



CREATING SOCIETAL
COGNITIVE RESILIENCE
AGAINST INFORMATION
DISORDERS



JEAN MONNET
CENTRE OF EXCELLENCE

CREATING SOCIETAL COGNITIVE RESILIENCE AGAINST INFORMATION DISORDERS - **RESAID**

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INTRODUCTION

The Global Risks Report published by the World Economic Forum on January 10, 2024 ranks “misinformation” and “disinformation”, or information disorders as we call them, first among the risks we will face globally in the next two years. The risks posed by information disorders surpass those of extreme weather events and social polarization (Global Risks Report, 2024). While extreme weather events take the first place in the medium-term assessment, information disorders do not change much and ranks fifth in the medium-term assessment.

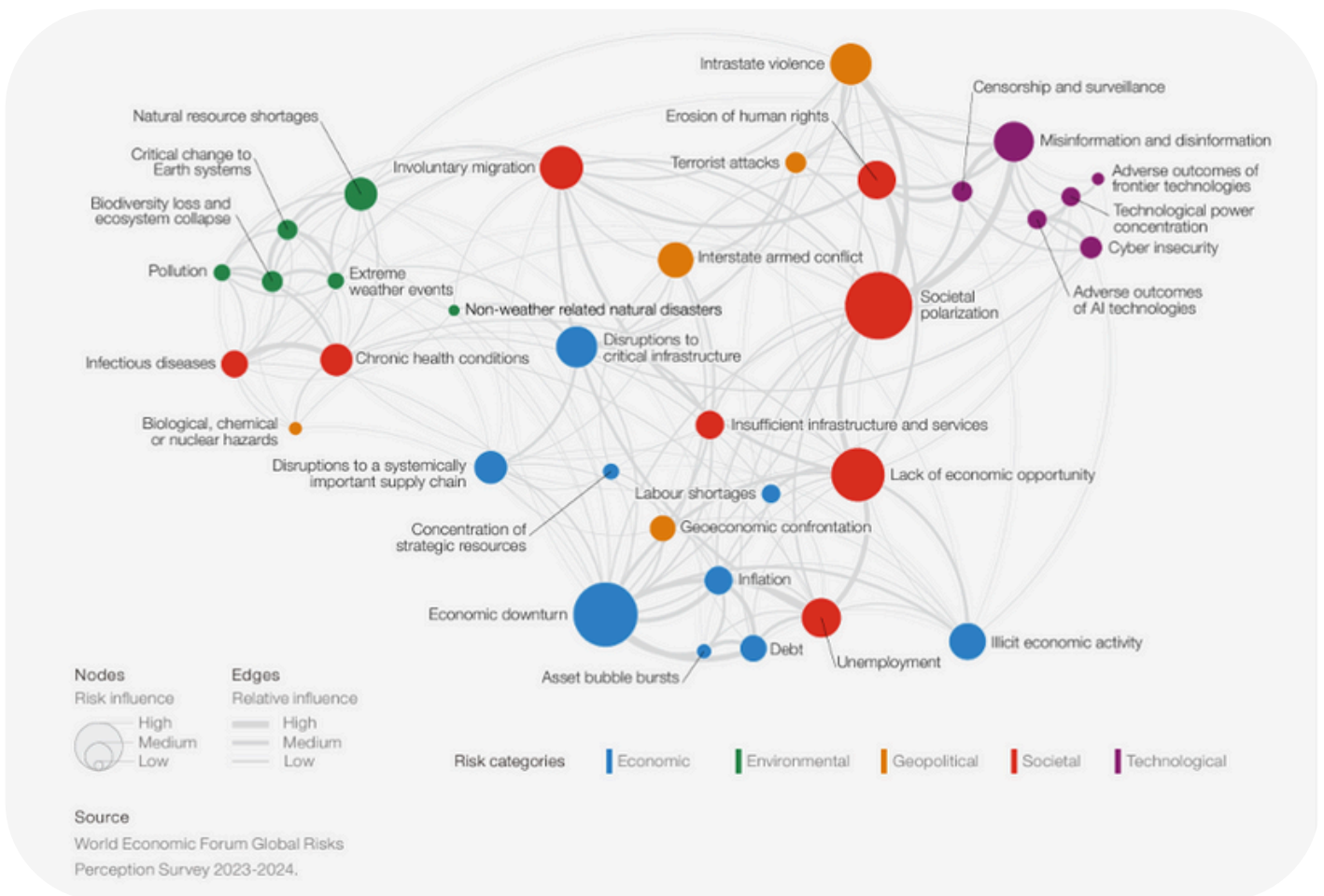


Figure 1: Global Risks

Since information disorders are directly and indirectly related to other risks such as social polarization, rights violations, wars between countries and other similar risks, they are among the risks that need to be prevented. Civil society organizations, academia, international organizations, and government representatives similarly consider these problems and see them as risks. The report also states that there are similar views on this issue in almost every country.

The World Health Organization also considers information disorders as a public health problem and urges authorities to take urgent measures in this regard (World Health Organization, 2024). The United Nations General Secretariat, in a report published in 2022, stated that countries should cooperate against information disorders (Countering Disinformation for the Promotion and Protection of Human Rights and Fundamental Freedoms, 2022).

However, in this era of multiple crises, information disorders, which are considered to pose as great a global risk as global warming or wars, or even greater than them, are beyond a security problem that governments can solve with legal regulations and public order measures. State-based legal regulations against information disorders which may have different consequences and uncertainties due to local and global dynamics, may be insufficient and, more importantly, may lead to human rights violations within the framework of interrelated rights.

With the development of technology, the diversification and dissemination of content related to information disorders can be realized more rapidly. Technology companies and social media platforms have an important responsibility in this regard. Dynamics such as the rapid spread of false information by both content producers and users on social media platforms and the highlighting of specific information/content through algorithms make it difficult for individuals to access accurate information, restrict the process of receiving information and negatively affect decision-making processes based on this information. The fact that algorithms present content based on users' past behaviors may cause misinformation processes to accelerate. The increase in information disorders and the role of technology in these processes can lead to widespread human rights violations and pose serious threats not only to individuals but also to societies. In addition to limiting the capabilities of individuals, violating their rights and putting their security at risk, it can also create a polarized environment that prevents social coexistence and weaken democracy.

Therefore, given the complexity and multidimensionality of information disorders and the diversity of responsible actors, intervention strategies need to be designed in a similar multidimensional approach.

Our project titled “Creating Social Cognitive Resilience Against Information Disorders - RESAID”, implemented by Istanbul Bilgi University and supported by the European Commission Jean Monnet Centres of Excellence Programme, aims to

create an intervention framework with an approach that takes into account the multidimensionality of information disorders. The aim of our project is to increase resilience against information disorder threats to individuals and societies in EU countries and Turkey. Since information disorders have a broad definition and a wide range of actors, this study aims to increase resilience against information disorders created by information space operations carried out by state actors and non-state actors acting in cooperation with them. In this framework, how information disorders are defined, what their mechanisms are and what kind of intervention areas are possible will be discussed. In this context:

- Information disorders are a multidimensional problem and require multidimensional solutions.
- Information disorders emerge from different sources and constitute a security problem for individuals, societies and states.
- Different measures need to be taken against information disorders by different actors at these three levels. The source of the information disorder and its impact should be decisive in the selection of these measures and the actors to take them.

Regardless of the source and the actors involved, we can summarize the general principles guiding our study as follows:

- Information disorders are a violation of human rights.
- Information disorders are a human security problem.
- Information disorders are constraining capabilities.

