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## The Canon of Certain Knowledge vis-à-vis the Reader's Contract in (Not Only) Scientific Texts

It is necessary once again to take the example of the emerald, which the countess lined with green tissue paper to make it seem more real.

(Białoszewski, 1989, p. 10)

### ABSTRACT

In the age of social media, the authority of science and scientism is no longer sufficient to gain the trust or attention of readers. Therefore, it seems necessary for the author of a text to establish a kind of pact with them – an individual pact that does not entirely dispel distrust toward scientific findings or institutions (as it seems impossible), but assumes that the text presented to the recipient will be the result of work conducted in the spirit of epistemological representation: devoid of emotional or political manipulation, honest, diligent, marked by effort, and driven by a desire to establish a connection with the reader. Hence the proposal to refer to this as a *scientific reference pact*, one element of which would be, for example, concern for reliable peer review, responsible choice of publication venue, but above all, the establishment of a relationship with the recipient through clear communication. The authors of the article adopted the strategy of bricolage, which is particularly useful for analyzing cultural texts within the interpretative paradigm. The text addresses the relationship between truth and fiction in the so-called non-fiction genres and in scientific texts; at the same time, it contributes to the discussion on the possibility of disseminating scientific knowledge, both in the context of the achievements of the philosophy of science and the widespread practice of knowledge construction by media users.

**KEYWORDS:** authority of science, truth, untruth, non-fiction, bricolage, interpretive paradigm, scientific reference pact

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## STRESZCZENIE

Kanon wiedzy pewnej wobec paktu czytelniczego w tekstach (nie tylko) naukowych

Trzeba brać jeszcze raz przykład ze szmaragdu, który hrabina podbiła zieloną bibułą, żeby wydawał się prawdziwszy

(Białoszewski, 1989, s. 10)

## STRESZCZENIE

W dobie mediów społecznościowych autorytet nauki i scjentyzmu nie wystarcza już do zdobycia zaufania czy uwagi czytelników. Dlatego konieczne wydaje się zawarcie przez autora tekstu swoistego paktu z nimi – paktu indywidualnego, który nie wyzbywa całkowicie nieufności wobec ustaleń czy instytucji naukowych (bo wydaje się to niemożliwe), ale zakłada, że tekst prezentowany odbiorcy będzie efektem pracy prowadzonej w duchu reprezentacji epistemologicznej: pozbawionej manipulacji emocjonalnej czy politycznej, uczciwej, sumiennej, naznaczonej wysiłkiem i kierowanej chęcią nawiązania więzi z czytelnikiem. Stąd propozycja określenia tego mianem naukowego paktu referencyjnego, którego jednym z elementów byłaby np. troska o rzetelną recenzję, odpowiedzialny wybór miejsca publikacji, ale przede wszystkim nawiązanie relacji z odbiorcą poprzez jasną komunikację. Autorzy artykułu przyjęli strategię *bricolage'u*, która jest szczególnie przydatna do analizy tekstów kultury w paradygmacie interpretatywnym. Tekst porusza kwestię relacji między prawdą a fikcją w tzw. gatunkach *non-fiction* oraz w tekstach naukowych; jednocześnie stanowi przyczynek do dyskusji na temat możliwości upowszechniania wiedzy naukowej, zarówno w kontekście dorobku filozofii nauki, jak i powszechnej praktyki konstruowania wiedzy przez użytkowników mediów.

**SŁOWA KLUCZE:** autorytet nauki, prawda, nieprawda, *non-fiction*, *bricolage*, paradygmat interpretacyjny, naukowy pakt odniesienia

## Introduction

The following text offers a preliminary reflection on truth, untruth, excess, and their interrelationships in the so-called non-fiction writing genres and in scientific texts. At the same time, it is a contribution to the broader discussion on dissemination of scientific knowledge – both in the context of the achievements of the philosophy of science, which has long questioned

the possibility of building a canon of certain knowledge for years, and in light of the prevalence of contemporary media practices, (the overwhelming part of the human community) constructing representations of knowledge about the world on the basis of their large-scale “discoveries” on the Internet. These discoveries, we should add, that often have nothing to do with scientific research methodology or even logic. In the era marked by the proliferation of fake news and the popularity of pseudoscientific beliefs – such as flat earth theories or distrust in conventional medicine – the authority of science is insufficient to engage the public and convince them of its validity. The hermeticism of scientific discourse not only contributes to its perceived exclusivity, but may also lead to its rejection, often with serious social consequences. In a time of growing public distrust, how can researchers earn the trust of readers, viewers, or listeners when sharing their findings and discoveries? How can we, faced with a flood of “experts” and self-styled advisors, convince the audiences to trust our conclusions, especially when our own theoretical-scientific workshop, our research reflexivity tells us to be far from cautious about them? How do we persist in sharing knowledge without ceding ground to those who spread falsehoods with emotional appeal and viral ease? And how do we strike a balance between the hermetic language of science and the need to connect with often skeptical, even hostile, audience?

