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## **Three models for collective intellectual virtues**

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# 12 Three Models for Collective Intellectual Virtues

*Jeroen de Ridder*

## 1 Introduction and Preliminaries

On April 10, 2019, 3 pm, in the headquarters of the European Research Council in Brussels, the German-Dutch astrophysicist Heino Falcke, then chair of the Event Horizon Telescope science council, showed the world the first-ever image of a black hole (Devlin 2019). The image was the result of a massive collaboration involving a network of eight inter-linked radio telescopes across the globe and a team of more than 300 scientists from 60 institutes in 18 countries.<sup>1</sup> Falcke testifies that he originally came up with the idea for measuring a black hole's event horizon in the late 1990s, 20 years before the image was finally revealed. Clearly, the people who created this image achieved an immense epistemic success. Equally clearly, the success could not have been achieved without team effort. Collaboration was both practically and cognitively necessary: the sheer amount of work was massive and it involved a combination of scientific expertise, skills, knowledge, and understanding that no single researcher has on her own. The vernacular of intellectual virtues naturally lends itself to describing and evaluating what the team did: it displayed perseverance, creativity, curiosity, well-placed trust, and organized skepticism.

Cases like these – it's easy to multiply examples – make it plausible that the language of intellectual virtues applies as naturally to groups as it does to individuals. And hence that there are collective intellectual virtues. The purpose of this chapter is to present three models for collective virtue: three ways of understanding how collectives or groups can possess features that make them flourish and excel from the epistemic point of view.

Before I turn to these models, I should clarify a few things. The suggestion that there are collective virtues raises methodological and metaphysical questions that are familiar from the growing literature on collective epistemology (cf. Lackey 2014; Lahroodi 2019). For example: should the starting point for analyses of belief, knowledge, virtue, and other epistemic states be individuals, or should analyses remain neutral between individuals and groups (Gilbert and Pilchman 2014)? Are all ascriptions of group epistemic states shorthand for (complex) ascriptions of individual

epistemic states so that group epistemic states are reducible to sums of individual epistemic states? Do group epistemic states require group mental states or, even more problematically, group minds? What, if any, are the conditions on the individuals in a group in order for the group to be in an epistemic state or possess an epistemic quality? The worry animating these questions is that groups cannot be epistemic subjects in their own right, over and above the individuals making up the group; that groups cannot ‘really’ or ‘irreducibly’ believe, know, or possess virtues.

I’ll sidestep concerns about whether groups can ‘really’ possess intellectual virtues. Not because they are unimportant, but because I want to make progress on a different task. Namely that of understanding the different things we might mean when we use the language of intellectual virtue to evaluate group epistemic performance. I will introduce three models – or three how-possibly explanations – for how groups can have features that make them perform excellently from the epistemic point of view. For ease of exposition, I will henceforth call these features collective intellectual virtues, but, in doing so, I remain noncommittal about whether all three models ultimately describe features that are ‘really,’ or ‘irreducibly’ collective virtues.

Another issue from the literature I’ll steer clear of is what kinds of groups (if any) can possess virtues, as well as the even more fundamental one of what groups are (Ritchie 2015; Epstein 2019). The presentation of each model will make it clear what kinds and degrees of internal organization and coordinated behavior a collective must have to exemplify that model. I will leave it to others to decide whether those factors suffice for that collective to constitute a ‘real’ group or a certain kind of group, rather than a mere collection of individuals. The only constraint on my discussion is that it is focused on what I will call *collaborative* collectives or groups, that is, more or less stable groups that intentionally work together towards some common goal, such as committees, teams, organizations, departments, etc. Hence, I will not discuss arrangements in which the judgments or betting behavior of random and fleeting collections of individuals are aggregated to generate epistemically reliable outcomes.<sup>2</sup> In such cases, a collective is used by an external agent as an instrument to generate epistemically high-quality output, but does not itself form an epistemic agent in any meaningful sense.

I will also refrain from taking a stand on the nature of virtue. Some virtue epistemologists distinguish between reliabilist and responsibilist conceptions of virtue (Baehr 2006; Battaly 2008). The former conception takes reliable cognitive faculties as its model for virtues, whereas the latter takes cultivated character traits, which typically include proper motivation and emotion, as the model for intellectual virtues. I will be ecumenical here and draw on examples of both kinds, although it should be obvious that it is more difficult to argue that groups can ‘really’ have collective responsibilist virtues.

