

## Questioning the ideal of value neutrality. A reply to Van den Berg and Jeong.

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### **Abstract**

*Is the ideal of value neutrality in science (a) achievable, (b) desirable, and, (c) not detrimental? Alex van den Berg and Tay Jeong (2022) passionately defend the ideal of value neutrality. In this reply, I would like to fine-tune some of their arguments as well as refute others. While there seems to be a broad consensus among philosophers of science that value neutrality is not achievable, one could still defend it as an ideal to aspire to for the sciences (including social sciences). However, I argue that the ideal of value neutrality advanced by van den Berg and Jeong is detrimental, therefore not desirable. We should rather adjust our view of science towards scientific pluralism and perspectivism in combination with strategies to productively deal with values in science. The latter approach is, *pace* van den Berg and Jeong, more conducive to democracy and egalitarianism than the ideal of value neutrality.*

### **1. Introduction**

Is the ideal of value freedom or value neutrality in science (a) achievable, (b) desirable, and, (c) not detrimental? Alex van den Berg and Tay Jeong (2022, henceforth vdB&J 2022) passionately defend the ideal of value neutrality. In this reply, I would like to fine-tune some of their arguments as well as refute others. In order to do so, I look at recent findings of philosophers of science concerning three questions. First, are value influences in science avoidable (Section 2)? Next, is value neutrality desirable or are there any other alternatives that are to be preferred (Section 3)? Finally, could the ideal of value neutrality be detrimental (Section 4)?

While there seems to be a broad consensus that value neutrality is not achievable, one could still defend it as an ideal to aspire to for the sciences (let me add that I work with a broad understanding of the sciences here, including the social sciences). However, I will argue that the ideal of value neutrality advanced by van den Berg and Jeong is detrimental, therefore not desirable. We should rather adjust our view of science towards scientific pluralism and perspectivism in combination with strategies to productively deal with values in science. The latter approach is, *pace* vdB&J, more conducive to democracy and egalitarianism than the ideal of value neutrality (as I will develop in Section 5).

### **2. Is value neutrality achievable?**

It is commonly held among philosophers of science that values influence the scientific process, unavoidably. Values may, *inter alia*, play a role in data collection (Zahle 2018), measurement procedures (Reiss 2013), evaluating evidence (Douglas 2000), choosing among scientific models (Potochnik 2012), and organizing scientific results for presentation to the public (McKaughan and Elliott 2013). The presence of these value judgments in science might be obvious in some cases, and harder to trace in other ones.

Kevin Elliott (2017, 2022) shows how science is permeated with value judgments and he distinguishes at least five avenues for value influences, connected to five questions that regularly show up and whose answers shape scientific research:

- (a) What research topics to choose or prioritize? Values steer the direction of research.
- (b) What specific questions to raise, assumptions to make, concepts and methods to use, and measurement procedures to select? Values influence the design of research.
- (c) What are the aims of inquiry in this particular context (weighing a variety of theoretical and practical goals, e.g., a quick or inexpensive fix rather than a slower, more detailed result)? Values specify the goals of scientific research.
- (d) How to deal with questions of uncertainty (e.g., when is the available evidence sufficient for particular sorts of conclusions)? Values specify the interpretation of research results.
- (e) How to report and frame the conclusions of scientific research (e.g., what terminology, categories, or metaphors to employ in providing scientific information, what not to report)? Values define the way in which scientific information is spread and used.

In this reading, values are inescapable, doing science implies answering these questions (a)-(e) and thus making value judgments, be it implicitly or explicitly. VdB&J (2022) do acknowledge the presence of value influences and follow Max Weber who “took great pains to spell out the many respects in which the researcher’s values are deeply implicated in the research process from the start: in the choice of problem, the questions asked, the formulation of the concepts and distinctions needed to address them, the value of the results, etc.” (vdB&J 2022: 633) However, according to vdB&J, in the end, it is up to the researcher “to persuade her audience of the value neutrality of the methods chosen to assess the facts of the matter” (Ibid).

Given this pervasiveness of values, one could either acknowledge that the ideal of value freedom or value neutrality is unachievable and therefore some other normative option is to be found. Or, one keeps value neutrality as an ideal (or a fiction) to aspire to, acknowledging that in the practice of science, it might be unachievable.

### **3. Is value neutrality desirable?**

Although it might be unachievable, the ideal of value neutrality remains the most desirable option for van den Berg and Jeong. In this section, I first scrutinize the way in which they defend the ideal and contrast it against accounts of epistemic privilege and standpoint theories, a second option. Next, I present a third option that seems to be neglected by vdB&J, namely scientific pluralism.

