

FEMINIST EPISTEMOLOGIES: RE-CONCEPTUALIZING OBJECTIVITY

FRANCESCA PUTIGNANO

Abstract: Scientific objectivity is a long-debated and pivotal problem in epistemology, and consequently, it attracts numerous responses. Feminist epistemology also questions scientific objectivity, arguing that the contexts of the epistemic knower are central to knowledge production, and denying the idea that epistemic agents can curb any personal, political, and social influences or values.

This article fits into the feminist epistemology debate on scientific objectivity, combining two perspectives, Sandra Harding's standpoint theory and Helen Longino's contextual empiricism. Both projects advocate the legitimate use of non-epistemic values in science, albeit with different strategies, and focus on two equally relevant topics concerning objectivity: contents (products) and processes of objectivity. Therefore, only by analyzing the two together can we obtain a more accurate picture of objectivity to grasp the completeness of knowledge production. Through this coordinated analysis, new attributes that define scientific objectivity will be presented: a contextual and partial *essence*, a pluralistic methodology, and a transparent and responsible attitude of the epistemic agent.

Keywords: scientific objectivity, feminist epistemology, situated knowledge, Longino, Harding

INTRODUCTION

This paper is a transcription of a presentation given at University College Cork on 7/12/2019 at the Irish Philosophical Society Annual Conference on the philosophy of science, political philosophy, and the intersection between them.

The purpose of this article is to present a view of scientific objectivity¹ that is different from the value-free ideal² and enriched by the lens of feminist epistemology, specifically by the combination of two different stances in feminist epistemology which are usually considered separately, Sandra Harding's standpoint theory and Helen Longino's contextual empiricism.³ We expect two relevant

¹ The literature on objectivity in science is immense. For a reconstruction of the concept in epistemological debates, see Reiss, Julian and Sprenger, Jan, "Scientific Objectivity", The Stanford Encyclopedia of Philosophy (Winter 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/win2017/entries/scientific-objectivity/>. For a historical account of the term 'objectivity' see Lorraine Daston and Peter Galison, *Objectivity* (Zone Books, 2010). For a standard view of objectivity as in value-free see Paul Boghossian, *Fear of Knowledge: Against Relativism and Constructivism* (Oxford: Oxford University Press, 2006). For feminist literature on objectivity see Heather Douglas, 'The Irreducible Complexity of Objectivity', *Synthese*, 138.3 (2004), 453–73 <<https://doi.org/10.1023/B:SYNT.0000016451.18182.91>>, Genevieve Lloyd, *The Man of Reason: 'Male' and 'Female' in Western Philosophy*, Ideas, 2. ed., repr (London: Routledge, 1995), Donna Haraway, 'Situated Knowledges: The Science Question In Feminism and the Privilege of Partial Perspective', *Feminist Studies*, 1988, 575–99, Sandra Harding, *The Science Question in Feminism* (Ithaca: Cornell University Press, 1986), Helen Longino, *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry* (Princeton University Press, 1990), Elizabeth Lloyd, 'Objectivity and the Double Standard for Feminist Epistemologies', *Synthese*, 104.3 (1995), 351–81.

² By value-free we mean the idea that the claims, theories, methods, and outcomes of science are, or at least, ought to be free of any non-epistemic perspectives, values, personal interest, or bias of any kind. And by epistemic values we mean all those values generally considered constitutive of the objectives of knowledge and the search for the truth through scientific inquiry, while non-epistemic values concern personal, social, cultural aspects and depend on the context and the person who supports them (Phyllis Rooney, 'On Values in Science: Is the Epistemic/Non-Epistemic Distinction Useful?', *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 1992.1 (1992), 13–22 <<https://doi.org/10.1086/psaprocbienmeetp.1992.1.192740>>). In the relevant literature, depending on the preference of the author, 'cognitive' or 'constitutive' are used as synonyms for 'epistemic', and 'non-cognitive' or 'contextual' for 'non-epistemic' (Elizabeth Potter, *Feminism and Philosophy of Science: An Introduction*, Understanding Feminist Philosophy (Abingdon, Oxon.; New York: Routledge, Taylor & Francis Group, 2006).

³ Although in the last twenty years there has been a remodulation of the distinct perspectives in feminist epistemology (Alison Wylie, 'Feminist Philosophy of Science: Standpoint Matters', *Proceedings and Addresses of the American Philosophical Association*, 86.2 (2012), 47–76.), some differences between the two positions remain (Kristen Intemann, '25 Years of Feminist Empiricism and Standpoint Theory: Where Are We Now?', *Hypatia*, 25.4 (2010), 778–96).

results: (1) the insights from this coordinated analysis should make it possible to identify new attributes that help to define scientific objectivity, which is characterized by a contextual and partial *essence*, by a pluralistic methodology and by a transparent and responsible attitude; (2) this combination of feminist perspectives is an excellent example of the intersection between the philosophy of science and political matters. In fact, feminist epistemology is an attempt to explain what happens to the theory of knowledge when it meets feminist theory (hence, a specific political movement).

In the first section, I will explore the genesis and features of feminist epistemology, revealing precisely the progressive political possibilities it entails. Feminist epistemology uses and treats the typical problems of epistemology differently, including politics in knowledge and the impact that the social position and the sexual body of the epistemic knower have. Feminist epistemology contends that the contexts of the epistemic knower are central to knowledge production, arguing against the idea of the subject as interchangeable and the possibility of acquiring knowledge in a value-free manner.

