



## ***Detection of Conspiracy Narratives Using the Information Marker Method. A Study in the Methodology and Philosophy of Information***



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**Abstract:** The article will present the main assumptions of the information marker method, which can be used for recognizing the characteristics of conspiracy theories conveyed in the content of informational messages – texts, statements, recordings, etc. The proposed method draws on the conspiracy thinking model CONSPIR (Lewandowsky & Cook 2020) and has a practical component. However, the technique presented in the paper constitutes a modification and addition to the original proposal. First, it deals with a problem frame that is different from that of CONSPIR, since it is applied to formulated information messages. Hence the marker method is not an instrument for analyzing cognitive attitudes or patterns of conspiracy thinking. Secondly, the proposed tool is profiled in terms of content focused on scientific issues (mainly pertaining to the natural and applied sciences). Third, given the characteristics and structure of the communication under consideration, I replace the widely used term “conspiracy theory” with the more universal concept of “conspiracy narrative,” which seems to reflect more adequately the specific features of such information messages. Fourth, given the more specific purpose of the marker method compared to that of the CONSPIR model, I will try (where possible) to refrain from citing specific examples of conspiracy narratives, referring to singular events and personal examples. Consequently, to use a phrase widely used in methodology, the presented technique can be applied to *all cases of a given type*.

**Keywords:** Conspiracy narratives; marker method-based detection of conspiracy narratives; CONSPIR Model; information ethics.

### **I. The CONSPIR Model as an Inspiration for the Information Marker Method**

In their proposal, S. Lewandowsky and J. Cook start from a model of two averaged and distinct cognitive attitudes, namely conventional thinking and conspiracy<sup>1</sup> thinking. The first attitude is characterized by, among other things: justified skepticism, reacting to counterevidence (including a readiness to revise views), and seeking consistent explanations and descriptions. This conventional way of thinking can be used to identify

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<sup>1</sup> The notion of conspiracy theory has become widespread in scientific discourse due to K. R. Popper (1945).

actual conspiracies, such as the manipulation of research results for market purposes or instances of price collusion<sup>2</sup>. According to the authors, the second attitude, conspiracy thinking, is based primarily on extreme distrust (usually of a particular source), resistance to counter-evidence, and self-contradiction. This catalog of characteristics leads to a set of seven specific cognitive canons. The first, **Contradictory**, means the ability to simultaneously accept contradictory views and assessments. The second – **Overriding Suspicion** – alludes to nihilistic and cognitively destructive skepticism. The third, **Nefarious Intent**, implies a negative assessment of the motives driving the authors of the alleged conspiracy. The next element is captured by the phrase **Something Must Be Wrong**. There is a constant tendency of suspicion on the part of the subject evaluating the analyzed explanation. **Persecuted Victim**, on the other hand, expresses the subjective belief in their belonging to a group defending an inconvenient truth. In such situations, the subject may perceive themselves both as a victim (e.g., of exclusion or ridicule) and as a hero, i.e., a proclaimer of truthful views. Another canon is the attitude of being **Immune to Evidence**. This is combined with the *self-sealing* mechanism, i.e., the tendency to respond to counterevidence with an increased readiness to defend the position taken. Finally, **Re-interpreting Randomness** means the subject espousing the conspiracy narrative refuses to accept that random events occur, and is thoroughly convinced that the supposed conspiracies are complex in nature.

## II. Marking Information: Specificity and Purpose

The information marker method is an extension and transformation of the CONSPIR model. This model was used as a starting point for the creation of a methodological instrument for detecting the features (e.g., repeated phrases or specific lines of argumentation) found in messages bearing the hallmarks of conspiracy narratives, rather than for identifying the specific cognitive attitudes associated with such phenomena. In order to create such an instrument, however, the problem frame had to be changed. This entailed moving from the subject level, where the cognitive behavior of individuals or groups is evaluated, to the object level, where the object of analysis is the product of such cognitive activity: the information message. The marker method requires not only a change of the problem frame but also a reformulation (detailing and profiling) of the initial model and its supplementation with additional elements. Features typical of conspiracy narratives (*information markers*) can be grouped into three main categories. The first is related to the purpose of the CONSPIR model and concerns the identifiable content, as well as the cognitive and communication style of the authors. The second has methodological and semantic dimensions and pertains to the specific nature of the

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<sup>2</sup> Similar actions can result in specific legislative measures. A well-known example concerning economic issues is the Sherman Antitrust Act of 1890 (available online at: <https://www.archives.gov/milestone-documents/sherman-anti-trust-act>).

argumentation found in conspiracy narratives and their terminological layer. The third category, which is normative in nature, essentially involves attributing a specific moral intention to the parties in the dispute.