The fact that there are failed examples where the fight against human rights violations remains at the level of discourse may create hesitations about conceptualizing information disorders as human rights violations. This is precisely why different attitudes towards human rights can be more challenging for mainstreaming the fight against information disorders. However, without disregarding these hesitations, we still believe that it is critical to address the combat against information disorders from a universal human rights perspective. Drawing on the human security and capability approach, we believe that this framework contributes by opening up a multidimensional framework for enhancing cognitive and social resilience.

1. INFORMATION DISORDERS, DIFFERENT DEFINITIONS AND TYPES

Information disorder is an umbrella concept that describes misinformation in today's information ecosystem. While there are many different definitions, the tripartite distinction (Wardle and Derakhshan 2017) provides a good framework for framing the debate as it is generally accepted. According to this generally accepted distinction, there are three different types of information disorders:

1. Disinformation: The act of spreading information in an intentionally misleading way. This type of information misrepresentation is associated with fake news, conspiracy theories and manipulative content.

2. Misinformation: The act of spreading disinformation unintentionally. It is shared in the belief that the information disseminated is true. Misinformation often leads to the spread of false information.

3. Malinformation: The act of spreading information with the intention to cause harm. This type of information disorders includes damaging information such as disclosure of personal information, defamatory content and invasion of privacy.

These concepts are important to identify the situation and motivation of the person/organization disseminating the information and to identify the circumstances under which it is more visible. In order to combat information disorders, it is necessary to distinguish between these types and create different areas of intervention (Erdoğan et al., 2022).

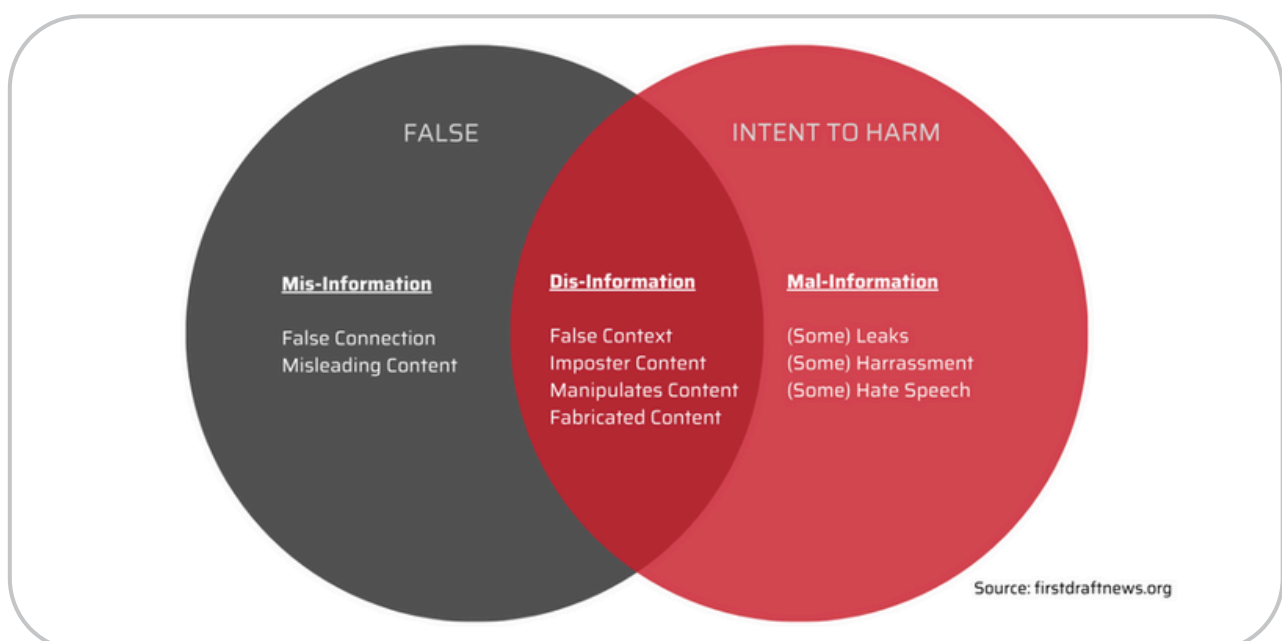


Figure 2: Three Different Types of Information Disorders

While information disorders are a relatively new concept, many ideas and terms, some of which we use in daily life and some of which we have only recently started to hear about, are directly or indirectly related to information disorders. These include propaganda, which has a long history; “fake news”, which became popular after 2016 and was chosen as the “word of the year”; conspiracy theories, which we encounter dozens of examples every day; filter bubbles, echo chambers and algorithmic bias, which are the gifts of social media and digitalization. The 2016 Oxford Dictionary's word of the year “post-truth” makes visible what kind of ecosystem we are in. It emphasizes a condition where truth is no longer important, and where truth based on personal beliefs, ideas and emotions takes precedence over information based on data and scientific evidence. The fact that false information, which is understood by individuals to be untrue, becomes acceptable because it confirms their own beliefs and the acceptance of false information by individuals reveals an important discussion on how reality is perceived. In such an environment, it becomes important to examine not only at a single level but also at micro, meso, and macro levels. In this framework, any intervention that aims to create social resistance against information disorders must consider the multidimensionality and complexity of this phenomenon.

Concept	Definition	Example	Source
Misinformation	False or wrong information is spread with harmless intentions.	Sharing a false statistic without knowing it.	Wardle, 2020
Disinformation	Intentionally disseminating misleading or false information.	Creating and distributing fake news to influence public opinion.	Wardle, 2020
Malinformation	Information is based on facts but used to cause harm.	Leaking sensitive personal information damages a person's reputation.	Wardle, 2020

Concept	Definition	Example	Source
Propaganda	Promoting a political cause or point of view, especially by using biased or misleading information.	State-sponsored media outlets present distorted perspectives to support government policies.	Nichols, 2004
Fake News	Manufactured news stories created to mislead or manipulate readers.	Websites that publish completely made-up articles to get revenue.	Buzzfeed
Conspiracy Theories	Interpretations of events or situations that explain conspiracies without evidence.	The belief is that a secret, powerful group controls global events.	Lewandowski and Cook, 2020
Echo Chambers	Situations where beliefs are strengthened and reinforced through communication and repetition within a closed system.	Social media groups that only welcome information that fits their current views.	Löblich and Venema, 2021
Filter Bubbles	Intellectual isolation is caused by algorithms presenting information based on users' past behavior.	Personalized news feeds showing news similar to previously engaged articles.	Pariser, 2011
Algorithmic Bias	Systematic and unjust discrimination in algorithms often reflects the biases of their creators.	Search engines prioritize specific news sources, influencing what users see.	Buolamwini, 2017

Concept	Definition	Example	Source
Information Overload	Difficulty understanding and deciding on an issue due to too much information.	Being overwhelmed by too many news articles, social media posts and other media on a particular topic.	Blair, 2010
Astrourfing	Hiding the sponsors of a message so that it appears to come from the grassroots.	Fake online comments or reviews that give the impression of widespread public support.	Bienkov, 2012
Clickbait	Content designed to attract attention and encourage visitors to click on a link, often at the expense of accuracy or quality.	Sensational headlines that exaggerate the content of the article to drive traffic.	Beaujon, 2014
Media Literacy	Ability to access, analyze, evaluate and create media in various forms.	To teach individuals to critically evaluate news sources and recognize bias.	European Commission, 2024
Deepfakes	Artificially created media that convincingly imitates real people is often used to spread misinformation.	Videos in which a public figure appears to say or do things that they don't actually say or do.	Settles, 2023

Table 1: Concepts and Definitions

2. INFORMATION DISORDERS AS A HUMAN RIGHTS VIOLATION

While discussing the individual, social and economic damage caused by information disorders, it is possible to develop another perspective and consider information disorders as a violation of human rights.