In the central sections, I will present the two theories within feminist epistemology that formulate an idea of objectivity different from the value-free ideal, called respectively 'procedural objectivity' by Helen Longino and 'stronger objectivity' by Sandra Harding.⁴ Both of these projects advocate for the legitimate use of non-epistemic values in science, although with different strategies and goals.

However, the features and description of scientific objectivity that I mentioned before emerge more precisely when we consider these two solutions together, thus maximizing the strong points of these perspectives and improving the weak points that persist when the perspectives are considered separately. This personal contribution is the object of the fourth section, where I will examine the differences and similarities between the two perspectives and attempt to show how we can better understand the problem of objectivity without having to choose between the two. In fact, I believe that by analysing the two together, we can obtain a more accurate framework of objectivity, which benefits from feminist insights, to grasp the exhaustiveness of knowledge-production on the whole.

FEMINIST EPISTEMOLOGY: ORIGINS AND GENERAL STANCES

In this paragraph, I will give a brief description of feminist epistemology; I will then concentrate on the criticisms made by feminist epistemology of the ideal of value-neutrality, paving the way for political and social aspects in knowledge production.

The first feminist criticisms in epistemology date back to the 1970s.⁵ Criticisms were motivated by the general frustration experienced by women biologists and scientists when they tried to add women's interests and gender investigation to the already existing body of knowledge.⁶ After a

⁴ Longino, *Science as Social Knowledge*, Helen Longino, *The Fate of Knowledge* (Princeton: Princeton University Press, 2002) <<https://press.princeton.edu/books/paperback/9780691088761/the-fate-of-knowledge>> [accessed 29 September 2020], Sandra Harding, *Whose Science? Whose Knowledge? Thinking from Women's Lives* (Milton Keynes: Open University Press, 1991), Sandra Harding, *Objectivity and Diversity: Another Logic of Scientific Research* (Chicago: The University of Chicago Press, 2015).

⁵ For an introduction to feminist epistemology see Linda Alcoff and Elizabeth Potter, *Feminist Epistemologies*, 2015, Alessandra Tanesini, *An Introduction to Feminist Epistemologies* (Malden, MA: Blackwell Pub, 1999), Sandra Harding, *The Feminist Standpoint Theory Reader: Intellectual and Political Controversies* (New York: Routledge, 2004).

⁶ The first approaches of feminist literature to science were not motivated by epistemological concerns, but rather by critiques of the existing disciplines, especially in the biological field (Alessandra Tanesini, 'Epistemologie e filosofie femministe della scienza', *Aphex*, 2015 <<http://www.vloweb.com/aphex/epistemologie-e-filosofie-femministe-della-scienza/>> [accessed 13 November 2020]). We can find plenty of examples of misconceived explanations tainted by sexist assumptions. Probably, the fields most affected have been medicine and biology (see for example, Helen Longino and Ruth Doell, 'Body, Bias, and Behavior: A Comparative Analysis of Reasoning in Two Areas of Biological Science', *Signs: Journal of Women in Culture and Society*, 9.2 (1983), 206–27 <<https://doi.org/10.1086/494044>>).

In the medical field, women were excluded from medical science, or women's conditions and diseases were ignored. In the field of biology, the prominent examples are the studies on the hormone that controlled reproductive functions, or the differences in the type of hormones in men and women that justify an aggressive yet (supposedly) successful attitude.

preliminary phase of criticism of existing explanations, feminist critics investigated how sexist and androcentric assumptions were able to thrive in spite of a method purportedly based on neutrality and universality. They suggested that the notions of method, objectivity, and rationality as they were defined at the time, rather than being neutral, were affected by the western heterosexual bias. Sandra Harding⁷ was the first to organize this emerging body of feminist critiques in epistemology. She divided feminist epistemology into three categories: feminist empiricism, standpoint theory, and feminist postmodernism.⁸ Contextual empiricism was formulated by Longino in the framework of feminist empiricism, while Harding is one of the forerunners of standpoint theory.

In general, the notions underpinning the three positions not only concern the social structure and the use of science, but also the origin, the problems, the social meanings, the aims, and theories of knowledge. Starting from the assumption that the contexts of the epistemic knower are central to knowledge production, and consequently, denying the idea of the epistemic knower as interchangeable, feminist epistemology argues against the possibility of handling knowledge in a neutral and detached manner, or in other words the idea that epistemic knowers can curb any personal, political, and social influences. Knowledge, rather than being pure and detached, is *situated*. Situated means that knowledge arises from a specific location characterised by social and political aspects. All knowledge is generated by the particular position of the knowing subject; consequently, our social experience conditions the recognition of what we live and what we know.⁹ Given that knowledge is situated, feminist epistemology proposes the opportunity to embrace the contexts and values that form our knowledge and see if they can be used to perform a beneficial role in the typical process of theory of knowledge, objectivity, justification, etc. The very possibility of doing feminist science highlights the connection between contextual values, ideology, and scientific research.¹⁰

To this extent, both Longino and Harding formulate two respective revisions of objectivity, by considering the active role of non-cognitive aspects, albeit with differences. I believe that concentrating on both the solutions makes it possible to consider the criticism of objectivity as value-free from two different perspectives, the process of knowledge - production (feminist practices and methodologies), and the product of this knowledge (contents of feminist science). Moreover, they both express concern about the impossibility of conducting objectivity in a value-free way. However, instead of abandoning the concept of objectivity altogether, we need to revise it, taking account of the fact that we are inevitably shaped by our background assumptions, which affect knowledge production and compromise the value-free ideal. In the next sections, I will present the two projects, and I will conclude by laying particular emphasis on why a coordinated analysis is beneficial for understanding how political intersections function in science.