In the following parts of the text, I will present a list of characteristics that mark messages which disseminate conspiracy content. As I mentioned earlier, in my proposal, instead of the term *conspiracy theory* (for more on the meaning and evolution of this term, see Axelsen & Emberland 2020; Brotherton 2013; Byford 2011; Furnham 2013; Keeley 1999; Zdybel 2002), I will use the term *conspiracy narrative*. The term conspiracy narrative as employed here aligns with the suggestions of Sunstein & Vermeule (Sunstein & Vermeule 2009, 202–227) and F. Czech (Czech 2015, 12–14)<sup>3</sup>. Therefore, I will interpret conspiracy narratives concerning scientific issues as structured descriptions of specific phenomena and/or their class, along with associated explanations, which articulate the conviction that the research outcomes and procedures of so-called official (academic) science – and the information used, formulated and accepted within this domain – manipulate, falsify and distort the truth about the phenomena under investigation. The goals of these activities are held to be hidden as a result of the conscious actions of the conspiring groups. Conspiracy narratives focused on science primarily function in two of the four conspiracy narrative types identified by F. Czech, namely, medium-range narratives (sector- or industry-specific – in which a group is identified as having taken control over an organization or sphere of life) and detailed narratives (related to specific incidents/phenomena). The effect of the generalized cognitive attitude associated with conspiracy theory thinking may be the acceptance of the so-called conspiracy narrative scheme (Czech 2015, 131–154). The notion of conspiracy narrative of interest to me, however, inherits one of the characteristics commonly attributed to *conspiracy theory* from the colloquial understanding of the concept,<sup>4</sup> namely falsity or at least unverifiability. Such narratives are also – again referring to the findings of F. Czech – action-oriented, due to their systemic nature and focus on selected cases (specific causal relationships, disease entities, etc.).

### III. Marker 1: Extreme Skepticism

The first marker is associated with a clear – and usually explicitly articulated – tendency to excessive suspicion (that is unjustified on the basis of verifiable and intersubjectively communicable criteria). Skepticism thus understood refers to *official explanations* and accounts (e.g., reports from the authorities) and stems not so much from

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<sup>3</sup> The author suggests a more detailed distinction between conspiracy narratives and metanarratives. Due to the narrow focus of this article, I will only use the first of these concepts in the sense provided in the main text.

<sup>4</sup> It seems that the concept of conspiracy theory, can be used in the sciences in which the methodological requirements, placed before claims having the status of a theory, are less restrictive than, for example, in the natural sciences.

perceiving erroneous or debatable (e.g., low probability) elements in the proposition competing with the conspiracy narrative, but rather from the cognitive attitude adopted. The argumentative elements present in the content of the examined messages, which undermine competing positions, seem to be derived from the feature marked in the CONSPIR model by the phrase *Something must be wrong*. In the case of the message under examination (an article, a speech, audio material, etc.), Marker 1 basically indicates comprehensive criticism of the so-called *official* communications and the findings reported therein (e.g., the result of an investigation, an expert opinion, a laboratory report), both because of their content (inconsistency with the explanation being put forward in the conspiracy narrative) and, above all, their source (official sources, official science, government sources, etc.). A view that conflicts with the accepted conspiracy narrative is treated as the result of collusion and complicity, and its authors (e.g., experts, the academic community) are viewed as being involved in the conspiracy. Interestingly, and as the authors of the CONSPIR model point out, even a successful debunking of the conspiracy narrative does not usually result in acceptance of the “victorious” explanation. This is because an attitude of programmatic distrust of official sources prevails. Even when the conspiracy narrative “X” (e.g., a thesis about the cause of a medical event) does not stand up to confrontation with the so-called official explanation (e.g., an outcome obtained in accordance with clinical trial procedures), proponents of the debunked narrative are still left with the belief that *something must be wrong*. This attitude may result in the adoption of yet another conspiracy narrative or an attempt to salvage the previously accepted one by introducing additional assumptions that protect the initial thesis.