#### ***3.1. The dichotomous argumentation of van den Berg and Jeong.***

The argumentation of vdB&J (2022) in favor of value neutrality consists of two steps. The first step revisits accounts that emphasize how for a long time mainstream science has had racist, ethnocentric, and sexist biases. According to vdB&J, some of these critiques of mainstream science should not be considered incompatible with the ideal of value neutrality. The second step of their argumentation builds upon a refutation of proposals of standpoint theories and their claims about epistemic privilege. Let us look in more detail at these two steps and the dichotomy that is being created.

The accounts discussed in their first step, like, for instance, many feminist ones that exposed cases of androcentric bias across the sciences, do rely on the ideal of value neutrality to evaluate which scientific practices are “bad” science, according to vdB&J; they expose the partiality, the failure of value neutrality, by having impartiality as the norm. The feminist –and other– critics concluded: “First, that the production of scientific knowledge is social and communal rather than an individual endeavor. Second and consequently, the sociocultural composition of the scientific community in question does matter greatly for the quality of the scientific knowledge it can produce. For only in a scientific community that contains a wide diversity of well-represented and well-respected sociocultural perspectives will it be possible to identify and, if need be, weed out, the group-specific biases that mar traditional science.” (vdB&J 2022: 633-34) VdB&J’s reading of these conclusions is that they are not at all at odds with what they call the “positivist” orthodoxy. In order to illustrate their point, vdB&J discuss the work of Helen Longino and claim that Longino’s rejection of the ideal of value neutrality is “fundamentally mistaken”, her work would rather strengthen the case of value neutrality. As I will develop further below, vdB&J’s partiality-impartiality connection as well as their use of “weed out” in the quote above, reveals that they might not fully capture Longino’s contribution.

While in the first step, critics of value-neutral science were discussed that were, according to vdB&J, actually bearers of the value-neutral ideal, in the second step, they analyze accounts that generally speaking emphasize how pernicious the value-neutrality ideal is and how it suits to serve the interests of dominant groups. These critics reject the objectivity ideal and value neutrality as unachievable and undesirable in principle (vdB&J 2022: 635). However, throwing out these ideals leaves these critics without solid grounds to distinguish between more and less valid knowledge, vdB&J write, which is especially problematic given that many are defenders of strong political agendas. Next, vdB&J discuss some of the solutions provided by feminists in the form of standpoint theories which often grant a form of epistemic privilege to the knowledge of some (subordinated) social groups over that of others, so not all knowledges are equally valid.

VdB&J discuss three sets of standpoint theorists which differ from one another in terms of the grounds on which knowledge of socially subordinated groups can have epistemic privilege, namely: (a) by virtue of an historical mission or being on the “right side” of history; (b) by being on the side of social justice, morally superior; or (c) “the socially subordinated are in a better position to understand the whole of reality than members of the dominant group because the latter only need to know their own world whereas the former are forced in order to survive to be familiar with *both* the world of the dominant group and their own.” (vdB&J 2022: 638) Given that all three maintain untenable positions about epistemic superiority, we end up with value neutrality again, following the reasoning of vdB&J.

It should be noted that vdB&J focus on claims of epistemic superiority, but they pay little attention to other aspects these standpoint theorists highlight. This include: (a) there being alternative ways of understanding and representing societal phenomena different from the mainstream, different from the ones of socially dominant groups; and, (b) the differences in lived experience of different groups (something touched upon by vdB&J (2022: 639) but without spelling out epistemic consequences) and how this contributes epistemically in foregrounding understudied issues or formulating new original research questions grown out of that experience, identifying new relevant variables and sources of data, alternative methods, and so on. Their reading of standpoint theories is pretty reductive and not very charitable; they are not elaborating on what could be learned from standpoint theories’ critiques. Accordingly, VdB&J’s way of presenting possible options is very dichotomous; a choice between either supporting the value-neutral ideal or opting for an account of overall epistemic superiority, a possible middle ground of pluralism is not being discussed by them. Let us turn to that now.

### 3.2. Introducing scientific pluralism and perspectivism as a third option.

I want to briefly consider an alternative option that is not being discussed by vdB&J, an option that cannot be reduced to either side of their dichotomy. This third option advances an alternative way of looking at the sciences (broadly understood, including social sciences) different from the one van den Berg and Jeong present, a way based on philosophical work about scientific pluralism and perspectivism (see e.g. Kellert et al. 2006; Chang 2012; Massimi 2022). This scientific pluralism captures Longino's account better than the way it is done by vdB&J. It also qualifies the more radical ideas about epistemic standpoints, and, stipulates how to maximize epistemic benefits and productivity – clarifying how, even without the ideal of value neutrality, science can be productive.

