of Journalism in the Context of Non-declared War. Detector Media. MediaSapiens. 30 October 2014. (in Ukrainian)

- Pechonchyk, T. Why is it important to speak the truth during the war. Zmina.Info. 28 June 2022. (in Ukrainian)

- Sussman, Peter Y. Resolving Ethical Conflicts in Wartime. Society of Professional Journalists.

TOPIC 4

Media Literacy: Prevention of Harmful Informational Impacts

TERMS GLOSSARY

Debunking means disproof of false information through providing facts and evidence after its dissemination.

Prebunking means preventive informing about possible manipulations to form resilience against disinformation.

Availability heuristic means a cognitive prejudice when probability of an event is assessed in relation to the easiness of remembering similar examples.

Ilusory truth effect means a tendency to consider information truthful through its multiple repetition regardless of its factual credibility.

Inoculation theory means a concept of psychological "vaccination" against disinformation through preliminary familiarization with manipulative techniques.

Media literacy: Prevention of Harmful Informational Impacts

Lecture ⏷ 2 hours

1. Fake news psychology.
2. Types and methods of manipulative influence.
3. Role of media literacy in the welfare of citizens.
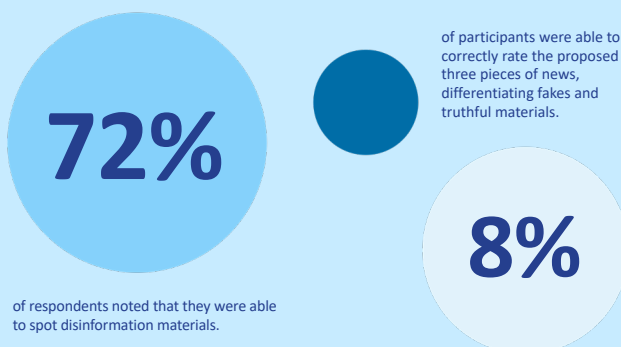
1. Fake news psychology

The phenomenon of fake news and their dissemination on the Internet is among the most pertinent issues in the modern world. This is not just a science riddle but also a serious challenge from the society which depends more and more on digital technologies and social networks. Why do people fall so easily for manipulations and spread false information?

A widespread opinion that inability to differentiate fakes from credible facts is a sign of political polarization in the world of "post-truth" is not completely justified. Actually, not all fake news attract enough attention and interest of the public to share them in social networks and create a viral content effect. That is why it is important to understand which factors make people believe in disinformation and start to spread it.

What do people use to determine credibility of information and which factors influence their choice?

According to USAID-Internews study "Ukrainian Media, Attitude and Trust in 2023"

72%

of respondents noted that they were able to spot disinformation materials.

of participants were able to correctly rate the proposed three pieces of news, differentiating fakes and truthful materials.

8%

These numbers show that most people overestimate their ability to identify false information.

Among features of information credibility survey participants mentioned reliability of information source (37%), different views presented in materials (26%), and who the information channel belongs to (14%). These factors play a key role in evaluating the truthfulness of the news but they are not always enough to avoid the impact of disinformation.

It is necessary to tell apart **two** principally different approaches to conceptualizing trust in fake news. The first approach is about **concentrating on "identifying" truth** or how probable disinformation is compared to truthful content. This identification documents the general accuracy of a person's convictions and therefore provides an idea about the competence in differentiating true and false information.

The second approach is about concentrating on **general trust in the news** regardless of their truthfulness. It is important that factors changing general trust do not necessarily impact people's ability to tell the truth from fakes. For example, increase or decrease of trust in news headlines does not impact the general accuracy of a person's convictions.

Role of reflective thinking in countering fake news

In this context it is necessary to recall theories of double processes which envisage that analytical thinking in a person can dominate over automatic, intuitive reactions. So what is the role of reflective thinking in the ability of differentiating fake news from the truth? Research shows that people who reflect more on the consumed information are less prone to trust disinformation content and are better at telling the truth from fakes. Therefore, people prone to reflection believe less in fake news.

How do people determine the truthfulness of the news?

The correlation between cognitive reflection and mistrust in fake news is stronger in cases when their content is obviously untrue (and vice versa for truthful news). That is, if people really stop and think, preliminary knowledge becomes a deciding factor for them. It is also true that education, media and information literacy positively impact the recognition of truthfulness for the news content.

2. Types and methods of manipulative influence

Which features of fake news influence the intuition of people or make them make errors in judgment? A key factor is a preliminary contact with fake news headline which creates an "**illusory truth effect**" and increases further

trust in the fake. For the first time this phenomenon was studied in 1977 by Thomas Toppino and David Goldstein, American psychologists. They proved that brain reacts quicker to familiar information and therefore considers its truthful in advance. Repetition makes fake news work, so the more often people come across disinformation messages, the more confident they are about their credibility.

Another method used by disseminators of fakes and manipulations to improve disinformation perception is "**availability heuristic**". This approach, in the opinion of **Kent Hendricks**, envisages the use of mental labels; they mostly use information which is the easiest to access from human memory. This induces a person after a contact with manipulation to quickly make a decision, not stopping to reflect on further actions. People are prone to pay attention to any information associated with the event that interests them, be it true or fake. Emotionally charged or negative information draws even more attention because it stands out from the general information flow. Therefore, it is no wonder that disinformation often has these characteristics. Accessibility heuristics in combination with multiple repetition of information from different sources facilitates active spread of fake news reaching out to more and more victims of cognitive manipulations.
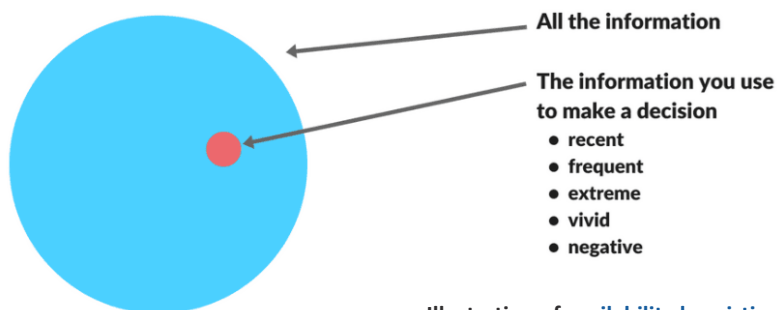
The availability heuristic

All the information

The information you use to make a decision
- recent
- frequent
- extreme
- vivid
- negative

Illustration of **availability heuristic principle**

Common manipulation techniques

A manipulative message often becomes convincing thanks to a logical error or a rhetorical strategy deceiving people. Highlighting these methods can help people resist a wide range of manipulative messages on the Internet, teaching them to identify and refute deceitful styles of argument and over-general information. **Prebunking.withgoogle. com** singles out the following techniques often repeated in disinformation in time and context.

