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Trust in scientific expertise
Institutions in their certification*

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Confianza en la Ciencia
Las instituciones en la certificación de la experticia científica

Abstract: This article analyzes the problem of trust in science and how scientific expertise is endorsed in contemporary society. In the first section, we briefly examine the fallacies of appeal to authority and why relying on scientific experts is not fallacious. In the second, we argue that we trust science in view of the layperson, and the division of labor in a complex world. In the third, we resort to Searle's social ontology to show how such experts are collectively recognized. In the fourth, we elucidate how the credentials of key institutions such as the University operate to certify those experts. In the fifth, we show that a lack of trust in scientific expertise can lead to irrationalism. To this end, we analyze the

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paradigmatic case of flat-earthers. In view of the division of labor, we conclude that we do not live in isolation in a Robinson Crusoe-like world, i.e., ignoring and distrusting scientific experts, who gather evidence in the context of well-reputed institutions in social reality.

Keywords: Appeal to authority fallacy, scientific expertise, credentials, trust in institutions rationality.

Resumen: Este artículo analiza el problema de la confianza en la ciencia, y de cómo la experticia científica se avala en la sociedad contemporánea. En la primera sección, examinamos brevemente las falacias de apelación a la autoridad, y por qué no es falaz depender de los expertos científicos. En la segunda, argumentamos que confiamos en la ciencia desde la perspectiva del lego y la división del trabajo en un mundo complejo. En la tercera, nos apoyamos en la ontología social de Searle para mostrar cómo se reconocen colectivamente las y los expertos científicos, mediante credenciales. En la cuarta, elucidamos cómo son generadas por instituciones clave, tales como la Universidad. En la quinta, argumentamos que la falta de confianza en la pericia científica puede conducir a la irracionalidad. Para finalizar, analizamos el caso paradigmático de los terraplanistas. Dada la división del trabajo, concluimos que no vivimos en un mundo aislado tipo Robinson Crusoe, esto es, ignorando y desconfiando de los expertos científicos, quienes recaban evidencia en el contexto de instituciones reputadas en la realidad social.

Palabras clave: Falacia de apelación a la autoridad, experticia científica, credenciales, confianza en las instituciones, racionalidad.

1. Introduction

We trust science. Despite this trust, the skeptic always lurks in the shadows, and likes to sneak onto the scene, even in the laboratory. In the theoretically motivated version of radical skepticism (Williams, 1999, p. 35), knowledge is impossible because it can always be called into question; thus, we are uncertain about most of the things we supposedly know. This view assumes that everything we know about ourselves and about the world around us can be called into question, because like Descartes, it is possible to suppose that the world could be an illusion or dream (Williams, 1999, p. 44). Some radical skeptics go even further: they attempt to undermine the authority of scientists, because there is no certain knowledge, and there is no such a thing as expertise. Not even the expert would know with certainty that theories correspond to something real (Nagel, 1987, p. 14), a crucial point in relation to the layperson's epistemic dependence upon the expert.

However, this concern seems to be too radical.[1] In everyday life we assume that scientific knowledge exists, albeit fallible, and that there are experts whose testimony is rational to trust, as they know about the world, with compelling evidence, all of which justifies believing that p.[2] Such

[1] Descartes sets out to exorcise this radical skeptical stance in his Metaphysical Meditations (Descartes, 2008). His methodological aim is to refute both the radical skeptic and the atheist (González, 2017) in order to establish scientific knowledge even if the existence of God needs to be proved (Descartes, 2008, p. 25 AT VII 36).
[2] We return to this problem below.

institutionally validated experts distrust the radical skeptic, because in relation to the practical matters of everyday life, the skeptic also relies on scientific knowledge.

In this paper, we aim to show that we are socially justified in trusting science, and that this everyday practice is based upon a social dependance upon institutionally founded cooperative relations. Therefore, it is rational to trust experts, who have gathered the relevant evidence that justifies believing that p. Those experts do not have such status because they declare themselves as experts, like the guru.[3] On the contrary, there is an entire social apparatus that validates scientific experts as such, and as we argue, that prevents us from committing fallacies of appeal to authority when we rely on such scientific expertise. Briefly put, we show from the viewpoint of social epistemology and Searle's social ontology why it turns out to be rational to trust scientific expertise.

This paper is divided into five sections and a conclusion. In the first, we briefly examine the appeal to authority fallacy. In the second, we analyze why we usually trust science, given the epistemic dependence of the layperson and the division of labor in a complex world. In the third, we draw on the theoretical apparatus of Searlean social ontology to show that scientific certifications are normative, as they are endorsed by key institutions, such as the University. Finally, to establish why it is rational to trust science, the last section analyzes the case of flat-earthers. We hold that they fall into irrational beliefs that seek to discredit competent scientific experts. But, paradoxically, flat-earthers also end up committing the fallacy of appeal to authority: by ignoring evidence-based expert knowledge and by establishing pseudo-expert knowledge, they adopt an irrational attitude.

