Full name of the applicant	Maximilià Ernest Bautista Perpinyà
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SCIENTIFIC SECTION OF THE PROPOSAL

MAIN LANGUAGE CHOSEN = ENGLISH

This part includes the following elements:

1. Report on past research (optional)
2. Description of the research project
3. Comments on changes made in the research project in case of resubmission (optional)
4. Potential interdisciplinary approach of the research project (optional)
5. Description of the work environment
6. Summary of the master's thesis or equivalent
7. Additional comments (optional)

The applicant must fill in the sections below and convert the file into an unprotected PDF before appending it to the online application form.

The F.R.S.-FNRS insists on **strict compliance with the instructions given for each part of the proposal** (scientific section relevant to the instrument selected, number of pages allowed for documents to be enclosed with the application form…) and stresses again the sovereign consideration of the Scientific Commissions assessing the application file.

1. REPORT ON PAST RESEARCH (OPTIONAL)

My interest for the social and humanistic study of the scientific process arose from several research experiences within the field of Neuroscience. After graduating with Honors from a BSc in Liberal Arts and Sciences, with a specialization in Biology (Maastricht University, 2014), I then studied and worked on the molecular and cognitive dimensions of psychiatric disorders. I graduated with an MSc in Neuroscience (Université de Strasbourg, 2016), approaching the brain from a translational approach. My experience in different fields within Neuroscience included a student research assistantship on the molecular and behavioral underpinnings of depression (Uniklinikum Freiburg, 2016), a one-year master thesis studying the anatomical and cognitive dimensions of borderline personality disorder (Freiburg University, 2016), and after graduation, a one-year research assistantship on the genetic basis of a rare epileptic disease (Universidad Autónoma de Madrid, 2017). These diverse research experiences came with their own particular epistemic challenges. Together with an awareness of the diversity in disciplinary approaches to studying mental health, my direct experience with the inevitable social character of the research practice fueled my interest in the humanistic study of science.

This interest quickly turned into a systemic and professional dedication. I have recently graduated with Cum Laude from my second Master's degree in History and Philosophy of Science at Utrecht University. My expertise is, broadly speaking, on identifying the social structures needed for the communication of knowledge. Specifically, I am drawn to studying how knowledge is (or isn't) politically put into effect, with special attention to the heterogeneity in how the different modes of knowledge are instrumentalized, visibilized, and financially sponsored. I have a particular interest in contemporary history, from the mid-twentieth century to the present. I am very keen on this time period, especially for Western history of science, as the period after the Second World War

is an important turning point for science – in terms of policy, the identity of the scientific community, and the novel ways of funding and communicating scientific developments. During my last years of specialization within the field of History and Philosophy of Science (HPS), I have focused on two branches of study: (1) the history of the modern molecular life sciences, with an emphasis on the history of science policy and of the negotiation of the scientific identity in ethical debates; and (2) an interdisciplinary and applied approach to current debates about academic publishing.

Regarding (1), I dedicated my Master's program to elucidate one question: *what does it mean to be a good scientist?* Having taken courses in ethics, on the history of the different disciplines, and on the relationship of science with society, I set this moral question in the context of 1970s molecular sciences. My thesis, 'To be a molecular scientist. The negotiation of epistemic and social virtues in 1970s *Nature*'s marketplace,' tells the history of the identity of the molecular scientist — the ethical, social, political, and epistemic commitments as told and negotiated in the magazine *Nature* as a sort of forum for self-reflection and self-construction (see 6 for details). The three topics that became the backbone of my master thesis study were: a) the topic of science as a consumption, especially in regard to the commercialization of laboratory materials; b) the topic of science policy and the social responsibility of scientists; and c) the topic of workplace safety and research ethics in the context of the debates over the safety of recombinant DNA technology.