Emotional Language

Using emotional words and terms which cause a negative impact or trigger strong emotions like fear or indignation. Such techniques can influence the perception of information, making it more convincing due to emotional resonance.

False Dichotomy

Intentional presentation of a situation or a problem in the form of restricted choice, normally two opposite options pictured as the only ones possible. In fact, there is a wider range of solutions or approaches which are ignored to simplify or manipulate public opinion. This is a situation when the material has a limited number of options (e.g., to solve the problem) presented as an exhaustive list while in reality there can be more variants.

Cherry Picking

The so-called selective approach presents a set of arguments in favor of a statement with simultaneous neglect or omission of arguments that contradict this statement. This approach creates a distorted idea about reality, making argumentation one-sided.

Fake Experts

Experts are involved to strengthen dubious arguments or to question established statements. Their opinions are used to support dubious statements or to discredit scientific or other established positions.

Red Herring

"Red herring" is a technique often used in discussions when an interlocutor intentionally raises a totally unconnected topic to distract attention from the main subject of conversation.

Scapegoating

Scapegoating is a psychological mechanism projecting responsibility for the problem on other persons. This allows to avoid the analysis of real causes of the problem and to simplify its perception through blaming the scapegoat.

Ad Hominem

This happens when an article is focused not on the problem itself but on the drawbacks of a person or organization that raises it.

Polarization

Differences between groups or opinions are intentionally exaggerated to deepen conflicts and create a feeling of animosity. This can cause the division of society into camps at odds with each other.

Impersonation

Conscious dissemination of information on behalf of a different person or organization to increase trust in the message. This can include a fake or a manipulation to influence the audience's opinion.

Slippery Slope

This is an assumption that an insignificant action will inevitably bring about serious consequences. This technique is used for intimidating or exaggerating risks.

Decontextualization

Such substitution of context is built on a conscious presentation of an event or a problem in a different context, omission of important details and information, which influences perception and interpretation.

3. Role of media literacy in the welfare of citizens

Historically, media literacy appeared as a response to changes in media environment. If earlier for successful socialization it was enough to learn reading, writing and arithmetic, with the spread of media and later Internet and social networks a need for new competences arose. Media literacy is a set of skills a contemporary person needs for critical information perception and efficient interaction with media environment. These skills have an all-encompassing impact on different fields of life, from routine decisions to global outlook.

Media literacy in all fields of life

Today practically every aspect of our life is associated with informational space. We learn news, communicate with friends, work, study, relax, shop – and all this happens in an environment saturated with media content. The quality of our life in general depends on our critical perception of all this information.

Media literacy impacts the following:

- Professional field: ability to find reliable sources for work tasks and critically evaluate professional information

- Education: ability to choose high-quality learning materials and determine the credibility of scientific data

- Civil stand: understanding of media manipulations in political life, ability to form own opinion

- Consumer behavior: critical attitude to advertising, conscious choice of products and services

- Interpersonal relationships.

Media literacy and psychological welfare

Media literacy plays an important role in protecting a person's psychological welfare. Informational overload, constant flow of the news (often negative), continuous consumption of social media content – all this forms a significant mental load.

Defense from informational stress

A media literate person:

- Can filter information flow and concentrate on the most important
- Recognizes manipulative headlines and sensational messages
- Moderates consumption of the news, especially negative
- Understands when to switch off from the information flow

Healthy self-esteem and social comparison

Social networks became a space often harming self-esteem and decreasing satisfaction with life. Media literacy helps to critically evaluate idealized images presented by bloggers and influencers and to form realistic expectations from oneself and others.

Countering cyber-intimidation

Media literacy arms users with efficient tools to counter aggression in online space. Thanks to the developed critical thinking skills a person identifies hostile behavior on the Net quicker and can take timely protective measures. This allows to create a safe digital space minimizing destructive impacts. When facing cyber-bullying, a media literate person knows strategies of constructive response; they know when to ignore provocations and when to turn to platform moderators or the law enforcement. An important aspect of countering cyber-intimidation is awareness about possible sources of support, from specialized online communities to professional psychotherapists helping to cope with emotional consequences of negative online interactions.

Informational hygiene and mental health

The concept of informational hygiene which is an integral part of media literacy is a powerful method to support mental health in the digital age. Practicing regular digital detoxes allows the brain to take a break from constant information flow and restore natural cognitive processes, which positively impacts the emotional state and general well-being. A media literate person consciously sets temporal and content boundaries for interaction with social networks and decreases mental load from excess content consumption. Such approach to conscious information consumption allows to maintain mental equilibrium in the context of contemporary world's information overload and

use digital opportunities for personal growth and not to the detriment of one's mental health.

Media literacy and financial welfare

In the age of online banking, e-commerce and digital instruments, the ability to critically evaluate information becomes a pre-requisite for financial security. Expert research demonstrates positive correlation between media literacy and financial welfare. Highly media literate people are able to better find their way in informational space which enables them to make more justified financial decisions. They are more efficient in analyzing economic news, understanding financial products and identifying possible fraudulent schemes, which helps to protect their financial interests. Normally media literate people have access to a wider range of informational resources. This gives them an opportunity to gain relevant knowledge about investments, finance management and other aspects of economic life, which also helps to improve financial welfare.