If you worry that the above qualifications undermine the motivation for thinking about collective intellectual virtue, let me point out that the task of understanding how groups can do well epistemically is relevant for collective epistemology, regardless of where the chips fall on what counts as genuinely collective virtue. Many groups in contemporary societies carry out epistemic tasks such as information gathering, storage, dissemination, or analysis, either as their primary goal (e.g., the sciences and humanities, education, journalism, R&D) or in the service of some other primary goal (e.g., administration of justice, political decision-making, governance, producing products, or offering services). To carry out such tasks successfully, collectives need to perform well epistemically and so it is important to describe and understand the different ways in which groups can do so. The general models I develop here do not straightforwardly translate into prescriptions about how to improve the epistemic life of specific individual groups or collectives – we need fine-grained empirical data from cognitive and social psychology, political science, management science, etc. for that – but they do sketch broad possibilities for how groups can flourish epistemically, which can serve as the basis for further empirical exploration and fine-tuning.

## 2 Addition

The first model of collective virtue is straightforward. In some cases, a group does well epistemically when all or most of its members are epistemically excellent (and nothing prevents them from exercising their individual intellectual virtues in the context of the group). A team of three creative individuals can be even more creative than the individuals working alone. Scholars who are individually intellectually perseverant can stimulate each other to become even more perseverant when they collaborate. An open-minded thinker and an intellectually generous one might make a great teaching team, and so on. The basic idea is addition: collaborating virtuous individuals exhibit virtuous behavior as a team.

This can happen in two different ways: (a) the individuals in the team might all possess the same virtue to various degrees, resulting in the collective exhibiting the dispositions and behavior relevant to that virtue to a high degree, or (b) the individuals may possess different, complementary virtues, and act accordingly in their capacities as team members, thus causing the collective to display behaviors that fit with the different virtues of the individual team members.

In collective epistemology, proposals along these lines are typically labeled *summative*. Summative models construe collective states as reducible to the mental states of the individuals who make up the collective. Saying that the group believes that *p* is thus shorthand for saying that most or all of the individuals in the group believe that *p* (cf. Quinton 1975, 17); ‘the group is intellectually humble’ means that its members

are intellectually humble. For this reason, several epistemologists hold that summative models of collective states aren't really or robustly collective (Gilbert 1987, 2014; Tuomela 1992, 2004; Bird 2010; de Ridder 2014; Lackey 2021). If talk of group belief, knowledge, understanding, and virtue is nothing more than an efficient way of talking about individuals, then there are no genuinely collective epistemic states. I won't take sides here, as I explained before. For present purposes, it suffices to note that some talk of collective intellectual virtues can indeed be analyzed as a way of saying that the individuals in the collective possess the relevant virtues.

Individually virtuous group members do not necessarily make a virtuous group on the first model. There are several reasons why individual virtues might fail to produce collective virtue. First, on the traditional Aristotelian conception of virtue, virtues are the golden mean between excess and deficiency. Collaborating individuals with the same virtue could produce an excess of the underlying trait at the group level. A group of open-minded individuals can become credulous or intellectually feeble. Second, individual virtues can cancel each other out in a collaborative setting. A creative person working together with a meticulous individual might dampen each others' individual virtues. Third, the group's formal or informal organization and culture can prohibit the manifestation of added individual virtues at the group level. A team of intellectually courageous and creative individuals might see all their sound ideas shot down in a conservative organization that overemphasizes proper procedure, due diligence, and risk avoidance.

The second and third models chart how nonvirtuous individuals can act together to produce intellectually virtuous behavior at the group level.

### **3 Interaction**

In the second model, mutual interactions between group members and the group's structure and culture are key to generating collective virtue. Unlike in the addition model, it is not required that group members are individually virtuous; in some cases, they might even be intellectually vicious.

#### ***3.1 Mere Interaction***

The first and simplest version is when two or more individuals who work together stimulate or challenge each other – intentionally or not – to do better than they would have on their own. Interaction between individuals who lack virtue can consistently produce epistemically excellent outcomes.

You need not be a particularly virtuous individual for collaboration to awaken a competitive mindset, a desire to show your best self, an urge to impress other people, or at least to not let them down. If you have ever successfully coauthored a paper or cotaught a class, you should be able to recognize this phenomenon. There is a wealth of empirical research in cognitive and social psychology supporting the general idea that interaction and collaboration in a group lead people to modify their behavior in various ways (cf. Kelly et al. 2013).