LONGINO'S PROJECT: FEMINIST METHODOLOGIES OF SCIENCE

⁷ Harding, *The Science Question in Feminism*.

⁸ Although we are now seeing changes in these positions, this division is still valid if we need a map to navigate within the discipline.

⁹ This thesis is accepted by all feminist epistemology, even if interpreted in different ways. For example, in the standpoint theory it is explained in structural terms, highlighting how the epistemic location is not only idiosyncratic, a consequence of our talents, dispositions, and unique personal histories, but must be understood to arise from a contingent but powerful line of social differentiation. These conditions shape not only our position as experts – that is, if we are recognized as credible epistemic agents – but also our cognitive and epistemic resources (Alison Wylie, 'A Plurality of Pluralism: Collaborative Practice in Archeology', in *Objectivity in Science: New Perspectives from Science and Technology Studies*, by Padovani, et al. (Springer, 2015), pp. 189–210).

¹⁰ Nowadays many scholars are sympathetic with the idea of objectivity as not- value free which gave particular importance to the context-related part, and how this part may help in stating a new idea of objectivity far from the value-free type (see E. Montuschi, 'Rethinking Objectivity in Social Science', *Social Epistemology*, 18.2–3 (2004), 109–22 <<https://doi.org/10.1080/0269172042000249246>> and Inkeri Koskinen, 'Defending a Risk Account of Scientific Objectivity', *British Journal for the Philosophy of Science*, 71.4 (2020), 1187–1207 <<https://doi.org/10.1093/bjps/axy053>>). I will expand these aspects in the fourth paragraph.

Longino focuses on the methodologies and practices involving scientific knowledge by showing how they are fundamentally social and interactive. Scientists do not work alone, and even if they do, their work must meet specific criteria to be defined as scientific knowledge and accepted. Data from an experiment must be available to the entire scientific community since the experiment might thus be repeated and verified by others. The stability and reliability of data are assured by subjecting the results to the criticism of peers, a paradigmatically social activity. Also, scientists discuss their theories, and so 'the decision whether something is an appropriate reason is made socially, through discursive interactions'.¹¹

In this interaction, Longino underlines that the background assumptions of the researchers have a central role, and for this, they should be evaluated. There are no formal connections between theoretical hypotheses and the observed data brought forward as evidence for them. Data does not in itself indicate what it serves as evidence for; it acquires its status as evidence for certain theories in the context of background assumptions, the significance of these observations is a function of the questions in which we are interested. Contextual values also shape background assumptions. Thus, contextual values enter via background assumptions into the production of knowledge. The explanation is always verified by empirical adequacy, but the background assumptions trigger the relevance given to evidence. Hence are the background assumptions that illuminate different aspects of the same observations that become epistemically significant.¹² However, if we all share the same background assumption, it is not likely that we will be able to spot contradictions in our points of view or alternative explanations.

Hence, a good understanding of our knowledge production can be acquired by considering the context of background assumptions and the interaction with the relevance of evidence and the required diversity of points of view. Since these are all social activities, a good understanding of objective is based on the normative rules that regulate these interactions, and Longino (1990, 2002) provides four equally binding criteria for this regulation, which represents the feminist methodologies of doing science: avenue for criticism, uptake of criticism, shared standard for evaluation of theories, and equality of all members.

The first prescribes publicly recognized ways for the criticism of evidence, theories, and models. Criticisms of research must be articulated using the same standard and in the same venues where the original research is presented: journals, conferences. Secondly, the community must not merely tolerate dissent, but theories and beliefs must change in response to the ongoing critical discourse. Thirdly, rules must be officially recognized according to which theories, hypotheses, and observations must be correctly evaluated. The point of requiring public standards is that by explicitly or implicitly professing adherence to those standards, individuals and communities adopt criteria of adequacy with which they can be assessed in a non-arbitrary way. Finally, 'communities must be characterized by the equality of intellectual authority'.¹³ The consensus is not the result of the exercise of power, but the result of critical work in which all the perspectives are heard. The equality of intellectual authority does not mean that every perspective is equally valid, but that everyone is recognized for their ability to make arguments that can serve for the construction of the theory.

¹¹ Helen Longino, 'Gender, Politics, and the Theoretical Virtues', *Synthese*, 104.3 (1995), 383–97.

¹² Researchers interested in the impact of hormones on sexual behavior discovered that the sexual behavior of rhesus macaques reaches a peak when the females are ovulating. The researchers wanted to determine how the males understood when to start the reproductive act and thus obtain the optimum result in terms of procreation. It is now proven that the peak of sexual activity during ovulation is signalled by macaque rhesus females, which initiate the sexual act, but for a long time, the research conducted neglected this fact and focused instead on the behaviors and abilities of the males. Kim Wallen, a behavioral endocrinologist specializing in female sexuality, states that the crucial turning point took place in 1976 - over 30 years after the examples of female initiation had been recorded for the first time. According to Wallen, this reflected a cultural shift due to the increase in female students in endocrinology. An influx of female researchers led to greater scrutiny of the dominant perspective and its justifying resources and enabled the discovery of sexist hypotheses on male sexual proactivity and female passivity (Janice M. Hassett, Erin R. Siebert, and Kim Wallen, 'Sex Differences in Rhesus Monkey Toy Preferences Parallel Those of Children', *Hormones and Behavior*, 54.3 (2008), 359–64 <https://doi.org/10.1016/j.yhbeh.2008.03.008>).

