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## COLLECTIVE DELIBERATION IN EPISTEMIC GROUPS: LESSONS FROM DELIBERATIVE DEMOCRACY

**Abstract:** The paper examines the role of collective deliberation in epistemic collaborations. While collective deliberation is extensively studied in political philosophy and democratic theory, its role in genuinely epistemic contexts remains underexplored. The paper argues that collective deliberation is vital for achieving understanding and justifiedness, particularly in situations where epistemic questions permit multiple solutions because of diverse background theories and methodologies. Building on Bratman's account of shared agency, the paper describes epistemic collaborations as joint actions, where deliberation plays a central role in shaping collective views. Collective deliberation plays an important role not only in structuring epistemic collaboration but also in justifying the collective results. The paper advances a dialectical or deliberative account of group epistemic justification, where the latter relies on a process of giving and asking for reasons. By integrating insights from deliberative democracy, normative standards for collective epistemic deliberation are proposed.

**Keywords:** collective deliberation, epistemic collaboration, deliberative democracy, group epistemic justification.

### 1. Introduction

It is widely accepted that knowledge is a social achievement. Scientific inquiry builds on collaborative interactions among experts who divide epistemic labor. Division of labor often combines with diversity and disagreement, which are thought to bear epistemic benefits to the scientific community (Zollman, 2010), and to be at the origin of scientific progress (Feyerabend, 1970, p. 203). Moreover, given the complexity of today's issues (climate change, for example), much research is based on

interdisciplinary collaborations, uniting scientists from different fields and educational backgrounds. Although it is clear that knowledge in these contexts is a collaborative achievement, the way in which individuals come to share and integrate knowledge is not sufficiently understood. How is it possible for individuals, coming from different disciplines and cultures, to successfully collaborate on epistemic questions? And, when they do, on what grounds are their collective views justified?

The paper aims at exploring the role of collective deliberation in epistemic collaboration and justification. During the past decades, collective deliberation has received much attention in normative philosophy – especially, in democratic theory. Deliberative democrats argue that collective deliberation – conceived of as an uncoerced discussion among equals – can lead to “better” collective outcomes (Habermas, 1993; Estlund, 2008; Landmore, 2017). The superiority of collectively deliberated decisions – to those resulting from voting, for example – owes to the fact that participants to deliberation are encouraged to assess alternatives by providing and comparing reasons for and against competitive claims. Decisions produced this way are thereby more likely to satisfy some epistemic requirements for political decision-making – i.e., they tend to conform to some notion of truth, namely the principles of justice or the common good.

Although deliberative democracy is often discussed as a theory of political justification, the normative role of deliberation in genuinely epistemic contexts remains underexplored. There is undoubtedly a good reason for this. One cannot really argue about facts of the matter. Unlike practical questions – with respect to which one is free to make up her mind – epistemic questions about how the world is are rationally settled in a compulsive way – by reference to agent- and context-independent criteria – namely evidence and proof. Evidence being objective, unlike personal commitments and preferences, disagreement should be considered as an indication of error or lack of information. Collective deliberation, involving weighing reasons for and against possibilities, is thus reserved to questions that call for a decision. On the contrary, collective inquiry seems to be a matter of integrating evidence from different sources, including higher-order evidence regarding each other’s expertise, and not deliberation.

However, it is still possible that there is more than one permissible explanations for a single phenomenon. The choice among them cannot be settled by solely appealing to evidence but remains dependent on background theories and methodological assumptions. There might

be different perspectives on what can count as evidence or on what one can reasonably infer from it (Longino, 2001). Indeed, the evidence available at some given time may be insufficient to determine what beliefs one should hold in response (the underdetermination thesis), or a body of evidence could support conflicting beliefs about the same proposition (the permissivism thesis). Diversity and disagreement of this sort are particularly salient in scientific collaborations – especially in interdisciplinary ones – and cannot generally be discounted to lack of evidence or intelligence.

If epistemic questions can have more than one permissible solutions and cannot be tracked by appealing to some overriding principle (e.g., evidence), they need to be settled through argumentative interaction. This is why, according to Longino (2001, p.129), an adequate normative theory of knowledge should focus on the deliberative process through which knowledge is produced. However, a strictly procedural account of knowledge would be insufficient. One cannot possibly discount the epistemic requirements for truth, without inflicting violence on the concept of knowledge itself (Rescher, 2003, p.10).

This paper aims at clarifying the role of deliberation in epistemic reasoning in groups. By reinstating its role in scientific collaborations, it will build on the deliberative theory of democracy to propose an account of deliberative epistemic justification of collective views. The paper is structured as follows: It begins by addressing the role of collective deliberation in epistemic collaborations, by relying on Bratman's account of shared agency. Secondly, the paper focuses on the question of what group epistemic justification is. The normative account I defend can be described as dialectical or deliberative, since collective justification depends on a process of giving and asking for reasons – in other words, on argumentation. Finally, I will defend this epistemological account, by relying on the deliberative democratic theory. This way, I will respond to objections raised against dialectical accounts of epistemic justification, by showing that collective deliberation can respond to epistemic requirements.

## 2. Epistemic Collaborations

Collaboration is a salient phenomenon in science. Scientists often work together in research teams and publish their findings in multi-authored papers (Thagard, 2006). Moreover, scientific collaboration today seems to respond to a practical necessity (Rolin, 2015). Contemporary scientific

questions require research teams to integrate expertise from different specializations or disciplines, and to combine materials and resources (Andersen and Wagenknecht, 2013). Hence, groups play a central role in knowledge production. But what does it mean for agents to collaborate on epistemic questions? How are epistemic collaborations possible, especially among individuals with different expertise and epistemic perspectives?