1. The problem of the appeal to authority fallacy

At the beginning of his famous Metaphysics, Aristotle holds that all human beings by nature desire to know (980a, 21). For the Stagirite, scientific knowledge, or episteme, is based upon logic as a propaedeutic for the sciences, and upon metaphysics as its ultimate foundation. An Aristotelian desideratum for science is that correct reasoning is inferential and demonstrative, that is, it requires that the conclusion necessarily follow from the premises (APr. 24b18–20). This is explained because science leads to the truth through knowledge, which, while not necessarily correct because

[3] Scientific experts rarely self-declare as such, and as we analyze here, they depend upon the recognition of institutions and their standard regulations, which in turn are recognized within a community.

it is fallible, requires clear and rigorous reasoning. Falsehood is, as obvious as it may seem, the path to uncertainty, obscurity, and confusion. Therefore, correct reasoning is crucial, because of the illuminating and rigorous knowledge it leads to, and because invalid and incorrect reasoning leads to uncertainty and confusion.

A related issue to correct reasoning is the problem of fallacies, and the extent to which they are not rigorous reasoning. Briefly put, a fallacy is a faulty argument. However, there are two types of fallacies: formal and informal. The former depend upon the logical structure of arguments, such as the fallacy of the antecedent, in which the consequent resulting from the negation of the antecedent is denied. For example, if John wins the lawsuit, Peter will have to pay his debts. John did not win the lawsuit, thus Peter will not have to pay his debts. The conclusion does not follow as a strictly formal matter, because from the fact that John did not win the lawsuit, it does not necessarily follow that Peter does not have to pay his debts. He could well do so even if John did not win.

Informal fallacies, on the other hand, are those that have nothing to do with how an argument and conclusion are structured, but rather with problems about errors in the content of that argument (Van Vleet, 2012). For example, how the argument can hide an appeal to an authority that is not such, or irrelevant. Thus, the conclusion does not follow for different reasons: premises are irrelevant, there is an appeal to force to derive the conclusion, there is a recourse to "the gallery," among many other types of problems related to how the conclusion was reached. Unfortunately, despite not being rigorous arguments, fallacies are very common in daily life, for example, in fields such as advertising or politics.

One of the main concerns of this section is the problem of appeal to authority fallacies, called *ad verecundiam* in Latin (Van Vleet, 2012, p. 27). This fallacy is an argument that can appeal to an authority that is not such, because the person has no genuine expertise; rather, it is only apparent to prove the truth of the conclusion. For example, Donald Trump's recommendation to buy Tesla cars does not allow us to conclude that they are of good quality. The wealthy millionaire, and 47th president of the United States, does not have expert knowledge about cars, much less about a new electric technology that replaces combustion. Therefore, his recommendation should be taken with a grain of salt; and the conclusion that Tesla cars are excellent is simply fallacious.[4]

[4] Before this article, Donald Trump and Elon Musk were close friends. However, they had an argument; hence, Trump's possible recommendation of Tesla cars is more fiction than reality. Given the current argument between Trump and

Despite the evidence of questionable authority, appeal to authority fallacies are also common in science and philosophy. As to the former, the Schön scandal was famous: an acclaimed scientist Jan Hendrik Schön managed to publish a series of fraudulent articles in various reputable scientific journals such as *Science* and *Nature*, amongst others, before being exposed due to inconsistencies in his work data (Agin 2007, pp. 36-39); as for the latter, the scandal denounced by Alan Sokal stands out.

This scientist posed as a postmodern philosopher, publishing a paper in the journal *Social Text*, in which he used a series of scientific concepts to try to demonstrate an absurd conclusion, namely, quantum gravity is merely a social construct. Later, Sokal and Bricmont denied the seriousness of the claims made in that article, showing that they had denounced what they called an *intellectual imposture* (Sokal & Bricmont, 1999).[5]

Indeed, there are times when appealing to the authority of an expert supports the truth of a conclusion, and that the fallacy of appeal to authority is not always committed. However, when is this the case? In this section, we show that when appealing to scientific expert knowledge, there is a proper appeal to authority, because scientists know, based upon evidence, what the layperson simply ignores. There is an imbalance between the evidence the expert possesses and what the layperson does not, thus it is rational and justified to rely on the testimony of the former.[6] An interesting problem is what happens if the layperson, who trusts the expert and his or her evidence, becomes an expert. In that case, they might question the evidence. We return to this problem below in relation to scientific consensus.

There are many situations in which justified epistemic dependence exists, validated by expert knowledge; i.e., it is rational to trust a scientific expert who holds beliefs grounded on evidence, or rational beliefs (we return to this point below). In the case of laypeople, they depend upon experts, but not vice versa. Precisely, as Fodor puts it in relation to scientific experiments, someone who has a watch is in a better position than someone who does not when telling the time

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Musk, the former could likely claim that Tesla cars are of poor quality, thereby committing another *ad verecumdiam* fallacy.

[5] Both cases mentioned reflect the *ad verecumdiam* fallacy. However, the academic and social issues involved are not only reducible to this. Other factors related to the professional practice of academia must also be taken into consideration, such as the continuous demand by employers for publication in indexed journals or the virtually nonexistent payment of peer reviewers by publishers and/or scientific journals.

[6] There is a whole discussion on this point, which we only mention here for reasons of space. See Lycan (1988), Harman (1986), White (2005), Feldman (2004, 2007), and Kelly (2010), among others. Our view, which focuses on scientific expertise and evidence, is compatible with Goldman (1979), Chisholm (1977), and Meeker (2004).

(Fodor, 1991, p. 202). However, it is always possible to distrust the expert: the watch could have broken down, could have been altered by the influence of an evil Cartesian demon, or could have been affected by a change in the laws of nature. This again indicates the fallibility of scientific knowledge.