Besides, media literacy helps to avoid financial traps like fraudulent schemes or unprofitable loans often advertised on the Internet and media. Thanks to critical thinking and ability to identify false information people can preserve and multiply their finance. Even though there is a general trend that higher-income countries normally have a higher level of media literacy, this connection is not unambiguous. Media literacy depends on many aspects including education policy, access to information resources, cultural factors, etc. **A study by Detector Media** in Ukraine showed that the level of media literacy depends on age, education and income level, and place of residence. This shows that income level is just one factor impacting the level of media literacy.

In **another study** Professor Julian McDougall from Bournemouth university discussed the importance of media literacy in the context of Global Alliance for Partnerships on Media
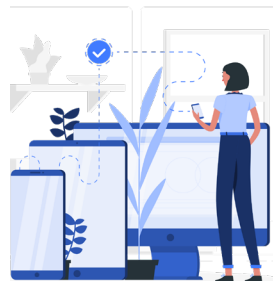
and Information Literacy (GAPMIL). He emphasized that media literacy depends not only on the income level but instead is a product of complicated interaction of factors including education, technologies, and social context.

It is also necessary to note the **economic aspect of media literacy.** A media literate consumer is ready to pay for high-quality content, understanding the value of professional journalism. This is especially important in the context of crisis a traditional media business model is navigating at the moment when financing through advertisements becomes insufficient to support high-quality journalism. Forming a culture of paying for media content is not just an issue of survival for high-quality media but also an investment in the quality of information environment in general.

Media can and should explain to their audience why high-quality journalism costs money, the amount of resources needed to create credible information and the value this has for the society. Such transparency doesn't just improve trust in the media but also encourages the audience to consciously choose information sources preferring those which invest in the quality of content.

PRACTICE

Practical class ⏱ 6 hours

Prebunking: «vaccination» against manipulations or a communication strategy?

1. Debunking, prebunking and inoculation theory
2. The notion and types of prebunking
3. When to use prebunking and who should do it?
4. Using prebunking: a step-by-step guide

1. Debunking, prebunking and inoculation theory

Development of efficient methods to counter disinformation depends on the understanding of human psychology. A most widespread approach to fighting fakes is **debunking**, or *measures to refute false messages aiming to fight disinformation after it has spread* (this also includes fact-checking). Debunking is an efficient method but often a lot of time and resources are spent to demolish disinformation narratives. As a consequence, many researchers tried to find ways to prevent the spread of disinformation before it takes root in the society. Preventive approaches used before people face disinformation are called **prebunking**. In other words, **prebunking** *is a way to teach people to identify manipulative messages and resist them before they appear or spread on the Net*. This approach has already demonstrated its efficiency. Being of awareness-raising and unprejudiced nature, it helps to form resilience to disinformation in a wide audience. Prebunking concentrates not on direct refutation of fakes but on informing people about techniques and methods used to create these manipulations. An interesting initiative is an awareness-raising campaign to resist manipulations and disinformation implemented by Google Jigsaw in Europe. You can view one of their videos by following a QR code below; it demonstrates how you can manipulate a video to create an impression that a lion is on the loose in the city.

[Video](#) **which is a part of Prebunking campaign from Google Jigsaw in Europe**

At the same time, prebunking is based on inoculation theory developed in 1960s by William McGuire, a social psychologist. It is designed as a "vaccine for brainwash". Inoculation theory is a social psychology concept stating that it is possible to psychologically resist the attempts of ill-intentional persuasion in advance. Similarly to medical vaccines providing physiological protection against future infection, psychological "vaccines" protect from future attempts of manipulating human mind. By introducing refutations of weakened arguments beforehand we ensure cognitive resistance to future manipulation attempts.
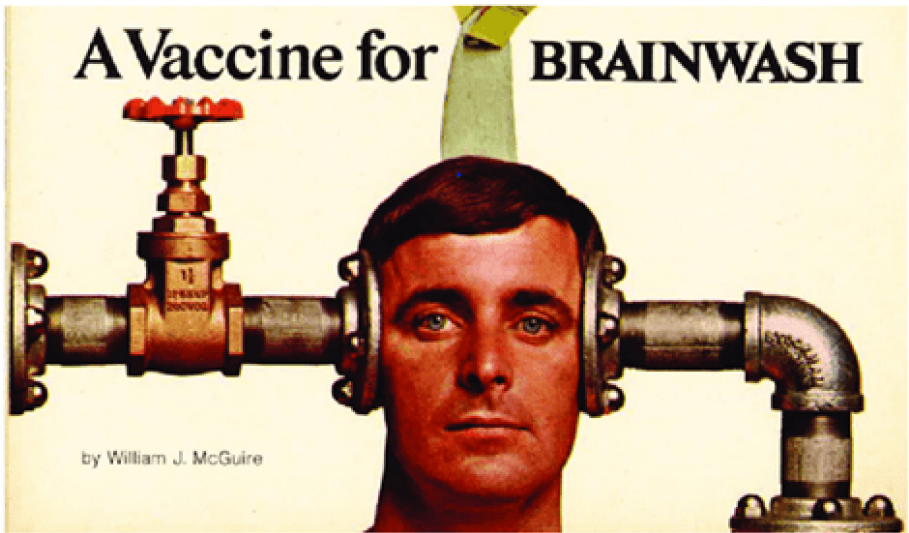
Illustration to an article by William McQuire "A Vaccine for Brainwash" in Psychology Today (1970)

In practice, inoculation theory consists of two parts:

Prevention activates psychological protection from unwanted attempts to persuade a person, warning about a possible clash with deceitful messages in the nearest future.

Refutation in advance provides the audience with tools to counter deceitful information they may face in the future. Apart from providing them with counter-arguments in advance, it helps to switch on a "microdose" or a weakened example of disinformation so that it is easier for them to recognize it in the future.

The spread of fake news can be compared with the spread of a virus infection. Therefore, inoculation theory proposes an intuitively understandable structure helping to immunize against disinformation influences.

2. The notion and types of prebunking

Prebunking can be active and passive. Each has its advantages and disadvantages from the point of scale, efficiency, durability, and value. In general, **the longer recipient is engaged in prebunking, the more durable inoculation effect will be.**

- **Passive prebunking** includes interventions providing the audience with all information necessary to resist disinformation and not requiring active participation except becoming aware of and processing information. *Publications, graphical materials and videos are types of passive prebunking*. Passive prebunking interventions are easier to implement and disseminate, in particular through social networks. However, they are less interactive and not able to engage a big audience which most probably results in a smaller effect on users.