Although epistemology generally takes group beliefs as a departure point and raises the question whether these beliefs can have the features of knowledge (truth and justification), I will begin by noticing that epistemic collaborations, such as research teams or authors publishing together, can be described as collaborative activities. This means that collaborations, including epistemic ones, are characterized by a shared intention. But what does it mean for a group of individuals to share an intention? There are many influential accounts for shared agency in the philosophical literature (Gilbert, 2000; Tuomela, 2007), but my explanation here will be broadly inspired by Bratman's analysis of shared intentional action (Bratman, 2014). For the purposes of the present enquiry, Bratman's approach presents two important advantages in comparison to competing accounts. First, Bratman's account makes the fewest possible normative assumptions on the ground level of explanation. For shared intentional action to be possible, it is not required that there is a strong institutional background or, more generally, a consensual evaluative or cognitive background among participants. Thus, it makes it possible to consider collaboration even in contexts where substantial disagreement prevails – in interdisciplinary groups, for example. Secondly, Bratman does not take shared intentions as given but addresses the process by which they come to be developed. Individuals may have a plan of acting together, but this plan needs to be “filled in” through reasoning on the part of the members of the group. However, unlike Bratman, I will be interested in epistemic, rather than genuinely practical, contexts.<sup>1</sup>

For Bratman, shared intentions should not be understood as attitudes in individual minds (i.e., “I intend to do my part in our shared action”), nor as attitudes belonging to a collective super-mind – for such a mind does not exist. Rather, a shared intention is a network of appropriately interconnected individual intentions. This way, Bratman proposes a non-summative, yet bottom-up account of shared agency. Following Gilbert's distinction (Gilbert, 1989), while summative views reduce the group's intentionality to an aggregation of the intentional states of its members,

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1 Although I rely on Bratman's account of shared intentionality and I generally take collective views to be acceptances, rather than beliefs, I do not rely on Bratman's definition of acceptance (Bratman, 1992).

non-summative accounts recognize a distinctive intentional standing to the group. At the same time, for Bratman, group intentionality remains responsive to the intentions and attitudes of the members of the group, the interplay of which is at the origin of the shared intention.

This is a plausible description of epistemic collaborations. Indeed, epistemic collaborations are characterized by a shared intention (e.g. a research project). However, this project is not a mere aggregation of the contributory intentions and actions of the members of the group. Although a research team has a shared plan, individual scientists contribute differently towards its realization, each having a distinct task – or contributory intention. After all, epistemic collaborations express views that are irreducible to those of their members. Collaborative research generally gives rise to conclusions that none of the members could ever individually reach or hold, but that emerge as a result of complex interactions among them (Palermos, 2022). A multi-authored research paper is not generated by simply adding up the authors' contributions. Also, even if there is a dissenting minority or the group view expresses a compromise that does not conform to anyone's opinion, the members can let it stand as their collective view on some epistemic question. The collective view is nevertheless responsive to the contributory intentions and actions. While some epistemological approaches (Kuhn, 1970), inspired by the sociology of science, explain individual contributions in terms of their relation to the cognitive resources of a scientific community, there are reasons to avoid trivially defining individual contributions this way. Indeed, in interdisciplinary groups, there is no single type of cognitive resource – contemporary research cuts across disciplinary boundaries. Moreover, it is the aim of science to constantly reflect and develop the cognitive resources and tools available within the community (Andersen, 2016).

The existence of an overall shared plan is a necessary condition for joint action, but not a sufficient one. For example, is not sufficient that we both plan to paint the room together for us to actually paint the room together (Bratman, 2000, p.122). In scientific collaborations, conditions for joint action as presented by Bratman do also hold. It is undoubtedly necessary that the group has a common project – e.g., to explain certain phenomena, to model a system, or to validate a hypothesis. Yet, a research team divides the labor among its members. Individual scientists or subgroups of scientists are generally supposed to contribute to the project according to their specialization and by accomplishing different tasks. Contributory intentions and actions are thus interdependent, in the sense that they are mutually efficient with a view to the realization of the project<sup>2</sup>.

2 In Bratman's vocabulary, one could say that contributory intentions "interlock".

Interdependence also involves beliefs about each other's commitment to the common project. Given the division of labor, collaborators need to trust each other that they will complete their task reliably for collaboration not to break down. Finally, the shared goal, as well as interdependency in efficiency and persistence, are matters of common awareness within the group (Bratman, 2014).

However, this complex intersubjective structure should not be taken for granted. Imagine that a research group is assigned a research project. The means by which this project will be carried out are not obvious. One cannot expect individual scientists to unilaterally work on some tasks according to their specialization and simply add up their findings to generate the collective result. Contributory intentions might conflict, and disagreements are likely to arise as to the relevant evidence, background theories and hypotheses, methods to be employed and specific goals to be achieved. Unless contributory plans and views are assigned an appropriate weight, their working together could hardly count as a genuinely collaborative activity. This is why Bratman introduces a further condition for shared intentional action – that of meshing subplans. In other words, participants to the joint activity need to be responsive to each other's reasons and try to make them mutually satisfiable and coherent.