#### **IV. Marker 2: Cognitive Impregnation**

Cognitive impregnation is a kind of “evidence resistance.” It results from a combination of a specific cognitive styles (see Marker 1) with which it appears to be positively correlated, for instance attitudes characterized by non-standard “logic” or reasoning (e.g., simultaneous acceptance of contradictory explanations – Marker 4) and/or the need for cognitive closure. The effects of combining these tendencies are visible in the content of informational messages, or in records of disputes and discussions (e.g., forum posts), which are focused on emotionally charged and particularly important issues, such as medical issues. Cognitive impregnation involves non-rational resistance to counterevidence. In such situations, the reaction of a proponent of the questioned conspiracy narrative to counterarguments is not to put forward a more detailed analysis, rejection, or disconfirmation of the espoused narrative, but rather involves discrediting the counter-arguments (often using ad hominem attacks and other techniques that are unacceptable in scientific methodology). Another solution is the formulation of various

auxiliary hypotheses intended to protect the espoused narrative<sup>5</sup>. However, this weakens the probability of the initial conspiracy thesis, both due to the cognitive value of the formulated auxiliary hypotheses (which are increasingly complex, less and less probable) and the impact on the global structure of the argumentation (the conjunction of an increasing number of elements, overly complex argumentative sequences, etc.). Counter-evidence is usually interpreted as being part of a broader conspiracy, and this is often explicitly communicated in the narrative layer of the message<sup>6</sup>. Interestingly, according to proponents of conspiracy thinking, the greater the strength of the counter-evidence presented, the greater the strength of the alleged conspiracy (Lewandowsky & Cook 2020, 7). The stronger the tone of the counterarguments, the more effort is invested in defending the challenged conspiracy narrative<sup>7</sup>. This is reflected in the evolution of specific narratives (e.g., in the aforementioned records of discussions hosted in forums promoting conspiracy narratives). This mechanism coincides with a feature that the CONSPIR model refers to as “self-sealing.”

### V. Marker 3: Hypercriticism

Another marker is epistemic in nature and is the result of an individual or group's unique cognitive culture. It also refers to a specific style (“logic”) of formulating arguments. The consequences of both elements operating can often be found in communications promoting conspiracy narratives. Hypercriticism tends to be combined with Marker 1, i.e., extreme, unjustified skepticism. This method of undermining the arguments of the opposing side (such as official science) is comprehensive. It may concern selected elements of the communication (e.g., description of the result of an experiment) or the entirety of a given concept. In extreme cases, it refers, in the existential dimension, to the factual layer. Examples of this tendency are particularly destructive positions in the context of scientific

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<sup>5</sup> However, this is not about the mechanisms found in the methodological conception put forward by I. Lakatos, where the expansion of the set of auxiliary hypotheses serves – in the context of science – rational mechanisms for protecting the core of a research program found in science; it is more like (...) degenerating research programs. In the case of progressive programs, the auxiliary set protects concepts that allow for the discovery of new facts and the generation of non-trivial predictions. In the case of conspiracy narratives, it is difficult to justify explanations and predictions from a methodological perspective. Supposed predictions are usually *ex post* statements, also involving hindsight bias. Protective hypotheses are also typically scientifically unverifiable. For example, phenomena with a disputed ontological status are explained by reference to other phenomena and regularities, often incomprehensible or raising doubts about their existence. Various versions of pseudoscientific paleo-astronautical concepts are a generalized example of such narratives.