Regarding (2), I have proven experience in addressing the question: *how can we make a more self-reflexive academic community?* The question certainly has a conceptual link to (1), yet is independent project-wise. I am one of the co-founders of the Journal of Trial and Error, a peer-reviewed, indexed journal that rethinks what 'success' means in academia, creating for it an avenue for new and honest ways of communicating the results and process of research. This multidisciplinary initiative has had much to gain from the traditions of HPS and Science and Technology Studies (STS). In short, the Journal of Trial and Error serves as a platform where researchers from any field share negative, unexpected, unfinished results – that despite these seemingly valueless characteristics for the individual researcher, are still useful for the scientific community at large. Complementarily to this, the journal also gives special attention and value for not only reporting, but for systemic and critical reflections about science and research failure. As one of the journal's co-founders, I have worked on designing the editorial approach, taking philosophically-complex and abstract concepts, like 'replication' or 'negative results' within the HPS and STS literature, and translating them into a clear application: the development of a working journal and the production of an annual issue. I have been invited to several international conferences of different disciplines (molecular and structural biology at Cambridge, 2019; neuroscience at Bern, 2020; academic publishing in Latin-American countries at Manabí, 2020) where I have talked about the intimate relationship between modes of academic publishing, epistemic challenges, and employment in research.

2. DESCRIPTION OF THE RESEARCH PROJECT

2.1 Goals of the research

The project "Meaning and uses of 'biodiversity' and 'taxonomy' outside biology" aims at drawing a wide cartography of the concept of 'biodiversity' in non-academic settings. The guiding question of the project will be: what does it mean when politicians, scientists advising policymakers, environmental activists, concerned corporations, or environmental conservation non-profits, among others, make arguments or develop policies that invoke a loss of or crisis in 'biodiversity'? In part, answering this question requires us to clarify a conceptual issue that is often neglected in public debates over the biodiversity crisis: what exactly is it that we hope to conserve? Traditionally, biologists have defined biodiversity using measures like "species richness," for which different (not unproblematic) taxonomical approaches exist [1]. In addition to being used by scientists such as conservation biologists or environmental scientists, the idea of 'biodiversity'

(which itself is a new concept, dating only from the 1980s) is relevant for and used by other sciences, by political actors, and by different members of the public in the debates over the relation of humans with the environment. Given the political origins and inherent social ambition of the field of conservation biology, labeled at times as a "science of crisis" [2], this project aims at surveying the relationship between scientific concepts like 'biodiversity' and 'taxonomy' and their social and political settings. In short, I seek to investigate the possibility of a conceptual confusion as an issue for biodiversity, not only at the level of cutting-edge science, but at the level of environmental policymaking.

Specific Aims

SA1. Select three appropriate case studies. In order to study the development of concepts of biodiversity within and beyond the scientific community in more detail, I will begin by selecting three case studies, delimited both geographically and by domain (whether a particular governmental entity, agency, NGO, etc.).

SA2. Analyze introduction and uses of biodiversity within each case study. Since biodiversity is a concept that has been created and developed over the last thirty years, we are in the unique position to analyze both the historical details of the introduction of biodiversity within each case study as well as the conceptual changes that took place as biodiversity became progressively more important to a wider array of fields of study. Institutionally, the aim will be to track the political origins and ambitions of the field of conservation science, with the following guiding question: how did conservation biologists and related stakeholders present the concept of 'biodiversity' as a neutral, scientific term, and how did they negotiate the seemingly contradictory position of the purported analytic impartiality of 'biodiversity' with the clear political ambition of 'conservation'?

SA3. General analysis of the meaning of biodiversity outside science. While a generalization based on a small number of case studies must always be approached carefully, I hypothesize that a number of general features of the use of biodiversity will be shared by the case studies that I select. In the final phase of the project, I will identify the different ideal types of conceptualizing 'biodiversity' based primarily on the selected case studies. The main goal will be to employ a conceptual history approach (methodological details in section 4) by which the ideal types of 'biodiversity' will be explained according a co-construction between the conceptual developments of the term and their institutional political context.

Concrete Outcomes

The research performed shall interact with ongoing discussions in the fields of conservation science, history of science, and philosophy of science. As such, I will produce: two articles in peer-reviewed journals, two or three commentaries in the wider non-academic press, and a dissertation that will be ready to be converted into a monograph after my defense. As well, by the end of the research project, I will organize a multidisciplinary conference on the topic of the history and philosophy of the concept of biodiversity.

2.2 State of the art

This project seeks to integrate conceptual studies in the philosophy of science and theoretical biology on the ontological and epistemic status of species [3]–[13] with historical studies of the relationship between scientific expertise and anthropogenic environmental effects [14]–[19].

