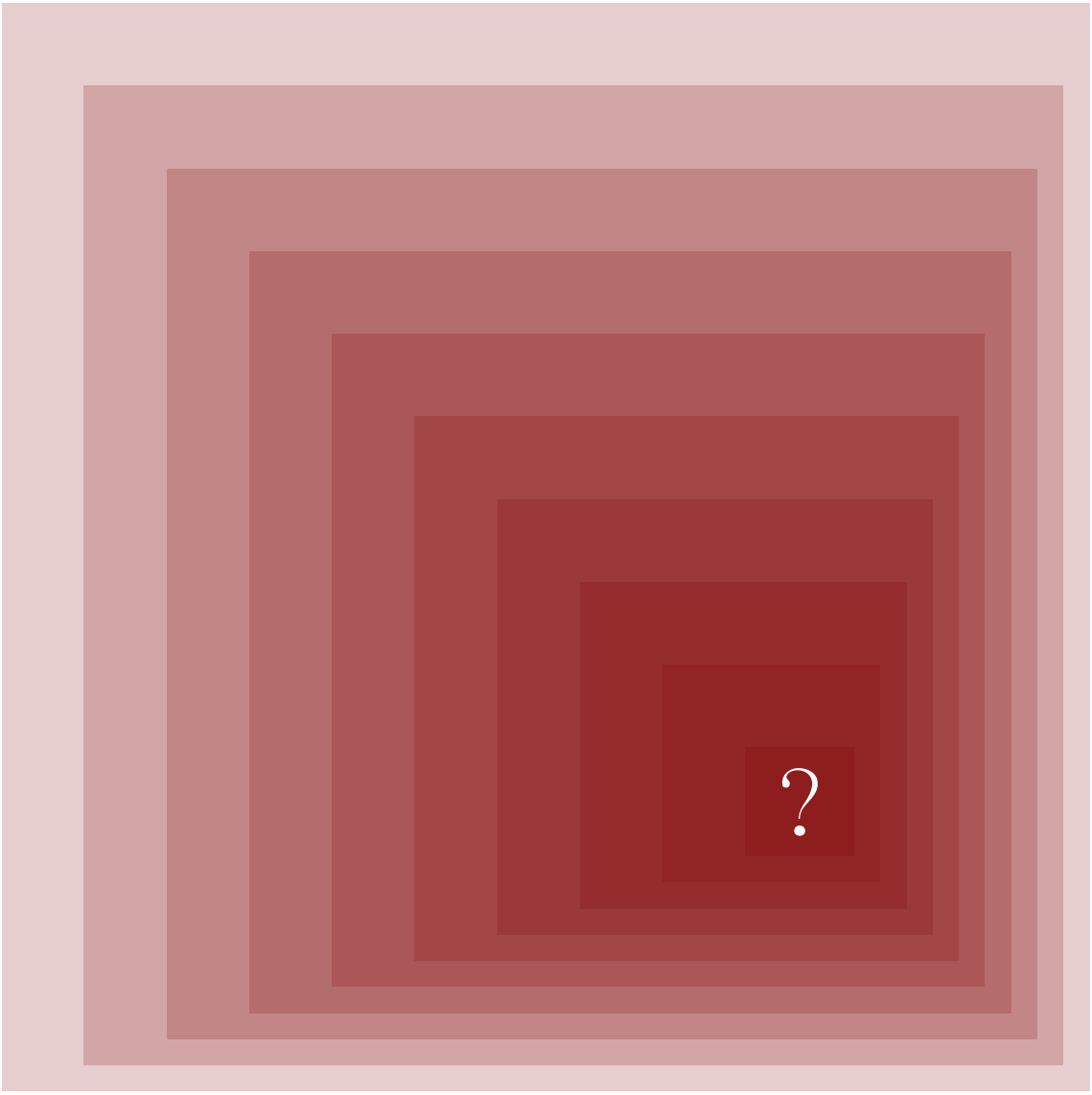
IGNORANCE dans les SCIENCES ?

Book of Abstracts



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PHILO PHILOSOPHIE HISTOIRE CRÉATION REPRÉSENTATION UNIVERSITÉ DE LYON — ÉCOLE DOCTORALE 487

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Jour 1 / Day 1 — 14/03/2024

Keynote — « Two decades of Ignorance Studies. Between structure and intentions ? » — 15h00

Mathias Girel — École Normale Supérieure de la rue d'Ulm

The Ignorance Studies/Agnotology publications that have developed over the last two decades have addressed extremely different themes and fields, ranging from the relationship with toxic products, climate change, or secrecy to ignorance in cultural and social relationships. At this stage, it seems difficult to lump them together under a single heading, given the wide variety of styles and methodological presuppositions involved. In this talk, I shall try and give a tentative survey of this field, with a focus on recent developments. In particular, I shall address and compare two major approaches that are methodologically opposed on many points : those that include strategic and intentional motives in their explanations and consider them irreducible, and those that focus more on structural motives.