Our attempt to articulate a few thoughts about truth, untruth, excess and their interrelationships stems from these questions. We drew inspiration from non-fiction genres and ask whether the strategies used in them can be applied to fostering relationships between authors and readers of scientific and popular science texts. The deliberate juxtaposition of these two domains is not meant to offer a ready formula for communicative success. Rather, it aims to highlight a challenge that requires attention. Reframing and metaphorizing this issue can open a new perspective on it, much like turning La Fontaine’s famous decanter in our hands to view it from different angles. When asked to settle a dispute, La Fontaine responded by describing how the debaters perceived the refraction of light in a crystal decanter. One saw green, another – sitting opposite – saw red, while La Fontaine himself saw yellow (Wańkiewicz, 2010, p. 25). They were all describing the same decanter, and each was correct in their own way. Only by embracing diverse viewpoints can we fully appreciate the richness of perspectives, stepping beyond the constraints of our own isolated outlook.

While working on the text, we adopted the research strategy of *bricolage*, which is particularly useful when analyzing cultural texts (including scientific and literary texts) within the interpretative paradigm. *Bricolage*, as a scientific research practice, involves drawing freely from a rich scientific and source repertoire, producing a patchwork, heterogeneous,

multicolored textual whole. The methodology of the researcher-*bricoleur*, inspired by the concept described in the anthropological and cultural works of Claude Lévy-Strauss (2001), allows for the combination of a variety of – also non-traditional – methods and techniques of scientific work. However, this does not imply chaos or randomness in the selection of solutions and material for analysis. The *bricoleur* makes choices with an awareness of the perspectives and tools adopted, with knowledge of the paradigms in which they are embedded (Denzin & Lincoln, 2014, pp. 27–28). His curiosity and eagerness to answer the research question is not directed by a rigid plan of action. Methodological pragmatists safeguard the coherence of research frameworks, but these can also act as constraints. Although *bricolage* provides an outlet for the scientist’s freedom, daring but creative imagination, it ultimately leads to actions that are paradoxically structured. The researcher-*bricoleur* seeks, and upon finding direction, selects theories, concepts and categories (Siwicki, 2021, pp. 42–45). One such inspiration and the starting point for the present considerations is the category of the referential pact (Lejeune, 2001), familiar in literary theory, and concluded anew each time between the creator of non-fiction literature and the reader. In fact, this category, explained in more detail later in this essay, extends its exploratory potential far beyond the domain of discourse of literary theory and proves useful also in generalized considerations of a meta-scientific nature. The value of the referential pact is especially evident in the hermeneutic approach to interpreting and understanding texts, particularly in light of Dilthey’s methodology, where hermeneutics is not only the art of interpretation, but also its epistemology – a broadly humanistic stance (Stelmach, 1989, p. 6).

### On distrust of the text

As Paul Ricoeur writes in his canonical work *Oneself as Another* (2001, p. 25), every narrative a person weaves about life (and isn’t science about life in all its manifestations?) is a combination of experience and its fabrication – an attempt to frame that experience within a structure of description. Thus, a text that aspires to reflect the truth about humanity and the world, according to the rules of *mimesis*, is inevitably accompanied by a tension between the desire to faithfully reconstruct reality and the author’s imagination and creative abilities. The rigor of writing “how it is” or “how it was” competes with the need to aestheticize the experience – to present it in an appealing, eye-catching form. As a result, the work finds itself caught between two separate orders – empirical and textual – each guided by its own, to some extent separate, logics and purposes. As Michał P. Markowski writes,

On the one hand, we admire the thing itself and experience its presence; on the other hand, we admire how it was presented, that is, the representation that replaces it. Between the thing itself and its representation, the model and the copy, the object and the effect of imitation, lies the sphere of representation, that is, the simultaneous doubling and replacement of the model by the copy (Markowski, 2006, p. 314)

Markowski, as a literary theorist, weaves his reflections mainly around literary fiction, but his conundrums fit equally well into describing a scientific text. The dilemma associated with the inevitability of empirical-textual dualism is well recognized, for example, in modern historiography, which, while attempting to “do justice” to the past in its writing (Ankersmit, 2004), also inevitably falls into the trap of narrativity. Frank Ankersmit, one of the most important figures in the theory of historiography, following his mentor Hayden White, points out that this is the central problem of historical writing: representation is always a representation of the represented. The historian’s task is to create a description as adequate to reality as possible, while knowing that it will never fully reflect it (Ankersmit, 2004, p. 39). This dilemma is shared by every other branch of science. Language, mediating between humans and their understanding of the world, makes it possible to express the world at all, but at the same time inevitably influences the way it is perceived – as convincingly demonstrated by Edward Sapir and Benjamin L. Whorf or – using a different set of tools – Ludwig Wittgenstein. Emil Benveniste also writes aptly about this: “Language surrounds society on all sides and contains it within its conceptual apparatus, but at the same time it shapes society, laying the foundations of what could be called social semantics” (Benveniste, 1980, p. 35). Any scientific description can and should therefore inspire a certain amount of distrust in the reader – and a justified humility in the author. The problem of the text’s referentiality, its congruence with the reality it presents, is often exacerbated by the growing need for creation or self-creation on the part of the author. In the public imagination, a scientist is not permitted to be carried away by boundless fantasy, swirling phantasmagorias, or oneiric visions. There is no place in science for such a zero-sum departure from reality into a subjectivized, imagined version of it. It is not appropriate for a scientist to wander where an artist indulges in liberated creative anarchy. Yet science without the adjective “creative” seems to be only a craft – unsatisfying for an aspiring author who wishes to leave an indelible stylistic imprint on their text. Nevertheless, some scientists are boldly rising to the challenge of directly linking science with imagination, an essential component of scientific progress. One such example is Maksymilian Chutorański’s *Pedagogy 2050*, in which the author does not