This idea gives a central role to collective deliberation in building collaboration. Meshing subplans and achieving this kind of intersubjective rationality is a deliberative issue. Individuals need to provide and compare reasons for and against competitive claims in their effort to coordinate with a view to their shared intention. Research teams need to engage in reasoning of this sort. Division of labor requires scientists to appeal to each other, assess and organize partial contributions and testimony rather than acting by themselves. In case of epistemic divergence and disagreement, they need to combine their cognitive resources and make their contributions coherent for their collaboration to be efficient.

However, for shared reasoning to be possible, participants need to be able to evaluate and respond to each other's reasons. Thus, there should be some form of common ground, enabling mutual intelligibility and justifiability. Does this mean that collective deliberation is only possible among individuals of the same mind? It would be too strong to assume that, to be able to deliberate, individuals should have a background of consensual value judgments and beliefs. After all, many interdisciplinary collaborations succeed, while scientists have different cognitive resources, training, and conceptual devices.

Bratman suggests a weaker way of understanding this common ground. He claims that what is necessary for shared reasoning to be pos-

sible is not a background consensus on values and beliefs, but rather common policies about weights (Bratman, 2014). In other words, participants to deliberation should share an intention to treat certain types of considerations as mattering in their reasoning together, while excluding others. For instance, a scientific team would assign a proper weight to experimental findings and exclude considerations of religious nature, even if all members of the group are religious. When it comes to science, these might be shared epistemic standards for assessing contributions. These standards can be quite general in nature and defeasible, and there needs to be no agreement on their relative priority.

More generally, this common ground corresponds to a common background knowledge, which is procedural rather than propositional (Ryle, 1994; Thagard, 2006). This could involve policies of giving weight to certain types of considerations (epistemic reasons) or procedural rules (respect, consensus, etc.). Moreover, these shared commitments do not have a merely instrumental role in shared deliberation. They represent the group's point of view on an issue (Bratman, 2014, p. 141), according to which, in a context of common knowledge, different scientific assertions must be justified.

To summarize, epistemic collaborations can be described as intentional actions on the part of the group. Scientists often collaborate on common projects to combine epistemic resources and material means, to reach conclusions they could not unilaterally reach or could only reach with substantial costs. As such, contributory intentions, views, goals, and actions should be appropriately interrelated for the group to be performative. Following Bratman, this means that relevant attitudes and intentions should be appropriately responsive to intentions and actions of others. This is ensured through collective deliberation, which is required in several stages of the joint enterprise.

### 3. Group Epistemic Justification

Epistemic collaborations can be described as joint actions, characterized by a shared intention. They are indeed meant to address common epistemic questions, by adequately combining the cognitive resources and actions of their members. The main difficulty with this action-centered approach is that it leaves open the question of epistemic justification – that is, the question of whether the group is justified in holding a view that *por*, in other words, whether this view can have the features of knowledge (truth and justification). Indeed, within this approach, epistemic ra-

tionality can easily be understood as instrumental rationality, which does not exclude justification for pragmatic reasons. Shared deliberation has been described as aiming at coordination with a view to joint action, but agreement and efficiency are not by themselves epistemic values. Hence, one needs to understand how groups come to be epistemically justified in holding a view.

Collaborators in this case do not merely aim at acting together. Their goal is knowledge. Since they are meant to provide a response to epistemic questions – that is, questions of explanation and prediction – potential agreement on some view should be motivated by epistemic reasons. In other words, their collective views are subject to standards of epistemic rationality. The question is then how and when individuals working together can be said to *know*. On what grounds are the collaborative results epistemically justified? In the growing literature about knowledge in groups, one can distinguish two types of approach to group epistemic justification – *deflationary* and *inflationary* approaches (Lackey, 2016)<sup>3</sup>.

According to deflationary accounts, a group *G* is justified in holding a view that *p* as true if and only if all or most of its members are justified in holding a view that *p* as true<sup>4</sup>. Within this approach, one can also consider justification as a matter of degree, increasing with the number of individuals justifiedly holding the view in question (Goldman, 2014). In fact, deflationary approaches understand the justification of a group's view in terms of the justification of the individual members' views. They claim that justification of doxastic attitudes is the same for a group as it is for an individual. A group, as well as an individual, aims at the truth and the only means for accomplishing this goal is by considering all the relevant evidence. Since doxastic attitudes have a mind-to-world direction of fit, and since there are objective facts out there, when rational individuals are exposed to the same evidence, they will eventually converge on the truth. According to Meijsers, if only epistemic reasons for believing are taken into consideration, it is impossible that there is a difference in content between individual beliefs and the beliefs of the group (Meijsers, 2003). Therefore, deflationary approaches argue that, for a collective view to be justified, it needs to be responsive to individuals' justifiers – that is, individual mem-

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3 Although these approaches are often denoted as summative and nonsummative – respectively, I avoid this notation in order not to confuse them with the notion of group employed. It is possible to hold a nonsummative deflationist view and a summative inflationist view of group justification.

4 Proponents of this account typically refer to beliefs. I reformulate “believing *p*” by “holding the view that *p* as true” to avoid the debate on whether groups can have genuine beliefs or mere acceptances.

bers’ private evidence, including higher-order evidence about each other’s expertise and reliability.

Deflationary approaches rightfully insist that the collective result, in order to be appropriately justified, should be responsive to the individuals’ reasons. To the extent that epistemic collaborations are characterized by an epistemic intention – that is, they aim at the truth, ignoring or not assigning appropriate weight to relevant evidence is irrational. The problem is that this approach assumes that individuals’ justifiers could be easily added up. This assumption underestimates diversity and disagreement within epistemic groups. Disagreement, here, is taken to be irrational. Rational individuals are supposed to be able to agree once all relevant evidence is taken into consideration. However, disagreement may well be justified by diversity in methodologies and background theories and assumptions (Dang, 2019). In research teams, scientists are likely to disagree on how to assess evidence or on what one can reasonably infer from the evidence collected. Collective epistemic justification is thus not identical to individual justification since it further requires an aggregation procedure and compromise.