A good example of passive prebunking is **an experiment researchers did on social networks**. In cooperation with Google Jigsaw countering threats to open society, a team of psychologists from Cambridge and Bristol universities created 90-second videos to familiarize wide YouTube audience with different manipulation methods. Stefan Lewandowski, study co-author from University of Bristol, **claims**: "fact-checkers can debunk only a portion of false-hoods spread on the Internet. We need to teach people to recognize disinformation so that they understand when they are deceived".

A video from Prebunking Manipulation Techniques projects on the emotional language of messages. Source: [Info Interventions](#)

A video from Prebunking Manipulation Techniques projects on using "ad hominem" manipulative approach. Source: [Info Interventions](#)


Google Jigsaw, also in cooperation with leading organizations working with media literacy, launched a similar initiative to improve Ukrainians' resilience against disinformation.

Video "Substitution of context. Find out how to protect yourself".
Photo Source: Google link to project: **Google knowledge**

Active prebunking includes methods requiring a person to act, make a choice, interact deeper with content, etc. The main example of active approach researched well enough for today is games. Though games are captivating and allow people to get vaccinated against various methods of manipulations normally used in disinformation, they require more time and attention from participants which can decrease the volume of audience engagement. Game development also requires greater investments and resources.
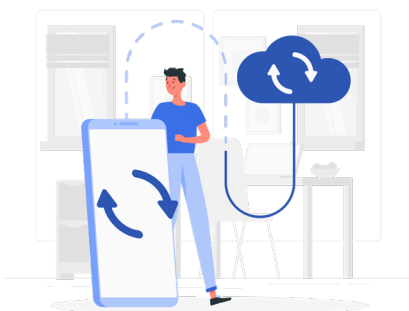
Examples of games:

BAD NEWS is the first prebunking game in history. It is a browser game with available options created by DROG and Cambridge University; gamers try on a role of fake news producer and learn to identify and imitate six disinformation techniques (e.g., trolling, conspiracy theories, imitation) during the six levels of the game.

HARMONY SQUARE – this game takes place in a peaceful community where everyone cares a lot about democracy. The gamer becomes the "main disinformer" whose task is to polarize people in Harmony square and use trolling campaigns during political elections. The goal of the game is to show the tactic and manipulation techniques used to deceit people, enlarge the audience of disinformation and play on social pressure using political subtext.
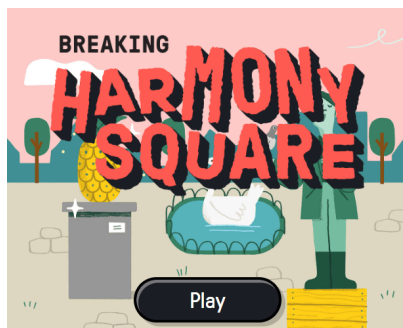
CAT PARK is a game for proactive learning of the most widespread disinformation methods helping users to better prepare for recognizing fake news no matter their form. According to the plot, the city is building a cat park. The goal of the player is to prevent that (because who needs a park just for cats?). The task is to turn the public against the park using various disinformation tactics.
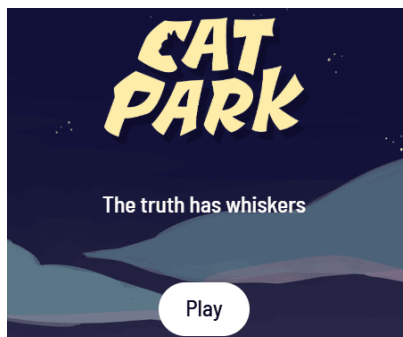
GO VIRAL! In this game developed by the Cambridge Social Decision-Making Lab in cooperation with DROG and UK Cabinet players start disseminating deceitful news about the pandemic. This enables them to feel methods and motives of spreading disinformation about COVID-19, helping to protect themselves.

3. When to use prebunking and who should do it?

Prebunking is the most efficient in situations when there is a high risk of disinformation or manipulative narratives being spread. The main scenarios when it is advisable to use prebunking include the following:

- **Foreseeable crises or events.** Disinformation narratives often repeat themselves, especially during elections, health care crises or natural disasters. Trend analysis enables to envisage new narratives that can be used for manipulations. For example, false statements about vaccines have always been popular, and this allows to prepare for their refutation beforehand.

- **Before the audience is convinced.** It is best for prebunking to reach the audience before they believe in manipulative content. Though prebunking is moderately efficient even after contact with disinformation, it is more efficient to act beforehand when the audience hasn't yet been impacted by manipulation. If certain topics or myths are regularly used for manipulations (e.g., vaccination, climate change, or political scandals), prebunking allows to "vaccinate" the audience before a new round of their dissemination.

- **During awareness-raising campaigns**. If an organization or government plan wide-scale changes (e.g.,

introduction of news laws, reforms, or medical programs), prebunking can help prevent the spread of false information that may emerge around these changes.

Who should be doing that?

It is important for the organization doing prebunking to have enough expert knowledge and a high trust rank among its audience. If there are doubts about the audience's trust and loyalty, it is better to initiate cooperation with organizations or experts who are already recognized in the field. It is necessary to take into account that prebunking requires resources for monitoring and correction of efforts as well as constant dialogue with the audience to ensure efficiency of messages against disinformation.

The main stakeholders that can engage in prebunking include the following:

- **Government institutions**. Authorities responsible for information security, health care, education or election processes can use prebunking to prevent disinformation. For example, during COVID-19 pandemic many governments launched campaigns to prevent the spread of false information about vaccines.

- **International organizations.** Organizations like the UN, UNICEF or WHO often use prebunking to fight global challenges like climate change, migration crises or epidemics.

- **Civil society organizations (CSO).** CSOs specializing in media literacy, human rights or social issues can efficiently use prebunking to work with local communities.

- **Media and journalists**. Media can use prebunking for raising awareness among the audience about manipulation methods in the news. This is especially important during elections or political crises.