Fodor precisely emphasizes that a scientific experiment involves putting the mind in a state of receptivity to believe that p if and only if p is true under *ceteris paribus* conditions, but this causal process does not prevent a series of exceptional situations regarding the generation of true beliefs. Fodor's aim, then, is to show how science actually works, and not how it could not work, because expertise refers to being justified in believing that p when p is true.

Radical skepticism seeks not only to overthrow common-sense knowledge, but also the epistemic authority and the functioning of scientific experiments. We focus upon this type of skepticism because it is a critique of knowledge in the "worst-case" sense, and because it attempts to undermine the authority of the expert to justifiably believe that p.[7]

Something similar happens in philosophy, with Gettier-type counterexamples. Given the classic thesis of Plato's famous “Theaetetus” that knowledge is justified true belief (“Theaetetus,” 201), Gettier proposed counterexamples refuting this definition of knowledge (Gettier, 2007, p. 13), which allude to the so-called *epistemic luck*: by this, the justification for believing that p is apparent and not real. Although it is not worth delving into Gettier's examples here, they do serve as a precedent that shows that skepticism is always around, and is always a matter of concern in philosophy, at least regarding when we know rigorously, even amongst philosophers. We often assume that it is not advisable to trust the truth of a conclusion, simply because it is supported by premises that seem questionable.

The purpose of the following section is precisely to explain why trust in science is justified epistemic dependence, and not a fallacious appeal to unreal authority. Thus, we show why it is rational to trust science when there are scientific experts who have rational beliefs to believe that p.

2. We trust science

[7] This does not rule out the possibility that other types of skepticism can also attempt to undermine trust in science. However, what the radical skeptic questions is the idea that scientific evidence places experts in a position of superiority.

Trust in science is a commonplace in social reality, and it is not usually questioned in contemporary times, except in contexts where the radical skeptic attempts to undermine the epistemic concepts of everyday life, for example, when unnatural doubts arise about sensory data, testimony, evidence, and the existence of the external world. Certainly, when boarding an airplane, performing a surgical operation, crossing the street, or calculating interests in financial activities, it is not assumed that radical skepticism is true. That is, it is not assumed that the world could be merely a dream or an illusion; rather, it is assumed that perception is reliable, and that our memory and the tools of our cognitive system for making valid inferences are also reliable. In fact, in contexts of scientific knowledge, such as the laboratory, it is assumed that reason is reliable and that it often leads to true conclusions, counting these as evidence, and even as guides for rational belief and action.

In everyday life, it is pragmatically assumed that radical skepticism is too strong in reliable belief-generating contexts. A surgical operation in which a surgeon's assistance were to suggest that the world could be nothing more than a dream induced by the evil Cartesian demon would be dismissed as insane, or as if she were playing a bad joke. A copilot who maintained, in the context of a flight, that all the aircraft's instruments had been altered by the same evil demon would also be dismissed as insane, or at least everyone would think her belief irrational, contextually unjustified, and certainly dangerous. In everyday life, safety is the result of shared practical rationality. If two friends were crossing the street, and one were to tell the other that the color spectrum is inverted, that is, that green light is red and vice versa, her belief would be taken more as a joke than seriously.

Radical skepticism is an armchair intellectual stance from the perspective of everyday life. It is a purely theoretical approach and it seems to be too far-fetched in that context. That is, such skepticism is effective in highly abstract theoretical contexts, but not in action.[8] For this reason, radical skepticism is theoretically fertile but pragmatically sterile. Adopting this same perspective, it has been suggested that the problem of radical skepticism has no theoretical solution, but that it does have a pragmatic solution, because it is vulnerable to default positions, namely, to presuppositions that justify thought and action, such as the existence of the external world,

[8] In fact, skepticism, if Pyrrhonian, points to the equivalence of contradictory judgments through tropes, which leads to ataraxia or tranquility. As we show in this article, in contemporary times, we accept ignorance in a different way: by epistemically depending upon the expert.

causality, the reliability of perception, and the adequacy theory of truth, among other default positions (Searle, 1998, pp. 12-20). It is notable that all these presuppositions are epistemically relevant to the scientific expert, who would never adopt the radical skeptical stance in the laboratory, even if, as might be criticized, they were questioned as scientific experts. Surely, the authority of the latter is questioned by radical skepticism, and therefore it is pragmatically inadequate in the realm of action and daily life.

As a way of taking a stand against this pragmatic question of radical skepticism, we also trust science. We do so because scientists are reliable experts, knowing what the layperson does not (Hardwig, 1985; 1991). Scientists never radically doubt everything, and that partly explains why we trust them. Unlike skeptics, scientists do question things, nut not everything. In a laboratory, scientists are guided by normatively adequate procedures (Merton, 1942, p. 116), which are characteristic of a research paradigm (Kuhn, 1962), with ontological assumptions. Thus, no scientist questions that the instruments are unreliable, that all of reality could be nothing more than a dream, and, crucially, that the person conducting the experiment is not a genuine expert. On the contrary, scientists trust instruments as well as the authority of the expert. For this reason, highly qualified scientists are collectors of reliable information and are capable of assessing the impact of their research on the lives of others (Wilhot, 2013) (we return to this point below).