Further limitations appear once one considers group justification in terms of aggregation. Imagine an experts’ committee seeking to make a prediction about whether the planet’s temperature will increase during the next decade. The proposition “The planet’s temperature will increase during the next decade” (*c*) is supported by a set of other propositions: “CO2 emissions will increase” (*d*), “Increase in CO2 emissions causes rise in planet’s temperature” ( $d \rightarrow c$ ). According to what has come to be known as the “discursive dilemma” (Pettit, 2001), majority voting on interconnected propositions may lead to inconsistent group judgments, even when individual judgments are fully consistent (List and Pettit, 2002). Consider the following example, where majority endorses *d* and  $d \rightarrow c$ , while rejecting *c*.

|              | <i>d</i> | $d \rightarrow c$ | <i>C</i> |
|--------------|----------|-------------------|----------|
| Individual 1 | True     | True              | True     |
| Individual 2 | True     | False             | False    |
| Individual 3 | False    | True              | False    |
| Majority     | True     | True              | False    |

In other words, aggregation cannot secure a deductively closed and consistent set of collective attitudes. On the basis of justified individual

judgments, the group ends up justifiedly endorsing a contradiction. Thus, aggregation does not necessarily preserve rationality or justifiedness.

Such problems do not arise if one adopts an inflationary account of group justification. Inflationary accounts take the group as the epistemic subject and collective views are justified by means of reasons accepted on the collective level. In other words, the group justifiedly holds a view that  $p$  as true if and only if the group is itself justified in doing so, over and above the individual members' views. Thus, even when scientists within a research team do not actually agree on the conclusion, they have reasons to let it stand as the group's view. According to Schmitt, who defends such an account,

"A group  $G$  justifiedly believes that  $p$  if and only if  $G$  has a *good* reason to believe that  $p$ , and believes that  $p$  for this reason, where  $G$  has a reason  $r$  to believe that  $p$  if and only if all members of  $G$  would properly express openly a willingness to accept  $r$  jointly as the group's reason to believe that  $p$ ." (Schmitt, 1994, p. 265 – italics added)

This approach, also known as the joint acceptance account of group justification, argues that a group is justified in holding a view that  $p$  as true, if the members openly agree to let a reason  $r$  stand as the group's justifier. And, according to Schmitt, one should think of this reason as an epistemic one:  $p$  has been obtained through a reliable process, it is grounded in adequate evidence, and so on. It is important to notice that it is not necessary for individuals to actually express such an agreement. The endorsement of the relevant reasons can be entailed by their general commitments (Lackey, 2016, p. 347). In other words, joint acceptance does not need to be motivated by explicit acceptance of the relevant reasons through discussion and argumentation. It is sometimes enough to think of what individuals *would* accept. Agreement on the relevant reasons can thus be presupposed or assumed, given one's belonging to a group.

While group views can indeed be justified on their own right, independently from whether the individuals subjectively hold the views in question, this account faces some problems. The account appears to be both too strong and too weak for group justification. First, it makes group justification "too hard to come by" (Lackey, 2016, p. 350). Group justification here requires agreement on the reasons supporting a result. Yet, if groups have hard time agreeing on a conclusion, it is even harder to expect that they will agree on the reasons supporting it. And, sometimes, it is even possible to agree on a result even if they have different (epistemic) reasons for doing so. Hence, this view of group justification seems to neglect (or to suppress) fundamental diversity within epistemic groups (Dang, 2019).

Moreover, the requirement of joint acceptance can seem too weak for the group view to be justified, since there are no further explanations regarding the way joint acceptance has been obtained – it may be the result of manipulation or social pressure. Feminist philosophy of biology has revealed that broad scientific agreement has often dissimulated androcentric biases, resulting from the historically systematic exclusion of women from science. This has given rise to myths about female biology – regarding, for example, female orgasm (Lloyd, 2005). Agreement, or joint acceptance, is thus not constitutive of the correctness of the result.

Collaborative views indeed have a distinctive epistemic standing. They cannot be described as a mere aggregation of individual members' judgments but emerge as a result of complex interactions and reasoning among individuals who divide the labor, at multiple stages of the collaborative inquiry. Reasoning might lead to mutual adjustments and the discovery of novel solutions, which are not amenable to aggregative analyses. Therefore, group epistemic justification is distinct from and not reducible to individual justification. At the same time, group views need to be responsive to individuals' reasons. Not only it would be epistemically irrational not to assign the appropriate weight to individuals' justifiers or defeaters, but also diversity is generally thought to result in epistemic benefits to the group. It makes it possible to expose problematic background assumptions and sources of error, leading to epistemically better results (Longino, 2001). What matters is not whether the result is supported by generally accepted or presumably acceptable reasons, but whether the relevant justifiers have been adequately taken into consideration, compared, and evaluated. Hence, an appropriate account of group epistemic justification should also focus on the epistemic virtues of the procedures by which collaborative results are generated.