<sup>6</sup> We can illustrate Markers I and II with a hypothetical scenario: a well-known politician drowns while having a bath. A narrative emerges suggesting he was the victim of a crime (he had many enemies, possessed sensitive information, etc.). After conducting investigative activities, the relevant authorities confirm it was an accidental death. The conspiracy narrative supporter concludes that the prosecution and the police are part of a larger conspiracy.

<sup>7</sup> This is an example of circular reasoning, in which evidence against a thesis is interpreted as confirming it.

issues: negationist attitudes, including historical negationism<sup>8</sup> (Bevernage 2022, 44–59), scientific negationism (e.g., HIV/AIDS denialism; see Kalichman 2014, 3–22) or climate denialism (Chavalarias, Bouchaud, Chomel, & Panahi 2023), where denialism targets the very fact of the occurrence of a certain phenomenon (e.g., a war crime) or confirmed regularities (e.g., the correlation between human activity and climate warming). In similar situations, communication that contradicts conspiracy narratives is identified as the work of a particular lobby (mainstream, official science), and such allegations enable the use of lines of argumentation that draw on overly simplified and polarizing thinking patterns based on “us vs. them” framing.

Messages depreciating scientific findings are not restricted to the widespread use of denialist practices or the rejection of research results (the factual level and *ad rem* criticism). Another commonly used informational tactic is to question the competence of opponents (*ad hominem* criticism). This is reflected in the content of the analysed communications: the questioning of the credibility of opponents can take on a comprehensive character, focused on both their substantive credibility (the epistemic level) and moral credibility (the normative level). Hypercriticism thus conceived refers not only to specific scientific arguments, but also to the level of credibility of institutions, and consequently, to methodological traditions and science as a distinguished cognitive authority. An example of an argumentation in line with Marker III might take the following form: in a text criticizing a scientific explanation of a phenomenon, elements incompatible with a given conspiracy narrative are rejected. Such elements (e.g., results from the field of academic medicine) are deemed to be the result of a conspiracy, and substantive (e.g., undermining competence) and moral accusations (e.g., alleged links to commercial companies) are made against their proponents. The very occurrence of the phenomenon (e.g., a specific cause-effect relationship) is also questioned.

## **VI. Marker 4: Acceptance of Internal Contradiction**

Acceptance of contradiction is another of the easily identifiable markers found in conspiracy narratives. It can occur at two levels: a) specific – within a narrative that deals with a particular issue (e.g., a disease entity), and b) general, i.e., within a sequence of narratives that constitute a specific cognitive worldview. Incoherence, or even blatant contradiction, is often not recognized by proponents of conspiracy narratives as an obstacle to formulating an explanation that is coherent and reliable (this thesis is supported by the results of research conducted by social psychologists (Wood, Douglas, & Sutton 2012). This is one of the reasons why it seems advisable to replace the term “theory” with the less restrictive term “narrative,” especially in cases where the proposed explanations deal with scientific issues. The condition of internal consistency is one of

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<sup>8</sup> Denialist circles sometimes try to present their actions as examples of methodological revisionism. However, this is an absolutely illegitimate and scientifically unjustified procedure.

the essential components of claims that are recognized as having the status of scientific theories. In conspiracy narratives, in contrast, this requirement is not generally fulfilled. In such cases it is not a matter of trying to explain a phenomenon through the use of a set of competing but testable hypotheses, subject to the procedures of verification, confirmation and falsification,<sup>9</sup> but rather the uncritical acceptance of often mutually exclusive claims. Interestingly, the lack of coherence between the different versions of the “theory,” does not seem to weaken the confidence of those who accept this type of cognitive attitude in the conspiracy narrative – in its descriptive, exploratory and predictive layers. Marker 4 also takes another, more relational form. First and foremost, it can be identified in the form of inconsistency, exemplified by the aforementioned acceptance of contradictory elements occurring within a single narrative. At the higher level of ‘clustering’ (Marker 8), it represents approval of the entire chain of conspiracy narratives, the individual elements of which are often incompatible (Wood, Douglas, & Sutton 2012). Nevertheless, a set of mutually exclusive individual descriptions can function as a consistent and acceptable description of reality<sup>10</sup>.