- **Social networks and tech companies**. Platforms can integrate prebunking in their algorithms to warn users about potential disinformation.

- **Experts and researchers.** Experts in different fields (medicine, ecology, economics, etc.) can participate in prebunking providing verified information and clarifications.

Here you can find examples of successful prebunking campaigns

4. Using prebunking: a step-by-step guide

Environmental Defense Fund proposes a convenient step-by-step guide

Step 1: Choose the topic

Determine a specific information narrative you want to focus on. This can vary from global crises like climate change and pandemics to individual-level problems.

Step 2: Choose your audience

Understand the audience you are trying to reach and its current attitude to the information you are planning to share. Make sure that you have respective experience or cooperate with experts on the topic.

Step 3. Develop your prebunking strategy

Create a "**truth sandwich**": provide facts, point to the mistake and the logic behind it and finish with another fact. This helps to create psychological protection against disinformation. Use "psychological vaccination". In this case contact with a

"weak" version of the lie creates resistance to future threats. For example, a warning like "people may try to manipulate you by saying that..." is accompanied by a statement refuting the previous one in advance (like "this is not true because..."). Such warning can decrease sensitivity to certain lies and to bigger methods used to manipulate information.

Step 4: Choose the right format for prebunking

Choose the most efficient prebunking format (cards in social networks, videos or infographics) and platforms for its dissemination. If you are doing a wide-scale campaign, it is advisable to engage the audience on different platforms, preparing different formats of information materials at the same time. For prebunking to be efficient and engaging for the audience, use interactive tools like games or simulations.

Step 5: Monitoring

Check the audience's engagement and its interaction with your messages. Correct your strategy according to these observations.

USEFUL RECOMMENDATIONS

- Cooperate with reliable sources, in particular with organizations or authors who have strong ties with your target audience to enhance your prebunking efforts.

- Use reliable resources to identify the most popular disinformation narratives and develop efficient counterarguments.

- Encourage the audience to use critical thinking, point to manipulative tactics and provide accurate information.

Informal education

Media literacy: how not to fall for manipulations? MOOC on Prometheus

Task for self-study

Analyze cases where prebunking was used. Define advantages and risks of prebunking.

Questions for self-check

What is "illusory truth effect" in the context of spreading fake news?

Name the main manipulation techniques described in the topic.

What is inoculation theory according to William McGuire?

What are the components of prebunking?

Which psychological mechanisms influence the perception of fake news?

How is media literacy connected with psychological welfare?

Recommended sources

Main:

- Borovkova, Kh. Theory of lies. Why do we believe fakes and what to do about it? Nauka.ua. 13 March 2021. (in Ukrainian)
- Konoplytskyi, S. Why do people believe fake news? SPEKA. 30 January 2024.(in Ukrainian)
- Sander van der Linde. There is psychological "vaccine" against disinformation. Zbruch. 29 March 2023.(in Ukrainian)
- Why do people fall under the influence of fake news? Institute of Mass Information. 31 January 2019.(in Ukrainian)

Optional:

- Harjani, T., Roozenbeek, J., Biddlestone, M., van der Chernetska, S. Kseniia Iliuk about prebunking: "We build defense against the attack that will happen sooner or later". Detector Media. 25 November 2022. (in Ukrainian)
- Linden, S., Stuart, A., Iwahara, M., Piri, B., Xu, R., Goldberg, B., Graham, M. A. Practical Guide to Prebunking Misinformation. 2022.
- Nanovska, V. Vaccine for the mind. How Google and election commissions debunk fakes before their ubiquitous spread. Mediamaker. 27 June 2024.(in Ukrainian)

TOPIC 5

How to Learn to Read Data and Avoid Data Manipulations

TERMS GLOSSARY

Database means a certain set of organized data sharing a common attribute or property.

Visual manipulations means intentional distortion of visual content to create false impressions and conclusions.

Data (originating from a Latin word datum in singular which first used to mean "something given") means a set of values, facts or figures. Cambridge Dictionary **defines** data as information, especially facts or numbers collected to be examined and considered and used to help decision-making.

Data literacy means an ability to read, understand, create and transfer data as information; an ability to collect, analyze and interpret data to make informed decisions.

Personal data means information with the help of which a person can be identified, both directly and indirectly. Direct identifiers are a person's unique data like their last/first name or taxpayer number. Indirect identifiers include non-unique attributes like physical characteristics. This definition can be found in **GDPR**, an EU law regulating which organizations in the EU and beyond process personal data of EU citizens.

Digital literacy means an ability to efficiently use digital technologies and critically assess online content.

How to Learn to Read Data and Avoid Data Manipulation

Lecture ⏱ 2 hours

1. Role of data and literacy when working with data in contemporary world.

2. Manipulations with survey data/rankings.

3. Visual manipulations (infographics based on data).

1. Role of data and literacy when working with data in contemporary world

Let us start with an example. In early November 2023 X (formerly Twitter) published news with the following headline: "Weapon supplies from Ukraine to HAMAS has grown three times during the last month" allegedly disseminated by The Washington Post. The publication was illustrated by a screenshot, allegedly from the outlet's web page.
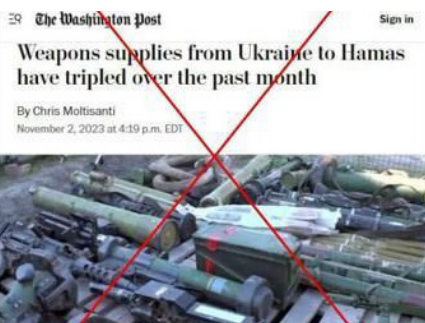
Screenshot of a post with fake information on X

Later social networks caught on this piece of news and it received huge coverage. Which conclusion could a reader draw if they don't have enough information about the event? They would think that Ukraine had always supported HAMAS because the message clearly says that the "supply has grown…" So it probably existed before? And now it has grown three times. Obviously, in this way authors wanted to multiply the effect of a headline pointing to the scale of the problem. Besides, those who believed this news had no questions about the following: Have there been any supplies before? How is it possible if Ukraine itself needs weapons? This information was spread on behalf of other global media like BBC and

Belligcat. This is a vivid example of manipulation which was later debunked by information agencies like **Reuters** and **AFP**.