There has been growing attention in the philosophy of science since the early 2000s to the practices of conservation and environmental scientists in defining and measuring biodiversity, centering initially on the question of how exactly biodiversity might be defined [6], [7]. As a relatively new scientific concept, it remains unclear whether and how biodiversity is taken to include varying levels of biological complexity (from molecules and cells up to individuals, communities, and ecosystems [6]) or to relate to taxonomic practice [7]. More recently, this has led philosophers to participate in debates about the "standardization" of species lists and

taxonomic methodologies. Should we rest content with a sort of pluralism concerning taxonomic concepts and the understanding(s) of biodiversity that result from them, or instead resist this "taxonomic anarchy" (in the provocative words of Stephen Garnett and Les Christidis [3]) or "taxonomic disorder" (in the words of Conix [13])? One proposition for such resistance calls for the drafting of concrete lists of species and the establishment of institutions for scientific governance with jurisdiction over species classification [3], [12], [13]. Other philosophers, taking a radically different response, argue for the complete abolition of the term 'biodiversity' altogether [11], [20].

The difficulty in defining and measuring biodiversity is not the only philosophical debate within environmental philosophy, and not the only source of vagueness in deploying science-based conservation projects. Other associated axes of scientific analysis such as the vagueness of analytic categories like 'habitat' or 'locality' [6], [21], demonstrate that scientific knowledge in conservation science is not devoid of uncertainty, leaving the setting of conservation priorities as value-laden and in need also of moral and political evaluation [4], [5], [22], [23].

One notable gap in this literature concerns the political context of both the discipline of conservation biology and the interventionist projects that target the protection of species or habitats. Throughout much of the contemporary conceptual analysis of biodiversity, a given relationship between science and politics is upheld: that science functions in an apolitical framework, and that the problems lie in the application of the scientific findings. To remedy this gap, I will turn to one of the major concerns of environmental history: to understand how humans have altered nature. Here, historical studies of the formation of legitimate expertise come into play. The recent attention in environmental history to describe how legitimate discourses about nature are constructed (e.g., [15], [19]) helps reframe the question of 'altering nature' into one of *co-construction* of nature, in which the definition of the concepts that make it, such as 'environment' and 'biodiversity', is an inherently political action.

Recent work demonstrates a productive marriage between conceptual and social histories. To take just one example, Paul Warde, Libby Robin and Sverker Sörlin's *The Environment: A History of the Idea* gives an account of the emergence of a new expertise of environmental science, tied to a history of the concept of 'the environment.' They deliver an institutional and intellectual history by combining a narrative of how the increasing national political attention throughout the globe went hand in hand with the development of concepts such as 'ecosystem', 'biosphere', 'anthropogenic climate change', and, of course, 'biodiversity'. One of my tasks will be precisely to analyze how the concept of 'biodiversity' was used to construct legitimate discourses of the environment. At times in stark contrast to the philosophical tradition, cultural historians have emphasized the deep political embeddedness of the meaning of environmental concepts. Robin, for instance, highlights 'biodiversity' not so much as a neutral scientific concept, but as a political one, articulated to drive and frame political action [15].

2.3 Research project

This PhD project fits within an existing FNRS Project de Recherche (PDR) project, 'Taxonomic Disorder: Mapping & Response,' led by Dr Charles H. Pence and to be carried out with postdoctoral fellow Dr Stijn Conix. In brief, this larger project aims at diagnosing the extent, consequences, and potential cures for what has been labeled 'taxonomic disorder' [13]. As discussed above, taxonomic disorder describes the apparent state of discrepancy that has arisen between systematists in their conceptualization of what counts as species (and other taxonomic concepts). In such a state of taxonomic disorder, there is no single standardized definition of 'species' and, as such, biodiversity measures that are dependent on a given taxonomical framework (including many of the most common such measures, which are defined in terms of "species richness," or the number of species present within a given region) are susceptible to unwanted variability. If different taxonomic concepts are at play, different groups of academics might lump and divide species according to incompatible criteria [3], [4]. In and of itself, this

disorder present within the scientific enterprise might well pose problems for taxonomists and their efforts to collect data on species extents, empirical estimations of biodiversity, and so on.