Despite the radical skeptic, scientists are regarded as epistemic authorities in a hierarchy of knowledge, and in an ethos of science. They know what the layman ignores, because they have been highly trained to reach their conclusions. Scientists do not doubt, like the radical skeptical philosopher, about the authority of other colleagues, although they may assume that the theory by which the latter arrived at the conclusion might not be true. In this sense, Popper (1991) has an important point, but its scope should not be exaggerated: it is crucial, and part of the scientific enterprise, to doubt and criticize, but not to doubt and criticize everything.[9]

[9] Taking a Kuhnian view, one might object that scientists criticize paradigms when they abandon normal science and begin to doubt the old paradigms, thereby becoming protagonists of scientific revolutions (Kuhn, 1962). On the other hand, one might also object that Searle himself (1995; 2010) considers that the basic facts of sciences such as physics, chemistry, or biology (Searle, 2010, p. 2-4) do not seem institutional. Indeed, knowledge of scientific experts is not unquestionable, but to doubt and criticize scientific theories, one must be an institutionally validated expert. In addition, Searle's basic realism, which embraces the distinction between brute and institutional facts, is compatible with our view: we must distinguish between correct scientific practice and expertise, which are institutionally validated, and brute facts discovered by scientists. Mendel's discovery that plants transmit their inheritance required validation of a key institution, such as the University of Vienna.

In the scientific enterprise, one never starts from scratch. There are vast areas that are not questioned, such as some fundamental metaphysical principles assumed by experts, for example, the principle of non-contradiction, which is not questioned by scientists in reaching the conclusions of their experiments. Consequently, the scope of philosophical doubt is limited in the field of science, because supposing and believing are also adequate epistemic attitudes that lead to true beliefs, even when scientists believe the conclusions reached by other scientists.

These issues are summarized by Hendriks et al. (2016, p. 153) under three components related to the figure of the expert and trust in science:

1. Experts have expertise
2. Experts have integrity
3. Experts have benevolence

Trust in science reflects a rational attitude of the lay audience towards experts, since this authority presupposes normative mechanisms, institutionally founded, which regulate and make reliable and justifiable belief in view of the evidence they gather. That is, there is a social rationality underlying the scientific enterprise: scientific experts are part of a community and its practices, of an ethos, which leads to evidence to rationally support beliefs. Such evidence cannot be legitimately questioned by the lay audience, or even by the radical skeptic. Therefore, and as Fodor (1991) puts it, we set our minds to believe and trust scientific experts. It is, in short, justified and rational to believe in them as long as there is no defeater to counter the belief that p.[10]

However, a question worth discussing, and to quell the criticisms of scientific expertise, is what makes us trust scientists, given their high qualifications and hierarchy in the knowledge pyramid. The question that arises is also the role of institutions in certifying scientific expertise. As we address in the following sections, the social aspect is crucial: institutions certify scientific expertise and give rise to the testimony of the scientific expert, thus, why it is rational to trust them.

2. Institutions and the certification of scientific expertise

[10] A defeater of this would be, for example, knowledge of a scientist's corruption. He may well be qualified as an expert, but we know that the ends he pursues are not primarily epistemic. There are several concepts of rationality, but the one we use here is that beliefs are supported by compelling evidence. Our view, then, assumes evidentialism, with social support.

Human beings live in social reality, and science has been a cooperative enterprise, especially in contemporary times, where the so-called knowledge society operates (Aarrevaara et al., 2021). On the one hand, human beings relate to other human beings and are also dependent upon them, because social practices require others. On the other hand, we are not like Robinson Crusoe: we do not live alone on an island, but rather we live in community surrounded by other human beings, and in a world of institutions and social practices. As we analyze below, there is a clear link between institutions and social practices (Searle, 2005). Science is yet another social practice in which we are epistemically dependent, both because it is a cooperative enterprise and because it is a practice governed by the principle of the division of labor; according to this principle, institutions support the truths related to facts and the evidence that supports them.

Human beings navigate in a sea of institutions (Searle, 2017). Marriage, money, the police, cocktail parties, friendship, the presidency of the republic are part of that sea. Furthermore, due to the division of labor, each individual does not need to be a specialist in everything; rather, they depend upon a host of experts who are. In the case of science, and as we have examined above, we are dependent upon other human beings who are specialists in a wide range of knowledge that relates to our social practices and that give rise to institutions in social reality.[11] As Putnam emphasizes, the community is divided between laypeople and experts, and the latter set the reference for some theoretical terms, such as natural kind terms, amongst many other activities related to knowledge (Putnam, 1991, p. 146-148).

In contemporary times, institutions are crucial for the existence of society. Searle's theory (1995; 2010) gives institutions a key role. According to this author, although we live in a single world, that of particles and systems of physical particles, we are able to relate to the world in virtue of consciousness and intentionality. That is, in virtue of sentience, the valuation of consciousness, and the representations of intentionality, we can attribute meanings to objects of physical reality. In other words, through sentience we are able to value and give meaning to reality; through intentionality and representations, we are able to give meaning, and create status functions, which are the origin of institutions that would not otherwise exist, and which, more importantly, enhance the social reality in which we live, making the social practices that this entails more complex.

[11] We are referring to institutions such as NASA, the FDA, the EU Office for AI, among others. Clearly, the reputation factor (Origgi, 2017) is also crucial in the realm of institutions.

Specifically, here we draw on the theoretical framework of *The Construction of Social Reality* (Searle, 1995) and *Making the Social World* (Searle, 2010) to examine how the certification of scientific expertise operates. Our justification is the following: Searle's social ontology is normative, based upon constitutive rules, which gives rise to the consensus of intentional agents and their collective recognition of key institutions. This consensus is crucial to the functioning of a scientific community: experts usually bring about scientific consensus in Kuhnian periods of normal science (Kuhn, 1962).