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« In praise of ignorance » — 16h30

Pieter R. Adriaens — KU Leuven Institute of Philosophy (Belgique / Belgium)

Ignorance comes in many guises. Some people are ignorant in that they think they know, while in fact they don't. Such presumed knowledge is closely related to stupidity. Others are ignorant in that they don't know they don't know, which is one definition of naivety. In its most neutral and fundamental guise, however, ignorance is simply not knowing. In a knowledge society, not knowing is often considered a problem. If knowledge is power, as Bacon had it, then ignorance is a flaw. Unsurprisingly, then, many of us, and that includes doctors, find it hard to acknowledge and assume ignorance. The French psychoanalyst Jacques Lacan once described the role of the psychoanalyst as le sujet-supposé-savoir [the one who is supposed to know], and many doctors indeed act accordingly.

In recent years, some philosophers and scientists have advocated a revaluation of ignorance-as-not-knowing, both on moral (Driver 2009) and epistemic grounds (Firestein 2012), and in a wide variety of contexts. Some have even argued that our trust in medical expertise is at stake. 'The key factor that has contributed to the erosion of belief in [medical] experts is their unwillingness to admit to a lack of knowledge.' (Salecl 2020, 26) In medicine, however, there may be good reasons to eschew not knowing, which is that any suggestion or confession of ignorance, at least on the part of the doctor, threatens to erode the patient's expectations about the efficacy of a medical intervention. In other words, to acknowledge ignorance is to undermine the placebo effect, and given that mental disorders are generally more placebo responsive than other disorders, the problem of how to deal with ignorance is particularly acute in psychiatry.

In this paper, I start by defining a placebo as any medical intervention that improves the patient's condition via expectation effects. Then I argue that these effects are causally overdetermined, as they spring from a complex set of psychosocial features. I distinguish between features related to a) the intervention itself ; b) the context in which it occurs ; c) the relationship between patient and doctor ; d) the patient's personality ; and e) the personal qualities of the doctor. This final category of features breaks down in three subsets : moral qualities, such as attentiveness, empathy, and compassion ; epistemic qualities, such as intelligence, experience, knowledge, and authority ; and physical qualities, such as sex and age. Finally, I discuss some arguments for and against the relative importance of a doctor's epistemic qualities in causing the expectation effects involved in the placebo response. My tentative conclusion is that acknowledging ignorance will probably have a relatively small negative impact on the placebo effect, and that such impact may be met by a corresponding increase in expectation effects caused by other features, such as honesty and trust in the relationship between patient and doctor.

« The Cost of Ignorance in Meaning Invariance » — 17h15

Kiran PALA — University of Eastern Finland (Finlande)

In recent decades, there has been a focus on understanding ignorance from a perspective that is self-referential. This means that the concept of ignorance is closely related to thoughts and mental processes, where uncertainty arises about how we perceive reality. In this context, it is important to note that the observer and the observed cannot be clearly distinguished. Likewise, the observer is indistinguishable from the observed. As humans, reaching self-referential wisdom is about penetrating insights into thought processes and equipping us to discern others levels properly. But its systematic precision has weakened, and its applications have become ontologically obscure. So, a logical study of this concept flourished when the techniques of semantical notions were applied to mental states to procure mental representations (Fagin et al., 1995 ; Meyer and van der Hoek, 1995). One way in which this concept has been examined is through the use of semantic notions and mental representations. Through this approach, we have the opportunity to transform ourselves from a state of unknown knowledge to a state of known knowledge. This transformation is often regarded as uncertain and complex, especially when considering its implications for philosophy and science. Earlier thoughts of Firestein (2012), who offers a methodology for a number of facets, as a result, an approach was applied to propose the attainment of scientific objectivity and to doctrine the radical meaning of variance in self-referentials. But the pragmatic mode of criticism for self-referential inconsistency and the sense of being self-falsifying—that is, the denial of objectivity in science and meaning invariance—both constitute self-falsifying assertions. Interestingly, every claim of falsity can be derivable from an assumption of its truth value, where objectivity is presupposed when making cognitive claims (Scheffler, 1965, p. 21). This highlights the importance of rejecting meaning invariance in order to maintain the intended meaning. Opposing Kuhn's (1963) and Feyerabend's (2002) rejection of scientific objectivity regarding the absence of factual experiences as substance in thought processes, which is the main argument put forth. It is acknowledged that our perception and interpretation of experiences may not always align with our memory or description of them, leading to a breakdown in meaning consistency and a subsequent alteration of meanings in a self-referential process. However, it is argued that the proposed rejection of scientific objectivity and the doctrine of radical meaning variance may face criticism due to their reliance on constrained conditions. This is deemed unjustified dualism as it fails to consistently reject objectivity and meaning invariance in science, thereby highlighting the arbitrary nature of dogmatism. The paper aims to analyze and illustrate a pragmatic approach to self-referential argumentation for attaining scientific objectivity, specifically in relation to meaning invariance.