## VII. Marker 5: Moral Intention

An extremely common feature of conspiracy narratives is the attribution of unambiguous moral motivations to the disputing parties. The intentions of the opposing group behind the conspiracy (e.g., the official science, the mainstream) are by definition evil, and result in manipulative communications aimed at hiding the truth. This framing explains the occurrence of Marker III and the use of the polarizing *us vs. them* cognitive mechanism, which oversimplifies and distorts the description of reality<sup>11</sup>. It is clear that conspiracies, collusion, and implicit agreements do in fact occur in our social space (including within institutional science), as evidenced by historical examples. Nevertheless, some of these occurrences may be driven by noble or at least morally neutral motivations<sup>12</sup>. However, for communication bearing the hallmarks of conspiracy narratives, the intention behind such agreements is identified as evil in every case. Noticeably, this tendency is symmetrical. Negative intentions on the opposing side are mirrored by the conviction that one’s own group always acts solely from noble motives, which is often observed in various forms of questioning of medical (e.g., epidemiological) results and recommendations. It is necessary to add that in extreme cases (e.g., movements opposed to public health and

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9 These methodological procedures apply mainly to the natural sciences. In the case of the social sciences, they have limited applicability (Keeley 2015).

10 It is not a matter of planned circumventing the rules of classical logic – such as the principle of the excluded middle – by using paraconsistent logics, but of openly accepting contradictory descriptions and explanations.

11 In similar arguments, large quantifications are commonly used (*all, the whole system, everyone, etc.*).

12 An example of such motivations could be the concealment by the family of some information about the patient’s illness – in order to improve the patient’s psychological well-being.

social measures) there may be justifications, even within the content of communications, for acts of violence against healthcare professionals or the administration<sup>13</sup>. Such content is particularly prevalent in online communication.

### **VIII. Marker 6: Extreme Determinism**

Another marker is related to the type of cognitive attitude and way of perceiving events which Cook and Lewandowski described as the “reinterpretation of randomness”. It would seem that here we are even dealing with an over-interpretation of randomness, and thus an unjustified simplification of explanatory schemes, as well as a kind of fetishization of the causal mechanism. With this cognitive attitude, stochastic factors are dismissed, the randomness (and separability) of events is questioned, the existence of different probabilities is challenged, and the ability to draw conclusions using incomplete information is undermined. In the frameworks characteristic of conspiracy narratives, random phenomena are almost unheard of, cause-effect sequences are unambiguous and tend to be ostensibly obvious, and explanations are simple and unambiguous – for example, they result from moral intentions (Marker 5). Thus, determinism is complete and unconditional, and lack of knowledge about all relevant elements of the situation under consideration does not weaken the belief in the truth of the conspiracy narrative. In similar situations, information deficits are supplemented with abundant references to universal mechanisms and explanatory categories, universal forces (such as ethnic groups, organizations, economic motives) that are constantly present within a given set of narratives. Contingent elements or information gaps are also sometimes seen as confirming the accepted explanation<sup>14</sup>. Elementary events are described in terms of a larger whole – as necessary elements, linked to other components. Examples of such networking can be seen in the content of conspiracy communications where individual pieces of the cognitive puzzle are described as interconnected, necessary and mutually explanatory. Another interesting form of Marker 6 is the unwarranted linking of events that are unrelated but which, for example, occurred at the same time or took a similar course. This theme, which explains the unusually wide range of explanations proposed by conspiracy narratives, was pointed out by B. L. Keeley, among others.

### **IX. Marker 7: Besieged Fortress Syndrome**

A classic motif in conspiracy narratives is to describe yourself or your group as victimized (discriminated against). This contributes to the consolidation of beliefs and

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<sup>13</sup> It seems that projection mechanisms may be of great importance in cases of this kind (Douglas & Sutton 2011).