¹³ Longino, 'Gender, Politics, and the Theoretical Virtues'.

These four criteria serve to subject the results to multiple points of view to eliminate idiosyncrasies in the background assumptions and obtain a higher level of objectivity because the more knowledge can handle criticisms originating from multiple perspectives and capable of eliminating contradictions to make scientific reasoning reliable, the more objective it will be.

HARDING'S PROJECT: FEMINIST CONTENTS OF SCIENCE

Harding's main aim is to analyze the question by who knowledge is conducted. Whilst, objectivism requires the elimination of all social values, for standpoint theory, not all social values are harmful because they can enrich our scientific discussions, and these profitable values are carried by specific groups or identities. Harding agrees with Longino about the need for evaluations of background assumptions, which are shaped by contextual values. However, this type of evaluation is made differently. Starting from the assumptions that our cultural beliefs are all located and that these locations shape the way we know and the access to what we can know, Harding contends that the different characteristics of the positions of women in a stratified gender society are an advantage in research because these characteristics make it possible to produce more accurate descriptions and explanations.

Women's perspectives (and marginalized groups in general) and the contents of their values are the keys to enhancing objectivity: by starting from the lives of the marginalized, the objectivity of a scientific investigation increases because it observes and examines the assumptions and practices that seem natural or discounted from the perspective of the dominant class (white heterosexual men). Thinking from the perspective of women leads us to ask questions about natural and social relationships and ask ourselves about the social conditions that make someone else's perspective different from the dominant one. Harding argues that these experiences should be understood as a starting point to offer a new perspective through which to look at problems because they offer a better way of finding oppositions or contradictions in a system that benefits, intentionally or not, from institutional sexism or racism.

This dual vision is called a standpoint. However, standpoint is not automatic and requires three conditions: the researchers being aware of the social conditions that shape scientific knowledge; looking beyond hegemonic ideologies and seeing how they function; and thirdly, since a standpoint is a collective achievement, it should be reached through critical discussion involving the people whose positions it represents. This last aspect can imply a political effect because having a standpoint also means producing resistance, counter-hegemonic discourse, autonomy, and changes in society.¹⁴

This self-awareness about our knowledge formation is what Harding calls stronger reflexivity, namely that at the center of interest is not just the object-to-know, but also the researcher who must reflect on their social locations and the auxiliary assumptions that shape her knowledge, and this also includes, of course, social aspects. Harding claims that marginalized groups are better at evaluating these social aspects because they are more accustomed to experiencing the differences; they do not share the privileges of the dominant class. These experiences help them to understand the material world, human bodies, and social relations in ways that are not available to most university professors (mainly men) who produce epistemology, social theory, and conceptual research frameworks.¹⁵

¹⁴ Other scholars in the standpoint framework have underlined which phenomena would benefit from women's considerations see (Hilary Rose, *Love, Power, and Knowledge: Towards a Feminist Transformation of the Sciences*, Race, Gender, and Science Bloomington, Ind: Indiana University Press, 1994, Dorothy E. Smith, 'Women's Perspective as a Radical Critique of Sociology', *Sociological Inquiry*, 44.1 (1974), 7–13 <https://doi.org/10.1111/j.1475-682X.1974.tb00718.x>, Nancy Hartsock, 'The Feminist Standpoint: Developing the Ground for a Specifically Feminist Historical Materialism', in *Discovering Reality*, ed. by Sandra Harding and Merrill B. Hintikka, Synthese Library (Dordrecht: Kluwer Academic Publishers, 2004), CLXI, 283–310 <https://doi.org/10.1007/0-306-48017-4_15, Patricia Hill Collins, 'Learning from the Outsider Within: The Sociological Significance of Black Feminist Thought', *Social Problems*, 33.6 (1986), S14–32 <<https://doi.org/10.2307/800672>>).

¹⁵ An example of this situation is described by Nancy Daukas, 'Altogether Now: A Virtue-Theoretic Approach to Pluralism in Feminist Epistemology', in *Feminist Epistemology and Philosophy of Science*, ed. by Heidi E. Grasswick (Dordrecht: Springer

In summary, with stronger objectivity, we will have alternative reflections to study and explore, and we can also re-open questions made on earlier occasions and challenge the old model because it does not give these groups the tools to live in the system. By shedding light on these types of questions, feminism offers alternative views of nature and social relationships, along with methodological differences that involve taking women's lives as starting points and lead to results that often conflict with the dominant western vision. It is important to note that the purpose of these studies is not to produce an ethnography of women's lives but to critically examine the dominant institutions and their policies, cultures, and practices that influence women's lives. Hence, giving feminist explanations is crucial to enabling women to stop being mere historical objects and to become historical subjects capable of making their own history.

PROCESS OF SCIENCE AND PRODUCT OF SCIENCE: TWO SENSES OF OBJECTIVITY

The two projects that I have summarized, even self-contained, serve as an excellent example of the intersection between philosophy of science and political aspects, as well as of different understanding of scientific objectivity. Nevertheless, I believe that if we consider these two projects together, we can get a more complete idea of how specific political intentions, such as feminist beliefs, can improve a topic as highly debated as objectivity in science. The analysis of objectivity in fact can be centred on two *targets*. Objective may refer to the products of science as well as to the processes of objectivity.

According to the first understanding, science is objective in that, or to the extent that, its products—theories, laws, experimental results and observations—constitute accurate representations of the external world. [...]. According to the second understanding, science is objective in that, or to the extent that, the processes and methods that characterize it neither depend on contingent social and ethical values, nor on the individual bias of a scientist. (Julian Reiss).