Studies on this subject suggest that information disorders violate a number of human rights.

a. The Right to Vote and Stand for Election (ICCPR Article 25)

Information disorders undermine democratic processes and violate voters' rights to vote free and fair. Voters during election processes who receive information about candidates and their promises during the electoral process and make their decisions based on this information may be manipulated by the dissemination of misinformation. Obtaining information about the candidates competing in the elections, accessing information about the candidates' promises, obtaining information about the issues addressed by the candidates or the position of the candidates play an important role in voters' decisions. The voter's right to know the best options and alternatives for themselves is related to the sources and content of the information they have access to. Lack of access to information or deprivation of options due to misinformation in information sources may violate voters' rights.

Misleading content spread about candidates during the campaign process may prevent the elections from taking place in a fair environment. The inability of candidates to campaign in a fair environment leads to a violation of the right to be elected. For example, research on how misinformation spread on social media affected voter behavior during the 2016 US Presidential elections has shown that disinformation can manipulate voter preferences. The revelation that the personal data of 87 million Facebook users had been misused by the company Cambridge Analytica has brought about an important debate, and Cambridge Analytica has been found to be highly influential in Donald Trump's electoral success (Ward, 2018). Such conditions and practices endanger the legitimacy of democratic elections and violate citizens' democratic rights.

b. The Right to Health (ICESCR Article 12)

The spread of health misinformation negatively affects individuals' access to health services and health decisions. During the COVID-19 pandemic, the spread of misinformation about vaccines has been shown to increase vaccine hesitancy, endangering public health. This situation, also defined as an infodemic - a pandemic of misinformation - directly violates people's right to health and has serious negative impacts on public health. Disinformation can violate the right to health as it removes opportunities for individuals to protect themselves from threats to their health.

c. The Right to Protection of Honor and Dignity (ICCPR Article 17)

Information disorders can target specific individuals or groups, damaging their honor and reputation. Disinformation campaigns, particularly against political figures, are examples that violate their personal rights by lowering their public reputation. For example, research shows that misinformation spread about politicians and public figures can seriously damage their reputations (Schiff et al., 2024).

d. The Right to Protection from Discrimination (ICCPR Articles 2(1) and 26)

Information disorders can target specific ethnic, religious, or social groups and promote discrimination against them. Misinformation about migrants or certain ethnic groups leads to their marginalization and discrimination in society. The marginalization that occurs through information disorders can have the consequence of suppressing the voices of different group members or making them invisible.

e. The Right to Participation (Article 21 and Article 25 of the Universal Declaration of Human Rights)

Article 21 and Article 25 of the Universal Declaration of Human Rights guarantee the right to participate in public affairs. The Human Rights Committee has stated that in order to ensure the full exercise of the rights protected under Article 25 of the Covenant, the free exchange of information and ideas on public and political issues between citizens, candidates and elected representatives is essential. This requires the existence of a free press and other media that can comment on public affairs and inform public opinion without censorship or restrictions. Information disorders violate citizens' right to participate in public affairs.

A Rights Based Approach to Combating Information Disorders

When we define information disorders as violations of a series of human rights, the fight against information disorders must inevitably be “rights-based”. A rights-based approach not only focuses on the human rights violations caused by existing practices but also aims not to cause further human rights violations when formulating solutions.

One of the most important debates in the fight against information disorders is the restrictions that the measures taken and the policies implemented will impose on freedom of expression. From the perspective of the media, which represents the sphere of freedom of information and freedom of expression, legal regulations on

disinformation may violate the rights to access to information and freedom of expression. Disinformation laws, which include a “security issue” approach, prevent access to rights even though they are stated as “precautionary measures”. Since information disorders are perceived as a threat and there are no international standards on protective measures to be taken in this regard, the measures themselves may turn into rights violations. Therefore, in a rights-based approach, care should be taken to ensure that measures and practices do not constitute a violation of rights. The table below shows the basic principles and possible applications of this rights-based approach.

Principles and Practices	Core Principle	Practices
<p>Protection of Freedom of Expression (ICCPR Article 19)</p>	<p>Freedom of expression is a fundamental human right protected by international law. This right is protected in the UDHR and Article 19 of the ICCPR. Protection of freedom of expression is essential in combating information disorders</p>	<ul style="list-style-type: none"> • Restrictions on freedom of expression must be clearly defined, necessary, and proportionate. • Vague terms such as “fake news” should be avoided and to focus on specific harms instead. • While targeting disinformation, legislation should not suppress critical thinking and freedom of expression. • Legal processes to deal with disinformation should be independent and impartial (Ehrenkranz, 2018; Nicaragua approves “cybercrimes” law, alarming rights groups AP News, 2020; Organization for Security and Co-operation in Europe, 2017).
<p>The Right of Access to Information</p>	<p>Individuals have the right to seek, receive, and disseminate information. This right supports informed decision-making and democratic participation.</p>	<ul style="list-style-type: none"> • Governments and platforms should ensure transparency in information dissemination and avoid censorship that limits access to various sources of information. • Open data policies and public information campaigns should be supported to facilitate access to information. • Digital literacy programs should increase individuals' ability to access accurate information (Lewandowsky et al., 2012).

Principles and Practices	Core Principle	Practices
<p>The Right to Protection from Discrimination (ICCPR Articles 2(1) and 26)</p>	<p>Information disorders can promote discrimination by targeting specific ethnic, religious, or social groups. Such discrimination is prohibited by international human rights law.</p>	<ul style="list-style-type: none"> • Media literacy should be improved and independent media organizations should be supported to prevent the dissemination of discriminatory and damaging information. • Platforms should develop effective policies against hate speech and discriminatory content. • Legal regulations should aim to counter discrimination and promote social cohesion.
<p>Transparency and Accountability</p>	<p>Transparency and accountability are essential in combating information disorders.</p>	<ul style="list-style-type: none"> • Governments and platforms should be transparent and inform the public in their efforts to deal with disinformation. • Platforms should demonstrate transparency in processes such as content removal and the closure of user accounts, and ensure that these processes are verifiable. • Disinformation should be combated through independent oversight mechanisms and civil society organizations (Resolution A/HRC/34/7, 2017; Resolution A/HRC/39/29, 2018; Global Network Initiative, 2020).
<p>Confidentiality and Information Security (ICCPR Article 17; ACHR Article 11)</p>	<p>The right to privacy includes the protection of private life and private communications and strengthens freedom of expression. Privacy also encompasses the right of individuals to protect their personal data and identity information.</p>	<ul style="list-style-type: none"> • Anonymity restrictions can limit freedom of expression and information and lead to unnecessary collection of personal data. Such restrictions are incompatible with international human rights law. • The collection and processing of individuals' personal data and contact information should be transparent and lawful (Resolution A/HRC/34/7, 2017; Resolution A/HRC/39/29, 2018; Global Network Initiative, 2020).