so much forecast the future as, through references to the history of tomorrow, stimulate the imagination about the present, seeking to sensitize readers to other, new, fields of research or educational onto-methodologies, and forms of criticality. As the author declares, “just as appealing to history helps us understand the present, so appealing to the future, by mobilizing imagination to highlight barely visible, marginalized problems, will allow us to search for other worlds, other ontologies with which to look at ourselves today” (Chutorański, 2021, p. 187).

The creative element – the writing element – sometimes reveals itself in scientific writing not only in the form of breaking thought patterns or the conventions of doing science, but through also linguistic imagination, bringing out the beauty of the word. Reading Edgar Percé’s books, for example, is not only an intellectual feast, but also a literary one. His works seem to proclaim: it’s not just what you write, but how you write it that makes your text compelling and memorable. On the other hand, however, it is worth recalling an anecdote about Antonín Dvořák, described by Mariusz Szczygiel in his book on reportage. The composer had a habit of taking his students to the train station, where they were tasked with closely observing at the locomotives and the smallest details of their construction. In them, the Czech composer saw a reflection of perfect precision, where everything serves a purpose, and even the smallest element, seemingly only ornamental, has a technical function. This, in his view, is how musical compositions should be: every sound should have a purpose (Szczygiel, 2022, pp. 298–299). Transferring this metaphor to scientific writing, it would be fair to say that the beauty of a text must not overshadow its scientific value – although striking a balance between the two is not always easy. A significant barrier to gaining the trust of the reader of a scientific text is often the overly hermetic nature of its language – a high degree of sophistication. This stands at the opposite pole from the beauty of the text. After all, not everything scientific has to sound foreign and abstruse. Yet, in the eyes of many authors, the complexity of a text and its saturation with vocabulary exotic to the potential reader seems directly proportional to their status in the academic world and the admiration that surrounds them. We have known how easily we are seduced by such evasive narratives at least since the famous provocation made by American physicist Alan Sokal, who in 1996 successfully published an article in a scientific journal that was saturated with fashionable jargon – a mixture of postmodern philosophical language and quantum physics – yet completely devoid of meaning (Sokal & Bricmont, 2004).

Meanwhile, the referentiality of a scientific text – its anchoring in fact and reality – is crucial not only for the author but also for the reader. However, the reader must be able to perceive and understand this referentiality,

which is certainly not aided by the hermetic nature of the language. Description – following the hermeneutic view of reading – is the only possible strategy for understanding the world. The author and the reader co-institute and co-create the text: one through the effort of writing, the other through the effort of reading – in an attempt to understand both each other and the reality described in the text, and to open themselves to what is different and to the Other (Galanciak & Tanaś, 2014, p. 238). Reading, Paul Ricoeur argues, is a unitary, monosubjective phenomenon – a form of dialogue between author and reader – within which the proper meaning of the text is forged. “It is,” writes the philosopher “like the performance of a musical score. It means updating the semantic possibilities of the text” (Ricoeur as cited in Mitosek, 1998, p. 152). The process of reading and interpretation is therefore essential to complete the work’s meaning regardless of its nature. The text becomes a micro-world in which the author and the reader meet, each bringing to it the baggage of their own experiences and beliefs – or, as Gadamer would say, their pre-judgments (Galanciak & Tanaś, 2014, p. 239). So even though, as prominent journalist and columnist Krzysztof Mroziejewicz writes,

It is impossible to like writing. It is a nightmarish process, a torment from which one tries to escape, occupying one’s time just to do whatever it is that prevents one from writing. ... Devotion to writing, especially one’s own, belongs on the list of cases that doctors deal with (Mroziejewicz, 2013),

this does not imply that a writer should take revenge on the reader with their writing, making it difficult for them to read. For without the reader, the text does not fully exist.

### On distrust of the sciences

In his book *The Consequences of Modernity*, Anthony Giddens writes this about trust being an immanent part of social relations:

Trust is related to absence in time and space. Trust is related to absence in time and in space. There would be no need to trust anyone whose activities were continually visible and whose thought processes were transparent, or to trust any system whose workings were wholly known and understood. It has been said that trust is “a device for coping with the freedom of others,” but the prime condition of requirements for trust is not lack of power but lack of full information (Giddens, 1996, p. 33).