For feminist researchers, the question is not just how the research is conducted but also what the research produces. Rather than choosing to pursue one side over the other, if we analyze the two solutions together, we could gain insights into the two different aspects of scientific objectivity, namely the methods and criteria through which we evaluate a knowledge (the process of science) and the contents (products) on which we should concentrate. This double appraisal allows us to obtain an exhaustive framework of scientific objectivity without neglecting important aspects. The standpoint theory offers a concrete example of what a scientific community that benefits from diversity and dissensus can give to epistemology and theory of knowledge in general. Contextual empiricism by Longino becomes the theoretical framework for dealing with and explaining the validity of the contents supported by standpoint theory.

Through the lives of marginalized groups, standpoint theory promotes the logic of discoveries: asking and starting from the perspectives of these groups throws light on aspects hitherto ignored or misconceived, so they are instrumental from a heuristic point of view. However, arguing for the justification of these perspectives to hold a theory can be problematic. We risk either falling into essentialism, as in deciding that one marginalized group is better than others without exceptions or falling into relativism, as in endless disputes about which marginalized group is the best. In order to be conclusive, a theory must not only focus on highlighting the perspectives that are ignored but must also

Netherlands, 2011), pp. 45–67 <https://doi.org/10.1007/978-1-4020-6835-5_3>. Women who wish to participate in mainstream society must get in tune with the *modus operandi* of the ruling class and must, therefore, conform themselves. Conforming also entails developing a sense of how the privileged class lives, which allows us to develop a dual consciousness: a critical awareness of our own conditions and bias and of that of the dominant group. This dual vision contributes to the production of a broader and less partial description of things. In contrast, an individual who accommodates the ruling class does not have to negotiate their own environment and, therefore, is often not able to notice perspectives that differ from their own, also because the dominant class has the power to portray itself as absolutely impartial.

be able to impose itself as a producer of scientific knowledge, not mere plausibility.¹⁶ The problem of standpoint theory is that it does not tell us *a priori* how to choose between different standpoint perspectives. Over the years, the concept of marginality has become more and more complex because the hierarchy and the network of social relationships are determined not only by gender but also by other markers (race, sexual orientation, and so on), which therefore make it very difficult to consider the multidimensionality of each individual occupying a specific subjective niche.

As a result, I believe contextual empiricism can provide a solution since choosing it as a justificatory basis removes the risk of grounding epistemology on a specific political position (for example, standpoint theory on Marxist theory).¹⁷ Once we have included the marginalized positions, which are essential to have less partial knowledge, and not just because they have been ignored so far but because their intuitive insights are valuable due to the social locations they occupy, we can argue *a posteriori* with these marginal voices using the criteria proposed by Longino.

Longino's project, on the other hand, is enriched by standpoint theory because it allows the support of cultural relativism but not epistemological relativism. Longino shares the concept of situated knowledge, namely that the social conditions of the knower motivate epistemic differences. For this reason, she argues that we should pay particular attention to the different background assumptions that are shaped by different social locations. To ensure objectivity, then, she proceeds to (1) recognize the role of non-cognitive values through the elaboration of scientific knowledge and (2) argue for the diversity of values, because the more values we gather, the more we will be able to put the theory we hold regarding a specific phenomenon to the maximum number of diverse points of view.

However, Longino does not lean on one value over another. Critics have stressed that in this way she risks falling into inter-subjectivism relativism, allowing certain radical or extreme values to take their place in science.¹⁸ With Harding's epistemically privileged standpoints, as a mandatory presence in the scientific community, we could argue that marginalized perspectives are superior from a heuristic point of view and that their contribution to the choice of theories is justified by methodological norms that govern the social interactions that lead to defining scientific knowledge. In fact, starting from the marginalized perspectives makes it possible to diversify the social composition of the scientific community, from which different perspectives arise. And these different perspectives are the pivotal ingredient and the normative force in Longino's project, for ensuring more accurate objectivity, since the more voices gather and the more criticisms knowledge can survive, the more correct it will be. In this way, the position supports cultural relativism, recognizing that each belief is situated, but not epistemological relativism because these norms justify methodologically which social locations and background assumptions bring better knowledge. So, Longino explains the methodological norms that characterize feminist research while Harding explains why these rules are epistemically salient since if results and theories also correspond to marginalized perspectives and experiences, knowledge will be more accurate and less partial.

In this way, the fundamental characteristic of objectivity is not its being value-free but rather the fact that it is a trait of the communitarian structure of scientific inquiry, which can increase thanks to the plurality of views that are addressed through pragmatic and non-fixed criteria. Being a feminist epistemologist means insisting that the researcher is considered responsible for the values and interests

¹⁶ Helen Longino, 'Feminist Standpoint Theory and the Problems of Knowledge', ed. by Dorothy Smith and others, *Signs*, 19.1 (1993), 201–12.

¹⁷ Hartsock (2004) was the first to propose a theoretical justification of the epistemic privilege of women in the patriarchal system. She presented an analogy between the epistemic privilege of the proletarian class and women from Lukàcs (Georg Lukàcs and Rodney Livingstone, *History and Class Consciousness: Studies in Marxist Dialectics*, I. ed. 1923 (Cambridge, Mass: MIT Press, 2013).