But the consequences of taxonomic disorder do not only pose a problem for the scientific community. Biodiversity is critically important to the general public, especially given that the protection of vulnerable species is a matter for local, national, and international governance. This lack of scientific clarity, therefore, has serious consequences for those who try to argue for policy changes, for example, that a given natural habit or a concrete living species needs protection. As such, building on the first part of their PDR project, in which Pence and Conix will survey the scientific literature for the appearance, extent, and nature of taxonomic disorder, I will address the pressing more general issue: how does this conceptual confusion affect real-world conservation efforts? What are the conceptual commitments that conservation projects embrace? How have these commitments developed over time, and how do they interact with other values that stakeholders bring to their relationship with nature and with their societies?

Methodologically, this PhD project stands on the shoulders of both philosophical and historical literature. Philosophical works, as well as interaction with Pence and Conix, will help in clarifying the conceptual confusion that surrounds debates over the current biodiversity crisis. Historical narratives will then bring to the table attention to the speaker and contexts of those debates. Put bluntly, philosophy will give attention to the *what* ('what is biodiversity?'), whereas history will highlight the *who* ('who is speaking of biodiversity?'). Until now, nobody has attempted to integrate these seemingly distinct traditions in order to understand contemporary debates over the relation of humans to the natural world. Before solutions are proposed and enacted, we must investigate both the philosophical assumptions and the historical precedents of the traditions under which the social groups that propose those solutions operate.

SA1: Select three appropriate case studies
An essential step for a successful project will be the identification of fitting case studies. Given that I will study biodiversity from a conceptual history approach, the potential case studies must be fertile for both political and conceptual analysis (see section 4 for methodological details). That means that the initial part of the project will be to identify social tensions taking place in discussions of biodiversity as "semantic struggle[s]" [24, p. 80]. One of the main desiderata will thus be that the individual cases are set in the interaction between different social groups (such as different groups of scientists or political actors), allowing me to analyze the tensions between them. The case studies will be limited to concrete geographic areas, and will ideally be project-based (e.g., the project and debates over how to conserve the faunal and floral biodiversity of the Doñana National Park in southern Spain). The scope of the individual case studies will be described both conceptually and politically. On the one hand (conceptual analysis), I will pick cases in which I can investigate the conceptualization of biodiversity and the taxonomic methodology. Since I won't be dealing with scientific literature per se and rather with e.g., environmental policy-making documentation, it is expected that detailed definitions of these concepts won't be present. However, one of the main desiderata of the case studies is that the sources do, to a certain extent, spell out conceptualizations of what is meant by 'biodiversity' and what are the taxonomical principles being used to argue for given conservation strategies. On the other hand (political analysis), it will be important that the cases under study are rich in sources containing political decision-making histories, such as project funding strategies, knowledge transfer between experts and policy-makers, and the setting of institutional priorities. That means that I will pay special attention in this phase of the project to the potential issues in the accessibility of sources, such as whether they are hosted in public or private archives. Finally, and since the final SA3 will be a cross-comparative analysis, it will be important to select, for instance, case studies in different countries.

Together with the aforementioned investigation of the conservation projects to conserve the Doñana National Park [25], another example of potential research is a case study of the Leopoldina Akademie Freundeskreis and its liaison with the EASAC (European Academies

Science Advisory Council) as an example of academic science-based political activism, for which I have already applied for funding (see section 5 for details).

SA2: Analyze introduction and uses of biodiversity within each case study
Once the specific case studies are selected, I will visit archives (which will include both, for instance, local government archives and national NGO archives) and perform interviews with involved stakeholders. This archival work will enable my analysis to draw on internal discussions, debates, and the self-conceptions of these concepts used by the very actors who were responsible for developing biodiversity policy in these various organizations. As noted above, because these transformations were recent, extensive documentary evidence and personal experience should still be available.

Together with these primary sources, and in order to analyze and interpret them, I will read philosophical and historical literature so as to build up a competent and fertile theoretical framework. This portion of this specific aim can draw extensively on the conceptual analysis work and digital humanities analyses of the FNRS PDR project led by Pence, which will be developing both a general understanding of taxonomic and biodiversity concepts as well as tracing their presence throughout the scientific literature.

SA3: General analysis of the meaning of biodiversity outside science
From the case studies I hope to draw a general cartography of meanings of 'biodiversity' outside science. Such a general understanding of the ways in which biodiversity has been used could be a significant aid to our efforts to intervene in these debates. If disagreement at the conceptual level is a part of what has made these debates so intractable, then clarifying exactly which concepts tend to be used by which actors would be a significant advance.