This third option starts with acknowledging the *plurality* and heterogeneity of approaches in science. Different scientific approaches to the same phenomenon, motivated by different concerns, background assumptions, epistemic interests, ..., result in different parsings of causal space (focussing on one or more causes within a causal landscape), different conceptualizations of causal relations and explanations, and so on. These different approaches are often irreconcilable, i.e., they can neither be completely reduced nor generally integrated into one, thus resulting in an *ineliminable plurality*. Longino (2013) illustrates this ineliminable plurality clearly in providing a rich case study of how aggression is being studied in behavioral research, highlighting how scientific communities persist in having different focal points and emphases, even of the same phenomena. She shows how each scientific approach (be it quantitative behavioral genetics, molecular behavioral genetics, neurobiological approaches, or social-environmental approaches) defines the phenomenon under investigation in a different way, the questions it picks out as significant as well as the parsing of the causal landscape differ, just like the methodological rules, tools, and, techniques across these approaches.

Next, pluralist philosophers of science not only acknowledge there being a *plurality* of approaches in science, but they also normatively endorse it in their advocacy of scientific *pluralism* – not pleading for integration or convergence, but for a shared space in which different vantage points negotiate, sharpen oneself, are accommodated. Two salient epistemic benefits of scientific pluralism are that (1) it enables us to maximize the number of significant *questions* answerable, and (2) it fosters a *multiplicity of perspectives* which ensures mutual criticism – provided that some norms of interaction and cultivation are being respected (cf. below).

Considering scientific pluralism shows us an alternative to the way in which vdB&J set up the discussion around partiality and impartiality. VdB&J take it that pointing at the partiality of knowledge would presuppose an ideal of impartiality (cf. 2022: 635). However, taking into account the literature on scientific pluralism, it is plausible to point at the partiality of knowledge without presupposing impartiality to be the goal to be reached. One rather supplements with other approaches that might be partial – *partial* here both understood as “interested, preferential, one-sided” as well as “only in part, restricted in extent, limited”. As Longino writes (2013: 144): “From an empirical point of view, what we know is piecemeal and plural. Each approach offers partial knowledge of behavioral processes gleaned by application of its investigative tools.” This partiality understood within scientific pluralism is *epistemically productive*, i.e., it answers a grand variety of significant questions most adequately provided it is a form of “tested partiality” submitted to mutual criticism (cf. Van Bouwel 2023a).

A second aspect in which scientific pluralism corrects the way in which vdB&J set up the discussion, concerns the connection to realism (cf. vdB&J 2022: 635). Several philosophers of science have recently demonstrated how pluralism and perspectivism are compatible with scientific realism. Michela Massimi (2022), for instance, shows that, while scientific knowledge is constrained by how the world is, scientific inquiry is always a ‘view from somewhere’, historically and culturally located epistemic communities explore through their epistemic practices particular domains of inquiry guided by their questions which results in a plurality of perspectival approaches to the world. The claims of knowledge of the respective approaches must be assessed from the point of view of other scientific perspectives. This cross-perspectival assessment and interaction among approaches might lead to convergence among some approaches in the long run, but not necessarily so.

In conclusion, scientific pluralism seems to answer vdB&J’s challenge, namely “on what basis can those denying the possibility of any value-neutral knowledge still claim validity for their own knowledge claims?” (2022: 632). This pluralism – calling for more attention to epistemic diversity and heterogeneity within the community of researchers – does not “still tacitly or explicitly presuppose the desirability and feasibility of a more value-neutral scientific practice” (2022: 632) contrary to what vdB&J claim. It rather optimizes the epistemic interaction between approaches that have historically been developed from different epistemic interests and value-sets and maximizes epistemic productivity in science by accumulating answers to important questions.

Summarizing, this section shows that in order to discuss the question of whether value neutrality is the most desirable ideal, it is important to articulate the different possible options and to go beyond the dichotomy around which vdB&J build up their argument in favor of the ideal of value neutrality. By advancing scientific pluralism and perspectivism, we have an option available that could be more desirable than value neutrality. Let us now see what the problems with maintaining the ideal of value neutrality could be.

#### **4. Is the ideal of value neutrality detrimental or not?**

Promoting the ideal of value neutrality might be detrimental, because “thinking away” values by insisting on value neutrality makes that we refrain from exploring possible ways in which to best deal with value influences in science (ways that differ from just putting forward value neutrality as an ideal). It also prevents us from detecting or becoming fully aware of value influences and possibly stipulating what the better or worse values influencing science are or should be. When considering scientific practice, one might conclude that sometimes these value influences are beneficial – leading, e.g., to take into account long-neglected epistemic interests of certain social groups, or using their understanding of scientific concepts that might be more relevant to them (cf., Alexandrova & Fabian 2021). In other cases, value influences might be considered pernicious or harmful – e.g., exclusively corporate visions in defining what constitutes scientific evidence for policy-making (cf., Madureira Lima and Galea 2018), or considering a very narrow set of research questions, e.g., “the pharmaceutical industry’s research priorities do not represent all the needs of the world’s citizens well.” (Elliott 2017: 171)

Within philosophy of science, where there is large agreement about the unavoidability of values (see, e.g., Magnus 2018), the discussion has moved from how to keep out (so-called non-epistemic) values to how to deal with values, carefully scrutinize them and justify the ones that are being employed. Thus, rather than “thinking away” values and insisting on value neutrality, we can consider possible

ways of scrutinizing them, aiming to detect and limit pernicious value influences as well as promoting beneficial value influences. Sticking to the ideal of value neutrality leaves the alternatives in dealing with values undiscussed, neither allowing for detecting pernicious values present in the sciences nor considering moral, social, economic consequences of their claims.