But why do people believe this information? Manipulators and propagandists first of all rely on people's tendency to trust information more if it contains data. In 2016, Research + Data Insights (RDI) together with other research companies **conducted** first-ever public survey on the public's attitude, knowledge and behavior about data. The survey was conducted in the USA. The results show that 83% of American respondents believe that statements are more convincing if they are accompanied by a diagram or a data analysis. However, 64% of respondents do not understand how to get access to the data and interpret them independently. Along with that, 85% are concerned about the way organizations and governments use their personal data.

So as we can see from this example, data matter a lot. And it is no less important whether we can read and operate these data.

In 2022, Forbes defined data literacy as the second most important skill (after digital literacy) for the nearest 10 years. Even critical thinking was placed third. The **article** by Bernard Marr for Forbes about top ten most important skills for the following decades notes that for most companies in the world data have found a place among the most valuable and important business assets as they are the basis for decisions. That is why in the nearest years business will pay a lot of attention to data literacy which will become a key skill for hire in many companies.

However, data are important not only for business. The volume of data in the world is constantly growing. They become a part of daily life and work in any country. For example, in the US data and AI **help** utility services to prepare for challenging weather conditions. Data also

influence politics. Unfortunately, as we have seen data are also a tool for manipulation in different countries of the world.

When talking about this skill, head of *Data Literacy Project* advisory council Kevin Hanegan proposes to define it as a combination of skills and ways of thinking enabling people to find ideas and meaning in the data to find solutions based on those. However, it is important to understand that the necessary set of skills depends on the goal. *For regular users* it is the ability to read and analyze data, to critically interpret those to be able to make important daily decisions. *For a professional user (e.g., a journalist)* it is a wider set of skills like data visualization, data management (i.e., their collection, verification and storage) and others to be applied in their trade (e,g., for efficient content promotion or in investigative journalism).

2. Manipulations with survey data/ rankings

Data are used in all fields of life: from business and science to public governance and daily decisions. However, data on their own have no value without their correct analysis, interpretation and use. That is why data literacy, including the ability to collect, process, analyze and visualize information, becomes an integral part of professional and personal competences.

Manipulations with sociological surveys or results of other studies is among the most popular types of data manipulations. They can happen in different ways, for example:

- incorrect data interpretation;
- completely fake data;
- publication of just a portion of data advantageous for someone;

- ignoring the context;
- headlines distorting results;
- focusing the audience's attention on advantageous figures.

## Case of "Ukrainians ready for compromise"

In September 2018, Democratic Initiatives fund named after Ilko Kucheriv, which does sociological surveys, made a **statement about manipulations** with the results of its surveys by 112 Ukraine TV channel (the channel was closed not long before Russian full-scale invasion due to Security and Defense Council sanctions). At this time, election races were gathering momentum; Ukraine was preparing for presidential and parliamentary elections, plus there were discussions about the war waged by Russia in 2014. There was a statement on air of the TV channel, with reference to Democratic Initiatives, that public opinion "confirms growing popularity of For Life party" and also that "a growing number of Ukrainians believes that peace can be achieved by arrangements and compromises". At that the news did not provide any comparative data to confirm such "growth". Democratic Initiatives **objected to both statements and provided real data**: "in December 2017 6.7% of the population were ready to support For Life party, and in August 2018, 6.1%". As for the readiness of Ukrainians for compromises, "Democratic Initiatives" stressed that the story missed a significant detail: "Yes, most are for peace but less than 29% of Ukrainians support 'peace at any cost' and 51% are 'for compromises but not just any'. As the survey results show, for most Ukrainian citizens the compromises the Kremlin wishes for are unacceptable". (**Democratic Initiatives**).

3. Visual manipulations (infographics based on data)

Data are also charts, diagrams and other infographics. Scott Berinato, senior editor of Harvard Business Review and data visualization expert, provides 24 types of diagrams in his book "Good Charts" including an alluvial diagram (when flows and nodes show the transfer from one set of values to another) and a Sankey diagram (it is also called a flow chart where arrows or column show distribution and change of

values). Scott Berinato believes that "what makes a chart good is not how pretty it is or how well it adheres to the rules of chart creation but how efficiently it conveys the idea, adapting to the context used".

There is another good book, "The Functional Art: An introduction to information graphics and visualization" by Alberto Cairo, about high-quality data visualization. It has an interview with Prof. Hand Rosling, founder of Gapminder Foundation, which is especially worth reading.
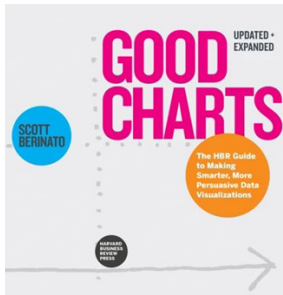
Scott Berinato "Good Charts" 2022

Gapminder is special because it popularizes statistics. The fund analyzes global statistics in different fields and shows global trends and our false ideas about the world. Gapminder website notes that it exists to prevent global strategies based on stereotypical and outdated worldviews. The main mission of the organization is to fight destructive false ideas with the help of fact-based outlook understandable for everyone. Actually, on Gapminder **website** you can find lots of great diagrams which can refute many of your ideas about the world.
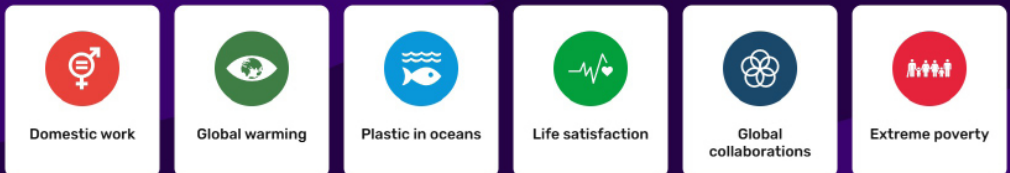

Gapminder resource interface

In Ukraine, Texty.org.ua successfully visualizes big data. **Their website** contains lots of visualizations, including interactive ones, which tell about Ukraine and the world.