An important point in the attribution of status functions is that intentional agents must recognize the symbolization resulting from the constitutive rule "X counts as Y in C," in which the status of an object or person is declared through language (Searle, 1995, p. 43). As a result of the recognition process, status are indicators that are collectively recognized, and that must first be declared as such (Searle, 2010, p. 13). The most apparent status indicators are badges, uniforms, togas, insignia, amongst many others (Searle, 2010, pp. 14-20). All of them indicate the existence of a symbol, of a status function that is created, maintained, and collectively recognized in social reality, and that encourages us to trust in the existence of the status.

Nevertheless, one issue not anticipated by Searle is that credentials are key among status indicators. As Smith et al. (2020) argue, credentials are status indicators that guarantee the existence of a collectively recognized symbol and, by acting as deontic artifacts, serve to identify such and such a qualification in the agent who carries it (p. 57). They are, so to speak, facilitators of trust in institutions. For example, a driver's license is a status indicators; that is, it requires us to trust that S is authorized to drive a car. In this case, the credential is sufficient to attest a collectively recognized capacity. Consequently, credentials are guarantors of the existence of a certain institutional status. The credential requires recognition of that status, which is already collectively accepted by a group of institutional agents.

There is an obvious connection between status indicators, credentials, and representatives of institutions. These must be recognized by intentional agents. If someone belongs to an institution, like a police officer, for example, they must carry a status indicator or a credential that identifies them as such. But the role of institutions does not end there: institutions empower an intentional agent to carry[12] that status indicator or credential. The authorities have created the police

[12] For this reason, false credentials make someone believe that S belongs to institution I, whereas this is not the case. That is, it causes a false belief. We return to this point below.

institution, which in turn empowers their members to use credentials to identify themselves as members of the institution. Consequently, these credentials are crucial, because they are granted by the institution and because they guarantee membership.

Some institutions play a leading role in social reality, and act as stated above: they facilitate the existence of trust.[13] Notary offices, for example, are institutions that certify documents that attest to the existence of a specific institution, or a capacity within the framework of membership in an institution. In fact, contracts bear not only the signatures of those signing them, but also the recognition of those signatures. To a certain extent, such offices are factories of institutional facts, because they guarantee that the collective recognition of a fact belonging to an institution is correct.

It is important to highlight the link between institutions and trust: for example, credentials endorsed by notary officers make us trust an institution and the membership of certain intentional agents to the institution. If an impostor were discovered to have impersonated a notary officer, for example, we would immediately lose trust in the documents, as they would all be counterfeit.[14] A loss of trust in a notary office could occur because it is unable to ensure that its employees are not impersonated. Indeed, a notary office would not be trustworthy if it were regularly subject to such scams. However, these types of situations are rather exceptional and confirm that the institution functions regularly as it should in a functioning society.

Universities are like notary offices. They also facilitate trust in institutions and are factories of institutional facts. Universities endorse scientific expertise. From what we have examined so far, expertise is endorsed, and credentials must exist to guarantee its existence and to foster trust. The process requires established normative procedures, and this is why we have the case of procedural institutions discussed by Searle (1995, pp. 103-104). For example, to be collectively recognized as a university professor, an academic must have passed a considerable number of courses, obtained degrees, such as a PhD, and taken several exams.

Interestingly, scientific expertise is elitist in a positive sense of the term: not just anyone can declare someone to be a scientific expert. In the sense we intend here, experts, who are

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[13] It is important to highlight that Searle (1995; 2010) does not identify motives to the creation, maintenance, and recognition of institutions and, therefore, leaves out the phenomena of trust and distrust in institutions. This makes his theory incomplete because he leaves unexplained both phenomena, which are prevalent in social reality (González, 2025).

[14] In a sense, trust and distrust in institutions, and even their representatives, exhibit transitivity: since they are collectively recognized, if S recognizes and trusts an institution and its representatives, other Ss will also be able to trust; likewise, if S does not recognize and trust an institution and its representatives, other Ss will not trust either.

collectively recognized as such, ensure the existence of other experts, and thus there is a kind of institutional elitism in light of normative procedures for acquiring and guaranteeing expertise. In the case of the University, an academic must have been collectively recognized by other peers through the procedures formally established by that institution. If agents are unable to satisfy those procedures, they will not be collectively recognized as experts, nor will they be endorsed as such through the corresponding credentials. Consequently, elitism exists when scientific expertise is guaranteed through institutional procedures, which must be formally approved for the corresponding credentials to be granted.[15]

The phenomenon is similar in the case of scientific expertise. There is a group of experts who, in light of certain institutional procedures, endorse a person's expertise, and if so, grant them the appropriate credentials. Generally, this procedure is adopted by a formal academic committee, in an institution like a university. A physicist, a biologist, or a chemist acquires such status if they have been examined and endorsed by experts, by peers, that is, by a formal committee with the corresponding credentials. Consequently, we trust scientific experts when they have credentials. In fact, it is rational to trust the expertise of someone who has been endorsed by the university. There is an important difference here with non-institutionally endorsed experts: although trust in expertise is not infallible, defeaters must exist in those cases.

Note that, although it is sufficient for the expert to be accredited as such, it is not strictly necessary: there could be a self-proclaimed expert, but that is not common in social reality.[16] Social reality works as we have described here: it is based upon the endorsement of expertise by experts who act in an elitist manner if and only if certain formal institutional procedures are satisfied, so established credentials will serve as facilitators of trust.