The ontological situation of science, scientists, and all scientific literature (as well as non-fiction – more on that later), including even textbooks, fits the dilemma of trust as precisely laid out by Giddens. The author and the recipient, communicating through the code of written language – or increasingly, through audiovisual media – are, by the very nature of the medium, separated in time and/or space. The competencies of these two subjects of scientific cognition are also typically different. In this situation, the reader's trust in the author – in their scientific competence, reliability, and good intentions – becomes a fundamental condition for the reading process to occur, along with the acquisition or verification of knowledge. At the same time, however, the reader is, and ought to be, inherently characterized by reflexivity – both regarding their own reading competence and in relation to the content presented to them. “Reflexivity,” Giddens goes on to write, “is in a certain fundamental sense a distinctive feature of all human activities. The constant ‘maintenance of contact’ with the foundations on which one’s own actions are based is, for all human beings, part of the actions themselves” (Giddens, 2008, p. 30). Every action, therefore, intrinsically involves the ongoing and consistent monitoring of one’s own and others’ actions, as well as their various contexts. This principle also applies to the world of education and science, where trust in the researcher, author, or teacher should – antinomian as it may sound – go hand in hand with vigilant reflectiveness on the part of the reader.

The history and philosophy of science themselves lay the groundwork for this way of thinking, emphasizing in their contemporary form that there is no such thing as certain knowledge. This paradox of doing science is aptly formulated by Alan F. Chalmers:

Recent developments in the philosophy of science have highlighted and revealed the enormous difficulties inherent in the belief that science rests on a foundation consisting of the results of observations and experiments, and in the belief that there is a kind of inference procedure that reliably derives scientific theories from such a foundation. There is no method by which a theory can be shown to be true, or even probably true ... Attempts to present a simple logical reconstruction of “the scientific method” face numerous additional difficulties, given that there is also no method by which scientific theories can be conclusively refuted (Chalmers, 1993, p. 16).

In extreme interpretations – such as those of the famous counter-instructionist Paul Feyerabend – science does not necessarily show us at all why we should take it more seriously than other forms of knowledge, which had been useful to, for example, our ancient ancestors (mythologies) or traditional communities (such as voodoo practices). According to Feyerabend,



the belief in the unquestionability of scientific dogmas is nothing more than a modern religion. The shape of science – what we do or do not do and how we interpret it – is the outcome of social interests, subjective values, ideologies, and desires of individuals with social influence in this area (Feyerabend, 2021). Of course, Feyerabend's views, intentionally provocative and rooted in a postmodern and even amodernist spirit (Flour, 2018) intellectual ferment in the philosophy of science community, represent a certain radical epistemological stance. Still, when we consider the philosophy of science as a whole, we find that only radical inductionists truly treated knowledge as certain. Inductionism – the methodological position that emphasizes the special role of experience and observation of regularities of events for the formulation of general claims – assumes that scientific knowledge must be demonstrable. Observations coupled with inductive reasoning are supposed to uphold the framework of objectivity, leaving no room for the scientist's personal needs, beliefs or preferences. Under this assumption, a properly conducted research process (i.e., objective observations and pure inductive reasoning) it should yield certain knowledge. The problems Copernicus or Galileo faced with the scientific world's resistance to the heliocentric theory, not to mention the execution of Giordano Bruno, already demonstrated the limitations of this view. Scientists and the science they “produce” are influenced by many factors, among which social pressure is not at all at the bottom of the list. The trouble is – as the more reflective inductionists and, more pointedly, the critical falsificationists, have argued – the principle of induction itself cannot be logically or experimentally justified. It is impossible to prove its correctness logically (since even if the premises are true, the conclusion may still be false) or empirically (since doing so would require using induction to prove induction, which only leads to circular reasoning of the Humean problem of induction. No number of observations entitles one to generalize them to an absolutely certain universal conclusion (Chalmers, 1993, p. 36). Falsificationists, therefore, adopt a different strategy: they focus on the falsifiability of theories. In their view, only fail falsifiable, i.e. testable, can be, in their view, considered scientific). Theories that fail to withstand the test of experimentation should be replaced with new ones and the verification process should begin anew. This strategy, however, can only help eliminate flawed theories; it will never allow establish a theory as definitively and universally true. After all, it may simply be the case that no one has yet managed to disprove it. As Chalmers (1993, p. 69) points out,

One can never say of a theory that it is true even if it has performed very well in tests, but one can say of a theory that it is better than another if it has withstood tests that have resulted in the refutation of previous theories.

The conclusions drawn from these findings are far from optimistic. They are aptly put encapsulate by a well-known quote from Popper's *Logic of Scientific Discovery*:

Science does not rest upon solid bedrock. The bold structure of its theories rises, as it were, above a swamp. It is like a building erected on piles. The piles are driven down from above into the swamp, but not down to any natural or 'given' base; and if we stop driving the piles deeper, it is not because we have reached firm ground. We simply stop when we are satisfied that the piles are firm enough to carry the structure, at least for the time being (Popper, 1977, pp. 93–94).