Of course, not any combination of people who work together will automatically do so in virtuous ways; we are all familiar with stories about group processes gone terribly wrong. The claim is far more modest: sometimes, with the right combination of people and the right collaborative tasks and settings, people working together will excel even when they wouldn't have done so individually. Consider some schematic examples of actual intellectual virtues. By pooling ideas, asking critical and constructive questions, and building on each others' ideas, a group can become creative. When group members push each other to become clearer and more explicit and to think through potential criticisms, the group as a whole becomes intellectually careful and rigorous. If group members cheer each other on or refuse to give up first not to lose face, the group might persevere on a difficult task where individuals wouldn't have done so.

### *3.2 Collective Virtue Out of Individual Vices*

The right combinations of individually intellectually *vicious* people could also form groups that possess intellectual virtue. Based on a range of empirical literature from biology, psychology, and organization science, Paul Smart (2018a, 2018b) defends this possibility by exploring what he calls 'Mandevillian intelligence':

Cognitive and epistemic properties that are typically seen as shortcomings, limitations or biases at the individual level can, on occasion, play a positive functional role in supporting the emergence of intelligent behavior at the collective level.

(Smart 2018b, 4171)

Many group intellectual tasks can be construed as a collective search through a space of doxastic possibilities: solving a problem, forming a hypothesis, making a decision, or forming a belief that's in accordance with the available evidence. As Smart points out, performing a collective search well requires striking a balance between exploration and exploitation. Unless the space of possible solutions is a simple ordered one, a successful search must explore the solution space far and wide in order to identify optimal solutions. The collective needs to look as

broadly as possible before it exploits group members' judgments to home in on a preferred solution. Somewhat surprisingly, fast and smooth information sharing among group members harms this process, because it leads to premature convergence on suboptimal solutions. A better balance between exploration and exploitation is achieved, Smart explains, when group members trust each other less, are individually dogmatic, or manifest cognitive biases and heuristics like confirmation bias, belief perseverance, the availability heuristic, etc. – in other words, when they exhibit individually vicious behaviors.

Smart's proposal dovetails with other strands of research. Modeling work in the philosophy of science has shown that one way for scientific communities to do a better job of converging on the truth under certain conditions is for individual scientists to start out with more extreme beliefs (Zollman 2010).<sup>3</sup> Another way, again under certain conditions, is for scientists in a broader community to actively avoid approaches already taken by others (Weisberg and Muldoon 2009). Although this doesn't entail that individual scientists must be intellectually vicious for the community to be successful, it is clear that vices such as self-righteousness, narrow-mindedness, or arrogance might lead to extreme beliefs or might stimulate researchers to actively avoid approaches taken by others. Drawing on various strands of research in cognitive and evolutionary psychology, Hugo Mercier and Dan Sperber (2017) argue that human reason evolved for social use. Reasoning is meant to convince others, to justify our thoughts and actions to others, and to scrutinize others' justifications. Biases and limitations that may seem intellectually bad on the individual level produce epistemically successful interaction at the collective level by evolutionary design.<sup>4</sup>

### 3.3 *Structure and Culture*

On the third version of the interaction model, it isn't the mere interaction between individuals as such that leads to collective virtue, but the members' interaction with the group's formal or informal structure, rules, or culture.<sup>5</sup> When a group of people work together in pursuit of some common goal, some forms of organization arise naturally: tasks are divided, people take on different roles, mutual expectations form, communication patterns develop spontaneously or are explicitly agreed upon, a system of sanctions might be put in place, and something less tangible like a group 'culture' or 'ethos' emerges. This is all the more true for established groups that work together over longer periods of time in a formal institutional setting such as an organization.