3. The risk of not trusting expert scientific testimony: irrationalism *ad portas*

Trusting institutionally certified experts constitutes a rational and, in fact, expected action, given the way our societies are configured and the mechanisms that allow for the acquisition and spread

[15]The following caveat should be made: the fact that scientific expertise is elitist in the sense described does not mean that it is not democratically open to anyone who is able to meet the stipulated requirements.

[16] Someone might argue that a mother could become an expert on her child's illness. However, the mother would not be a doctor, nor a genuine expert, because the fact that she cannot be negligent shows that our view is correct: there is accountability only in function of the collective recognition of a certain status.

of evidence-backed knowledge. This also leads us to examine its opposite possibility, namely, to what extent not trusting experts would result in an irrational action. In this final section, we will point out that distrust of experts is, paradoxically, more likely to generate appeal to authority fallacies (or, failing that, a form of this kind of fallacy) than having moderate trust in them when we cannot, on our own, justify our beliefs due to lack of expertise. Indeed, the point that we will defend is that it is rational to rely upon the testimony of scientific experts and that, paradoxically, not only is not doing so irrational, but such an attitude also goes hand in hand with irrationality, giving rise to fallacies of appeal to authority.

To support our claim, we can turn to the common examples mentioned when discussing distrust in science, experts, and scientific institutions. A paradigmatic case is that of flat-earthers. A defender of this view will hold a series of beliefs contrary to the scientific canon regarding the shape of our planet, which include, of course, a latent distrust of scientific institutions (e.g. NASA), the figures who represent them, and the regulated discourses on the subject (such as the discourse on the Earth as a sphere). One might quickly assume that this is already an example of their irrationality, since the flat-earthers seem to deliberately ignore a series of facts that our societies take for granted based upon certified experts.

However, this point requires further analysis because, as some have argued (Guyver, 2020), flat-earthers are not irrational for that reason, but rather are people who, in an era marked by suspicion towards authorities, start from a legitimate doubt regarding the regulation and communication of information. For better or worse, we currently find ourselves in the era of post-truth, one in which the figure of the expert seems to be elucidated to give way to the homogenization of knowledge with opinions (McIntyre, 2008, p. 41).

Flat-earthers can fall into irrationality as well, but they are not irrational in principle for not believing that p, when supported by evidence. Conspiracy beliefs, a type of explanation that consists of appealing to the supposed existence of a secret plot orchestrated by those in power (Keeley, 1999; Coady, 2006; Dentith & Orr, 2017), are based upon what a group has instilled in its members as irrefutable evidence in certain environments (in the family, in friendship, among others) without that belief, in fact, being genuine evidence.

Unfortunately, many flat-earthers often fall victim to what Katherine Furman has termed *epistemic bunkers*, defined as "«…» social epistemic structures that are designed to keep their members safe «…» They boost the credibility of testimony from internal actors and diminish the

credibility of those outside, sometimes blocking external testimony entirely." (2023, p. 199).[17] In the bunker, expert testimony becomes trivialized because various agents actively seek to invalidate it, because it is part of the agenda of "those seeking to maintain control." By doing so, they isolate themselves from scientific evidence, from our mechanisms for obtaining it, and from the conditions that force us to consider knowledge bearers as certified experts.

Now, the flat-earther may be unaware of these practices. They may have limited access to information, or even if they do, they may interpret it based upon the cognitive biases cultivated by the social groups they belong to. They could be, following Plato's allegory, slaves who have only seen images passing by, unable to free themselves from the cave to see the light of the sun. However, the problem of irrationality arises when, having access to information and being able to partially see its correctness (a slave who escapes from the cave), the flat-earthers simply decide to distort expert knowledge and disregard relevant evidence for their own benefit. To illustrate this point, let us consider two possible scenarios:

a. The flat-earther is irrational when he actively distorts the experts

First, we can think of a flat-Earther who, having encountered the word of institutionally certified experts, distorts the information in such a way that it ridicules the expert and mistakenly assumes her to be an intellectual layman. He assumes, in his own intellectual narcissism, that his ideas are equally or more valid than the expert's, despite their lack of support. For him, the expert becomes just another layman, someone who makes mistakes and does not know what he is supposed to say that he knows. Thus, the flat-earther ends up reducing the expert to a sort of control device by the prevailing political powers, and therefore, anything that comes out of his mouth will be considered false, corrupt, or manipulated. In terms of Miranda Fricker (2007), this is a typical case of epistemic injustice, one case in which the testimony of the institutionally certified expert is considered erroneous only in virtue of his role (i.e., his epistemic value is disqualified by a disqualification of the agent who shares the testimony).

[17] In Fodor's (1991) terms, flat-earthers block the mind's disposition to believe that p if and only if p is true under ceteris paribus conditions.

However, we can find a second scenario that, in our opinion, is even more negative and contributes to the specific form of appeal to authority fallacy that we mentioned at the beginning of this section, namely:

b. The flat-earther is irrational when he actively distorts the experts and assumes a layman is an expert (whether himself or a third party).