Not only that, the replacement of one theory by another often does not take place in the peace and quiet of scientific offices but takes the form of a sudden and – by the standards of science – revolutionary shift. This view of the historiography of science, proposed by Tomas Kuhn in his *Structure of Scientific Revolutions* (2020), constituted a revolution itself. Kuhn argued that science involves clashing distinct paradigms: frameworks of theoretical assumptions, established laws, and recognized research methods that a given community of scientists adopts. Researchers who work within a paradigm develop and strengthen it – or, conversely, erode it, when they encounter difficulties that undermine its veracity. Such crises lead, sooner or later, to the formulation of a competing paradigm, whose proponents strive to overthrow the existing order, which they view is flawed. Paradoxically, the message that science conveys to today's audiences is therefore one of complexity and uncertainty about anything. This is aptly captured in the words of Anthony Giddens:

We are abroad in a world which is thoroughly constituted through reflexively applied knowledge, but where at the same time we can never be sure that any given element of that knowledge will not be revised.

... In science, *nothing* is certain, and nothing can be proved, even if scientific endeavour provides us, with the most dependable information about the world to which we can aspire. ... No knowledge under conditions of modernity is knowledge in the "old" sense, where "to know" is to be certain (Giddens, 1996, pp. 39–40).

This is confirmed by the example of the difficult end of the Aristotelian paradigm, overturned by the principles of Newtonian mechanics – which in turn had to undergo significant modifications under the influence of Einstein's theory of relativity. To move beyond revolutions in the mathematical and natural sciences alone, it is also worth recalling (while maintaining proportions) the intriguing case of the challenge posed by missionary

and linguist Daniel Everett to Noam Chomsky's famous thesis of the existence of a universal grammar. One of the key features of this theory is the principle of recursion (the generation of one structure from another, "embedding" a sentence within a sentence, e.g. by means of multiple compound clauses). In an article published in *Current Anthropology* (2005), "Cultural Constraints on Grammar and Cognition in Pirahã," Everett described the Pirahã people using a grammar unlike any other, completely devoid of recursion. Their grammatically simplified language, lacking of an accomplished tense, goes hand in hand with a radically different vision of the world. It contains no numbers (and thus no numerals), no color terms, and no concept of history; for the Pirahã, past and future converge in the present. Everett encountered tremendous resistance from the scientific community, which treated Chomsky as a kind of guru. Among other challenges, he faced serious obstacles in continuing his research. Unintentionally, Everett had inadvertently challenged what Imre Lakatos described as the "hard core" of a scientific research program – the set of fundamental research assumptions considered irrefutable. Lakatos, in his attempt to reconcile Popper's falsificationism with Kuhn's theory of scientific revolutions, argued that scientific research programs consist of a "hard core" (i.e., the foundational assumptions that cannot be rejected without abandoning the entire program – negative heuristics), and a "protective belt" – a flexible, falsifiable, and modifiable domain of auxiliary hypotheses and research uncertainties (Lakatos, 1995). Contemporary philosophy of science increasingly challenges this traditional view of its own subject matter. As philosophers such as Larry Laudan and Philip Kitcher have argued, the goal of science is not necessarily to discover an objectively existing truth, which raises doubts about the usefulness of debates over the truth or falsity of scientific theories. Instead, the aims of science are more pragmatic and closely tied to human needs. According to Laudan, the primary task of science is to solve intellectual problems, and the value of a theory lies in its effectiveness in resolving these problems. Scientific progress occurs through the selection and adoption of theories that solve more problems than their predecessors. When existing theories prove insufficient, they are gradually replaced or supplemented through an evolutionary process rather than through abrupt revolutions, as Kuhn suggested. A true scientific revolution would require a radical failure of scientific methods, objectives, and theories – something that has never actually occurred (cf. Kraszewski, 1993). Similar ideas are found in the work of Kitcher, whose philosophy of science aligns with the sociological perspective, viewing science as a socio-cultural institution that generates knowledge according to the norms of a given culture (Kitcher, 2022). Within this framework, the goal of science need not be the discovery of objectively

existing truth, as postulated by the neopositivist methodology of sciences grounded in the theory of cognition. As Anna Starościc observes,

nowadays, scientific progress is more often associated with its cumulative development (epistemic progress) or with a more modest realization of science's intended goals, which are not necessarily cognitive in nature (functional progress) (Starościc, 2024, pp. 156–157).

What becomes essential, then, is the functional development of science as a social institution – one that operates flexibly and effectively to improve human life – rather than the pursuit of universal, infallible procedures aimed at attaining objectively true results (Kawalec, 2018; Szubka, 2019).