<sup>14</sup> This can be identified, for example, in conspiracy narratives about transportation disasters, where often, for example, the fact that a person does not appear on board a means of transportation is interpreted as evidence of his participation in a conspiracy or the desire of conspirators to protect him or her.



encourages rallying around the proclaimed narrative. Subjectively, it also helps to explain criticism coming from opponents, which is usually treated as an excessive response and unjustified attack. Such references are abundantly represented in the content of communications defined as conspiracy narratives. In the analysed scheme, supporters of the conspiracy narrative can play a dual role. They are both members of a minority defending the truth and freedom (the heroic attitude) as well as victims who are coming under attack from opponents (the mainstream, official authorities, academics). Examples of this attitude are visible in the content of numerous conspiracy narratives, for example in descriptions of alleged harassment faced by their supporters. Often also in descriptions identifying alleged enemies (see narratives opposed to public health measures or pseudoscientific conceptions of geographical issues<sup>15</sup>). Marker 7 is connected with Marker 5, because defending one's own position (as true, as dangerous for certain forces, as combatted through the use of immoral means) is also considered in ethical terms and can be embedded in the polarizing *us vs. them* scheme.

### **X. Marker 8: Information Clustering**

Most of the presented markers were based on the Lewandowski and Cook model. At this point, however, I propose to introduce a feature that goes beyond the framework of the CONSPIR model. Due to the unique aspects of this marker, I will refer to it as "information clustering." Marker 8 refers not so much to the content of the message itself as to the specific nature of the sources in which it is deposited and distributed<sup>16</sup>. The analysis of individual sources (news channels, internet platforms, collections of films or thematic podcasts) in which we find conspiracy narratives shows that messages of this type are published in groups, in larger sets, or information clusters. Conspiracy channels collect multiple messages of a similar kind. In my opinion, this regularity can be attributed to several fundamental reasons, among which cognitive factors play a key role (cognitive profile) (more on the psychology of conspiracy thinking in e.g., Grzesiak-Feldman 2016), as does the fact that they are often based on simplified, repetitive mechanisms (e.g., the agency of a given ethnic group); and explanations of this kind, appearing in clusters, are mutually reinforcing, which helps in the construction of a generalized, multi-faceted view of reality<sup>17</sup>. The tendency to cluster is extremely useful in the process of fact-checking and assessing the value of the messages under examination. However, as I mentioned, unlike other markers, it is rather used to evaluate sources. Clustering thus understood

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<sup>15</sup> In the latter case, references to entire organizations, often transnational (e.g., NASA or ESA), are particularly prominent.

<sup>16</sup> To a limited extent, the tendency to group conspiracy narratives together can be compared to the process of accumulating conspiracy theories described by D. Pipes (1997).

<sup>17</sup> In this process, issues such as the specifics of the communication process considered, for example, in the context of the *message-centered/meaning-centered* dichotomy (more extensively in Boruszewski 2017) or the problem of *meaning lag* (Klapp 1982) can also be important.

can take two basic forms: a) personalized, in which conspiracy content is embedded in the channels or publications of a specific person (or community), and b) a source – a channel that predominantly or exclusively amasses conspiracy narratives.

## **XI. Universal Marker: Word Clusters**

Finally, I would like to point out an additional feature that is useful in identifying conspiracy narratives. However, it does not constitute a single marker, but is rather something like a generalized semantic marker. There are certain phrases and expressions that are commonly used in conspiracy narratives. Of course, the fact that phrase X appears in a given communication does not automatically mean that we are dealing with a conspiracy narrative. These are expressions that are commonly used in everyday language. However, they are not typical of the language of science (or even the language of popular science literature), and this circumstance may be useful in the process of identifying conspiracy narratives. Furthermore, the occurrence of specific phraseology or semantic distortions can be utilized in the development of algorithms for detecting potential conspiracy narratives and the fake news that constructs them (more on this topic in Aldawiri & Alwahedi 2018). At this point, it is worth recalling examples of selected, commonly encountered (in different variations) phrases related to conspiracy narratives. Interestingly, many of them are closely associated with specific information markers. For example, with Markers 1 and 2 we can commonly find phrases like: *Something has to be wrong; official version; official science; mainstream sources; I will never agree to (...); connect the dots; think for yourself*. Marker 3 is associated with constructions like: *What official sources say is untrue or doubtful or manipulated; someone wants us to think that; someone has an interest in it* (etc.). Marker 4 may be correlated with formulas weakening responsibility for a statement, such as: *I am only asking questions*; or relativizing formulas: *It is just an interpretation; everyone has their own truth; scientists do not know everything*. Marker 5 is commonly used in conjunction with normative terms like *fraud; abuse; intent to harm; desire for control; the interest of a lobby or a specific group*, etc. Marker 6 is associated with phrases like: *someone is hiding information on this topic; it could not have been a coincidence; such cases do not exist; these things do not happen; everything is connected*. Marker 7 is marked by expressions indicating that the mentioned *facts, knowledge, information, or views* are *inconvenient* – and even *dangerous* – for *certain or unknown, or known powers being at work*. Another linguistic indicator of the conspiracy narratives may be epithets, i.e., stigmatizing terms (e.g., *killers in lab coats, fools with academic titles*), the use of which is considered a classic propaganda trick. Marker 8, for obvious reasons, does not associate with characteristic phrases, because it concerns not so much the content level of the messages as the technical dimension related to the management of information sources.