Philosophers rejecting the value-neutral ideal develop ways in which value influences should be made explicit or how institutional structures of science should enable the identification of value influences and their criticism. We might distinguish a number of strategies that have been put forward by philosophers to this effect, for instance, using the *right kinds* of values (epistemic vs non-epistemic), ensuring values play an *appropriate role* (direct or indirect), demanding *transparency* about value influences and their implications, assuring *representativeness* of values, *engaging* with relevant stakeholders, appealing to *norms* for good scientific practice or transformative criticism. One, two, or more of these strategies might be applied simultaneously (cf. Elliott 2022: 37-48). Thus, one might consider kinds of values, roles, rules, social procedures, and so on, with some strategies being more addressed to the individual researchers, while others rather focus on more social accounts to manage value influences. I will not go into the discussion of the strengths and weaknesses of these respective strategies, the idea here is to contrast them with advocating an ideal of value neutrality. These strategies can clarify disagreements concerning values (not) used; they do not presuppose that this will lead to an integration of dissenting accounts or a consensual view. It might be the case, but it might also just make more explicit where the differences lie –with an agreement to disagree. There is no presupposition that this would lead to *weeding out* or removing value influences.

Let us, for instance, briefly look into Longino's social-procedural account of dealing with value influences. The main idea is that values and interests in different scientific approaches should not be avoided, suppressed, or purified, but rather addressed by more and different values and interests of other approaches – a critical interaction that makes the values more visible and helps the respective approaches to clarify, correct, and/or sharpen themselves. That interaction should live up to Longino's four *Critical Contextual Empiricism (CCE)*-norms, i.e., *venues for criticism*, *uptake of criticism*, *public standards*, and, *tempered equality of intellectual authority* (2002: 129-134). Doing so, the partiality and limitations of the different approaches are made evident by the articulation of questions that they are (not) designed to answer, as well as the limited range of their concepts and methods, their respective interests and values are being made explicit, and so on. Rival approaches are shown to have empirical successes as well, be it by exploring different angles of one and the same phenomenon, in relation to other questions and epistemic interests, driven by other values (cf., Longino 2013, in which she explicates these differences with respect to scientific approaches to aggression and sexuality).

Interestingly, van den Berg and Jeong discuss Longino's account including the list of the four CCE-norms and they conclude that: "if anything, these recommendations could be read as an endorsement of value neutrality with the aim to weed out group-specific sociocultural or political biases." (2022: 634). However, the interaction based on those norms is not there to *weed out*, remove, or eliminate values, but rather contrast, make explicit, and reconsider certain value influences and biases. Moreover, Longino advocates bringing in more values and actively cultivating dissenting perspectives: "[A community] must also take active steps to ensure that alternative points of view are developed enough to be a source of criticism and new perspectives. Not only must potentially dissenting perspectives not be discounted, they must be cultivated" (Longino 2002: 132). So, rather than removing, it is about criticizing, contrasting, fine-tuning, and, of course, sometimes it might lead to a general or more local integration of different perspectives, but often it does not. This also comes out

clearly in her 2013 book, a book which confirms that Longino's account is not an endorsement of value neutrality in the way vdB&J (2022) claim it to be.

One can, of course, understand *value neutrality* in at least two ways. The first as the absence of values in the outcome of the scientific process, the second one as having a scientific process in which no particular set of values is being prioritized, ascertaining that different sets of values get a seat at the table or are being cultivated. Longino could be read to tend to the second. VdB&J, however, clearly seem to understand value neutrality in the first sense; the outcome of the research should not be dependent on the researcher's biases or values, and "the researcher should be as aware of her own values and biases as possible" (2022: 633; the criterion of transparency often shows up in debates about value influences in sciences, sounds reasonable, but it has to deal with a number of problems, cf. Van Bouwel 2023b). For VdB&J, the burden lies with the individual researcher, not with institutional structures, the presence of different sets of values, or, the norms of social interaction within research communities. Scientific pluralism, however, requires acknowledging that science is a social activity embedded in a community, so it is important to consider how to best distribute the efforts of individual researchers, their social relationships and interactions, as well as which social norms should guide those collective epistemic processes, if the community is to be as epistemically productive as possible.