These are not merely the dilemmas of scientists secluded in research centers. Scientific discoveries, the debunking of theories, and the disputes surrounding them occasionally become fodder for media interest and, consequently, public opinion. They also influence the shape of education – its content and form – and in certain cases, fuel the pop-cultural imagination, which distills them to a digestible form for the audience, often simplifying, often distorting it. It suffices to mention Albert Einstein's theory of relativity, which has become a pop-culture icon, or the mythical figure of Schrödinger's cat – simultaneously alive and dead from the perspective of quantum mechanics. The complexity of contemporary scientific theories other forms of knowledge renders them hermetic to the average person, who must therefore either accept them on faith or reject them in favor of more readily comprehensible explanations. The latter option generates a number of complications and it is becoming increasingly common for a number of reasons. The rapid expansion of knowledge about the world and its growing complexity, combined with the development of the media – particularly the Internet and social media, where anyone can easily proclaim their own theories with a veneer of credibility of credibility – creates an explosive combination. On top of the existing distrust of the incomprehensible (i.e., science), another layer is added: distrust of the world itself, stoked by conspiracy theories spreading online. These theories are couched in language that perfectly balances comprehensibility and a superficial appearance of scientific legitimacy and rational debate. In the age of social media, discourse is spilling over into areas previously unexplored. Since there is no more certain knowledge, any theory can be undermined and any solution replaced by alternatives. The power of such reconstructed pseudo-knowledge stems from a deep distrust of scientific findings, institutions, and a strong emotional component. Anti-vaxxers, believers in reptilian overlords or a flat Earth, and proponents of various conspiracy theories – including persistent antisemitic narratives about

Jewish domination of the world – are finding fertile ground on the Internet and a receptive audience among many users.

Why is it so easy for harmful anti-scientific theories to spread on the Internet? Literary theorist Michał P. Markowski and his theory of the four ideologies of representation may offer some insight here. Drawing inspiration from critical philosophy, Markowski points out that any representation, that is, a human-made copy of reality (including any text) is susceptible to political appropriation. In this sense, ideologies are the ways in which “individuals bind themselves to reality through imagery” (Calek, 2016, p. 30). As Anita Calek adds, “ideology is a strategy for such a representation of the world that turns reality into an interpretable text in a specific language” (Calek, 2016, p. 30). We need ideologies to explain reality to ourselves, but media consumers, we are often too easily seduced by certain kinds of them. Markowski distinguishes four types of ideology: apophatic, aesthetic, epistemological, and ontological. He describes the first two as rooted in performative faith, that is, on the belief that representation does not measure up to reality directly, either because it cannot (apophatic ideology) or because it seeks to replace reality with something more perfect, such as art (aesthetic ideology). The other two ideologies are to be based on mimetic faith, and these will be of particular interest here. In the epistemological model, commonly used in science, reality becomes an object of knowledge for a knowing subject. This enables this subject (e.g., the researcher) to have intellectual mastery over reality. Knowledge, in this context, is theoretical – representation replaces reality, endows it with meanings, and mediates our mental image of the world. Reality itself, however, remains inaccessible. In contrast, the ontological model, characteristic of, for example, religious modes of thought, presents reality as revealed directly through representation. In this view, representation becomes the site where reality manifests itself (Markowski, 2006, p. 314 et seq.). This unveiling is accompanied by an aura of emotional intensity and a sense of initiation into hidden knowledge, inaccessible to those who approach reality through the epistemological model. The structure of conspiracy theories, with their emotionally charged atmosphere, mystery, and promise of revealing hidden truths, fits perfectly into the ontological ideology of representation. This may partially explain their powerful appeal. Their persuasiveness is further enhanced by appearance of scientific credibility: pseudo-studies allegedly confirming the harmfulness of vaccines, or arguments that the Earth is flat and satellite images are distorted by wide-angle lens, or that gravity is merely an illusion caused by the Earth's upward motion in uniformly accelerated movement (Adam, 2010).

In addition to linguistics, the category of representation has also been adopted by the social sciences. Émile Durkheim had already written about

collective representations, through which an individual immersed in society perceives reality. His concept was later developed by Serge Moscovici, who formulated the theory of social representations. According to this theory, representations are mental structures constructed in the mind during the learning process, corresponding to objects existing in the real world. Learning, in this cognitively oriented framework, is thus the process by which the mind builds representations – structures that encompass not only facts, but also judgments, stereotypes, and beliefs (Searle, 1995, p. 231). As Moscovici points out, the emergence of an element that does not fit into the mental framework developed thus far prompts the need to reconstruct the existing representation. This requires a significant effort cognitive effort on the part of the individual – a process of “learning by unlearning,” which helps reduce cognitive dissonance (Zbróg, 2016, p. 96). Zuzanna Zbróg provides an interesting insight by referring to Christine Mias’s distinction between research and expert approaches accompanying the process.

In her view, acting as an expert involves the pursuit of efficiency as a result of taking specific actions. Being a researcher, on the other hand, requires working in the dark, trying, doubting. An expert makes quick decisions, handles problems, often acts with urgency, and is quick and efficient. The researcher, on the other hand, needs to give themselves time to make better use of observations, build hypotheses and models step by step, confront their ideas with the research area, and rework these ideas (Zbróg, 2016, p. 103).

A responsible scientist, in addition, aware of the complexity of the discourse that has unfolded for years in the bosom of the philosophy of science, adopts the attitude of a researcher even when presenting their findings. Meanwhile, even a cursory analysis of texts produced by proponents of conspiracy theories or instigators of moral panics suggests that their language more closely resembles the confident tone of an expert. This may make it easier for such figures to reach individuals who are lost in the flurry of information, scientific jargon, and the inherent uncertainty that accompanies discussions of discoveries – a hallmark of responsible science.