To achieve this third specific aim, I will engage in conversation with current academic and policy discussions (both published and via the networks built in SA2), in order to derive general lessons drawn from my case studies.

2.4 Work plan

Year 1	Year 2	Year 3	Year 4
SA1 SA2 – especially building the theoretical framework and preparing archival visits, such as applying for additional mobility funding.	SA2 – case study 1.	SA2 – case studies 2, 3.	SA3 – general analysis, writing dissertation.

2.5 Bibliography

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3. COMMENTS ON CHANGES MADE IN THE RESEARCH PROJECT IN CASE OF RESUBMISSION (OPTIONAL)

Not Applicable.

4. POTENTIAL INTERDISCIPLINARY APPROACH OF THE RESEARCH PROJECT (OPTIONAL)

The project will require an integrated HPS approach ([26], [27]), addressing the questions of meaning and uses of scientific concepts by incorporating tools and developments from (1) the philosophy of biology, and (2) a conceptual history approach to conservation science and the notion of biodiversity. In short, the philosophical approach provides the analytical tools that will clarify *what* biodiversity is claimed to be, while the historical approach will put the emphasis on *who* is doing the talking.

(1) Philosophy of biology. Debates over the ontological and epistemic status of the concept of species (and related notions in taxonomy) have been a central question in the philosophy of biology since its inception. This tradition will allow me to understand the conceptual and practical constraints arising in the theory and practice of evolutionary biology that will determine, at least in part, the various non-academic uses of biodiversity. From a methodological perspective, this aspect of the project will involve the traditional approach found in the philosophy of science: engagement with philosophical texts, conceptual analysis of the components of evolutionary theory, and careful engagement with the ways in which those concepts find expression and usage in scientific practice.

Such analyses will be vital for understanding basic questions that are prior to the use of biological concepts in non-biological domains. What might the concept of biodiversity refer to? What empirically accessible (or measurable) surrogates for diversity might allow us to access it?

(2) Conceptual history. Taking as a starting point the methodological approach of German historian Reinhart Koselleck [28], [24], one of the largest aims of this project will be to draw a conceptual history of the concept of 'biodiversity'. Conceptual history (*Begriffsgeschichte*) as a branch of social history, yet still within an independent historiographic tradition, is a good methodological candidate to develop an integrated HPS approach, and fruitful also to investigate the meanings and uses of the concept of 'biodiversity'. While the philosophy of biology will bring the analytic sharpness on the ontological and epistemic commitments of the different meanings of 'biodiversity', we must investigate also the speaker and the conditions that make those meanings possible. For this, Koselleck's explicit formulations on how to carry out a conceptual history are highly valuable. His main starting point for a *Begriffsgeschichte* is that the definition of a concept is a "semantic struggle for the definition of political or social position" [24, p. 80]. As such, concepts are opened up as fruitful sites for study for social tensions. One of the minimal requirements for a *Begriffsgeschichte* is that the concept under study be plastic – it is in the malleability of its meaning where the social efforts to define reside, and where we can historically investigate the conditions that allow for words to be solidified into particular concepts with particular meanings. For that, the term 'biodiversity' as a deeply ambiguous concept with multiple scientific definitions (laying in a state of "taxonomic anarchy") yet able to frame and solidify complex political proposals for change, is a great candidate through which I can investigate the politics involved in the struggle to define its meanings.

Methodologically, a conceptual history allows to fix a framework of reference. In this project, 'biodiversity' will be my stable analytic word. From here, I'll be able to identify its different conceptualizations and the different groups that attempt to solidify particular meanings. Since it

is known that there are several competing conceptualizations for 'biodiversity', according to Koselleck's understanding of conceptual history, we can expect several social tensions at play. As such, my project is directed towards a comprehensive identification of those struggles by drawing from a comparative approach of social groups. As an a priori hypothesis, the comparison could be done across countries (e.g., fund*ers* of biodiversity conservation project versus fund*ed* countries with biodiversity hotspots), across taxa-based disciplinary differences (e.g., plant biologists versus animal biologists), across professional status (e.g., academic ornithologists versus amateur bird watchers), and across epistemic communities (e.g., scientists versus local communities versus non-profit NGO's versus policymakers).