Besides the lack of attention to strategies that could deal with values in a constructive way, let me briefly spell out two more downsides of pushing the ideal of value neutrality. First, pushing the ideal of value neutrality without considering strategies to make value influences explicit, leads to turning a blind eye to the trade-offs between values that always take place. Even so-called *epistemic values* or *theoretical virtues* that "positivists" would allow in science, have to face trade-offs (and they are, thus, less neutral than positivists seem to presuppose). These *epistemic values* are considered *internal* to science helping us in our theory choice – as additional guidance beyond logic and evidence. They were traditionally contrasted with *non-epistemic values* that are of a social, political, moral, or economic nature, *external* to science, and to be avoided as they threaten the objectivity of science. Interestingly, vdB&J discuss Longino's six epistemic values, namely *empirical adequacy*, *novelty*, *ontological heterogeneity*, *mutuality of interaction*, *applicability to human needs*, and *diffusion or decentralization of power*. The first four are not obviously non-"positivist", according to them, while the remaining two are intrinsically political, essentially contested, as "people fundamentally disagree on them and there is no widely accepted method for resolving such disagreements to the satisfaction of all parties." (vdB&J 2022: 634) Alas, there are no uncontested epistemic values or theoretical virtues on which there is complete agreement. Let me first briefly present the issues with epistemic values and then return to vdB&J's discussion of Longino's six epistemic values.

Agreeing on epistemic values faces at least three challenges, namely the identification, the interpretation, and the balancing or weighting of epistemic values (cf., Van Bouwel 2012). First, there is no clear consensus about which values have to be included in the list of epistemic values internal to science; Thomas Kuhn (1977: 321–322) lists five epistemic values, i.e., *accuracy*, *consistency*, *broad scope*, *simplicity*, and *fruitfulness*. Ernan McMullin (1983) elaborates a slightly different list, including *predictive accuracy*, *internal coherence*, *external consistency*, *unifying power*, *fertility*, and ("one other more problematic candidate", pp. 15-16) *simplicity*. Larry Laudan (1984: 35) mentions "such familiar cognitive goals as *truth*, *coherence*, *simplicity*, and *predictive fertility*." Hilary Putnam (1981) wants *instrumental efficacy* on the list, but McMullin considers that as a social, non-epistemic value. Hence, a first problem seems to be the identification of the list of internal values in science.

Second, presume a consensus about the list could be reached (the lists do have some values in common, even though they are definitely not identical, some are even antithetical, cf., below), the exact interpretation of every single one of these values seems contentious. This problem was already mentioned by Kuhn: “Individually, the criteria are imprecise: individuals may legitimately differ about their application to concrete cases.” (1977: 322) For instance, what does *simplicity* mean? Hugh Lacey writes that *simplicity* suggests, inter alia, “*parsimony; economy* (of formulation, of technical devices); efficiency in use for explanation, predictive and other “scientific” purposes; deployment of the “simplest” available mathematical equations; conceptual clarity, “clearness and distinctness” (Descartes), intelligibility; *idealization* which provides a benchmark, departures from which can be conveniently explained; having appropriate *analogies* with other theories (...) and *formalizability*.” (Lacey 1999: 60, his italics) *Simplicity* connotes as well *harmony, elegance*, and other aesthetic qualities. Besides the problem of the exact interpretation of epistemic values, there is room for disagreements on how a particular value manifests itself in a theory or model. (cf., Lacey 1999: 54)

Third, the different epistemic values can generally not all be maximally addressed or satisfied simultaneously by any single theory, model, or explanation. This raises the question of how these different values then should be balanced or how they must be weighed against one another (cf., van Fraassen 1989: 41–42). *Accuracy* might lead to choosing one theory while *broad scope* might dictate choosing its competitor (cf. Kuhn 1977: 322). So, what counts as the right trade-off? Who decides the weight of the respective values?

Given these problems of identification, interpretation, and the balancing or weighting of epistemic values, it seems hard to stick to considering these epistemic values as internal to science without any external “interference”. There have been other angles from which the strict division between internal, epistemic and external, non-epistemic values has come under fire too. Some researches argue that several of the epistemic values reflect dominant socio-economic imperatives. Hugh Lacey, for instance, maintains that modern science is conducted almost exclusively with an interest to *control* natural objects. As a result, certain possibilities – that cannot be developed if the search for knowledge is driven by values to control – might disappear from view. He illustrates this by considering transgenic seeds, which are embodiments of soundly accepted theoretical knowledge, but of little interest for, e.g., the many rural grassroots movements throughout Latin America (and elsewhere) that “aim to cultivate productive, sustainable agroecosystems in which both diversity is protected and local community empowerment is furthered.” (Lacey 2004: 38)