Table 2: Principles and Practices

3. INFORMATION DISORDERS AS A HUMAN SECURITY PROBLEM

Traditional security involves risks and threats to the sovereignty and borders of nation-states. However, emerging risks and uncertainties have started to affect societies in a negative way. Environmental problems, epidemics, and global inequalities pose new challenges to human well-being and opportunities. While human security emphasizes different aspects from traditional security, it still encompasses some form of threat, sense of insecurity, perception of threat, desire for security, uncertainties and solutions. A concept that conveys the conditions or vulnerabilities of everyday life that emerge as a result of changes and crises, and the reactions to the threats or measures that determine these conditions, becomes inevitable to be examined in the discussion of information disorders. With the development of mass media and communication channels, the impact of multiple crises and threats can spread rapidly and be felt through many different means. Poverty, epidemics, natural disasters, climate change, political instability, economic stagnation, wars and other uncertainties increase feelings of insecurity, create limitations in access to resources, increase risks and lead to the perceptions of threats to human survival, well-being, needs, rights and dignity. Therefore, beyond traditional security, the concept of human security needs to be emphasized in a way that is consistent with human experiences.

We can think of information disorders as a problem not only for states or similar political entities but also for the security of all human beings. In this respect, information disorders can also be characterized as a human security problem. It is pointed out that there is an idea beyond the humanization of the current traditional state security discourse. Human security refers to the right of individuals to be protected from physical, social and economic threats. This concept aims to protect individuals and societies against risks that threaten their daily lives. First defined in the Human Development Report published by the United Nations Development Program (UNDP) in 1994, human security has emerged as a concept that goes beyond the traditional understanding of security and encompasses the protection of individuals and societies against various threats. Human security is based on the principles of “freedom from fear” and “freedom from want” (Human Development Report, 1994). These include protection from “chronic threats” such as disease, hunger, oppression and sudden and harmful disruptions in home, work or community life. It is argued that human security conditions cannot be isolated from economic, social, environmental and cultural problems (Martin and Owen, 2014). From this perspective, human security emphasizes individual-centered policies (Thakur, 2004), “humanitarian

discourses” (Gasper, 2013) on development, rights and needs, the liberation and empowerment of individual (McCormarck, 2008) human-centered responses to change or crises (O’Brien and Barnett, 2013), and the impact on people rather than states and nations, recognizing the basic needs (Gasper and Gómez, 2015) of ordinary people. Human security consists of multiple dimensions, which can be listed as follows:

1. Economic Security: The ability of individuals and societies to access and sustainably utilize economic resources.
2. Food Security: Individuals' continued access to sufficient, safe, and nutritious food.
3. Health Security: Individuals' access to basic health services and the right to protection from diseases that threaten their health.
4. Environmental Security: The right to clean water, air and a healthy environment.
5. Personal Security: The right to be protected from physical violence, crime, and other personal threats.
6. Community Security: The right of individuals to protect and maintain their social and cultural identity.
7. Political Security: The right of individuals to live in an environment where their fundamental human rights are respected and to be protected from political repression (Human Development Report, 1994).

According to McDonald (2002), the definition of “security” in the report and the new approaches show a shift towards an individual perspective through the “threat to the quality of life of individuals”. The negative impact of information disorders on each of these dimensions leads us to discuss this problem as a human security issue. Information disorders endanger the right of individuals to be protected from physical, social and economic threats.

- **Health Security**

The spread of misinformation seriously endangers health security. During the COVID-19 pandemic, disinformation about vaccines has increased vaccine hesitancy, posing a threat to public health. Some people have refused to get vaccinated due to misinformation, while others have turned to ineffective and harmful treatment methods. This has led to a direct threat to public health and individuals' right to health.

- **Economic Security**

Information disorders also affect economic security. False economic information or

manipulative financial news create panic in markets and have a negative impact on individuals' financial decisions. Such disinformation misleads investors and leads to large financial losses, thus threatening the economic security of individuals (McDonald, 2002).

- **Threat to Social Security and Social Cohesion**

Information disorders create mistrust and hostility between groups in society. Misinformation, especially targeting specific ethnic, religious or social groups, leads to their marginalization and discrimination. Such disinformation campaigns undermine social cohesion and threaten the social security of individuals (Gasper et al., 2013).

- **Political Security**

Information disorders threaten the political security of individuals by endangering the legitimacy of democratic processes. Misinformation disseminated during electoral processes can manipulate the outcome of democratic elections by preventing voters from making informed decisions. This violates individuals' political rights and undermines trust in democratic institutions (Human Development Report, 1994).

- **Environmental Security**

Misinformation about environmental issues prevents individuals from accurately understanding and taking action against environmental threats. Misinformation about climate change makes it difficult for societies to deal with this global threat in a unified and effective manner. This poses a threat to environmental security in the long run (Paris, 2001).

Discussions on the concept of human security show that it is intertwined with a number of neighboring concepts, such as “human rights” or “human development”. For those who define human security as “a situation in which people and communities have the capacity to respond to threats to their basic needs and rights so that they can live in dignity”, this perspective automatically incorporates social change (O'Brien and Barnett, 2013). Therefore, concepts such as communication security, protection of information and technology, vulnerabilities, and freedom from inhuman treatment can also be associated with human security.

It is possible to establish a link between digitalization/cyber security and human security. Access to information, people's participation, overarching needs on

information are normally covered by digitalization (Zojer, 2019). It is possible to relate the threat becoming visible in all circumstances, digitalization and digitalized information to the human security framework (Salminen & Hossain, 2018). It is evident that digitalization affects individuals and everyday life through routines, policies and practices that support people's voices, alienate certain groups, and address beliefs in different contexts. Equal access to digital, visibility of different information in digital, and protection of digital rights and freedoms are among the elements of human security in the digital environment (Bedeski, 2000).

Consequently, traditional security focuses on risks and threats to the sovereignty and security of nation-states. However, in the current “era of multiple crises”, new types of challenges and uncertainties adversely affect members of society in different circumstances. This calls for new approaches that integrate traditional security frameworks with human security frameworks. These approaches should be able to articulate the main concerns of traditional security in the terms of the human security approach while examining the goals and actions of state and non-state actors and the relations of individuals and societies at the individual, community, state and international levels.

4. INFORMATION DISORDERS CONSTRAINING CAPABILITIES

Information disorders are also constraining capabilities. Amartya Sen's capability approach emphasizes the importance of equity for achieving social justice by focusing on human well-being. Sen's question of “equality of what” provides an important framework for assessing the question of justice through capability (Sen, 1979). According to Sen, people's well-being is not only related to material resources but also to the breadth of their capabilities (Nussbaum, 2000; Sen, 1993). The well-being of individuals is measured not only by the resources they have but also by their freedom to determine the actions they can take, their capabilities. Sen argues that assessing people's capabilities is a measure that can be defined as the freedom to do what they really want or to be who they want to be. This approach offers us the opportunity to evaluate the welfare of individuals not only in terms of material resources but also in terms of their capabilities (Uyan-Semerci, 2023).

In the information society we live in, the right to access information plays a vital role in access to other rights and in the transformation of all rights into capabilities. The development and protection of information-based rights is vital for human welfare. In the complexity of today's information environment, making

informational products and services accessible to all, especially the more widely recognized rights to access to information such as the right to education and freedom of expression, is one of the most important rights that we can realize.

Based on Sen's capability approach, when we consider the ability of individuals to access and use information, the focus is not only on the existence of rights but also on their translation into capabilities and their accessibility. The concept of capability focuses on whether individuals' rights and/or opportunities exist as real capabilities in the assessment of their well-being. In this sense, the freedom of individuals to transform their lives and live as they wish is directly related to the breadth of their set of capabilities. By emphasizing the freedom of individuals to live as they really want, this approach has a critical role in the creation of a just society. The term "as they really" want is also highly related to access to information, which involves shaping preferences through accurate information. The capability approach emphasizes that information is essential for basic human needs and that access to information is instrumental to people's freedom of choice and freedom to create the opportunities they want. The right to access information is fundamental to the utilization of all rights and the translation of these rights into capabilities.