5. DESCRIPTION OF THE WORK ENVIRONMENT

The Center for Philosophy of Science and Societies (CEFISES) at UCLouvain is an excellent place to conduct the research project that I have proposed here. The Pence Lab, which is hosted by CEFISES, is home to extensive expertise in the history and philosophy of biology, digital approaches to the history and philosophy of science, and the ethics of contemporary science and technology in society.

Prof. Charles Pence, PI of the lab, has published widely on all these subjects, and the lab currently hosts three major projects: one in digital history and philosophy of biology (FNRS, through 2021), one on the ethical impacts of contemporary molecular research on organoids (EC SwafS, through 2023), and one considering our responses to the contemporary biodiversity crisis (FNRS, through 2024). Current post-doctoral researcher Cécilia Bognon is conducting research drawing on historical and conceptual analyses of 'metabolism' in the emergence of biology in the eighteenth and nineteenth centuries, which may provide fruitful methodological insights and interactions.

CEFISES is, moreover, a vibrant and active research community in the philosophy of science more broadly. Other center faculty, including Prof. Alexandre Guay and Prof. Peter Verdée, have interests in the general metaphysics and epistemology of science, and each host a number of doctoral students and postdoctoral fellows. The center's seminar series, which meets weekly, is also available to any center members as a tool to invite external speakers, and could be used to bring relevant internal and external collaborators to visit UCLouvain.

Finally, the Institut supérieur de philosophie, which hosts CEFISES, is an active and welcoming institution with a host of faculty working across the discipline of philosophy, as well as an extensive library and administrative resources.

The research will be done using digital and physical textual sources. Regarding digital sources, access to those behind paywalls will be needed, and for the most part, will be provided by the hosting institution, UCLouvain. Regarding physical sources, short-term stays at archives will be necessary. Extraordinary funding for mobility may be applied for. In fact, and in the context of this project, I have already applied to the Johann-Lorenz-Bausch Fellowship 2021 of the Leopoldina Akademie Freundeskreis to visit the Leopoldina Archive in Halle, Germany to conduct the project 'Putting Biodiversity in Focus: Institutional Politics of a Scientific Concept at the Leopoldina Academy (1980s-2020).'

6. SUMMARY OF THE MASTER'S THESIS OR EQUIVALENT

My master thesis, 'To be a molecular scientist. The negotiation of epistemic and social virtues in 1970s *Nature*'s marketplace,' explores the ethical, political, social, and epistemic commitments of

British molecular biologists in the 1970s, told through the eyes of *Nature* as the leading outlet for the latest scientific and science policy news. In sketching what scientists adhered to and discussed in the magazine, I describe the image of 'the scientific self' of molecular scientists and the epistemic virtues —to use Daston and Galison's terminology— which they professed made 'good' science 'good'. In my research, I focused on two kinds of historical sources and two methodologies: on the one hand, the advertisements for scientific objects; and on the other, the political editorial pieces in *Nature* such as 'leaders' and the 'News and Views' section.

Regarding the advertisements, I describe a methodology and draw some general lessons that can be learned by studying these scientific commercial images. Within the historiography of commoditization of science, and despite the interest of various authors in describing how scientific products are made, transformed, and sold; advertisements targeting scientists themselves have largely been ignored. As well, in the book-length history of *Nature* (Melinda Baldwin 2015, *Making* '*Nature*'), these pieces of the journal have been omitted from the investigation. As such, my thesis serves as a defense of 'scientific advertisements' as fruitful historical sources. Concretely, I explore how much can they say about the meaning of science, and pose questions such as: are scientific advertisements proxies of what science was like in the 1970s? Can we learn something about what life was like at the bench, from an advertisement of antibodies?

To contextualize their meaning and illustrate the epistemic virtues within these visual objects, I turned to their immediate context — the second set of my sources. I use editorial pieces where the politics of science were explicitly debated. My two cases studies were (1) the debates over the funding of British science and the proposals of Victor Rothschild, Frederick Dainton, and the British Society for Social Responsibility in Science, in which the relationships between government, science, and society were explicitly spelled out (1971-1972); and (2) the debates over the regulation of recombinant DNA technology, the conceptualization of risk and workplace safety, and the corresponding ethical duties of scientists (1974-1978). In both these case studies, I studied concepts such as 'social responsibility', 'safety', and 'technical', and analyze their multiple plastic meanings and their diverse uses and implementations in policy.

7. ADDITIONAL COMMENTS (OPTIONAL)

Not Applicable