¹⁸ Longino's idea of social objectivity risks falling into a form of 'intersubjective relativism' since all values are seen as epistemic resources, without investigating how to deal with the positions that do not count as epistemic gain but, on the contrary, are malevolent for knowledge (Kristina Rolin, 'Contextualism in Feminist Epistemology and Philosophy of Science', in *Feminist Epistemology and Philosophy of Science*, ed. by Heidi E. Grasswick (Dordrecht: Springer Netherlands, 2011), pp. 25–44 https://doi.org/10.1007/978-1-4020-6835-5_2).

that inevitably play a role in all aspects of scientific research. That being said, feminist epistemology does not aim to leave a sense of mistrust or arbitrariness regarding science. Instead, it provides a more precise insight into how science is produced to achieve better understanding and control of it. We can now summarize more precisely the three stances that define scientific objectivity when we investigate it from the perspectives of feminist epistemologies.

1. The first feature appeals to the *nature* of scientific objectivity, as contextual and partial. Scientific objectivity should not aspire to the value-free, instead, it should take into account the potentiality of the inherent intersection of political and social aspects in science and the fact that knowledge is characterised by these contextual and non-epistemic aspects. This means that knowledge is shaped and limited by our position; it is not possible to obtain the so-called view from nowhere, but every vision will always be partial and local. Consequently, knowledge can never be universal, but this does not mean that it is reduced to individual idiosyncrasies or epistemic relativism. Scientific knowledge is a positioned objectivity, open to multiple connections and deriving from the awareness that human lives are different from one another and immersed in knowledge stratified by gender.¹⁹ Women and men perform different activities in society and follow different models and behaviors. Using women's lives as a starting point to criticize basic knowledge that refers only to that of the ruling class, therefore, serves to reduce the partiality of the framework of social and natural life that has been created so far. Hence, the social and political locations in which women and marginal groups find themselves (as marginalized characters in a male and patriarchal-prominent society), could give them specific insight into problems and issues that enrich general understanding.
2. The second feature pertains to the methodology: we embrace a pluralistic attitude that is open to the idea that partiality can somehow lead to objectivity, where the combination and overlap of local perspectives are made possible using criteria and thanks to a democratic project which allows participation and inclusion in the first place. Feminist epistemology advocates for a variety of background assumptions, because otherwise we are not able to find contradictions if we all share the same perspectives. Knowledge of the empirical world should be founded in the world. Human lives are part of this world that is studied. But human lives are not all the same and they are also immersed in a stratified gender knowledge. This implies that objectivity is plural because different aspects of the same object can be known without hierarchical relationships emerging between them. Pluralism is a consequence of the complexity of nature, because a single theory does not exhaust all the causal interactions involved in a given process.²⁰ To this extent, a helpful reflection on the contents and objects of science in the social world is put forward by Montuschi (2004). Montuschi suggests that the objectivity of the processes through which the objects of science are said and classified can be evaluated based on the questions formulated and made for these objects and not because of some scopes and ideal standards. The choice and effectiveness of certain resources and techniques go hand in hand with the research objects and how they are classified and described. Her analysis supports a pluralistic method since it allows us to consider different images or models of the same object based on the interests and aims, we follow when starting the investigation. Pursuing a more pragmatic and plural approach in which objects can be inserted in a comprehensive context of description, classification, and analysis increases the different sides we can analyze of phenomena. The objectivity will be measured then not on ideal and fixed standards but on pragmatic and empirical standards, which can be enlarged and changed based on the question we want to answer in each research. Moreover, there will be place for every problem, especially

¹⁹ Haraway.

²⁰ Daukas.

those that have been ignored, because pluralism does not admit hierarchical organizations but opens to the complexity and transversality of the phenomena to be investigated.

3. Finally, developing and supporting this idea of objectivity involves a sense of transparency and responsibility. Transparency is required to avoid any epistemic injustice or distrust.²¹ Responsibility, on the other hand, is needed because if we acknowledge that our attitude to knowledge is neither universal nor general but that we are always embedded in social locations that shape but also limit our understanding, it is our responsibility to ensure that the most perfectible understanding is the one that respects the highest number of people. Relationships with others and with the world are central to the process of knowledge, we nurture our sensibility by questioning and seeking other people and experiences, and we also become more responsible epistemically.²² Situationality can be used as a map that guides researchers towards topics with different affinities, ensuring that groups whose research and scientific projects still have an impact on them can be respected.²³ An interesting view of the importance of a transparent and responsible attitude is the epistemic risk that can be used as a further warning. For instance, Koskinen uses the concept of epistemic risk²⁴ and our inherently fallible nature as epistemic agents to validate the normativity of scientific objectivity. When we consider something objective as connected to epistemic risk, we are not saying that this is true but that we have good reasons to trust the results, and this means that we are relying upon because we think that the epistemic risks that arise from our fallibility as epistemic agents have been avoided.²⁵

Then, suppose our sense of responsibility and transparency also consider marginal perspectives as our point of departure. In that case, we will obtain a much broader framework of epistemic risks, which we would not assume if our scientific members continue to be represented and formed only by homogenous groups. Considering what happens in case we are wrong, even to those marginal groups that are usually not considered and being ignored in scientific research, broadens our sense of responsibility and transparency, but also our objectivity because more possible scenarios are considered, thus also lowering the damage and epistemic risks in case we are wrong in certain analysis. Scientists, therefore, if we also consider epistemic risk as a variable for objectivity, will evaluate the ethical and social consequences of the error for a wide group of identities, therefore broadening the picture of the harmful effects we could have if they were wrong.

²¹ For more details on epistemic injustice and epistemology of ignorance see Miranda Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford ; New York: Oxford University Press, 2007) and Nancy Tuana, 'The Speculum of Ignorance: The Women's Health Movement and Epistemologies of Ignorance', *Hypatia*, 21.3 (2006), 1–19.