Another critical angle relies on feminist studies of the history and philosophy of science demonstrating how some (typically male or androcentric) epistemic values have gotten a lot more attention than other epistemic values. One example is Helen Longino’s defense of *ontological heterogeneity* against *simplicity* as an epistemic value or theoretical virtue. Rejecting ontological simplicity and valuing ontological heterogeneity can be linked to Longino’s discussion of theories of inferiority. These theories are often supported in part by a preference for *simplicity* and intolerance of *heterogeneity*: “Difference must be ordered, one type chosen as the standard, and all others seen as failed or incomplete versions. Theories of inferiority which take the white middle-class male (or the free male citizen) as the standard grant ontological priority to that type. Difference is then treated as a departure from, a failure fully to meet, the standard, rather than simply difference. Ontological heterogeneity permits equal standing for different types, and mandates investigation of the details of such difference. Difference is resource, not failure.” (Longino 1994: 477) Thus, for Longino *simplicity* as an epistemic value is misguided; on the contrary, she praises the virtue of *ontological heterogeneity*.

Let us now return to vdB&J’s (2022: 634) discussion of Longino’s epistemic values. Contrary to what they write, none of these epistemic values is uncontested and there are always trade-offs between them. Where Longino proposes *novelty*, it is in clear tension with (*external*) *consistency*, for instance, just as *ontological heterogeneity* is antithetical to *simplicity*. So, even with the epistemic



values that are traditionally understood as universal, internal to science, and as clearly distinguished from non-epistemic values, it turns out that there are always trade-offs to be made. Every trade-off has an impact on how science further develops, which research approaches are available or better developed, and which ones are not (remember path dependence). This is something we'd better be aware of rather than drowning it in an ideal of value-neutrality.

A last downside of promoting the ideal of value neutrality I would like to highlight is that it makes any research approach based on outspoken values a priori suspect and unscientific. In economics, for instance, one has approaches like feminist, Austrian, or Marxist economics, wearing their values on their sleeves. In contrast, the orthodox or mainstream approach within economics presents its own account as complete, universal, and 'value-neutral' handily using the ideal of value neutrality to delegitimize competing heterodox approaches; it drives on its 'scientific' status, which it contrasts with more 'unscientific' approaches of the heterodoxy (the latter including Marxist, feminist and Austrian approaches). The relation to the heterodoxy is then instrumental in the way that the heterodoxy's *unscientificness* supports the orthodoxy's *scientificness*; the heterodoxy functions as a constitutive outsider (cf. Van Bouwel 2009). It is a way of reasoning one frequently encounters, briefly summarized as: "my own preferences and assumptions are *empirical* while anyone who questions them is *doing politics*".

Hence, for mainstream economists there seems to be no need for engagement or mutual criticism with the traditional heterodoxy (as heterodox economists are putting themselves outside of good science viewed from the ideal of value neutrality), so no need to react to the heterodoxy's criticisms. In such a constellation, we will neither benefit from the plurality of perspectives in adequately answering a wide range of significant questions, nor from the mutual criticism between perspectives. Epistemic productivity will remain suboptimal.

This is another example of how not explicitly discussing the values present – kept under the veil of value neutrality – is detrimental. I have been defending a more productive interaction, making use of the plurality and coexistence of various approaches, reaping the benefits of scientific pluralism and maximizing epistemic productivity, rather than *thinking away* the values and propagating the ideal of value neutrality which only consolidates the status quo (see, e.g., Van Bouwel 2009, 2015, 2023a).<sup>1</sup>

## 5. The ideal of value neutrality and democracy.

In a last twist, vdB&J claim that their brand of positivism and value-neutrality ultimately rests on a "democratic and inclusive epistemology" (2022: 642) and is advancing "a kind of pan-human egalitarianism" (2022: 643). I beg to differ. More democratization, inclusiveness, and egalitarianism are not going to follow from merely promoting the ideal of value-neutrality. It will require paying attention to and explicitly discussing value influences and how to deal with them in a constructive way.

Firstly, if we want sciences that aim to be democratic and egalitarian we have to analyze how to organize collective epistemic processes in order to assure the availability of scientific knowledge (with a variety of perspectives) to all people who need it. This involves many questions raised in the social epistemology of science: consider how science has been skewed towards social elite problems, to what extent are the problems of some publics (to use Dewey's wording) being addressed or neglected,

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<sup>1</sup> *Epistemic productivity* is being understood here in terms of our capacity to answer our questions effectively, i.e., answering important questions in the best way possible (also see Van Bouwel 2023a, 2023b).

how could we make more perspectives available, how to address the omission of questions, agnotology<sup>2</sup>, funding structures, hierarchies in scientific disciplines, the impact of scientometrics, patent policies, corporate influences on science, the interactions between science and citizens, and so on.