While it is not enough to distort the word of the institutionally certified expert, flat-earthers can present their own "experts" with their own "credentials." These pseudo-experts and pseudo-credentials may operate as analogues to experts and genuine certifications within the context of flat-earther groups, but they lack validation for the rest of society. In Searlean terms, they do not generate a genuine deontology since they are not collectively recognized by the rest of the community capable of certifying experts, so their certifications have a partial and subjective validation only relative to those proselytizing groups. Despite all this, they manage to briefly position other charlatans as if they were genuine experts, fostering disinformation in the various current media and justifying their beliefs based upon their pseudo-testimony (or testimonial pathologies such as rumors, conspiracy theories, and fake news). Thus, a fallacy of appeal to authority arises when, ironically, there is not even real authority to appeal to. Even so, the flat-earther cites A and B as an authority, affecting anyone who receives this pseudo-evidence. Therefore, there is a distortion of our social mechanisms that, recognized by the community, allow for the communication of science and the dissemination of knowledge.

What has been pointed out in this final section is not limited to the stereotypical case of flat-earthers, but it applies to any case in which one or more pseudo-experts are positioned in public debate as relevant figures. This fallacy of appealing to pseudo-authority arises from the stubbornness of those who choose to actively ignore how our societies organize themselves with respect to knowledge and the legitimate means of obtaining it. They spread ignorance, fear, and, most importantly for our purpose, distrust in science. People lose trust in institutions when charlatans proliferate, making us forget how experts actually become experts and how there are normatively standardized steps for doing so. Such normative procedures reflect the strength of our institutions and their mission, such as the University. Unfortunately, if cases such as flat-earthers

continue to spread, our communities risk struggling to distinguish between experts and charlatans, which could lead to increasingly skeptical societies, lacking trust in genuine, authoritative voices.

Conclusion

The last section seems to lead us to a quasi-apocalyptic conclusion: there are those who irrationally distrust science and defend agents that are epistemically harmful to our societies, such as pseudo-experts, who claim to validate themselves with pseudo-certifications, the scope of which is merely subjective and limited to certain groups. However, these practices are parasitic on a system that, upon a regular basis, is functional in virtue of expert certification processes.

We are always susceptible to a charlatan or guru posing as a genuine expert without defrauding the system, especially considering the new forms of information we interact with (e.g., Instagram reels or TikTok). Furthermore, there is the limited filtering that certain sectors of society, especially digital natives and older adults, have when it comes to acquiring information online.

However, this second scenario is not common either. In today's knowledge-based society, the strength of institutions like universities to ensure expert knowledge has grown over time, and it does not seem that these types of negligent social practices are sufficient to undermine their authority. Universities are even adapting to the internet by generating new support channels to continue ensuring that certified experts are truly A and B, and not C and D.

In fact, the rigor and adaptation of our social mechanisms and institutions to foster trust in experts seems unparalleled. Except in fairly exceptional cases that challenge social reality (e.g., natural disasters), we would hardly lose this guarantee that underpins epistemic dependence upon experts.

We claim that trust in science constitutes a human need due to the division of labor that allows us to live in society. Basing our judgments upon the word of certified experts does not entail any kind of fallacy of appeal to authority or error of judgment, since we are rationally justified in believing them. In addition to the gathered evidence, our institutions, such as the University, are charged with the epistemic task of demonstrating that those who hold the social role of expert are in fact such as there is a parallel between knowledge and role. In view of those institutions, experts are authoritative voices whose testimonies on matters related to their field of expertise must be believed or accepted.

The lack of intellectual humility is positioned, then, as an inadequate disposition for social interaction in relation to the mechanisms that allow us to acquire knowledge and, its counterpart (assuming oneself as a layman who relies upon certified experts for knowledge).

Consequently, the famous Quinean dictum that science is just another myth is false (Quine 1991, p. 241). It is true that we live in an increasingly complex world, and scientific knowledge is increasingly diverse and specialized. It is also true that there are various theoretical constructs that we use to deal with sensory experience. However, we live in a sea of Searlean institutions, which are associated with collectively recognized social practices. Amongst these, science stands out as an essential social and cooperative practice, one that indeed allows us to better understand the world, and even to understand ourselves, surely, by all the trust we place in the testimony of scientific experts.

References

Agin, D. (2007). *Junk Science: An Overdue Indictment of Government, Industry, and Faith Groups That Twist Science for Their Own Gain*. St. Martin's Press.

Aristóteles. (1994). *Metafísica*. Gredos.

Aristóteles. (1995). Analíticos primeros. En *Tratados de lógica (Órganon) II*. Gredos.

Aarrevaara, T., Finkelstein, M., Jones, G., & Jung, J. (2021). *Universities in the Knowledge Society: The Nexus of National Systems of Innovation and Higher Education*. Springer. https://doi.org/10.1007/978-3-030-76579-8

Chisholm, R. (1977). *Theory of Knowledge* (2nd edition). Prentice Hall.

Coady, D. (2006). *Conspiracy Theories: The Philosophical Debate*. Routledge. https://doi.org/10.4324/9781315259574

Dentith, M. & Orr, M. (2017). Secrecy and Conspiracy. *Episteme* 14, 1-18. https://doi.org/doi:10.1017/epi.2017.9

Descartes, R. (2008). *Meditations on First Philosophy*. En J. Cottingham, R. Stoothoff & D. Murdoch (eds.). *The Philosophical Writings of Descartes Vol. II* (pp. 1-397). Cambridge University Press. https://doi.org/10.1017/CBO9780511805042

Feldman, R. (2004). *Epistemology*. Prentice-Hall.

Feldman, R. (2007). Reasonable religious disagreements. En L. Anthony (ed.) *Philosophers without Gods* (pp. 194-214). Oxford University Press.