This suggests a procedural account of group knowledge. This idea is expressed in Popper's epistemology, where scientific knowledge advances toward the truth by improving tentative theories through a process of error reduction achieved by testing and intersubjective criticism (Popper, 1972). A theory is corroborated or can be provisionally considered as true if it has met the required burden of proof. The degree of corroboration of a theory is determined by factors such as the extent of critical discussion of the theory, its degree of testability, the rigorousness of the tests it has faced, and its resilience in enduring these tests (Popper, 1972, p.18). Knowledge in epistemic collaborations evolves in a similar manner. Participants to the collaboration pool all relevant evidence and submit their contributions to testing and argumentative assessment of evidence, hy-

potheses, and theories. A justified collective view is based on reasons that survive this critical process.

This weighs in favor of a dialectical or deliberative understanding of group epistemic justification. The group jointly accepts letting  $p$  stand as its view because the participants trust the procedure by which this result has been generated. In a dialectical or deliberative understanding of epistemic justification (e.g., Hakli, 2011; Beatty and Moore, 2010), justification is linked to the practice of giving and asking for reasons. Participants are encouraged to express their views, engage in open dialogue, and critically assess the evidence, assumptions, and reasoning behind each perspective. This critical discourse serves as a crucible for refining ideas, identifying weaknesses in arguments, and fostering a collective understanding that transcends personal convictions and biases. Through this process, the collective views that emerge are not only more robust, but are also reflective of a well-informed and scrutinized decision. Claims and views are justified to the extent that they survive a process of giving and asking for reasons. In other words, according to this account, a group  $G$  is justified in holding the view that  $p$  as true if and only if  $p$  has been successfully defended against reasonable challenges during collective inquiry and deliberation. What counts as a reasonable challenge or legitimate defense is determined by the epistemic principles characterizing the epistemic community (Hakli, 2011, p. 15).

It is, however, noteworthy that argumentation differs from demonstration. Indeed, according to this understanding, epistemic reasoning is defeasible. This means that the premises might provide good support to the conclusion, but they do not guarantee its truth. Collaborative results, as sets of propositions, that count as knowledge should not be considered as true, justified beliefs, but as corroborated statements which are subject to refutation once new evidence and better reasons become available. Hence, epistemic rationality is to be understood as “bounded procedural rationality” (Walton, 2016, p. 209). Given our limited cognitive abilities and the resources available in the specific epistemic context, scientific theories are rationally justified through interactive argumentation.

#### 4. Normative standards for epistemic deliberation

Collective deliberation seems to play a central role in structuring epistemic collaboration, especially when the group under consideration is significantly diverse. Although the dialectical understanding of epistemic justification captures the intuitive way of thinking of justification as pro-

viding and responding to reasons, the epistemic properties of collective deliberation have been extensively challenged. It has been argued that deliberation, which is subject to social pressure and confirmation biases, has the tendency to radicalize existing positions, instead of leading to more considered judgments (Sunstein, 2006). In the realm of science, this approach raises further worries because it seems to make collective views depend on negotiation, involving practical and political factors such as career interests and power relations (Pickering, 1986). Moreover, it seems to constitute a rather weak basis for epistemic justification, since a speaker can be quite persuasive when advancing false claims, or the audience can simply be gullible (Lackey, 2016, p. 349). It is thus necessary to defend the epistemic value of collective deliberation, by examining the conditions under which interpersonal argumentation might maximize the chances of getting to correct or true collective views. This issue has already been raised by deliberative democrats. So, it would be interesting to apply the ideas of deliberative democracy to thinking about collective deliberation and judgment in epistemic collaborations.

Deliberative democracy has been proposed as a theory of democratic justification.<sup>5</sup> One needs to notice that there is generally a conflict between democracy and truth – either we conceive it as factual truth, correctness, rightness, etc. On one hand, democracy, by definition, requires collective decisions to be responsive to citizens' reasons. Moreover, admitting that citizens have an equal moral status requires that their preferences and views are treated in an equal way. Thus, democratic decisions should be produced through a fair procedure that takes into consideration individuals' preferences and views – typically majority voting. However, without further qualification, voting seems like a garbage in – garbage out process: If individuals are irrational, immoral, or simply self-centered, the collective decision will probably reflect these properties. Democracy then risks violating some fundamental principles of justice – such as human rights. In this sense, democracy seems at odds with epistemic concerns about the quality of the decision. On the other hand, if one privileges this epistemic concern, she should be able to define some univocal procedure-independent principles that the collective decision should satisfy. If this were possible, collective decisions could easily be trusted with a group of moral experts. However, in a pluralistic society, it is likely that different individuals have different conceptions of the common good or of what justice requires. Democracy is thus a means to acknowledge diversity. In

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5 “The notion of deliberative democracy is rooted in the intuitive ideal of a democratic association in which the justification of the terms and conditions of association proceeds through public argument and reasoning among equals.” (Cohen, 1989, p. 21)

response to this dilemma between inclusion and epistemic justification, deliberative democracy proposes itself as an alternative. Collective deliberation is presented as a meditation between reason and will (Habermas, 2010, p. 175). Collective decisions are responsive to individuals' preferences, but these preferences are no longer taken as primitives. They are informed and tested in a critical debate among equals (Elster, 2003) – eventually before voting.

Deliberative democracy makes democratic justification depend not simply on the fairness of the decision-making procedure, nor on some presumably consensual values or judgments. Justification is rather dependent on the reasoning supporting the collective results. In this sense, it suggests a means for justification of collective views that combines inclusion of the diverse points of view with collective justifiedness. Justification here is not simply a matter of coordination and agreement, but the results should be expected to have some epistemic qualities. In other words, argumentation should lead to “better” decisions. Assuming that there is more than one permissible solution, the aim of deliberation is to track the best response to the problem faced by the group. The question then is under what conditions these epistemic properties of deliberation are satisfied in epistemic groups. In the realm of epistemic collaboration, the integration of deliberative democracy offers a structured approach to decision-making that involves a careful balance between procedural (democratic) norms and substantial (epistemic) principles.