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Jour 2 / Day 2 — 15/03/2024

« Modèles climatiques, ignorance et risque » — 9h30

Marc DELEPOUVE — Université de Lille (France)

English version below

Face à l'ignorance de phénomènes qui sont ignorés par les modèles climatiques, nous introduisons deux concepts épistémologiques, le Reste et le Reste causal.

Deux objectifs de réduction des émissions de dioxyde de carbone, celui de 45% en 2030 par rapport à 2010 et celui de neutralité carbone en 2050, servent de référence des politiques au plan international, en vue de ne pas dépasser un réchauffement de 1,5°C en 2100 par rapport à l'époque préindustrielle. En 2021, la COP26 s'est conclue par le Pacte de Glasgow qui intègre explicitement cette référence.

Ces deux objectifs de réduction d'émission de CO2 sont une traduction politique de scénarios publiés par le GIEC. Or ces scénarios sont fondés sur des modèles climatiques qui ne prennent pas en considération des phénomènes potentiellement amplificateurs du réchauffement climatique, en raison de l'impossible quantification de ces derniers. Parmi ces phénomènes se trouvent la fonte de glaciers polaires, la fonte d'hydrates de méthane des fonds marins et le bouleversements du vivant marin. Chacun de ces phénomènes est susceptible d'émettre massivement du méthane et du dioxyde de carbone dans l'atmosphère. Chacun d'entre eux pourrait ainsi devenir la cause d'une accélération du réchauffement climatique, laquelle viendrait en retour stimuler ces phénomènes et en accentuer les émissions de Gaz à effet de serre (GES), d'où une accélération supplémentaire du réchauffement. Dès le XXIe siècle, ces trois phénomènes pris dans leur ensemble, de surcroît combinés avec d'autres phénomènes non quantifiables qui ne sont pas pris compte par les scénarios, présentent le risque d'enclencher un emballement climatique.

Le bouleversement en cours de la vie dans les mers et océans est particulièrement éclairant. Le rôle du vivant marin est majeur dans la composition de l'atmosphère et en particulier dans la concentration de GES. Les mers et océans subissent le réchauffement climatique et un ensemble d'autres perturbations anthropiques. La combinaison de ces perturbations crée un environnement du vivant marin inédit, si bien que ce dernier entre dans une zone inconnue où la part d'ignorance est déterminante. Son évolution d'ici à la fin du XXIe siècle est largement imprévisible et présente le risque d'occasionner un surplus important de GES dans l'atmosphère.

Afin de remédier aux risques induits par l'ignorance des phénomènes précités par la modélisation climatique, nous avons introduits deux nouveaux concepts épistémologiques dont la portée va bien au-delà de la question majeure de la définition des politiques climatiques, et présente, entre autres choses, le potentiel de faire émerger, nourrir ou stimuler des questions de recherche oubliées ou délaissées.

Tout d'abord le Reste. Les modèles, les théories, les scénarios ou les quantifications ne peuvent prétendre couvrir la totalité des aspects des phénomènes réels qu'ils ont vocation à approcher. C'est pourquoi nous introduisons le concept de *Reste* comme étant l'ensemble des aspects qui ne sont pas pris en considération.

Ensuite le *Reste causal* associé à une représentation de l'évolution passée, présente ou future d'un

phénomène donné, qui rassemble les phénomènes influençant ou pouvant influencer cette évolution, mais qui ne sont pas pris en compte dans cette représentation.

English version : « Climate models, ignorance and risk »

Faced with the ignorance of phenomena that are ignored by climate models, we introduce two epistemological concepts, the Causal Remainder and the Remainder.