Fodor, J. (1991). The dogma that didn't bark. En Hilary Kornblith (ed.) *Naturalizing Epistemology* (191-216). MIT Press.

Fricker, M. (2007). *Epistemic Injustice. Power and Ethics in Knowing.* Oxford University Press.

Furman, K. (2023). Epistemic Bunkers. *Social Epistemology* 37 (2), 197-207. https://doi.org/10.1080/02691728.2022.2122756

Gettier, E. (2007). Is justified true belief knowledge? En S. Bernecker y F. Dretske (eds.). *Knowledge: Readings in Contemporary Epistemology* (pp. 13-15). Oxford University Press.

Goldman, A. (1979). What is justified true belief? En G. Pappas (ed.). *Justification and Knowledge: New Studies in Epistemology* (1-23). Reidel.

González, R. (2017). La refutación cartesiana del escéptico y del ateo: Tres hitos de su significado y alcance. *Revista Anales del Seminario de Historia de la Filosofía* 34 (1), 85-103. http://dx.doi.org/10.5209/ASHF.55653

González, R. (2025). Desconfianza en las instituciones. Un problema en la ontología social de John Searle. *Revista de Filosofía Universidad Complutense de Madrid*, Vol. 50, 2, 429-439. https://dx.doi.org/10.5209/resf.959551

Guyver, J. (2020). The epistemology of Flat Earth theory. Evidentialism, suspicion, and the ethics of belief. En Corbally, C., Dinell, Da., & Ricker, A. (eds.), *Intersections of Religion and Astronomy.* Routledge. https://doi.org/10.4324/9780367407995

Hardwig, J. (1985). Epistemic dependence. *The Journal of Philosophy,* 82, 335-349. https://doi.org/10.2307/2026523

Hardwig, J. (1991). The role of trust in knowledge. *The Journal of Philosophy,* 88 (12), 693-708. https://doi.org/10.2307/2027007

Harman, G. (1986). *Change in View*. MIT Press.

Hendriks, F., Kienhues, D. & Bromme, R. (2016). Trust in science and the science of trust. En B. Blöbaum (ed), *Trust and Communication in a Digitalized World* (pp. 143-160). Springer. https://doi.org/10.1007/978-3-319-28059-2_8

Keeley, B. (1999). Of conspiracy theories. *Journal of Philosophy,* 96, 109-126. https://doi.org/10.2307/2564659

Kelly, T. (2010). The epistemic significance of disagreement. En J. Hawthorne y T. Gendler (eds.) *Disagreement, Oxford Studies in Epistemology* (167-196). Oxford University Press. https://doi.org/10.1093/oso/9780199285891.003.0007

Kuhn, T. (1962). *The Structure of Scientific Revolutions*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226458106.001.0001

Lycan, W. (1988). *Judgement and justification.* Cambridge University Press.

McIntyre, L. (2008). *Posverdad*. Cátedra.

Meeker, K. (2004). Justification and the social nature of knowledge. *Philosophy and Phenomenological Research,* 69, 156-172. https://doi.org/10.1111/j.1933-1592.2004.tb00388.x

Merton, R. (1942). Science and technology in a democratic order. *Journal of Legal and Political. Sociology*, 1, 115-126.

Nagel, T. (1987). *What does it all mean? A very short introduction to Philosophy*. Oxford University Press.

Origgi, G. (2017). *On reputation: on what it is and why it matters*. Princeton University Press. https://doi.org/10.2307/j.ctvc77bzk

Platón. (1992). Teeteto. En *Diálogos V*. Gredos.

Popper, K. (1991). *Conjeturas y Refutaciones*, Paidós Ibérica.

Putnam, H. (1991). El significado de 'significado'. En L. Villanueva. (ed.). *La Búsqueda del Significado* (pp. 131-194). Tecnos.

Quine, W. (1991). Dos dogmas del empirismo. En L. Villanueva. (ed.). *La Búsqueda del Significado* (pp. 220-243). Tecnos.

Searle, J. (1995). *The Construction of Social Reality.* Free Press.

Searle, J. (1998). *Mind, Language and Society.* Basic Books.

Searle, J. (2005). What is an institution?, *Journal of Institutional Economics,* 1 (1), 1-22. https://doi.org/10.1017/S1744137405000020

Searle, J. (2010). *Making the Social World: The Structure of Human Civilization*. Oxford University Press.

Searle, J. (2017). Money: Ontology and deception, C*ambridge Journal of Economics,* 41 (5), 1453–1470, https://doi.org/10.1093/cje/bex034

Sokal, A. y Bricmont, J. (1999). *Imposturas Intelectuales*. Paidós Ibérica.

Smith, B., Loddo, O., and Lorini G. (2020) On credentials. *Journal of Social Ontology*, 6 (1), 47-67. https://doi.org/10.1515/jso-2019-0034

Van Vleet, J. (2012). *Informal Logical Fallacies: A Brief Guide.* University Press of America.

White, R. (2005). Epistemic permissiveness. *Philosophical perspectives*, 19, 445-459. https://www.jstor.org/stable/3840904

Wilhot, T. (2013). Epistemic trust in science. *British Journal for the Philosophy of Science*, 64 (2), 233-253. https://www.jstor.org/stable/24563046

Williams, M. (1999). Skepticism. In J. Greco & E. Sosa. (eds.), *The Blackwell Guide to Epistemology* (pp. 35-69). Blackwell.