²² Lisa Heldke, 'John Dewey and Evelyn Fox Keller: A Shared Epistemological Tradition', *Hypatia*, 2.3 (1987), 129–40.

²³ Harding insists on this point, affirming that it should be a democratic principle that people who are affected by theories and consequences of specific inquiries should also have the possibility to express themselves on these theories and consequences and not passively submit to them. It should be an ethical principle that those who suffer the consequences of a scientific choice should at least take part in this science. Diversity therefore does not only concern different physical presence, but also the diversity of values and interests of all citizens. Starting with the lives of the marginal also serves the purposes of social justice (Harding, *Whose Science?*).

²⁴ The concept of epistemic risk appeared in Science and Human Values where Hempel defined it as the possibility that one could be wrong in accepting or rejecting a particular hypothesis (Carl G. Hempel, 'Science and Human Values', in *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science* (The Free Press, 1965), pp. 81–96 <<https://philarchive.org>> [accessed 1 February 2021]).

²⁵ Koskinen.

To show how these three stances apply, consider the following example:²⁶ climate change is central in our days, and scientists consider different variables and possible scenarios to interpret this phenomenon and solve it. Lately, political activists from marginal groups have shown insights and suggestions that western thought has not considered before, and climate change solutions could only benefit, if not solved, by marginal perspectives.

This is because firstly, Indigenous communities comprise 5% of the world's population, yet they protect 80% of the world's biodiversity.²⁷ Ironically enough, many of the environmental solutions western thought uses today have been used by Indigenous people for generations, such as zero waste, land restoration and water conservation. How much could our research have benefited and grown if we considered using different perspectives in our studies?²⁸ And how much time would we have spared if we consider these solutions in the first place? Abandoning the idea of objectivity as universal and accepting that our vision will always be partial and even limited will then lead us to open our gaze to other positions, equally partial, but which illuminate aspects different from ours. This enlargement is especially essential if we tackle such a large and impactful problem as climate change. Our knowledge can only improve if we give up the unattainable value-free ideal and use our partiality. Our contexts sculpt and limit our knowledge, so we should be open to the union and overlapping of other partial gazes where possible. By considering more partial gazes, we will have a more objective knowledge than we had if we only considered our gaze but passed it off as universal.

Secondarily, using a pluralistic methodology cast a different image on the climate change problem, one connected to social and racial justice. BIPOC communities are more likely to die from pollution because they are commonly located near infrastructure delivering the climate crisis.²⁹ Since they experience first-hand how the climate crisis affects their lives (way more than white people), the climate change problem can be discussed not only from an anthropogenic point of view but framing it in the lens of social and racial justice.

Thirdly, if we include different perspectives in our research and use our privilege³⁰ to listen and bring BIPOC voices in the scientific framework, we would amplify their voices and give them a righteous place in research. We will grow responsible because our knowledge produced would be useful and representative of the widest identities. We will also have considered damages (epistemic risks) to other identities, different from others. The consequences of an epistemic error can be much higher when measured from the perspective of a marginal identity than from a dominant one.

Let me now return to connect with what was said earlier about the union of the two perspectives in feminist epistemology. On the one hand, therefore, standpoint theory prescribes starting from marginal views because they are fundamental to throw new light on the problems and must be considered if not for an ethical principle, at least for an epistemic principle. Since the dominant gaze cannot fulfill a universal gaze, the way to gain more knowledge is to use and listen to as many perspectives as possible.

²⁶ I am aware that the topic chosen is very broad and varied and obviously I do not pretend to exhaust it here. However, the theme is appropriate, given the current relevance and shared interest, to better show the different facets through which it can be analyzed, especially those suggested by a non-Eurocentric perspective.

²⁷ Gleb Raygorodetsky, 'Can Indigenous Land Stewardship Protect Biodiversity?', *Environment*, 2018 <[https://www.nationalgeographic.com/environment/2018/11/can-indigenous-land-stewardship-protect-biodiversity/-/](https://www.nationalgeographic.com/environment/2018/11/can-indigenous-land-stewardship-protect-biodiversity/)> [accessed 1 February 2021].

²⁸ I wish to make a point here. Marginal people do not have to have a function to take them seriously because dominant groups do not have to have a function to be there and participate in science. Sometimes an identity is just an identity; however, since we find ourselves in a patriarchal system, it is possible that marginal groups would have a heuristic gaze, especially on sensitive topics like this.

²⁹ These communities are more likely to be found in dangerous places because of racism; richer and white communities have more means to defend themselves and fight off the construction of highways, gas pipelines, and polluting factories. BIPOC communities have less power and leverage, and they suffer most of these consequences.

³⁰ I am a woman in a patriarchal society. Still, I am also a white, cis heterosexual, and middle-class woman, so I must use my privilege in the academic space to amplify other marginalized voices who still struggle to be listened to due to an endemic racist and sexist system.

However, these marginal perspectives, both inside and outside the academic and epistemological circuits, do not receive the same credibility and cognitive authority, just as they do not have the same places or ways to be properly listened to. The academic settings do not yet allow the full development and listening of the marginal perspectives that usually produce antagonistic knowledge compared to the dominant one.³¹ As a guarantee that in a community where marginal points are included, these are not easily dismissed and silenced, Longino's criteria may run. She prescribes that criticisms coming from every point (marginal perspectives included) are adequately listened to, not only tolerated, and that the points of view of others cannot be ruled out through power or control, but only through rational operations.