Two targets for reducing carbon dioxide emissions, one of 45% by 2030 compared to 2010 and the other of carbon neutrality in 2050, serve as a benchmark for policies at international level, with the aim of not exceeding a temperature rise of 1.5°C in 2100 compared to the pre-industrial era. In 2021, COP26 concluded with the Glasgow Pact, which explicitly incorporates this reference. These two CO2 emission reduction targets are a political translation of scenarios published by the IPCC. However, these scenarios are based on climate models that do not take into account phenomena that are impossible to quantify. But these phenomena have the potential to amplify global warming. These phenomena include the melting of polar glaciers, the melting of seabed methane hydrates and the disruption of marine life. Each of these phenomena is likely to emit massive quantities of methane and carbon dioxide into the atmosphere. Each of them could thus become the cause of accelerated global warming, which in turn would stimulate these phenomena and increase greenhouse gas (GHG) emissions, leading to a further acceleration in warming. From the 21st century onwards, these three phenomena taken together, combined with other non-quantifiable phenomena that are not taken into account by the scenarios, present the risk of triggering a runaway climate. The ongoing upheaval of life in the seas and oceans is particularly enlightening. Marine life plays a major role in the composition of the atmosphere, and in particular in the concentration of greenhouse gases. The seas and oceans are being affected by global warming and a range of other anthropogenic disturbances. The combination of these disturbances is creating an unprecedented environment for marine life, which is entering an unknown zone where the degree of ignorance is decisive. How the marine life will evolve between now and the end of the 21st century is largely unpredictable, and there is a risk that it will produce a significant surplus of greenhouse gases in the atmosphere. In order to remedy the risks inherent in climate modelling's ignorance of the above-mentioned phenomena, we have introduced two new epistemological concepts whose scope goes far beyond the major issue of defining climate policies, and has the potential, among other things, to bring to light, nurture or stimulate forgotten or neglected research questions. First of all, the Remainder. Models, theories, scenarios and quantifications cannot claim to cover all aspects of the real phenomena they are designed to address. This is why we introduce the concept of Remainder as being all the aspects that are not taken into account.

Then, the Causal Remainder associated with a representation of the past, present or future evolution of a given phenomenon, which brings together the phenomena that influence or could influence this evolution, but which are not taken into account in this representation.

« Économie de la connaissance et production d'ignorance » — 10h15

Arnaud NIEDBALEC — Université Paris 1 - Panthéon-Sorbonne (France)

English version below

Jusqu'ici, l'étude des contextes scientifiques dans lesquels l'ignorance se déploie s'est majoritairement concentrée sur des terrains inscrits dans les sciences dites "dures" comme la climatologie, la biologie ou la médecine. Ces terrains correspondent aux lieux dans lesquels il est le plus souvent question de production d'ignorance, à savoir des institutions auxquelles les gouvernements ou la société civile accordent une confiance relative pour traiter des problématiques d'ordre sanitaire ou environnemental en vue d'une possible règlementation. On observe en quelque sorte une division entre les disciplines qui étudient l'ignorance et son émergence (comme la philosophie, la sociologie ou la psychologie) et celles au sein desquelles elle émerge et doit être comprise. Or de nombreux travaux, notamment en sciences sociales, appellent à tenir compte des effets que l'ignorance peut avoir sur les disciplines qui la mettent en évidence et l'étudient. En termes réflexifs, ces appels visent à "comprendre non seulement ce que l'ignorance fait au social, mais aussi (et surtout) ce que l'ignorance fait aux sciences sociales." (Barbier et al., 2021).

Ma recherche en tant que philosophe de l'économie vise à rendre compte du fait suivant : en même temps que les sciences économiques disposent de tout un arsenal conceptuel pour penser la production d'ignorance (via la production de connaissances et de non-connaissances, le traitement de l'information, le financement de la recherche, la capture des chercheurs ou l'articulation entre recherche fondamentale et recherche appliquée), celles-ci émettent des principes normatifs en termes d'organisation de la recherche scientifique qui, au regard des études et des développements sur la production d'ignorance, semblent susceptibles de l'encourager. Dit autrement, d'un côté l'économie dispose d'outils qui pourraient être utiles pour comprendre la production d'ignorance, d'un autre côté elle formule des recommandations qui constituent un terrain favorable à son émergence. Les sciences économiques offrent de nombreux terrains pour étudier l'ignorance tant du point de vue conceptuel qu'à travers les controverses qui la parcourent.

L'objectif est double : en se focalisant sur l'économie de la connaissance, et plus particulièrement sur les concepts phares autour desquels elle s'organise (ici les notions de diffusion et d'accumulation des connaissances), il s'agit d'une part de montrer que l'ignorance peut être pensée au regard de ces concepts alternatifs, et d'autre part qu'une certaine imprécision dans leur définition et leur mobilisation pratique peut conduire à l'alimenter. Dans ce second cas, l'idée est alors de distinguer les situations dans lesquelles ces concepts, agissants comme principes directeurs, peuvent être tantôt propices à une dynamique vertueuse d'accroissement des connaissances, tantôt propices à une confusion et à du doute. Cela revient à aborder les questions d'intentionnalité dans la production d'ignorance et d'indiscernabilité des résultats scientifiques (Girel, 2017) qui ne peuvent être tranchées que dans le cadre d'un terrain d'enquête particulier.