The sciences are a social and communal affair, so we should consider how to best distribute the efforts of individual researchers if the community is to be as epistemically productive as possible – analyzing multiple ways in which social interactions affect the epistemic status of the sciences. What institutions, conventions, or norms governing interactions within scientific communities are most conducive to epistemic productivity and progress? Answering this question will require considering the variety of different respects in which institutions can influence values in science; how organizations influence the values embedded in scientific research through their aims, culture, and structure; the kinds of institutions (regulatory, funding, academic, political) that are best suited to fostering and supporting democratized and egalitarian scientific research. So, rather than promoting the value-neutral ideal, we will have to pay attention to collective epistemic practices and institutions to optimize scientific productivity, something that would rather lead us to defend scientific pluralism (cf., Section 3 above).

None of these social-epistemic issues is being addressed by what vdB&J (2022) consider as the way forward for a democratic and inclusive epistemology, a way they mainly spell out in terms of methodology: “Consider the core methodological principles and practices of “positivism.” These consist of a range of techniques and methods intended to eliminate “bias,” including random sampling, careful (where possible controlled) observation, strict accountability, triangulation, replicability, and so on.” (2022: p. 642) This might all sound nice and familiar, but the history of science and the questions concerning the social epistemology of science spelled out above show that there is a lot more going on in the sciences than just applying some preferred methods.

Therefore, if you want science to become more democratic and inclusive it is imperative to address those questions concerning social epistemology and consider how we can guarantee that all groups (or publics) benefit from science. This might, *inter alia*, require an active inclusion of neglected perspectives, something that was already mentioned above: “Not only must potentially dissenting perspectives not be discounted, they must be cultivated.” (Longino 2002: 132) It is an aspect of pluralism that might not get enough attention. Pluralism is often understood to be tolerant of many of the perspectives already existing, in a kind of non-committal way. However, when certain publics are unable to participate in the discussion as fully as they would like to, cannot join the platforms where discussions are taking place, are inhibited by feelings of social or epistemic inferiority from speaking their piece, or for any other reason, then how can we optimize the collective epistemic outcome? We might need a collective effort to foster alternative perspectives, to create platforms or social constellations that allow for their development, to increase and equalize opportunities for citizens to influence what values should prevail in science, and so on – *thinking away* the problem of the social constellation is not going to help.<sup>3</sup>

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<sup>2</sup> *Agnotology* studies deliberately created scientific ignorance. Ignorance can be produced by not studying an important issue, e.g., by deviating funding away from certain issues thus acting against developing new knowledge that might be very relevant to some publics. Making discussions very technical so that experts can work on it far from public influence, is another strategy helping some to maintain the status quo or serve their special interests.

<sup>3</sup> It is a missed opportunity when vdB&J are discussing the paradoxical way in which standpoint theories think they can speak “on behalf of the oppressed” (2022: 641-642), that they completely ignore citizen science, a fast evolving area in the sciences, in which citizens speak up on behalf of themselves and new epistemic innovations are rife, going beyond the “positivistic” methods defended by vdB&J. For a discussion of the epistemic contributions of citizen science, how citizen science creates opportunities to broaden the set of values present in science as well as advances the democratization of science, see Van Bouwel 2023a.

Secondly, besides considering the availability of a wide range of perspectives and value-sets, we should also pay attention to the link between propagating the ideal of value neutrality as done by vdB&J and skepticism about or disappointment in science. VdB&J (2022: 631) state that their “‘positivist’ ideals of value neutrality and objectivity embody the very principles of egalitarianism and democracy.” However, I would like to invite the reader to reflect on how the reproduction of certain clichés about science – *value neutrality* being one of them – is actually feeding a backlash against scientific research, and, with reference to vdB&J’s title, “cutting off the branch on which we are sitting”. This came out clearly during the first months (in 2020) of the COVID-19 pandemic.

Dealing with the Coronavirus disease (COVID-19) revealed a lot of confusion about science. Remember, for example, the debates about the usefulness of wearing a face mask. One day media reported that scientists claimed it did not help, the next week they stated it helped, a month later they told us it did not help, etc. This can of course be an example of bad science communication, or journalism that fails to understand subtle differences in scientific research results (e.g., differing advice could result from the method used, be it randomized controlled trials, population-level data simulations, calculations and trade-offs about where – in hospitals, schools, bars, ... – using face masks could make the biggest difference given scarcity, or the scientific research results reported on could be context-dependent and not easily extrapolated). Whatever the reason, for some citizens this led to skepticism towards scientists, “they do not know what they are talking about anymore.”