Deliberative democracy places significant emphasis on procedural norms, defining the rules and processes that govern deliberation. In the context of epistemic collaboration, these norms are vital for ensuring a fair, inclusive, and rational discourse among members. To begin with, *inclusion* is a democratic norm, which seems to have important epistemic value as well. Deliberative democracy underscores the importance of including diverse perspectives in decision-making processes. In a political context, this is certainly justified by the equal moral status afforded to each citizen. Yet, diversity, as it has already been explained, has an epistemic value as well. In epistemic collaborations, inclusion ensures a comprehensive exploration of ideas, minimizing blind spots, and revealing independent sources of error. Diversity acts as a safeguard against cognitive biases, promoting rigorous evaluation and critical thinking, while it stimulates creativity and innovative thinking.

Does this imply that contributory views and claims should be assigned an equal weight? According to Longino, the equality condition should be understood in a qualified or tempered way (2001, p. 131). Division of labor combines with different expertise across individuals and research

questions. In fact, what is required by democracy is that everyone is given an equal opportunity to influence the result. However, the actual influence she will have on it is mediated by epistemic considerations, such as her epistemic competence and expertise. This qualification of the equality condition follows, after all, directly from the argumentation practice. During collective deliberation, the mutual assessment of reasons and positions is supposed to discriminate between arguments. This is what Habermas calls “the unforced force of the better argument” (Habermas, 2000, p. 37). So, in case of disagreement with the collective view, members feel nevertheless that they had the opportunity to defend their points. Their position was simply not strong enough to convince others.

Moreover, deliberative democracy emphasizes the importance of *rational discourse*, critical analysis, and the careful examination of possibilities to arrive at well-justified collective views. Argumentation is not simply meant to persuade or to win, although participants may be so motivated. In other terms, the normative role of argumentation does not rely on its ability to generate agreement, but on its truth-conducive properties (Betz, 2013). Indeed, what deliberative democrats focus on are the epistemic and sometimes social benefits of argumentation. During deliberation, participants are encouraged to formulate the reasons that support their claims, to defend their views and criticize those they disagree with. By doing so, and especially by revealing troubling implications or assumptions and blind spots in others’ positions, they reveal existing limitations and increase the information available within the group (Hafer and Landa, 2007). They also expect that it is those reasons that decide the fate of the propositions under discussion – and not, for instance, social power or coercion (Cohen, 1989). Agreement or coordination – if achieved – is thus rationally motivated. Others have argued that argumentation also has civilizing effects (Elster, 1995), which can be said to contribute to the epistemic quality of the results. In fact, although individuals may be self-centered, by being constrained to invoke reasons that are likely to persuade, they finish by adhering to these reasons. In this sense, argumentation promotes impartiality and objectivity.

These epistemic properties of argumentation are particularly salient in epistemic collaborations, where argumentation serves as a powerful tool for exploring, refining, and justifying collective results. However, one needs to consider an important objection. Argumentation, as one can easily realize by everyday practices, does not necessarily lead to these positive effects. People are not generally open-minded; rather, they tend to neglect dissenting arguments or to dismiss their sources as unreliable (Dutihl-Novaes, 2022). Under such circumstances, collective deliberation can be ex-

pected to have little effect on individuals' minds or the collective result, and its effects – if any – would be latent or slow (Mackie, 2006). This is why deliberative democracy draws attention to a central procedural requirement for collective deliberation: *mutual respect*. Also, participants need to be *open* to discussing their positions and revising their views when criticism succeeds. It is reasonable to suppose that these conditions are more easily satisfied in epistemic collaborations such as research teams, rather than in the political realm (Dutilh Novaes, 2022). Collaborators in science generally see each other as epistemic peers, though they might have different areas of expertise. Moreover, science being organized according to the principle of “organized skepticism” (Merton, 1973), researchers should welcome challenges.

While procedural norms provide the framework for deliberation, substantial principles focus on the underlying values and criteria that guide decision-making. More precisely, these are values and criteria according to which the advanced claims are defended or criticized, and decisions evaluated or justified. At least in its epistemic versions, deliberative democracy claims that procedure-independent criteria are needed so that deliberation can indeed constitute a theory of democratic justification. If the determination of rightness or truth is solely based on citizens' agreement – based on their preferences – it becomes challenging to substantiate key tenets of the deliberative ideal – such as the claim that collective deliberation improves the quality of collective decisions (Estlund 1997). One needs to appeal to some criteria, according to which the quality of decisions is to be assessed. For the same reason, epistemic deliberation needs to be constrained by epistemic criteria.

According to Longino, publicly recognized standards are indispensable for evaluating theories, hypotheses, and observational practices within a scientific community (2001, pp.130–131). They constitute the before-mentioned “common ground”, which being common knowledge among participants, structures shared reasoning and allows for mutual understanding and justifiability. In a deliberative context, it is against these standards that arguments are evaluated. Epistemic criteria, admitted by the epistemic community, determine what a reasonable challenge or a legitimate defense is in argumentation (Hakli, 2011, p. 15). They also allow us to distinguish what constitutes a valid contribution in the epistemic practice. The significance or relevance of the contribution is rooted in adherence to public standards, reflecting the community's cognitive aims and allowing for non-arbitrary evaluation in argumentation.