English version

Until now, research into scientific contexts giving rise to ignorance has predominantly foscused on the so-called 'hard' sciences, such as climatology, biology, and medicine. These fields represent domains where ignorance is most frequently generated, i.e., institutions entrusted by governments or civil society to address health or environmental issues with a potential for regulation. A division

exists between disciplines studying ignorance and its emergence (such as philosophy, sociology, or psychology) and those in which it arises and requires to be understood. Nevertheless, a substantial body of work, particularly in the social sciences, underscores the need to consider the impacts of ignorance on the disciplines identifying and studying it. Reflexively, these calls strive to "understand not only what ignorance does to the social, but also (and above all) what ignorance does to the social sciences" (Barbier et al., 2021).

As a philosopher of economics, my research aims to account for the following observation : while the economic sciences possess a comprehensive conceptual toolkit for contemplating the production of ignorance (via knowledge and non-knowledge generation, information processing, research funding, researcher influence, or the interplay between basic and applied research), they promulgate normative principles in terms of scientific research organization that, in light of studies on the production of ignorance, appear conducive to its fostering. In essence, economics has tools that could facilitate the understanding of ignorance production, yet its recommendations create an environment favorable to its emergence. The economic sciences provide numerous avenues for exploring ignorance, both conceptually and through associated controversies.

The objective is twofold : by concentrating on the economics of knowledge, specifically key organizational concepts (in this instance, the notions of knowledge diffusion and accumulation), the aim is to demonstrate that ignorance can be conceptualized within the framework of these alternative concepts. Additionally, it aims to highlight that imprecision in their definition and practical application can contribute to its propagation. In the latter case, the intention is to discern situations in which these concepts, serving as guiding principles, may at times foster a virtuous dynamic of knowledge enhancement and at other times foster confusion and doubt. This involves to address issues of intentionality in the production of ignorance and the indiscernibility of scientific results (Girel, 2017), which that can only be resolved within the context of a specific field of investigation.

« TERRA IGNOTA - Exploring the gulf between epistemological and logical perspectives on ignorance » — 11h15

Ekaterina KUBYSHKINA — Università degli Studi di Milano (Italie)
Mattia PETROLO — Universidade de Lisboa (Portugal)

Over the last couple of decades, the discourse surrounding the theoretical nature of ignorance has captured the interest of both epistemologists and logicians. From an epistemological standpoint, the debate has delved into defining ignorance, with the Standard Viewpositing that ignorance coincides with non-knowledge, thus serving as the complement to knowledge (see,e.g., Le Morvan 2012). This perspective enables the use of established theoretical and formal frameworks for scrutinizing ignorance. On the contrary, the New Viewasserts that ignorance corresponds to the absence of true belief, offering a nuanced analysis of situations where an agent may be ignorant without these cases being necessarily complementary to those for knowledge (see, e.g., Peels 2012). A pivotal distinction between these positions lies in the acceptance (Standard View) or rejection (New View) of false propositions as genuine instances of ignorance. Consequently, the New View contends that ignorance must be factive. From a logical standpoint, various works have sought to model the fundamental aspects of ignorance using formal systems. The prevailing methodology involves treating ignorance as a modal operator and applying tools from epistemic logic. In particular, we analyze three proposals : a system containing an operator representing ignorance whether (see van der Hoek & Lomuscio 2004), one for representing ignorance that (see Steinsvold 2008), and one for disbelieving ignorance (see Kubyshkina & Petrolo 2021). While these operators are primitive in their respective contexts, differences exist among them. Notably, ignorance whether is non-factive, whereas the other two operators are factive. Additionally, both ignorance whether and ignorance that can be reduced to K, the standard operator for representing knowledge, while disbelieving ignorance resists reduction to the standard K modality. Finally, doubts have been raised about the ability of each operator to model all forms of ignorance.

This work aims to establish a connection between the epistemological and the logical perspectives, assessing the compatibility of existing logical systems for reasoning about ignorance with the epistemological accounts. Specifically, we scrutinize the relationship between systems containing each ignorance operator and the Standard and New views. Given that none of the logical systems faithfully captures the nuances of the epistemological positions, we argue that there is currently a gap between the analysis of ignorance from an epistemological standpoint and its logical representation. We conclude by suggesting a potential avenue to bridge this divide through a philosophical resolution, possibly leading to a novel standpoint distinct from both the New and Standard views. This alternative perspective rests on the premise that ignorance cannot be defined in terms of or reduced to other mental states.