In conclusion, the capabilities approach is an important tool for assessing human well-being and ensuring social justice. This approach assesses people's well-being not only in terms of material resources but also in terms of capabilities, where access to information plays a role. It is, therefore, important for societies and policymakers to strive to enhance individuals' capabilities and facilitate their access to information.

5. INTERVENTIONS AGAINST INFORMATION DISORDERS

The consensus that information disorders lead to numerous negative individual and social consequences has resulted in the development of a series of interventions in this regard. These interventions can be categorized as individual, social, state and supra-state interventions.

a. Individual Interventions

- Media Literacy Trainings: Media literacy training programs are organized to improve people's ability to distinguish between correct and false information ([Nature](#)).

- Psychological Inoculation:

Psychological inoculation techniques are used to make people resistant to misinformation. These techniques are expected to immunize individuals against potential misinformation by alerting them to it in advance ([Interventions Toolbox](#)).

- Fact Checking and Debunking:

Individuals are encouraged to use fact-checking tools for verifying the accuracy of the information they share ([MPG Berlin](#)).

b. Social Interventions

- Media and Digital Literacy Campaigns:

By organizing social media literacy campaigns, the aim is to improve citizens' ability to access accurate information and recognize misinformation.

- Information Verification Applications:

The aim is to develop information verification applications and browser plug-ins that can be widely used in society ([MPG Berlin](#)).

- Creating Counter Narratives:

Social initiatives have been launched to create effective counter-narratives against misinformation, to ensure the dissemination of accurate information and to reduce the impact of misinformation ([Interventions Toolbox](#)).

- Multidisciplinary Efforts:

Multidisciplinary efforts are encouraged in the fight against misinformation. Scientists and other experts are expected to play an active role in combating information disorders ([University of Lisbon](#)).

c. State Level Interventions

- Regulatory Development:

The aim is to develop innovative regulations to make media ownership and sources of advertising funding more transparent. Regulations such as Germany's NetzDG law direct social media platforms to proactively remove certain content.

- Countering Market Concentration:

Regulations are in place to reduce concentration in the media or advertising market. This is a critical step to provide more diverse and balanced sources of information.

- Regulating Online Expression:

Regulations are being developed to protect freedom of expression on the Internet while countering harmful misinformation. The European Union's Digital Services Act (DSA) aims to strengthen transparency and accountability mechanisms of online platforms.

d. Supranational Interventions

- Multi-Stakeholder Platforms:

By involving various stakeholders in policy-making processes, it is possible to develop more inclusive and effective policies. This is an important approach to developing comprehensive solutions to the problem of misinformation.

- European Digital Media Observatory (EDMO):

Supranational organizations, such as the European Digital Media Observatory (EDMO), develop Europe-wide strategies to combat disinformation and coordinate between member states.

- Activities of International Organizations and Civil Society Organizations:

Media and digital literacy campaigns are organized across Europe to improve citizens' ability to access true information and recognize misinformation.

6. INFORMATION OPERATIONS AND INFORMATION DISORDERS

One of the major sources of information disorders is political warfare campaigns conducted by states and their cooperating non-state actors through information operations. Due to the changing nature of warfare, the boundaries between the conditions of war and peace are becoming increasingly blurred. In addition to conventional kinetic means, states are increasingly using non-kinetic means to achieve their strategic objectives. Among these methods, political warfare campaigns conducted through information operations stand out. Today, in addition to cyber-attacks on critical infrastructure and networks, state and non-state actors aim to manipulate the attitudes and opinions of individuals and societies or target their “hearts and minds” through information operations. In this context, while traditional cybersecurity primarily ensures the security of critical infrastructures and networks, in the new hybrid warfare environment, the concept of social cybersecurity, which includes the cognitive security of individuals using these infrastructures and networks, comes to the fore. Russia's aggression against Ukraine clearly demonstrates that cognitive resistance to disinformation at the state and societal levels has become a critical component of hybrid warfare.

Over the last decade, the perception of foreign interference and manipulation as a hybrid threat has increased among democratic countries. In the United States, the Mueller Report revealed the extent of Russian interference in the 2016 presidential election, while in Europe, the effects of similar information operations were seen during the 2016 UK referendum on European Union membership. In the Pacific, China is seen as a potential supporter of information operations aimed at undermining the democratic processes of other East Asian and Pacific countries. The US and Western countries point to Russia and China as the main practitioners of hybrid warfare, while Russia and China point to the US and its allies. In reality, both sides are using hybrid warfare methods in a variety of issues and places, from the Color Revolutions to the Arab Spring, from Syria to Ukraine and other frozen conflicts of the post-Soviet space, from the Eastern Mediterranean to Africa, where resource sharing is heating up.

Recognizing this situation, international organizations have also recognized information disorders as a security threat and have taken action to take measures against it. NATO's Strasbourg/Kehl Summit Declaration in 2009 emphasized that strategic communication is an integral part of the Alliance's efforts to achieve its political and military objectives (NATO, 2009). Since the 2018 Brussels Summit, NATO has made combating information disorders one of its priorities. The NATO Strategic Communications Center of Excellence defines strategic communications as the coordinated and fit-for-purpose use of NATO's communications activities and capabilities in support of alliance policies, operations and activities, and to achieve NATO's objectives (NATO Strategic Communications Centre of Excellence, 2019). This includes public diplomacy, public relations, military public relations, information operations and psychological operations.

Similarly, the European Union (EU) has made increasing public awareness and resilience to information disorders a key agenda item. In its Strategic Compass, the EU has expressed its determination to significantly increase its resilience and capability against hybrid threats, cyber-attacks and foreign manipulation and interference. To this end, the EU aims to establish an "EU Hybrid Toolbox" to strengthen social and economic resilience, protect critical infrastructure and safeguard democracies and electoral processes. This toolbox will include mechanisms to effectively detect, analyze and counter foreign information manipulation and interference. A statement by the European Commission in May 2024 reiterated the importance of raising public awareness of information disorders (European Commission, 2024).

7. BIOECOLOGICAL MODEL AND OUR APPROACH

Our project aims to contribute to the resilience of individuals by raising awareness about the issue, empowering them with tools to reduce information disorders and transform them into change agents who can disseminate their information to their immediate environment and increase their cognitive resilience to information disorders. Based on the framework developed by Bronfenbrenner, we aim to contribute to the resilience of citizens by intervening at different levels of development.