There is good reason to believe that not all considerations can count in epistemic deliberation. These standards distinguish the kind of reasons

one can reasonably advance in support of her claims or to challenge those of others. But what do these standards consist in? One solution is to derive those standards in an *a priori* way, by assuming that the goal of epistemic groups is truth and that the means by which one can reach it are univocal. In this sense, one could derive methodological criteria for science, or even the characteristics of a canonical method that could distinguish between science and pseudoscience. However, the history of science shows us that these abstract standards have little critical force in practice (e.g., Fagan, 2016). Research methods evolve according to the requirements of investigation in each epistemic context. Methods differ from one discipline to another and across experimental contexts.

There are no formal, univocal criteria for evaluating hypotheses and theories, especially in a collective epistemic practice. What groups dispose of is a set of “epistemological strategies” (Franklin, 2023), that is, a procedural background common knowledge that characterizes each epistemic group. Although social factors, such as power and career interests, can exert an important influence on scientific judgment, these considerations ultimately prove insufficient to provide justification in the long run. Justification of scientific results is ultimately based on reasons, generally accepted as epistemic by the scientists – even if this does not exclude disagreement as to the appropriate weight to assign to each of these reasons.

These strategies reflect general shared epistemological commitments. For example, in the case of physics, the standards constituting the common ground of argumentation appeal to the epistemology of experimentation – to considerations such as calibration, statistical studies of probable priors, elimination of plausible sources of error, independent confirmation and so on (Franklin, 2023). In interdisciplinary groups, these standards might be more abstract in nature, since participants do not belong to the same field, nor do they have the same educational background or methods of inference. However, there are some common epistemic values among researchers of different fields, and these are the basis for distinguishing points of agreement or even justified disagreement. These standards reflect the community’s cognitive aims and are thereby dynamic, subject to criticism and transformation based on shared values and goals. Their acceptance is an ongoing process, shaped through repeated acts of reflection and criticism, echoing the continuous evolution of knowledge (Longino, 2002).

A final point left to discuss is whether consensus is a promising normative goal for epistemic deliberation. Early theories of deliberative democracy have indeed considered consensus to be the ideal goal of deliberation (Habermas, 1993; Elster, 2013; Cohen, 1989). Rational consensus

seems to guarantee the two central claims of the deliberative ideal: autonomy (i.e., no one is constrained by decisions she has agreed to) and the common good (i.e., the common good or the truth is self-revealing through a reasoned debate). In science, consensus plays a central role as well, since it is considered as the touchstone of truth and attests of scientific authority. However, consensus has been criticized as a normative ideal. The demand for consensus is likely to create strong pressures towards unanimity for the wrong reasons – for example, social conformity – which contravenes the epistemic goals of deliberation (Sunstein, 2006). So, consensus is rather an indirect goal of deliberation, while participants directly aim for truth or better understanding (Landmore and Estlund, 2019, p. 124). What is required for epistemic justification of the collaborative views is not consensus, but joint deliberative acceptance (Beatty and Moore, 2010). In other words, what justifies the group in holding a view that  $p$  as true is that each has agreed on letting this view stand as the group's view, because of the process it has been generated by.

## 5. Conclusion

This paper has emphasized the central role of collective deliberation in epistemic collaborations. Collective deliberation appears to be crucial not only in organizing collaboration but also in justifying collective views. Relying on Bratman's account of shared intentionality, I showed how collective deliberation works in generating collective views, especially in a setting where diversity and disagreement are salient. The paper also proposed a deliberative account of group epistemic justification. Inspired by deliberative democracy, this approach asserts that the justification of collective views arises from the argumentative process by which they are generated. This approach was defended by demonstrating the epistemic properties of deliberation. The paper thus contributes to a deeper understanding of how collaborative interactions shape knowledge production in interdisciplinary settings and enriches discussions on the intricate processes involved in collaborative knowledge creation.

## References

- Andersen, H. (2016). Collaboration, Interdisciplinarity, and the Epistemology of Contemporary Science. *Studies in History and Philosophy of Science Part A* (56), 1–10.
- Andersen, H. and S. Wagenknecht (2013). Epistemic Dependence in Interdisciplinary Groups. *Synthese* 190(11), 1881–1898.