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« Undone science et santé des femmes, l'ignorance en recherche médicale en tant qu'injustice structurelle » — 13h30

Ellena THIBAUD-LATOUR — Université de Montréal (Québec, Canada)

English version below

La vulvodynie est un cas de douleur vulvaire chronique touchant 8 à 10% des femmes et se caractérise par une douleur présente à la fois lors de rapports sexuels, mais aussi spontanément dans la vie quotidienne (Bergeron, 2020). Ła vulvodynie est incluse dans le DSM-5 sous le diagnostic de « trouble de la pénétration et de la douleur génito-pelvienne » en tant que dysfonction sexuelle et est catégorisée par l'IASP en tant que « douleur viscérale primaire chronique » (Bergeron, 2020). Cette condition s'accompagne souvent d'un poids psychologique lourd puisque plusieurs femmes rapportent ressentir un sentiment de honte et d'inadéquation sexuelle, ce qui impacte donc négativement leur estime et leurs relations (Desrochers, 2008). S'attardant donc à la science médicale et tenant pour point de départ l'épistémologie de l'ignorance, la visée de cette communication est de comprendre l'undone science en ce qui a trait la santé des femmes comme une forme d'ignorance perpétuant et maintenant des injustices structurelles (tels que la marginalisation, la violence et l'impérialisme) (Young, 2011).

Plusieurs études d'épistémologie sociale et féministe soulignent le manque d'intérêt et d'attention portés aux questions de race, de genre et de religion dans la recherche scientifique. Pour pallier à ce manque, en sollicitant des écrits issus du domaine médical (Bergeron ; Desrochers ; Hudson ; Mautz) ainsi que de l'épistémologie sociale et féministe (Anderson ; Tuana ; Hoagland ; Frickel), nous proposons dans le cadre de cette communication que l'absence de recherche en matière de traitement de la vulvodynie, le sous-diagnostic et la sous-évaluation systématique de la détresse des femmes concernées (sur les plans à la fois physique, psychologique et social) s'inscrivent dans une épistémologie de l'ignorance jouant un rôle déterminant dans le maintien d'injustices structurelles. Il peut sembler étonnant que des préjugés sexistes subsistent alors même que la profession médicale (et la recherche biomédicale elle-même) s'est largement féminisée. Nous proposons ici que les préjugés en santés persistent en raison de biais structurels androcentristes. Ayant des répercussions physiques et psychologiques, la vulvodynie affecte de manière négative la qualité de vie des femmes en imposant un fardeau personnel, mais aussi social en perpétuant des récits sociaux au sujet de la sexualité et la féminité qui « mettent l'accent sur les relations sexuelles pénétrantes, sur le rôle des femmes en tant que pourvoyeuses de rapports sexuels et sur la représentation des rapports sexuels comme étant faciles et normaux » (Bergeron, 2020, p.10). Nous souhaitons, par le fait même, mettre en lumière la relation cruciale que l'ignorance entretient avec le pouvoir et le privilège dans le cas de la recherche en santé et, en nous appuyant sur le concept d'humilité épistémique, proposer des pistes théoriques pour contrer cette asymétrie. Nous démontrerons que, dans la mesure où les recherches scientifiques et les avantages vont à l'encontre du statu quo érigé par le groupe dominant, des connaissances seront mises de côté et une ignorance apparaîtra en tant que résultat indirect d'un choix dans les priorités de recherche et de développement de connaissance pour servir les intérêts de ce statu quo.

Undone science and women's health : Ignorance in medical research as a structural injustice.

Vulvodynia is a case of chronic vulvar pain affecting 8 to 10% of women and is characterized by pain experienced both during sexual intercourse and spontaneously in daily life (Bergeron, 2020).

Vulvodynia is included in the DSM-5 under the diagnosis of 'penetration and genito-pelvic pain disorder' as a sexual dysfunction and is categorized by the IASP as "chronic primary visceral pain" (Bergeron, 2020). This condition often carries a significant psychological burden, as many women report feelings of shame and sexual inadequacy, negatively impacting their self-esteem and relationships (Desrochers, 2008). Focusing on medical science and taking the epistemology of ignorance as a starting point, the aim of this communication is to understand undone science in relation to women's health as a form of ignorance perpetuating and sustaining structural injustices (such as marginalization, violence, and imperialism) (Young, 2011). Several studies in social and feminist epistemology highlight the lack of interest and attention given to issues of race, gender, and religion in scientific research. To address this gap, drawing on writings from the medical field (Bergeron, Desrochers, Hudson, Mautz) as well as social and feminist epistemology (Anderson, Tuana, Hoagland, Frickel), we propose in this communication that the absence of research on the treatment of vulvodynia, the underdiagnosis, and systematic undervaluation of the distress of affected women (on both physical, psychological, and social levels) are part of an epistemology of ignorance playing a crucial role in maintaining structural injustices.

It may seem surprising that sexist biases persist even as the medical profession (and biomedical research itself) has become largely feminized. We suggest here that gender biases in health persist due to androcentric structural biases. Having physical and psychological repercussions, vulvodynia negatively affects the quality of life of women by imposing a personal burden, as well as a social burden by perpetuating social narratives about sexuality and femininity that "emphasize penetrative sexual relations, the role of women as providers of sexual intercourse, and the representation of sexual intercourse as easy and normal" (Bergeron, 2020, p.10).