According to Seumas Miller (2010, 2019), organizations are systems of interdependent roles determined by four characteristic elements: structure, function, culture, and a system of sanctions. The same goes for subgroups within organizations, such as departments, teams, or other

collaborative groups. The group's *structure* consists of the differentiated roles in the group, typically defined by tasks or responsibilities for the person occupying the role, rules governing the performance of those tasks, and relations to the other roles. Established organizations typically have a formal structure that is explicitly specified, but a group has structure even in the absence of any explicit specification. In addition, there is the organization's informal structure, which may or may not diverge from its formally specified structure. Sometimes, people take on tasks that aren't officially part of their role or they follow unofficial rules in carrying out their tasks. An organization's *function* is what it is for; its official purpose. This is what the structure with its roles, tasks, and rules is supposed to accomplish – very generally put, to produce goods or render services of various kinds. An organization's or group's *culture* is its 'spirit' or 'ethos': the set of informal attitudes, values, norms, beliefs, desires, expectations, communication patterns, practices, etc. that pervade the group and that, together with its structure, determine its behavior and performance. Ideally, a group's formal structure and informal structure and culture are harmoniously aligned, but of course, this isn't always so. The final element is a *system of sanctions*, which captures what happens when group members violate the group's rules, norms, or values; anything from formal punishment to friendly corrections.<sup>6</sup>

A group's structure and culture (including its system of sanctions) can generate virtuous intellectual performance, regardless of the virtues or vices of individual group members. The *formal structure* of a group and the operative rules and responsibilities can encode intellectually virtuous practices by stimulating or prescribing actions and procedures that constitute virtuous behavior and by making nonvirtuous behavior more difficult. This can happen in any number of ways: from simple conventions and agreed-upon standard practices to a complete institutional system for dividing intellectual labor between different roles or sophisticated knowledge management systems. For instance, simple things like always letting a colleague proofread letters or memos or double-checking calculations before approving payments can reduce errors. This may not quite amount to intellectual virtue yet, but at least vices of carelessness and sloppiness are avoided. Senior management roles are often designed so that they complement each other and prevent one-sidedness: the tasks of a CEO require courage and steadfastness, whereas a Chief Risk Officer is supposed to be careful and temperate (de Bruin 2017, 117). A management team can become virtuous when it fills these roles with the right people. Or take the practice of preregistration in science (Nosek et al. 2018) and depositing data and analyses in the Open Science Framework (Foster and Deardorff 2017).<sup>7</sup> By registering the design, methods, and hypotheses of a study before carrying it out and committing to sharing data openly, various kinds of questionable research practices are prevented, such as hypothesizing after the results are known (Kerr 1998),

p-hacking, or letting results disappear. When a research team commits to working by the principles of open science (and lives by those commitments), its research practices will become more careful and more reliable – more intellectually virtuous. In all of these examples, the responsibilities and tasks that belong to various roles in a team are specified so that the individuals fulfilling these roles will show behavior that is conducive to the epistemic excellence of the group, regardless of whether they would be individually so inclined. In other words, the group's structure produces collective virtue.

Group structure can be scaffolded by training, standard operating procedures, protocols, and various sorts of technological support. Pilots, for example, are required to use preflight checklists before taking off to make sure everything is safe (Degani and Wiener 1993). Checklists are widely used in other high-risk environments, too, where safety is of the highest concern. They eliminate unreliability that might otherwise ensue from human lapses of attention or forgetfulness. The use of redundancy and double-checking is another familiar procedure for spotting mistakes and thus promoting reliability. A fascinating historical example is the Mathematical Tables Project, which was devoted to tabulating higher mathematical functions before there were electronic computers (Grier 2013, Ch. 13). The project ran from 1938 to 1948 under the leadership of the Polish-American mathematician Gertrude Blanche. Mathematicians broke down the calculations for the values of complex functions into basic arithmetic operations, which were then carried out by as many as 450 unemployed individuals, to be subsequently aggregated into comprehensive tables. In order to secure impeccable reliability, which was crucial for the project's reputation, Blanche and her fellow mathematicians went to great lengths to weed out error: they employed six to eight different procedures to check each calculation (Grier 2013, 215)!

Many organizations use knowledge management tools such as document repositories, data warehouses, management information dashboards, intranets, etc.<sup>8</sup> When implemented well, such tools ensure that the right information is easily accessible to the right people at the right time, so that the organization operates on the basis of reliable information and according to current procedures and practices. Easily accessible, reliable, and current information also enables groups to be transparent and to justify their actions when called upon to do so. This is conducive to or constitutive of intellectual virtues like honesty, responsibility, accountability, and truthfulness. An example from science is the massive open database with biochemical data at the European Bioinformatics Institute in Cambridge (Cook et al. 2018). Through the use of open (big) data, research teams in the life sciences can speed up discovery and enhance the reproducibility of their work.