However, not all the time everything looks so successful, pretty and – the most important – truthful. We have provided examples of data manipulations performed with different aims, in particular through incorrect visualization. Sometimes it happens due to the lack of knowledge or understanding of visualization rules, and sometimes it is intentional, to impose a false idea about this or that problem or phenomenon.

Let us start from clickbait headlines (we have mentioned that it is one of data manipulation techniques). It is headlines that dictate to us how to perceive data and their visualization. Here is a good **example** of incorrect presentation of data in a headline.

Journalists wrote that 70% of Ukrainians are ready for a compromise with the Russian Federation for the sake of peace in Donbas (take note that this is news back from 2019). However, the figure 70% in survey results from Democratic Initiatives never existed. In the **original research**, we can find the following numbers: 16% of citizens are ready to agree to any compromises (including those advantageous to Russia), and 51% are ready for compromises but not all of them (which is significantly different from full agreement). The journalists just added up the two numbers to impress the audience with a huge percentage. Instead, it transformed into data manipulation. And the audience was deceived about public moods concerning such important issue. Therefore, no matter what the text of the article says, the headline has defined a key message that a person would remember.
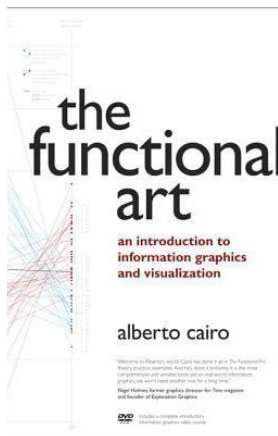
Alberto Cairo "The Functional Art: An introduction to information graphics and visualization", 2017

Майже 70% українців готові піти на компроміс з РФ заради миру на Донбасі — опитування

16:48, 14.02.19 2 хв. 3533

Також результати опитування свідчать, що більшість респондентів згодні з твердженням, що зараз триває війна України з Росією.

Українців готові піти на компроміс з РФ заради миру на Донбасі / фото persha.kr.ua

Майже 70% опитаних в усіх регіонах України погодились з тим, що заради миру на Донбасі треба йти на компроміс з Росією і так званими «ДНР» та «ЛНР».

Про це свідчать результати опитування, проведеного Фондом «Демократичні ініціативи» імені Ілька Кучеріва спільно з соціологічною службою Центру Разумкова з 19 по 25 грудня 2018 року.

Screenshot of UNIAN publication on February 14, 2019

As for **manipulations** directly in **charts**, **diagrams** or other **visualizations**, we can single out the main ones important for sociologists and data visualization experts:

- Too much data in one visualization. An attempt to include as much data as possible in one visualization is a bad idea, it can only confuse the audience.

- Incorrect choice of diagram for visualization (each type performs a certain function; these functions are described in a very detailed manner in the abovementioned book by Scott Berinato).

- Violation of proportions.

- Manipulations with Y axis (when it doesn't start from zero and the graph is cut).

- Incorrect scaling of pictograms/drawings.

- Incorrect intervals and units, e.g. to show a sharp growth or decline in certain data.

- Use of non-inclusive colors and illegible fonts (according to studies, thin/weak color palettes may look more pleasing to the eye but complicate information perception).

- You can find many examples in publications from recommended sources to this topic. For clarity, we'll provide several incorrect graphs below.

Як Ви ставитеся до ідеї федеративного устрою України?**
НЕ ПІДТРИМУЮ **69,2%**
ПІДТРИМУЮ **14,5%**
ВАЖКО ВІДПОВІСТИ **16,4%**

Як Ви ставитеся до ідеї автономії Вашої області (регіону)?**
78,6%
НЕ ПІДТРИМУЮ
ПІДТРИМУЮ **8%**
ВАЖКО ВІДПОВІСТИ **13,4%**

**Дослідження проведене соціологічною службою Центру Разумкова з 22 по 27 травня 2015

Source: **publication in Solidarity newspaper, August 2015**

For example, this graph published in a **party newspaper** has incorrect proportions. The size of columns is not proportional to indicated percentages and they are obviously drawn in an arbitrary manner. A similar example, but with pie chart was presented on air of **an American TV channel**. As we can see, it's not just about

violation of proportions but also more than 100% when adding up the percentages.

It is important to remember that for reading any data context is important. These are the drawings proposed by Daniel Kahneman in his book "Thinking Fast and Slow". Look at them and say, without thinking too much, what do you see?

Kahneman notes that most people read the

Source: **Reddit**

left block as "ABC" and the right one, as "12 13 14". However, if you stop a little and think, you will see that the symbols in the middle are identical in both blocks and they can also be read in the following way: "A 13 C" and "12 B 14". Kahneman calls this phenomenon the mechanism of hasty conclusions and explains it in the following way: "The same form is read as a letter in context of other letters or a number in context of other numbers. The shape is ambiguous but you draw a hasty conclusion about what it is and are not aware of the ambiguity you have unconsciously removed". What does this example teach us? We shouldn't rush to conclusions and instead should always pay attention to the context. In general, reading data and their visualization requires vigilance and critical approach.

PRACTICE

Practical class 🕐 **2 hours**

Checking for manipulations in data

1. Principles of working with data for a journalist
2. Parameters for verification of sociological surveys
3. How to recognize fake sociological organizations?

1. Principles of working with data for a journalist

Journalists often have to work with data. First of all they need to learn and process/interpret the data they receive every day from different sources, including official ones (e.g., statistics about losses, demography, or any other data). This is necessary not to get hooked on manipulation themselves and to correct convey these data to their audience.

Several simple rules will help with this task.

What the journalist working with data should know/clarify/ understand:

> 1. **Data origin** (who were they collected by; there should be a reference to the source). It is an important criterion because different data can be spread by fake sources/pseudo-experts and pseudo-sociologists/ other information field stakeholders acting in bad faith.

> 2. **When were the data collected?** Very often, media don't pay attention to this indicator, and it is a key one. Public opinion is not static; other data are not static as well, they constantly change depending on the circumstances.

3. **How were the data collected?** This is about data collection methodology (was it via questionnaires or interviews, during focus groups, through analysis of documents, statistics or register data, etc.). If this is pure sociology, the wording of questions is extremely important.