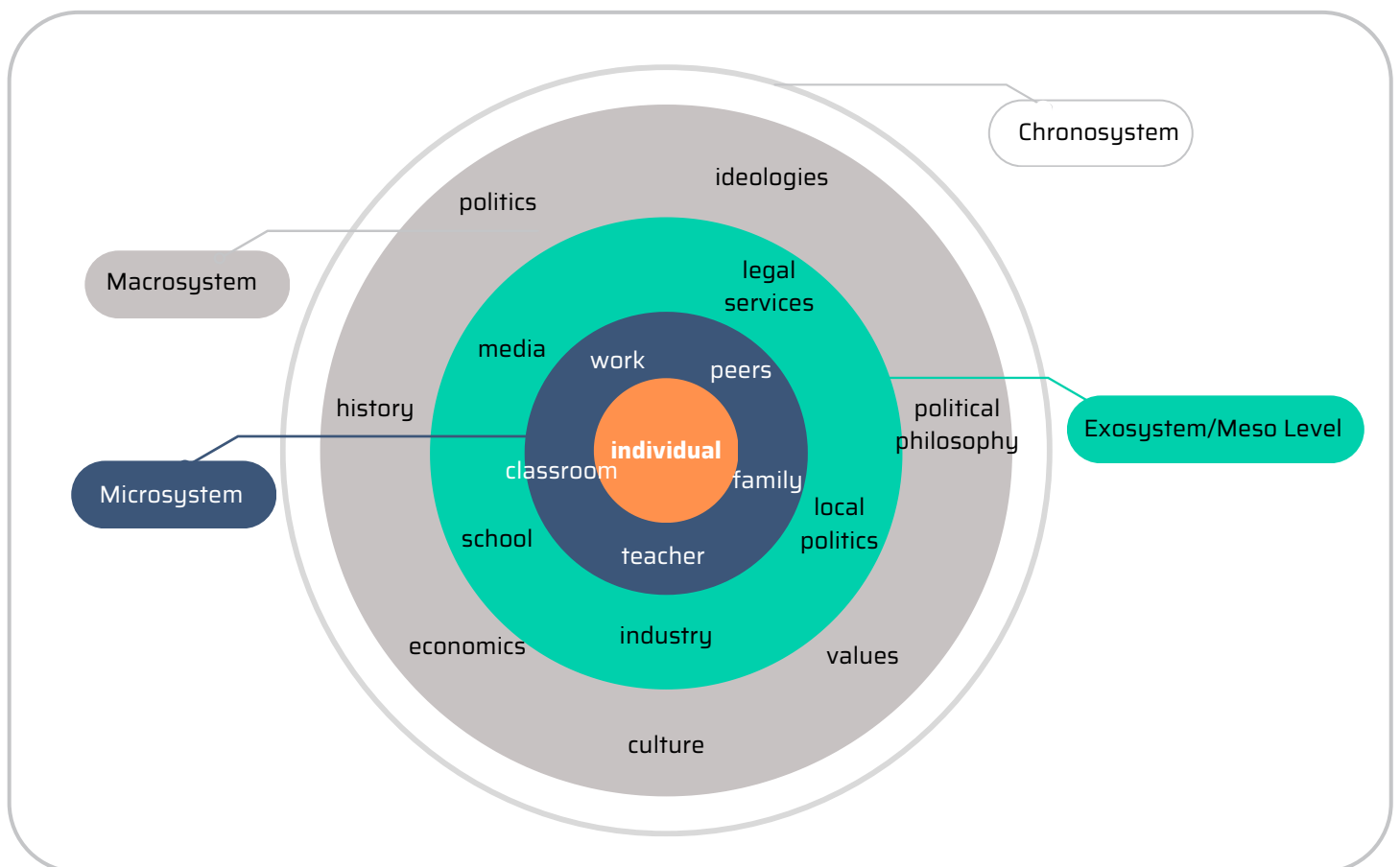


Figure 3: Bioecological Model of Bronfenbrenner

Bronfenbrenner's bioecological system (Bronfenbrenner, 2005; Bronfenbrenner and Morris, 2006) is a theoretical framework in developmental psychology that analyzes how the interactions between different systems in an individual's environment affect his or her development. The framework consists of five system levels: microsystem, mesosystem, exosystem, macrosystem and chronosystem. The microsystem consists of the individual's immediate environment, including family, neighborhood and peers. The exosystem consists of systems that indirectly affect the individual, such as schools and the media. We can also add the

information ecosystem to this level. The macrosystem consists of cultural and societal values and beliefs that shape the individual's environment. The chronosystem encompasses the historical and temporal environment in which the individual's growth takes place, such as crises.

Our interventions aim to empower the individual at each of these different levels of development: individual, meso and macro.

a. Microsystem

The microsystem includes the close circles in which individuals interact, such as family, friends and direct social media interactions. These close contacts are crucial in influencing individuals' beliefs and information consumption.

Interactions with family and friends greatly influence an individual's susceptibility to information disorders such as misinformation and disinformation. Individuals are more likely to trust and accept information from close relationships, which can reinforce confirmation bias and create echo chambers where misinformation is spread without discussion (Lewandowsky et al., 2012). Emotional bonds with family and friends also increase the impact of misinformation by exploiting emotions such as fear and anxiety (Fazio and McCoy, 2021). Furthermore, the lack of diverse perspectives in one's social circle limits exposure to accurate information, perpetuating misinformation (Sunstein, 2018).

Social media interactions significantly affect an individual's vulnerability to information disorders such as misinformation and disinformation. Social media platforms often create echo chambers where algorithms prioritize content that aligns with users' pre-existing beliefs, reinforcing confirmation bias and limiting exposure to diverse perspectives (Bakshy et al, 2015). The rapid and widespread sharing of information on these platforms can increase the reach of misinformation and make it difficult to distinguish reliable sources from unreliable ones (Vosoughi et al., 2018). Emotional and sensationalized content is more likely to be shared and interacted with, further increasing the spread of misinformation (Brady et al., 2017). Furthermore, social approval from peers on social media leads individuals to accept and spread misinformation without critical scrutiny (Del Vicario et al., 2016).

When we think of the members of society most affected by information disorders, especially vulnerable groups and their capabilities come to mind. In line with the

needs and capabilities of vulnerable groups, inclusive intervention models need to be considered and multi-layered collaborations need to be developed. The effects of information disorders may particularly affect those living in rural areas, youth, girls or groups with different intersectionalities. These groups may have more limited access to true information and may be more vulnerable to misinformation campaigns. These processes can result in a range of human rights violations and deepen existing inequalities. It is important that interventions are developed in a more inclusive framework that is responsive to the diversified needs and limitations of these groups.

One issue to be considered in micro-level interventions is that individuals should be open to behavior change and willing to cooperate. It is also known that some previously designed interventions have been ineffective and even led to some adverse outcomes due to individuals' refusal to cooperate. The design of interventions should take into account such resistance and not ignore the agency of individuals.

It may be difficult to establish a clear and unambiguous link between information disorders and human rights violations. In the designed interventions, while raising awareness on this issue, it will be ensured that individuals make better connections with this concept through concrete examples of how human rights function in daily life. Thus, it is planned to contribute to a clearer understanding of the relationship between these two concepts.

b. Mesosystem

The mesosystem includes the interconnections between different microsystems, such as the interaction between home and school or work environments. Interactions at the meso level, such as schools, workplaces and community organizations, significantly influence an individual's vulnerability to information disorders. Educational institutions and workplaces play a crucial role in shaping the critical thinking skills and media literacy needed to distinguish reliable information from misinformation and disinformation (Bulger & Davison, 2018). However, these settings can also contribute to the spread of misinformation in the absence of robust media literacy programs or if the institutional culture does not encourage critical inquiry (Mihailidis, 2014). Peer interactions in these settings can reinforce echo chambers because individuals are often exposed to the same sources of information shared by colleagues or classmates (Dutton & Shepherd, 2006). Furthermore, the spread of misinformation in these settings is exacerbated

by hierarchical structures where information from those in authority is accepted as it is without critical scrutiny.