By doing so, we aim to shed light on the crucial relationship that ignorance maintains with power and privilege in health research and, relying on the concept of epistemic humility, propose theoretical avenues to counter this asymmetry. We will demonstrate that to the extent that scientific research and benefits go against the established status quo by the dominant group, knowledge will be sidelined, and ignorance will emerge as an indirect result of choices in research and knowledge development priorities to serve the interests of this status quo.

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« The Epistemic and Moral Virtue of Ignorance in Controversial Domains of Research » — 14h15

Manasa GOPAKUMAR — Temple University (Philadelphia, USA)

While agnotologists have suggested that ignorance might be morally virtuous when certain kinds of research involve the risk of harm (Proctor 2008 ; Kourany and Carrier 2020), the normative features of the various kinds of scientific ignorance remain underexplored in the literature. In this paper, I discuss the notion of "virtuous ignorance" in the context of scientific research that are considered controversial due to their potential to result in adverse consequences. For instance, research on sex/race-based differences in IQ or the genetic causes of autism involve the risk of harm to particular groups of people. Similarly, several kinds of "dual-use research," i.e., research that generates knowledge or technologies that can be readily used for beneficial or harmful purposes (e.g., research in the life sciences that leads to the creation of new, highly virulent strains of viruses through genetic alteration), involve significant threats to public safety and health, or risk harming plants, animals, or the environment. While some philosophers (Kitcher 2001 ; Kourany 2020) have argued that there are moral reasons for abandoning or restricting such lines of inquiry, others (Ceci and Williams 2009 ; Flynn 2009) contend that foreclosing an inquiry in this manner would amount to an unwarranted constraint on scientific freedom. These debates can be distilled to a fundamental disagreement over which set of values—i.e., epistemic or moral—ought to be prioritized over the other. However, I argue that socially responsible inquiries need not compromise on the integrity of the scientific practice, because in certain contexts, ignorance can be epistemically and morally virtuous.

In this paper, I develop a normative framework to determine the conditions under which ignorance can be epistemically and morally virtuous. First, I distinguish between two forms of ignorance in science : selective ignorance (i.e., an absence of knowledge that results from selectivity in the various stages of research) and falsehoods (i.e., false beliefs resulting from errors, incorrect methods, etc.), and argue that unlike the latter, the former is not inherently an epistemically detrimental state. While selective ignorance can be epistemically detrimental in some contexts, for instance, when it results from an inefficient distribution of cognitive efforts (i.e., it entails an epistemic opportunity cost) or when the benefits and burdens of that ignorance are distributed unfairly (e.g., hermeneutical injustice), it can also be epistemically virtuous in other contexts, such as when it results from virtuous epistemic practices. Then, I propose and defend what I call the "epistemic precautionary principle" (EPP) for inquiries involving significant risks of harm. The EPP places the onus on the proponents of such inquiries to show that if the inquiry must be undertaken, it can be conducted with a degree of epistemic precaution proportionate to the risk involved. I then argue that selective ignorance within controversial domains of research can be epistemically and morally virtuous if it results from the adoption of the EPP. Lastly, I consider the application of this framework by discussing the merits and limitations of some federal and state policies on research in controversial domains.

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« Pour une épistémologie de l'ignorance scientifique » — 15h30

Lucie Boël — Université Jean Moulin Lyon 3 (France)