4. **What is the context?** We need to take into account the context data are provided in; audience's perception will depend on that. The context data are presented in is also important, as well as explanations and headlines.

5**. Data status** (official/private, open/classified, etc.).

6. **How were the data visualized?** Here we need to find out whether all charts and diagrams are correct and contain no manipulations.

The more you work with the data, the easier it will be for you to understand and analyze them.

2. Parameters for verification of sociological surveys

What do we need to know to correctly tell about survey results to our audience?

5 questions:

1. Who conducted the survey?

2. When was the survey conducted?

3. What is the sample/margin of error?

4. Which methodology was used and how were the questions formulated (if it is a public opinion poll)?

5. Who ordered the survey?

The first question, **who conducted the survey**, is probably the most important (more details about that is available in section **"How to recognize fake sociological organizations?"**). If we clarified whether the sociological company should be trusted, then we can pass to other questions. In particular, it is about **exact wording of questions, method, time, sample, and margin of error**. The information about the survey's commissioner is also important, especially if it is about elections. According to Election Code of Ukraine, researchers and media must publish information about the commissioner of public opinion poll on election issues.

However, manipulations can pertain not only to sociological data. Russia actively uses statistical data (both real and fake) to spread various disinformation and public opinion manipulations to disseminate its agenda, also in other countries. The most frequent manipulations are the following:

- statistics of losses both from Ukrainian and Russian side;
- statistics of Ukrainian refugees in European countries;
- data about demographic situation in Ukraine.

Naturally, this list is not exhaustive. That is why we have to be careful about any numbers, especially if they are spread by anonymous or dubious sources.

Case of "Dead villages"

Let us provide a very telling example of manipulation with numbers by Russian propaganda, spreading information through anonymous Telegram channels about "dead villages" as a result of mobilization.

Украина Зеленского: мертвые села и "обои" из портретов погибших мобилизованных
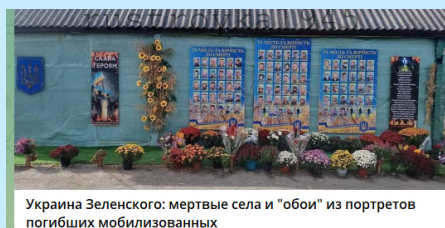
Screenshot of a post with fake information in a Telegram channel

This is one of the photos accompanied by information that in a village which had about 500 to 600 people before the war, now only several retired people and members of administration remain. Analysts from Center of Strategic Communications **debunked** this fake on their website SPRAVDI. They pointed out that the memory wall on the photo is **located** not in the village but in the town of Malyn, Zhytomyr region. Besides, it contains portraits of those killed not just since 24 February 2022 but during the whole Russian-Ukrainian war since 2014. Also, the wall commemorates the whole Malyn community which includes 77 settlements. As of October 2021, the approximate population of this community was 37,863 people. So this is by far not 500 or 600 as the propagandists claimed. Therefore, the proportion of numbers is different. So, as we can see, we have to be attentive to any data, especially if they are disseminated via dubious information sources.

3. How to recognize fake sociological organizations

In Ukraine, there are many examples when sociological data were spread on behalf of non-existing sociological firms or one-day initiatives (this happens especially often during pre-election campaigns). Journalists from Texty.org.ua created a database of pseudo-sociologists called "**Sellers of rankings. Database of pseudo-sociologists and hidden PR experts**". This database has data about 119 organizations and 261 people noticed publishing dubious surveys or covertly promoting politicians during the last 15 years.

We can name several features of fake sociological organizations/firms:

- Lack of mentions about firm studies in the period between elections. Unexpected emergence and disappearance of the firm.

- Non-public connections of founders and speakers of "sociological" organizations with politician.

- A "sociological survey" of such firm is massively spread by different media with the same headlines and accents (this can also be a sign of the material being an infomercial).

- Serious discrepancies between announced forecasts and real results (e.g., during a pre-election campaign it is announced that politician N has significant support but he doesn't even pass the electoral threshold).

- If the "research" is performed by some CSO without participation of a well-known sociological firm. CSOs do not have networks to do surveys. The most they can do is high-quality studies (like focus groups or in-depth interviews, but they still need to involve experts).

Texty.org.ua also compiled **a list of sociological firms** that can be trusted, with many years of experience on the market.

However, the main objective criterion of truthfulness for the sociological firm is its membership in one of these organizations:

- **ESOMAR** (European Society for Opinion and Market Research)

- **AAPOR** (American Association for Public Opinion Research)

- **WAPOR** (World Association for Public Opinion Research)

- **in Ukraine Sociological Association of Ukraine** (SAU).

-

Such organizations control the procedure of obtaining results and comply with international standards. Their websites have a list of corporate members.

Tasks for a practical class

1. Generate a piece of news using sociological data with the help of ChatGPT. Check the credibility of data in this material.

2. Choose one of the latest surveys of a verified sociological firm (your choice), visualize its results using simple tools (e.g., you can create a chart in PowerPoint, Canva or use other simple online tools). Discuss work results in the classroom and analyze mistakes.

Tasks for self-study

1. Analyze a media outlet (your choice) if it correctly presents various data. Describe examples of incorrect interpretation/manipulations/fakes and explain what these manipulations are; also indicate how the data should have been correctly presented.

Questions for self-check

What are the main ways to manipulate sociological data that you can name?

Which international organizations confirm the credibility of sociological companies?

Name key parameters to check the credibility of sociological surveys.

Which principles of journalist's work with the data are the most important?

Name three main types of visual manipulations with data.

Why is context important for data interpretation? Provide an example.

What are the main requirements in Election Code of Ukraine concerning publication of sociological survey results?

What makes data visualization efficient according to Scott Berinato?

Informal education

How (not) to lie using data visualization: a lecture by Andrii Hazin // Projector Mag (in Ukrainian)

Video materials: "The Joy of Stats", a movie in English

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4. Code of Ethics of the Ukrainian Journalist. Commission on Journalistic Ethics.

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MEDIA LITERACY
A Training Manual

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2025