## Conclusion

The presented list of information markers is obviously not a closed catalog,<sup>18</sup> due to factors such as the ongoing development of information technology and the emergence of new forms of manipulation, as exemplified by the relatively new phenomenon of deep fakes. Of course, recognizing a specific marker in an informational message does not guarantee that the latter is embedded in a conspiracy narrative. However, such a fact may and should arouse our reasonable suspicion and lead to specific cognitive and communicative responses. Firstly, we should refrain from disseminating (spreading) a suspicious message. Secondly, we should conduct a more thorough analysis of its content (Markers 1 to 7) and source (Marker 8), which is greatly helped by the use of fact-checking techniques.

The problem of conspiracy narratives regarding scientific issues is a key challenge for current research in disciplines such as philosophy of information, methodology of science and epistemology, information ethics, communication ethics, and applied ethics. It should not be overlooked that information is extracted, processed and used as research data in a number of studies and experiments that depend on the validity of such data. The reflections presented above deal only with a limited segment of this vast and multifaceted issues. No less acute in this context would be the need to adapt the educational methods to the specificity of contemporary patterns of scientific knowledge transfer used in education. I refer here primarily to the development and provision to students of an instrumentarium (tools and techniques) that will support them in their critical ability to identify conspiracy narratives, help them to verify the contents, select information versus misinformation and use information correctly in the social and scientific circulation of knowledge. Setting up such a toolbox itself first requires research and testing. Such research is a priority in the face of the uncontrolled growth of conspiracy narratives. In doing so, it presupposes the ability to differentiate a set of concepts making it possible to categorize conspiracy narratives. A further stage of research on this topic should focus on refining such exemplary information techniques as fact-checking and prebunking (defanging, respectively).

Finally, I would like to express my subjective judgment regarding conspiracy narratives focused on science. It is closer to the critical views of Popper and Hofstadter, and rather distant from the more neutral assessments of Fenster or Clarke. Although in the so-called non-classical approaches there are views indicating certain benefits of the occurrence of conspiracy narratives (Clarke indicates as many as three such reasons in Clarke 2002), it seems that in the case of issues related to the natural and medical

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<sup>18</sup> For instance, in the main text I did not include (due to the nature of the other markers) the very important emotional factor. The appearance of emotional reactions in the recipient of a message can be a signal that we are dealing with content that is deliberately engineered for this purpose. The list of communication trigger mechanisms for emotional reactions, however, is so large (fake news, clickbait, disinformation, satirical messages, misinformation, etc.) that I did not find it advisable to include it in the catalog of markers dealing strictly with conspiracy narratives.

sciences, they are, in principle, rather undesirable. Firstly, they undermine trust in science (its methods, results, predictions, institutions). Secondly, they can create false worldviews that translate into practical decisions, e.g., choosing a type of therapy that is harmful to the patient, or climate policy decisions. Thirdly, they may result in a cognitive state resembling what P. Knight (Knight 2015, 173) described as *never-ending distrust* (see Marker 1 and Marker 3), which has a destructive impact on research quality and science, in cognitive, epistemological, and – last but not least – social terms.

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