A group's *culture* can contribute to its epistemic flourishing, too. Informal and implicit ideals, values, norms, practices, attitudes, beliefs,

communication patterns, and other attitudes and behaviors influence the group members in a multitude of ways. A nonexhaustive list of ways in which a group's culture might be embodied and expressed includes: are questions welcomed; are junior team members mentored; is there organizational support for learning and development; are there opportunities for creativity and out-of-the-box thinking; do team members (especially those in hierarchical relations) welcome feedback and criticism; do team members give each other credit; do group members take pride in being part of the group; do people experience the organization's overall goals as worth caring about; who are the group's role models; are work hours and compensation in proportion to the tasks and results that are expected; are successes celebrated; etc. All of these things set the tone and shape the group's ethos. They can create a group that has intellectual virtues, even when the individuals in the group are not particularly virtuous apart from the group.<sup>9</sup>

To give a concrete example, Richard Dawkins tells a charming anecdote that illustrates the idea of informal communal norms well. A senior scientist in the Oxford zoology department, where Dawkins was an undergraduate, had for years

passionately believed, and taught, that the Golgi Apparatus (a microscopic feature of the interior of cells) was not real: an artefact, an illusion. Every Monday afternoon it was the custom for the whole department to listen to a research talk by a visiting lecturer. One Monday, the visitor was an American cell biologist who presented completely convincing evidence that the Golgi Apparatus was real. At the end of the lecture, the old man strode to the front of the hall, shook the American by the hand and said – with passion – “My dear fellow, I wish to thank you. I have been wrong these fifteen years.” We clapped our hands red. ... The memory of the incident I have described still brings a lump to my throat.

(Dawkins 2006, 321)

It's easily relatable how events such as these can have a formative influence on a group: when a group member sets an example by an impressive display of virtuous behavior, others will want to live up to that ideal and strive to improve their own behavior in the image of that ideal. Especially when stories about an exemplar are often repeated or when little ritual-like practices are formed around it, they have a lasting influence. While such exceptional events shape group culture, day-to-day practices and dealings are arguably even more important. For another example from the domain of science, recent systematic research on research integrity is beginning to single out 'research climate' – which is basically synonymous with 'culture' in this context – as a key driver of responsible conduct of research and prevention of questionable research practices (Crain et al. 2013).

A case from the literature also illustrates the influence of culture on collective virtue (or lack thereof). Both Reza Lahroodi (2007) and Miranda Fricker (2010) discuss the example of a church committee that operates in a closed-minded fashion even when all of its members are individually open-minded. While this is an example of a group vice, the example could easily be reversed to be about a virtuous committee consisting of members with individual vices. In Lahroodi's words:

We can conceive of a church committee that is narrow-minded about gay rights as a group, while all or most of its members are open-minded about gay rights. As individuals, all or most members of the committee routinely resist their initial tendency to dismiss ideas favoring gay rights that are contrary to their own and to grant them enough plausibility to take them seriously. The group, however, moves in the opposite direction. It fails to assign any plausibility to a wide range of contrary views about gay rights, summarily dismisses them and does not consider them worthy of discussion, let alone adoption.

(Lahroodi 2007, 287)

What explains the committee's behavior, as Lahroodi describes the example, is the interplay between two sorts of factors: first, 'commitment to certain standards, including standards for satisfactory discharge of the group's tasks, standards for good evidence or good reasoning about subjects relevant to the group's tasks, and so on'; and second, 'the pressure on members to reinforce their group membership by performing conforming behavior... [Group members] may want others to think they are towing the church line on this issue' (ibid., 288). Both of these factors form part of the group culture.

Miranda Fricker (2010) uses Christine Korsgaard's (1996) notion of practical identities to make sense of such a group dynamic. Following Korsgaard, she notes how people have various sorts of identities, corresponding with the different roles they occupy in their personal, social, and professional life: depending upon the circumstances and occasion, one can engage a situation as a parent, as a citizen, as a party member, as an employee, as a team member, etc. Some of these practical identities arise from group membership and the values and norms associated with the identity are set by the group ethos. Practical identities can express themselves in different beliefs, acceptances, utterances, and actions, which can in turn influence what other group members do in their roles as group members, thus creating a distinctly collective dynamic. A jury member in a legal court might, because of personal prejudice or hasty judgment, be individually convinced that the accused is guilty, but nonetheless realize that, *qua* jury member, she ought to refrain from judgment and wait until all the evidence has been presented and deliberations

are under way. In so far as all jury members wear their practical identities in this way, the jury as a group can be fair-minded and intellectually responsible.