- Beatty, J. and A. Moore (2010). "Should We Aim for Consensus?". *Episteme* 7 (3), 198–214.
- Betz, G. (2013). *Debate Dynamics: How Controversy Improves Our Beliefs*, Dordrecht: Springer Netherlands.
- Bratman, M. (1992). Practical Reasoning and Acceptance in a Context. *Mind* 101(401), 1–16.
- Bratman, M. (2000). *Intention, Plans, and Practical Reason*. Stanford: CSLI.
- Bratman, M. (2014). *Shared Agency: A Planning Theory of Acting Together*. New York: Oxford University Press.
- Cohen, J. (1989). Deliberation and Democratic Legitimacy. In D. Matravers and J. Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology*. London and New York: Routledge, in Association with the Open University.
- Dang, H. (2019). Do collaborators in science need to agree? *Philosophy of Science* 86(5), 1029–1040.
- Dutilh Novaes, C. (2022). Argument and Argumentation. In E. N. Zalta and U. Nodelman (eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2022 ed.). Metaphysics Research Lab, Stanford University.
- Elster, J. (1995). The Strategic Uses of Argument. In K. Arrow, R. H. Mnookin, et al. (eds.), *Barriers to Conflict Resolution* (pp. 236 – 257). New York and London: W. W. Norton & Company.
- Elster, J. (2003). The Market and the Forum: Three Varieties of Political Theory. In D. Matravers and J. E. Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology*. London and New York: Routledge, in Association with the Open University.
- Estlund, D. (1997). Beyond Fairness and Deliberation: The Epistemic Dimension of Democratic Authority. In J. Bohman and W. Rehg (eds.), *Deliberative Democracy. Essays on Reason and Politics* (pp. 173–204). Cambridge (MA) and London: The MIT Press.
- Estlund, D. M. (2008). *Democratic Authority: A Philosophical Framework*. Princeton, New Jersey: Princeton University Press.
- Estlund, D. M. and H. Landemore (2018). The Epistemic Value of Democratic Deliberation. In J. Mansbridge, A. Bächtiger, J. Dryzek and M. Warren (eds.), *Oxford Handbook of Deliberative Democracy* (pp. 112 – 131). New York: Oxford University Press.
- Fagan, M. B. (2016). Stem Cells and Systems Models: Clashing Views of Explanation. *Synthese* 193 (3), 873 – 907.
- Feyerabend, P. K. (1970). *Against Method: Outline of an Anarchistic Theory of Knowledge*. Minneapolis: University of Minnesota Press.
- Franklin, A. and S. Perović (2023). Experiment in Physics. In E. N. Zalta and U. Nodelman (eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2023 ed.). Metaphysics Research Lab, Stanford University.
- Gilbert, M. (1989). *On Social Facts*. Princeton, New Jersey: Routledge.

- Gilbert, M. (2000). *Sociality and Responsibility: New Essays in Plural Subject Theory*. Lanham, Md: Rowman & Littlefield Publishers.
- Goldman, A. (2014). Social Process Reliabilism: Solving Justification Problems in Collective Epistemology. In J. Lackey (ed.), *Essays in Collective Epistemology*. Oxford: Oxford University Press.
- Habermas, J. (1996). *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*. William Rehg (trans.), Cambridge, MA: The MIT Press.
- Habermas, J. (2000). The Inclusion of the Other. *Studies in Political Theory*. Boston: The MIT Press.
- Habermas, J. (2010). La souveraineté populaire comme procédure. Un concept normatif de l'espace public. In C. Girard and A. Le Goff (eds.), *La démocratie délibérative. Anthologie de textes fondamentaux* (pp. 171–201). Paris: Hermann.
- Hakli, R. (2011). On Dialectical Justification of Group Beliefs. In H. B. Schmid, D. Sirtes, and M. Weber (eds.), *Collective Epistemology* (pp. 119–154). Frankfurt: Ontos.
- Kuhn, T. S. (2012). *The Structure of Scientific Revolutions*. Chicago: University of Chicago press.
- Lackey, J. (2016). What is justified group belief. *Philosophical Review* 125(3), 341–396.
- Landa, D. and C. Hafer (2007). Deliberation as Self-discovery and Institutions for Political Speech. *Journal of Theoretical Politics* 19(3), 329–360.
- Landemore, H. (2017). *Democratic Reason: Politics, Collective Intelligence, and the Rule of the Many*. Princeton, New Jersey: Princeton University Press.
- List, C. and P. Pettit (2002). Aggregating sets of judgments: An impossibility result. *Economics and Philosophy* 18(1), 89–110.
- Lloyd, E. A. (2005). *The Case of the Female Orgasm: Bias in the Science of Evolution*. Boston: Harvard University Press.
- Longino, H. E. (2001). *The Fate of Knowledge*. New Jersey: Princeton University Press.
- Mackie, G. (2006). Does democratic deliberation change minds? *Politics, Philosophy and Economics* 5(3), 279–303.
- Meijers, A. (2003). Why accept collective beliefs? *ProtoSociology* 18, 377–388.
- Merton, R. K. (1973). *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: University of Chicago Press.
- Palermos, S. O. (2022). Epistemic collaborations: Distributed cognition and virtue reliabilism. *Erkenntnis* 87(4), 1481–1500.
- Pettit, P. (2001). Deliberative Democracy and the Discursive Dilemma. *Philosophical Issues* 11(1), 268–299.
- Pickering, A. (1986). Against correspondence: A constructivist view of experiment and the real. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* 1986, 196–206.

- Popper, K. R. (1972). *Objective Knowledge: An Evolutionary Approach*. New York: Oxford University Press.
- Rescher, N. 2003. *Epistemology: An introduction to the theory of knowledge*. Albany: State University of New York Press.
- Rolin, K. (2015). Values in science: The case of scientific collaboration. *Philosophy of Science* 82(2), 157–177.
- Ryle, G. (1949). *The concept of mind*. London: Hutchinson.
- Schmitt, F. F. (1994). The epistemic significance of disagreement. In F. F. Schmitt (ed.), *Socializing Epistemology. The Social Dimensions of Knowledge* (pp. 257–288). Lanham, MD: Rowman & Littlefield Publishers.
- Sunstein, C. (2006). *Infotopia: How Many Minds Produce Knowledge*. New York: Oxford University Press.
- Thagard, P. (2006). How to Collaborate: Procedural Knowledge in the Cooperative Development of Science. *The Southern Journal of Philosophy* 44 (S1), 177–196.
- Tuomela, R. (2007). *The Philosophy of Sociality: The Shared Point of View*. New York, US: OupUsa.
- Walton, D. (2016). *Argument Evaluation and Evidence*. Cham: Imprint: Springer.
- Zollman, K. (2010). The epistemic benefits of transient diversity. *Erkenntnis* 72(1), 17–35.