What chance, then, does science, immersed in the world of liquid modernity (Bauman, 2006), have of reaching a non-elite audience? Without efforts to de-hermetize its language and make its message accessible, probably none. But is that enough?

## About certain pacts

Certainly gone are the days of trust derived from the genre codes of a text (according to the colloquial consciousness of the type “a scientific text is credible because it is a scientific text and has been published”) and from the authority of an institution. The Internet is capable of challenging even the most thorough findings with emotionally charged language and loud rhetoric. The researcher’s full-blown attitude of distrust in their own findings – and consequently, uncertainty (or rather caution) in proclaiming knowledge – is multiplied and oversimplified in the form of distrust expressed by the reader, weary of the difficulties of reading and tempted by easier solutions suggested to them online or by a circle of friends.

As Bogusław Śliwerski points out, the area of uncertainty felt by the author is widened by the successive circles delineated by the reviewing community. In fact, next to reliable reviews, there are still those Śliwerski calls hypercritical, which exceed the boundaries of constructive criticism, appearing as

A destructive totalization of the reception of someone’s work ... intended to lead to the destruction, devastation, or “killing” of its author, sometimes resulting, among other things, from non-scientific factors unrecognizable to the participants of the debates (Śliwerski, 2021, p. 165).

The constant “exposure to criticism” and the stress associated with it can provoke the use of countermeasures, such as writing the text to meet the expectations of a potential critic – even to the point of distorting the results or bending the conclusions. As Śliwerski alerts “...what is published may be a lie, a text crafted because of the person of the reviewer” (Śliwerski, 2021, p. 153).

So we all navigate area space stretching somewhere between limited trust and boundless distrust, and we try to meet within it from time to time. How can this meeting be made fruitful? How can the reader’s trust in the author (and the author’s in the reader) be awakened? Literature answers this question in the following way: there is no universal solution; the days of trust ascribed to the entire genre are gone, so a pact is needed between the author and the reader, within which trust can develop, if only in this limited form. In the case of non-fiction, this is a reference pact, guaranteeing the reader that the author has done their due diligence to present their story as close to reality as possible. In other words, that there is a reference between the facts described in the book and the external world portrayed in it.

The concept of the reference pact was popularized in literary studies by Phillipe Lejeune, a prominent specialist in autobiographical literature, who described it as follows:

Unlike literary fiction, biography and autobiography are reference texts. Like scientific texts, they are meant to provide information about reality and be subject to verification. Their goal is not simple probability, but a resemblance to the truth, not an illusion of reality, but an image of reality. Such texts presuppose what I will call a referential, revealed or implicit pact, which determines both the sphere of reality under consideration and the principles and degree of similarity desired in the text (Lejeune, 2001, p. 47).

A pact understood in this way is made when a work presents a story backed by facts and documents, as well as witness accounts. In the case of autobiography, Lejeune writes about a slightly different type of contract between author and reader, which he calls the autobiographical pact (Lejeune, 2001). Here, the author of the text is at the same time the author of his own life, and by making a pact – by calling his story an autobiography – he promises to make an effort to bring the two authors as close together as possible. Lejeune states:

Undoubtedly, truth is unattainable, especially when it concerns human life, but the desire to attain it defines the field of discourse and cognitive acts – a certain type of human relationship that is by no means illusory. Autobiography has entered the realm of historical cognition as a desire for knowledge and understanding, the realm of action as a promise to offer this truth to others, and the realm of artistic relationship. It is an act that has real consequences (Lejeune, 2001, p. 5).

How far an author who enters into a referential pact with a reader manages to get closer to the truth is determined not only by their intentions and access to information, but by the entire baggage of cultural burden affecting their perception of reality. Dreams of complete objectivity and transparency are a pipe dream, a goal to be pursued but never achieved. However, that is not the point. As Anita Calek points out,

as long as the biographer seeks such imperfect truth about their protagonist – conducting source research, analyzing documents, seeking explanations for incomprehensible behavior and decisions – their story holds the value of truthfulness, provided that it does not break the referential pact, refers to historical truth, and the biographer's conduct is characterized by cognitive reliability (2016, p. 32).

The referential pact occurs when authors or publishers deliberately use references to non-textual reality, and the then text appears as a record of real experiences and real people. When someone suggests that their text



should be read, for example, as a newspaper article, one can speak of a reference reading pact.

According to journalist-reporter Mariusz Szczygieł, a reference pact – alternatively called a factual pact – is an implicit agreement between the author of a non-fiction work and the reader (who believes that the text was written with honest intentions) that the story given really happened. The reader (e.g. of a reportage) has the right to expect credibility and truth (Szczygieł, 2022, 170). It should always be included where the text is intended to be both a truthful discourse and a work endowed with a certain literary beauty. It seems that in both non-fiction and science writing genres, these are inseparable elements. Following the thought of historiographer Hayden White, it can be said that facts put into narrative form (that is, told in any way) will always form a whole shaped by literary form (cf. Zieniewicz, 2004). Thus, if we are dealing with a scientific text, the reference pact is the basic condition, the crucial point of the text's meaning. Even if it is a scholarly essay full of references, metaphors, and allegories, where thoughts run into out-of-context reality, these are *bona fide* companion facts; even if it is a kind of author's conjecture, a message, a subtle sign for the reader. As an example, consider the Chernobyl film made by Volodymyr Shevchenko in 1986, where you can hear crackling and see micro-flashes, as the tape recorded the impact of radiation. No one says anything, no one explains, because a guess, a whisper sufficiently guides the viewer to interpretively supplement the image. This addition – reading between the lines – is a transgression of the work, but remains consistent with it. Transgression of this type is usually a fiction strategy.