In a later paper, Fricker (2020) employs Margaret Gilbert's (2014) notion of joint commitment to analyze group ethos.<sup>10</sup> While this is a fruitful idea, analyses of collective virtue are not wedded to the joint commitment model.<sup>11</sup> For example, writing about social knowledge, Alexander Bird draws on the Durkheimian notion of organic solidarity to characterize the way in which some groups are bound together. Organic solidarity, he writes, 'involves bonds that arise out of difference, primarily the interdependence brought about by the division of labor. The key feature of the division of labor is that individuals and organizations depend on others who have different skills and capacities' (Bird 2010, 37). Bird is explicit that groups bound by organic solidarity need not take on any joint commitments in Gilbert's sense. Even so, such groups have an ethos, too, which makes them function well, neutrally, or badly from an epistemic point of view. Joint commitment may be a fine conceptual tool for understanding what group culture or ethos can be, but we don't need to limit our theoretical options here.<sup>12</sup>

To sum up the ideas from this section: the interactive model of collective virtue has three versions. First, the mere interaction between collaborating people who are individually lacking in individual virtue can produce epistemic excellence at the group level. Second, the right combinations of individual vices can produce epistemic excellence through interaction. And third, group structure and culture can nudge, coax, push, or require individuals to behave and interact in ways that make the group as a whole flourish epistemically, regardless of the epistemic qualities of the group members.

#### 4 Emergence

To introduce the third model, I need to draw attention to an implicit assumption in the discussion so far. It is that there is a single set of intellectual virtues, which can be had by individuals and groups alike. The examples so far included familiar ones from the virtue epistemology literature: reliability, love of knowledge, responsiveness to evidence, open-mindedness, perseverance, teachability, creativity, courage, etc. The third model – admittedly the most speculative of the three – turns on the insight that when we relax the assumption that all virtues can be possessed by both groups and individuals, there is theoretical space for intellectual virtues that *only* collectives can possess.<sup>13</sup> Perhaps groups can possess intellectual virtues which no individual could possess: *exclusively collective virtues*. This suggestion does not require positing any mysterious mechanisms or group-level mentality or agency. The mechanisms through which exclusively collective virtues could emerge are similar to

those in the interaction model: interaction between people who individually lack virtue, well-ordered interaction between individual vices, or interaction between group structure and culture, and individual character and behavior. The difference with the interaction model lies in the kind and nature of the virtue itself, not the way in which it is produced.

To warm up to the idea that there can be exclusively collective virtues, let's start with two related phenomena which are better documented. First, it is uncontroversial that, under the right circumstances, collectives can outperform individuals. This is also true in the epistemic realm. Teams can work faster and more reliably than individuals; they can be better at generating new ideas; they can persevere longer (e.g., by dividing up labor); they can bring a greater number of diverse perspectives to an issue; etc. A specific example is the 'diversity trumps ability' theorem (Hong and Page 2004), which shows that teams consisting of sufficiently diverse problem solvers can outperform individual experts and even teams of experts. While individuals can surely bring a number of different perspectives to a problem, a team of diverse individuals can do so to a much higher degree and this theorem shows that, at least for some tasks, diversity matters more than expertise. So, for at least some of the virtues that individuals and collectives can both have, it is possible for collectives to have those virtues to a significantly greater degree than any individual could.

This observation makes a weak version of the third model plausible: for some virtues that both individuals and collectives can have, collectives can have them to a greater degree than any individual could. At least, then, there are exclusively collective virtues in the sense that there are degrees of virtue possession exclusive to collectives – *quantitatively exclusively collective virtues*, we might call them.

A second phenomenon suggests that there is room for a stronger version of the third model. There may be kinds of virtues that are unique to collectives – *qualitatively exclusively collective virtues*. To support this, consider the concept of superdiversity. Introduced by the sociologist Steven Vertovec (2007), this concept characterizes geographical regions or cities that have high numbers of different immigrant groups or people of different ethnicities and, as a result, lack any homogenous majority groups. It has been claimed that superdiversity is conducive to innovation and economic growth (Ozgen et al. 2012) and that it can reduce intergroup tensions and prejudice (see Foner et al. 2019 for discussion and references).<sup>14</sup> While superdiversity and its effects are not intellectual virtues and cities and communities are not the sort of groups that form the focus of this chapter, it is clear that superdiversity is, by definition, a feature that only collectives can possess. It is structurally similar to the kinds of exclusively collective virtues I am trying to delimit here.