Where it is not possible to insert marginal subjects within the members of the community at once, given that the present situation still makes it difficult to obtain real inclusion, one could at least ask when faced with a problem, how much this also affects the life of marginal groups, or whether the solution developed is also suitable for those marginal groups. For example, this could be done with collaborative practices between other (not necessarily scientific) communities as has already and successfully done.³² Ultimately, the goal is to broaden one's gaze and consider more factors capable of obtaining a correct epistemic framework because it corresponds to the most comprehensive group's vision and more politically inclusive attitude.

CONCLUSIONS

After the detailed discussion of feminist epistemology and the combining of the two perspectives, we can now come to conclusions by reconnecting with the original topic of the conference: feminist epistemology is all about the intersection between science and politics and this particular article is devoted to the contribution of feminist epistemology on the debate on objectivity. In the present-day debate, reflections on politics connected to science do not seem cutting-edge or provocative because the philosophy of science has shown increasing interest in the intersections between social and political aspects of science. We see the rise of such disciplines as social³³ and political³⁴ epistemology,

³¹ Plenty of practical factors can explain the difficulties and obstacles for marginalized categories, such as the low prospects for career development, recruitment, and salaries, compared to the dominant ones. Also the phenomenon of free ride, meaning the exploitation of diverse identities without changing the academic setting, hence using marginal perspectives only when it is convenient (Carla Fehr, 'What Is in It for Me? The Benefits of Diversity in Scientific Communities', in *Feminist Epistemology and Philosophy of Science*, ed. by Heidi E. Grasswick (Dordrecht: Springer Netherlands, 2011), pp. 133–55 <https://doi.org/10.1007/978-1-4020-6835-5_7>.)

Another one is the chilly climate. The chilly climate is the set of behaviors characterized by different treatments depending on the gender of the person who receives them. These behaviors can include lack of encouragement, devaluation of academic performance, calling attention to a person's gender and sexuality appropriately, and even sexual harassment (Roberta M. Hall and Bernice R. Sandler, 'The Classroom Climate: A Chilly One for Women?', 1982 <<https://eric.ed.gov/?id=ED215628>> [accessed 21 November 2020]).

³² Alison Wylie devoted much of her research to show how the field of archeology was successfully reformed when archaeologists also began working in concert with local indigenous groups whose sites, artifacts, history were being studied (Wylie, 'Feminist Philosophy of Science').

³³ Social epistemology studies the influence of social factors on knowledge. Some scholars in feminist literature have stressed that social epistemology has been inspired by feminist epistemology since feminist epistemology chronologically precedes social epistemology. Rather than thinking of feminist epistemology as a derivation of social epistemology, it would be correct to affirm the opposite, although this relationship is often not recognized (*Feminist Epistemology and Philosophy of Science: Power in Knowledge*, ed. by Heidi E. Grasswick, Feminist Philosophy Collection (Dordrecht; New York: Springer, 2011), Linda Alcoff, 'Is the Feminist Critique of Reason Rational?', *Philosophical Topics*, 23.2, 1–26, and Wylie, 'Feminist Philosophy of Science').

³⁴ Political epistemology is a branch that rapidly acquired recognition and is enjoying success in current epistemological debates. Due to its recentness and broad scope, there is no specific definition; political epistemology can be understood as a 'label' under which scientists, philosophers and epistemologists gather contemporary and time-sensitive debates, such as consensus, role of expertise, social and political factors intertwined in science and knowledge production. In general, political epistemology highlights the role of social, political, and normative aspects of knowledge production, and exchange to 'research the complexities of interactions between epistemic, economic, and political structures' (Max Planck Institute for The History of Science, *Political Epistemology. New Approaches, Methods and Topics in the History of Science, Workshop Series 2016-17*).

which specifically involve the study of how political, economic, and social aspects engage actively and mutually with science. Social aspects and politics are not merely attributes added to science, but they direct, shape, and participate in research projects. Their influence on science emerges both in the questions which direct research and in the methodology and justification of theories, and they also affect the goals of science.

In the 1970s, when feminist epistemology first appeared, however, the relationship between politics and science was controversial, because the presence of politics and any values in general which questioned epistemic ‘purity’ jeopardized the imperative ideal of epistemic neutrality in the theory of knowledge. Moreover, feminist epistemology not only pointed to how political and social aspects inevitably come into play when science is involved, but also to the fact that the very possibility of feminist epistemology is grounded on the relationship between epistemology and political aspects. Hence, feminist epistemology had a crucial impact on understanding how the development of science and knowledge models are integrated into and intertwined with the non-cognitive aspects. The best and worst of modern science were built through political desires, social interests, and values; science is not neutral, it emerges from a certain social order, it is a human product, and as such it bears the markers of those who produce it.³⁵ From this perspective, feminism has analyzed the category of gender as an asymmetrical category of human thought, social organization, social activities and individual identity and behavior. Since science is also a social activity, it is not excluded from this gender-biased view.

Yet, this gender-critique of scientific topics leads neither to reductionism nor to merely political questions regarding power. What it suggests is a rethinking of the traditional notion of objectivity, internally flawed and inconsistent, but also pointing to a possible solution for the very notion of objectivity. This also explains why feminist epistemology deserves attention in the diverse, pluralistic landscape of twenty-first-century postmodern society.

Francesca Putignano is a PhD candidate in philosophy at university of Venice Ca’ Foscari. She is also part of ERC group EarlyModernCosmology (Horizon 2020, GA: 725883). She can be contacted at francesca.putignano@unive.it

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³⁵ Harding, *Whose Science?*