Or, remember the discussions between modelers and the wildly varying numbers concerning how many people would die from COVID-19 in the coming months if no intervention would take place. Some of these models were studying short-term health outcomes, how many people would die from COVID-19, while other, more holistic models also wanted to include social and economic impacts or overall health outcomes of policies. Think, for instance, about the mental and physical health toll of social isolation, the consequences of a severe economic downturn, delayed treatments for other medical conditions, fewer cancer screenings, missed vaccination for children, and so on. Again, for many citizens, this situation created a lot of confusion and the credibility of scientists did not seem to benefit from it.

Might it be because we have been promoting an outdated philosophy of science? When one considers scientific modeling, for instance, making choices is unavoidable. Rather than claiming that some of the choices made, assumptions, and omissions, by the modelers, are unjustified, I use these COVID-19 examples to illustrate that there are constantly value-based choices being made – choices about which variables are significant or what is a good measure of health – that have a significant impact on (available) policies. Even if one were to advocate including many more variables than the first COVID-19-models contained, one has to realize that endlessly increasing the complexity of models eventually makes their predictions useless. For the public and politicians to understand what goes on, we have to have an accurate view of how science works. This view should be different from so-called *folk philosophy of science* that sees science as a homogeneous project in which each study individually stands for Truth (remember the face mask reporting), as uninfluenced by non-epistemic values simply depicting an objective external world (remember the modeling). Rather than propagating such a view, we should aim to clarify how the messy reality of scientific practice is a never-ending exploration and conversation in which a plurality of approaches has been developed, and how there are always certain assumptions scientists start from, value-based choices to be made, conditions in which knowledge claims are being developed to be taken into account, and so on.

The high expectations about science’s value neutrality and objectivity, easily turn to disappointments and skepticism when not fulfilled. In that sense, the ideal of value neutrality and skepticism are two sides of the same coin. When studying our contemporary democracies, it is fascinating to see the commonalities between populism and technocracy as demonstrated by Fernandez-Vazquez et al.

(2023); the anti-pluralism and belief in a unitary societal interest that underpin both technocracy and populism. This unitary, non-pluralist interest is the people's will for the populists and the objective knowledge independent of people's values for the technocrat to be translated into neutral, non-ideological, and evidence-based policies. Both populists and technocrats challenge our contemporary pluralistic democracies in their anti-pluralism and anti-politics (for populists, political parties hinder the representation of a unitary general will; technocrats are averse towards the role of parties as intermediaries to solve social problems and belief in the superiority of expertise to reach efficient, neutral, non-ideological policies). A striking finding by Fernandez-Vazquez et al. is how endorsing populist principles correlates positively with demanding that experts and technocrats take an active role in political decision-making: "In summary, the latent-class analysis has uncovered a large group of respondents, almost a third of the sample, who simultaneously combine strong populist views with the endorsement of most technocratic items, particularly pro-expertise and anti-politics ones. There is no group in the sample who espouses populist principles while clearly rejecting technocratic views. In that sense, our analysis shows that *all populists are technopopulists.*" (2023: 91)

I think it should make us pause and reconsider whether the ideal of value neutrality as defended by vdB&J – and a typical ingredient of a *folk philosophy of science* – actually leads to more democracy. Their ideal of value neutrality risks setting misaligned expectations about how science actually works or what it produces. Better to acknowledge values in scientific modeling, be explicit about conflicting values and trade-offs, the epistemic productivity of plurality and competing coherent scientific approaches. Better to be aware of failures to be inclusive, humble, and representative, and realize how shortcomings might be mediated by thinking harder about social-epistemic questions. A democratic culture requires considering and encouraging different worldviews and alternative value-sets, critical deliberation about competing values and trade-offs, participation of the public(s), and engagement of scientists with other stakeholders in explicating significant, important questions. Democracy is a way of articulating divisions as well as offering opportunities to peacefully move forward (and correct earlier mistakes when necessary). Wouldn't teaching citizens about the presence of values in science and the different strategies of how to deal with them in a constructive way be more conducive to democratization and egalitarianism than thinking away values and holding on to the ideal of value neutrality?<sup>4</sup>

One last objection that might pop up in the head of the reader: Wouldn't being explicit about values lead to a toothless relativism and to science losing its credibility? Philosophers of science have amply demonstrated how scientific pluralism leads to increased epistemic productivity rather than toothless relativism (also see Section 3). In recent years, there is also a growing literature that experimentally studies the impact of being explicit about the presence of values in science has on science's credibility and the trust of citizens in science (see, e.g., Hicks & Lobato 2022; Cologna et al. 2022). These studies do not find evidence for a transparency penalty, disclosing values does not threaten or undermine science's credibility; there is no difference in perceived trustworthiness. Thus, perhaps we should just give up presuming that values and science are always sworn enemies and move on to a more productive post-positivist perspectivism.

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<sup>4</sup> It might also be amusing to know that according to historians of science value neutrality is an old medieval, monastic ideal, see, e.g., Amanda Power (2019).

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