English version below

L'ignorance est loin d'être un concept nouveau. L'intérêt pour son étude, en revanche, est récent et il est lié à la prise de conscience de son importance dans le domaine scientifique (Wehling, 2021). Les ignorance studies qui émergent dans les années 1980 s'intéressent aux mécanismes, sources et effets de l'ignorance scientifique et à sa dimension sociale (Proctor & Schiebinger, 2008 ; Tuana, 2004, 2006). D'autres chercheurs s'intéressent plutôt à la dimension positive de l'ignorance – apparentée au moteur de la science – et questionnent son rôle dans la dynamique de la recherche (Firestein, 2012 ; Ivainer & Lenglet, 1996). Ce qu'ont en commun ces approches sociale et heuristique sont, d'une part, l'intérêt pour sa dimension empirique et d'autre part, le flou qui entoure l'expression « ignorance scientifique » elle-même. Le récent développement de l'épistémologie analytique de l'ignorance pallie partiellement cette limite en interrogeant ses conditions et caractéristiques. D'abord la Standard View part de notre intuition première sur l'ignorance comme antonyme de la connaissance et se développe à partir de ce point, en menant cependant à des implications contre-intuitives (notamment le fait d'ignorer des propositions fausses, voir Le Morvan, 2022). Ensuite la New View définit l'ignorance comme une absence de croyance vraie et challenge notre intuition a priori mais saisit nos représentations de l'ignorance d'une manière plus adéquate (Peels, 2011, 2023). Un problème émerge au croisement de ces approches : les études empiriques de l'ignorance scientifique ont une compréhension superficielle du concept tandis que les approches épistémologiques, en s'appuyant sur des cas d'ignorance triviaux, font fit de ses particularités dans un contexte scientifique. Les deux cas résultent en une vision partielle de ce qu'est l'ignorance et en particulier de l'ignorance scientifique. Nous proposons d'étendre le cadre conceptuel de la New View en intégrant les apports des approches empiriques et plus précisément de l'approche heuristique de l'ignorance scientifique. Cette extension du cadre théorique, en le rendant plus flexible, lui permet de s'adapter à tous les cas d'ignorance en intégrant les particularités de l'ignorance scientifique. En retour, ce cadre théorique permet de structurer les analyses de situations concrètes d'ignorance scientifique en identifiant les éléments clés à interroger. Pour ce faire, nous présentons d'abord le cadre conceptuel développé par Peels afin d'avoir une meilleure compréhension de la nature de l'ignorance. Nous nous appuyons ensuite sur l'approche heuristique pour identifier les caractéristiques de l'ignorance scientifique (notamment de types d'ignorance inconsciente différents) et interroger la manière dont elles mettent le cadre en difficulté. Il est ici nécessaire de questionner la distinction entre ignorance commune (ou triviale) et ignorance scientifique, qui repose non pas sur des éléments conceptuels mais pragmatiques : les caractéristiques mises au jour dans l'approche heuristique peuvent aussi s'appliquer, pour la plupart, à l'ignorance commune. Enfin, nous nuançons et étendons le cadre théorique en intégrant ces caractéristiques afin qu'il rende compte de tous les cas d'ignorance. Ce nouveau cadre prend en compte des éléments pragmatiques directement liés à son application et chaque précision supplémentaire permet non seulement de mieux comprendre la nature de l'ignorance mais aussi d'analyser plus en détail les études de cas.

English version — « For an epistemology of scientific ignorance »

Ignorance is far from being a new concept. Interest in its study, however, is recent, and is linked to the growing awareness of its importance in science (Wehling, 2021). The ignorance studies that

emerged in the 1980s focused on the mechanisms, sources and effects of scientific ignorance and its social dimension (Proctor & Schiebinger, 2008 ; Tuana, 2004, 2006). Other researchers are more interested in the positive dimension of ignorance - akin to the driving force of science - and question its role in the dynamics of research (Firestein, 2012 ; Ivainer & Lenglet, 1996). What these social and heuristic approaches have in common is, on the one hand, an interest in its empirical dimension and, on the other, the vagueness that surrounds the expression "scientific ignorance" itself. The recent development of the analytical epistemology of ignorance partially compensates for this limitation by questioning its conditions and characteristics. Firstly, the Standard View starts from our first intuition of ignorance as an antonym of knowledge and develops from this point, leading however to counter-intuitive implications (notably the ignoring of false propositions, see Le Morvan, 2022). Then the New View defines ignorance as an absence of true belief and challenges our a priori intuition but captures our representations of ignorance in a more adequate way (Peels, 2011, 2023). A problem emerges at the intersection of these approaches : empirical studies of scientific ignorance have a superficial understanding of the concept, while epistemological approaches, relying on trivial cases of ignorance, make light of its particularities in a scientific context. Both approaches result in a partial vision of what ignorance is, and of scientific ignorance in particular. We propose to extend the conceptual framework of the New View by integrating the contributions of empirical approaches and, more specifically, of the heuristic approach to scientific ignorance. This extension of the theoretical framework, by making it more flexible, enables it to adapt to all cases of ignorance by integrating the particularities of scientific ignorance. In turn, this theoretical framework makes it possible to structure analyses of concrete situations of scientific ignorance by identifying the key elements to be questioned. To this end, we first present the conceptual framework developed by Peels in order to gain a better understanding of the nature of ignorance. We then draw on the heuristic approach to identify the characteristics of scientific ignorance (including different types of unconscious ignorance) and question how they challenge the framework. It is necessary here to question the distinction between common (or trivial) ignorance and scientific ignorance, which is based not on conceptual but pragmatic elements : the characteristics uncovered in the heuristic approach can also apply, for the most part, to common ignorance. Finally, we nuance and extend the theoretical framework by incorporating these features, so that it accounts for all cases of ignorance. This new framework takes into account pragmatic elements directly related to its application, and each additional clarification not only leads to a better understanding of the nature of ignorance, but also to a more detailed analysis of the case studies.

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Programme

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