Local community interactions as a meso-level factor significantly influence an individual's vulnerability to information disorders. Community organizations, local media and social networks can reduce or exacerbate the spread of misinformation and disinformation. Communities with strong ties and trust can inadvertently spread misinformation if it is in line with shared beliefs and values, while strengthening echo chambers and confirmation bias (Gil de Zúñiga et al., 2012). In contrast, communities that promote media literacy and critical thinking can act as a buffer against misinformation encouraging verification and debate (Craft et al., 2017). Local leaders and influencers play a crucial role; their endorsement of information, whether accurate or not, serves to lend it credibility. In addition, the availability and quality of local news sources affects the public's exposure to reliable information; areas with limited access to reliable news are more vulnerable to misinformation (Nielsen and Schrøder, 2014).

c. Exosystem

The exosystem encompasses government regulations as well as broader social systems that indirectly affect individuals, such as media and journalism.

The ecosystem of external environmental settings that indirectly affect the individual significantly influences vulnerability to information disorders. Factors such as media policies, economic conditions and technological infrastructure play crucial roles. Media regulation and the extent of government control over the media can hinder or facilitate the spread of misinformation, while lax regulation and lack of accountability can lead to higher susceptibility (McNair, 2017). Economic conditions also affect the media environment, with economically struggling media outlets prioritizing sensationalism over accuracy to attract more viewers and advertisers (Vargo et al., 2018).

Technological infrastructure, including the availability and quality of internet access, affects how information is disseminated and consumed; regions with limited access to reliable Internet services may find informal and potentially unreliable sources more credible (Regnedda and Muschert, 2013). Moreover, workplace policies and practices that favor or ignore media literacy training affect workers' ability to critically evaluate information (Southwell and Thorson, 2015).

d. Macrosystem

The macrosystem includes the broader cultural and societal context, such as cultural beliefs, political climate and social norms.

Macrosystem elements such as culture and values significantly influence an individual's vulnerability to information disorders such as misinformation and disinformation. Cultural norms and societal values shape the ways in which information is interpreted and accepted. For example, cultures that prioritize collective beliefs and social cohesion discourage dissenting views, thus strengthening echo chambers and facilitating the spread of misinformation (Hofstede, 2001). Moreover, societal values that emphasize freedom of expression without adequate media literacy training lead to uncritical acceptance of misinformation (Bode and Vraga, 2015). In societies where trust in traditional media and institutions is low, people are more likely to turn to alternative sources that may not be reliable (Newman et al., 2018). Moreover, cultural attitudes towards authority and expertise influence how information from experts is received and whether it is critically evaluated or accepted at face value (Lewandowsky et al., 2017).

Political climate as a macrosystem element profoundly affects vulnerability to information disorders, particularly through phenomena such as populism, polarization and the rise of the radical right. Populist movements often use misinformation to appeal to emotions and present themselves as defenders of “the people” against corrupt elites, thus spreading false narratives to gain support (Mudde and Kaltwasser, 2017). Political polarization exacerbates this problem by creating deeply divided social groups that are more inclined to accept information that confirms their own biases and ignore opposing viewpoints, feeding echo chambers where misinformation thrives (Prior, 2013). The rise of the radical right, with its often conspiratorial and anti-establishment rhetoric, further reinforces the spread of disinformation as these groups often use social media and other platforms to spread unsubstantiated claims and sow distrust of mainstream media and institutions (Wodak, 2015). This environment not only increases the spread of misinformation, but also undermines efforts to correct it, as individuals become more entrenched in their ideological positions (Sunstein, 2018).

Information disorders have serious impacts not only on individuals but also on social structures. In particular, misinformation spread on ideological, ethnic, cultural and religious issues deepens social polarization. Therefore, it is important

to understand the social impacts of information disorders and create collective responses in this context when developing intervention strategies. One of the objectives of the project is to build resilience at the societal level as well as individual resilience. In a polarized environment, individuals become closed to different views and are only willing to follow channels/platforms that are compatible with them, which can make interaction between differences difficult. It is an important question mark as to what spaces are created and measures are taken to ensure that different views can come together and produce true information and access to information sources. For this reason, intervention tools that enable both knowledge producers in the media field and users who consume information to play a role in building resilience against information disorders are also considered.

e. Chronosystem

The chronosystem encompasses the time dimension, reflecting changes in the environment over time.

Chronosystem events, such as the evolution of the media system, significantly influence vulnerability to information disorders. The shift from traditional to digital and social media has transformed the way information is produced, distributed and consumed, often accelerating the spread of misinformation and disinformation (Bennett and Livingston, 2018). The rise of social media platforms has democratized the dissemination of information but has also created environments where misinformation can quickly go viral due to algorithmic amplification and lack of gatekeeping (Vosoughi et al., 2018). Historical shifts, such as the decline of local news organizations and consolidation of media ownership, have reduced the availability of credible, community-oriented journalism, making it harder for individuals to access true information (Napoli, 2019). In addition, the evolution of the media landscape has witnessed an increase in partisan news sources that cater to specific ideological audiences, further reinforcing polarization and echo chambers (Stroud, 2010).

Chronosystem events such as multiple crises, pandemics and war significantly increase vulnerability to information disorders (Sellnow and Seeger, 2013). These events create high-stress environments where fear, uncertainty and urgent demand for information are common, making individuals more susceptible to misinformation and disinformation. During crises, the rapid spread of misinformation exploits people's anxieties and fills information gaps created by

the rapid and often chaotic flow of events (Pennycook and Rand, 2019). For example, the COVID-19 pandemic saw a surge in health misinformation due to conflicting reports and the public's urgent need for guidance, even giving rise to the term “infodemic”, which refers to an epidemic of misinformation (Zarocostas, 2020).

Wars and conflicts similarly create favorable environments for disinformation, as the parties involved can resort to propaganda to manipulate perceptions and influence public opinion (Bakir and McStay, 2018). Multiple crises involving multiple, interconnected crises exacerbate these vulnerabilities by challenging traditional fact-checking mechanisms and increasing the difficulty of discerning credible information amidst a deluge of conflicting reports (Dupont, 2020).