Take Ernest Hemingway's famous short story, which has seven words. But how much there is to read in this text! The Nobel laureate faced the challenge to write the shortest sad story, with a prize pool of USD 10, during a meeting with friends. Hemingway's text turned out to be the best: *For sale: children's shoes. Never used* (Tkaczyk, 2021, p. 57).<sup>1</sup> However, it also finds its way into the non-fiction genre, as in the reportages of Hanna Krall or the experiments of Mariusz Szczygieł. In scientific works, traces of it can be found in, among other things, texts on the borderline of scientific essayism.

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1 The event served as an inspiration for a creative expression by third-year students of psychopedagogy of creativity at APS in Warsaw. This is a fragment of one of the works: "... Telephone. The sound of crying in the earpiece, a barely audible voice. Single words swallowed by tears. I had a miscarriage! I heard that a moment before the sound indicating that the call had ended. One word, and it echoed in my head for the rest of the day... Is there anything I could do to take at least a little pain from her... She will not see the first shoes on her son's feet. She will give them to someone else. Maybe someone else will be luckier than Majka" (Siwicki, 2022).

Journalism more often uses the term *factual pact*, which Zbigniew Bauer coined and popularized in the Polish context as the foundation of reliability and informational credibility in the media. It is concluded with the viewer, by choosing the type of transmission, the way of mediating the presented event, etc. This pact, Bauer writes,

is founded on the audience's trust in the news content disseminated by the media; on faith in the honest intentions and professional competence of journalists. It therefore also represents a kind of ethical obligation for journalists. It's a command to present the truth, express it in an understandable way, and disseminate it in its true context (Bauer, 2003, p. 8).

Further on, the doyen of Polish journalism, in a sense, vivisects the contemporary media and evaluates:

It is the media, especially the electronic media, that are forcing us to revise our previous categories of description – and this is a description not only of the media, but of our culture as a whole. It is the media that makes us become, in a peculiar way, “suspicious” of texts, messages, and communication acts themselves, which we have not associated with the media before. On the other hand, this suspicion is evolving into an equally peculiar confidence: we perceive texts and communications not previously associated with art as naturally embedded in the cultural space (Bauer, 2003, p. 13).

## Conclusion

Bauer's insights are undoubtedly complementary to the other considerations presented in this text on the complex relationships between distrust and trust, narrative and fact, author and reader. All of them seem pertinent to non-fiction literature, but they also strike at the heart of issues arising within the scientific world. In an era in which the dogma of certain knowledge has long and repeatedly been challenged, in which the authority of science and scientism is no longer sufficient to win the trust and attention of the public, in which any theory can be undermined and a solution replaced by alternatives, and the discussions taking place via social media are spilling over into previously unexplored areas, it seems necessary for the author of a scientific text to make a pact with the reader as well. An individual pact – not one that completely dispels distrust of scientific findings or institutions (as that it seems impossible), but one that assumes the text presented to the recipient is the fruit of work conducted in the spirit of epistemological representation, devoid of emotional or political manipulation; work that is honest, careful, full of effort, and

driven by a desire to establish a bond with the reader. Let us call it a scientific reference pact. As for how to make such a pact, each author must find their own answer.

A necessary, though not always sufficient, element of this process – fundamental in the scientific community – is adherence to research ethics, ensuring fair peer review, and making responsible choices regarding publication venues. However, above all, it requires establishing a bond with the recipient and communicating in a way that is clear to them, perhaps (also) through the same platforms they use? Developing communication beyond the scientific text itself? Bolder popularization of one's own achievements instead of locking science in a glass tower? The belief that scientific results are meant exclusively for scientists – assumed to be sophisticated readers requiring no special attention from the author – is no longer tenable, especially in the age of the Internet. Never before have non-scientific counter-narratives about the world spread with such speed and reach. Ignoring this challenge is not an option.

In writing about the reference pact, we were guided by the need to present and understand metaphorically reflected colors – the diverse ways in which people interpret and articulate what the eye sees and the mind perceives. Our aim was to examine the problem of scientific communication from an unconventional perspective, much like La Fontaine's decanter viewed from a different angle. Whether juxtaposing such distinct forms of writing as non-fiction literature and scientific discourse is meaningful or useful is a question for each author to decide. Regardless of the answer, however, it is worth starting by removing the barriers of misunderstanding from in front of the reader that inevitably push them today into the arms of charlatans. By seeing them. By putting them, rather than oneself, at the center.

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