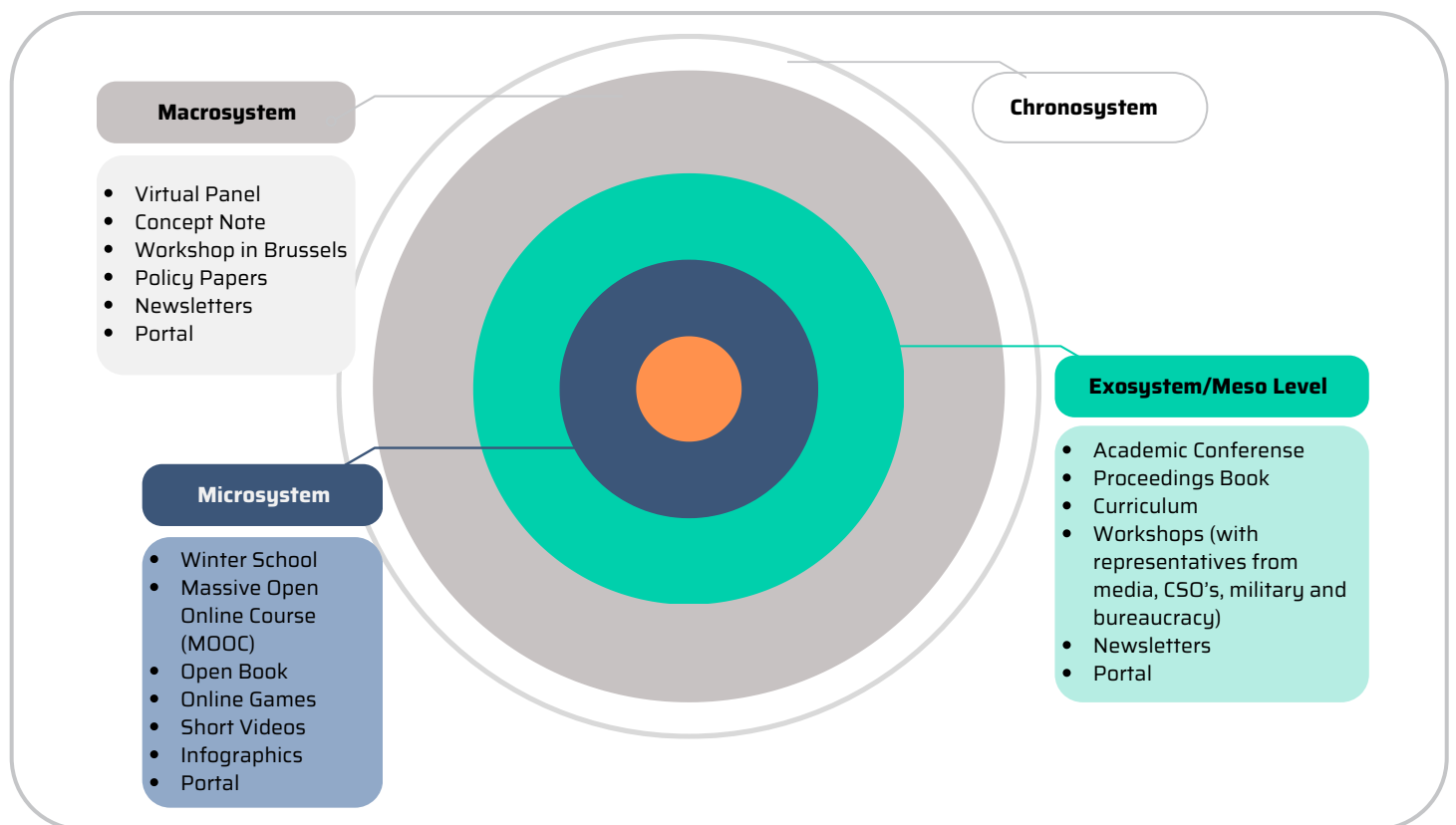


Figure 4: Bioecological Model and Our Interventions

At the individual level, our primary goal is to raise awareness about information disorders and empower individuals against them. A secondary goal is to transform them into change agents who disseminate their information and contribute to the resilience of their primary networks, such as family and peers. We will carry out a series of activities to achieve these goals.

At the individual level, our primary goal is to raise awareness about information disorders and empower individuals against them. One of the key challenges at the individual level is that individuals lack the desire to access true information. Individuals' orientation towards information that reinforces their existing beliefs and allows them to be in the area where they feel comfortable may facilitate the spread of information disorders. For this reason, within the scope of the project, it is thought that raising awareness of individuals about information disorders through various tools in individual interventions, encouraging them to access true information, enabling them to critically evaluate information, and taking an active role in accessing true information by providing verification tools will be useful in combating this challenge. A secondary goal is to transform them into change agents who disseminate their information and contribute to the resilience of their primary networks, such as family and peers. We will carry out a series of activities to achieve these goals.

Individual Level:

- **WINTER SCHOOL:** We will organize a Winter School in Istanbul for 40 participants. This Winter School will last four days and will consist of six sessions and two workshops. The Winter School will include lectures on different types of information disorders, methods to reduce them, countries' efforts, international and supranational organizations and tools to reduce information disorders. The workshops will consist of interactive games and simulations related to information disorders.
- **MOOC:** We will also prepare a MOOC (Massive Open Online Course) that anyone can access for free. Those who complete the MOOC will receive an official certificate from Istanbul Bilgi University. The MOOC will consist of video lectures, readings, quizzes and tests, and will include lectures related to the topics we focus on at the Winter School. Our team has already developed some MOOCs on this topic such as "[Mitigating Polarization](#)", "[Infodemics Training](#)" and "[Migration Awareness Training](#)". All these online courses attracted more than a thousand of users in two years and showed us the potential of MOOCs.

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- **OPEN BOOK:** We will also prepare an open book on the topic. This open book will be published and available for free download. Our previous open books “A Guide to Social Research Methods: Requirements, Limits and Interpretations” (Erdoğan and Uyan-Semerçi, 2021) and “Infodemic and Information Disorders: Concepts, Causes and Solutions” (Erdoğan et al., 2022) have attracted thousands of users. Our open book will enable interested users to gain a deeper understanding of the topic.
 - **ONLINE GAMES:** As part of our project, we will create three online games to attract users to our portal. These games will contribute to users' awareness and knowledge of the topic. Gamified interventions are highly successful in raising awareness and leading to behavioral change (Basol et al., 2020). We developed three different games as part of our [TurkuazLab Project](#) and these games attracted more than 9000 unique users in two years.
 - **SHORT VIDEOS:** We will prepare short videos to be disseminated through social media channels. These videos will aim to raise awareness about the topic and attract users to our portal and MOOC. In our previous projects, we have observed that short videos communicate effectively.
 - **INFOGRAPHICS:** We will also prepare infographics on the topic to circulate on social media. In our [RMDEDU Project](#), we have prepared several infographics that have become popular and we expect to increase the awareness of the target audience and attract new users to our portal.
 - **PORTAL:** We set up a portal which will be an entry and meeting point for interested users. This portal will include podcasts, videos, links to current academic and non-academic work, and other organizations interested in the issue.

Meso Level:

- **CONFERENCE:** At the meso level, we will organize an international academic conference to attract interested scholars. This academic conference will help us build a network among academics and share the latest developments on the topic.
- **PROCEEDINGS:** The proceedings of the academic conference will be published in English. This book will be available on our portal and will provide information on the latest work in the field.
- **CURRICULUM:** As part of our meso-level intervention, we will prepare a standardized curriculum for use in secondary and higher education, with readings, videos and other components. This curriculum will help disseminate our information on the topic.
- **WORKSHOPS:** We will organize three workshops with representatives of the media, civil society organizations, the military and the bureaucracy. Each workshop will help us raise awareness and empower these target groups. We also expect these participants to become change agents directly involved in the fight against information disorders. Another outcome of these workshops is to create a network of interested individuals. We will also invite participants to become a user of our MOOC and use our materials in their in-house trainings in their own organizations.
- **NEWSLETTER:** During our project, we will prepare and send bi-monthly newsletters to our subscribers. These newsletters will provide up-to-date information on the topic and attract them to our portal and MOOC.

Macro Level:

- **WORKSHOP IN BRUSSELS:** At the macro level, we will aim to reach policy makers in the EU, NATO and other relevant stakeholders. Therefore, we will organize a workshop in Brussels to share our experiences on the topic and create a discussion platform for more effective efforts to improve societal cognitive resilience. Another aim of this workshop is to create a network of relevant individuals and organizations.
- **POLICY PAPERS:** At this level, we will produce seven policy papers addressing different aspects of the problem of information disorders. These policy papers, written in English, will be available on our portal and we will also distribute them to our network.

In order to ensure that the impact of the project can be measured within the framework of the interventions shared above, it is planned to set relevant targets for the interventions designed, to ensure that these targets are monitored in the process and to implement them regularly with the right methods. Finally, it is of critical importance that the interventions to be developed within the scope of the project are in line with human rights principles. Therefore, the project will take into account fundamental issues such as the protection of individuals' privacy, freedom of expression, data security, and the right to access information.

This concept note has been finalized with the valuable contributions of experts working on information disorders in different disciplines who participated in the virtual roundtable meeting held on October 2, 2024. As RESAID team, we would like to thank all participants for their contributions.

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