Of course, the question is whether there are compelling examples from the epistemic realm that fit the bill of this third model: characteristics of

groups that are conducive to or constitutive of epistemic flourishing and that only groups can have. A conservative approach to this question is to scrutinize detailed analyses of familiar individual virtues and to ask whether there are perhaps *forms* of these virtues that only groups can possess. In so far as the genus-species distinction applies to intellectual virtues, this is a promising avenue. Individuals and groups can both have virtues like intellectual humility, open-mindedness, creativity, perseverance, etc., but the specific form they take in individuals and collectives might differ. Virtues bifurcate into an individual and a collective form.

Consider the virtue of intellectual autonomy or self-governance. Individuals can be intellectually autonomous by thinking for themselves and deciding for themselves whom to trust. But any individual has only her own mind and cognitive resources to accomplish this. This is different for groups. First, because, unlike individuals, groups aren't 'all-purpose cognizers.' Groups only think and reason in so far as this is relevant to their function and purpose. Second, some groups have designated individuals to work on subtasks that are relevant to the overall intellectual task the group is engaged in. Hence, for groups, fairly radical forms of autonomy can be feasible and desirable: some groups can truly think fully for themselves and rely (almost) exclusively on their own resources, without trusting others outside the group. Along the same lines, Byerly and Byerly (2016) suggest that self-regulation can take on a distinctively collective form. Plausibly, self-regulation is an element of intellectual autonomy in so far as autonomy involves the group regulating the actions of its members. This form of self-regulation doesn't exist at the individual level, simply because there are no members whose behaviors can be regulated.

Something analogous can be said about cognitive diversity. An individual can have cognitive diversity by mastering various thinking styles, drawing on different experiences, and having different practical or social identities which she can bring to bear on questions. But clearly, a group can host a wider range of cognitive diversity by having members with radically different life histories, socio-economic, religious, or political backgrounds, and diverse lived experiences. Cognitive diversity might not be an intellectual virtue in and of itself, but it is certainly instrumental to virtues such as problem-solving capacity or creativity. Perhaps, then, there is a distinctly collective form of creativity.

Finally, a more radical approach looks for collective virtues that are truly unique in kind, that is, not just a species of the same genus as individual virtues, but such that individuals cannot have them. Byerly and Byerly (2016) propose that solidarity might be an example of such an exclusively collective virtue. This, however, isn't an intellectual virtue. A possible example from the intellectual realm involves the qualities of a group involved in fostering and cultivating mutual empathetic understanding. Michael Hannon (2020) argues that democratic deliberation

might be good for an empathetic understanding of other people. Understanding others, he writes, requires ‘that we be willing to listen to them. More than this, however, it requires the ability to “take up” another person’s perspective. We must be able to see the other person’s point of view’ (2020, 598). Hannon cites empirical evidence showing that, in the right circumstances, groups composed of diverse members who engage in deliberation indeed develop stronger empathetic understanding, which subsequently also increases outgroup empathy (Mutz 2006; Morell 2010; Grönlund et al. 2017). While mutual empathetic understanding might not be a strictly veritistic epistemic goal, it is nonetheless an epistemic goal, argues Hannon. It facilitates more accurate opinions about other people and is a precondition for rational deliberation, which may, in turn, enable better truth-tracking in political, moral, and religious matters.

Obviously, such mutual empathetic understanding is not a feature that individuals can possess. Only groups that are sufficiently diverse and that have a structure and culture that facilitate respectful dialogue will reap these epistemic benefits. This, then, is reason to think that the features that make groups good at cultivating empathetic understanding constitute a qualitatively exclusively collective intellectual virtue. Perhaps, then, we can call it the virtue of mutual empathetic understanding.

In conclusion, the third model for collective virtue presents the possibility that groups possess intellectual virtues that individuals cannot have. Either by having a familiar virtue to a greater degree than any individual could – a quantitatively exclusively collective virtue – or by having a virtue that only groups can have – a qualitatively exclusively collective virtue.

## 5 Conclusion

I want to close by offering two suggestions for future research on these three models for collective intellectual virtue, which can advance this new branch of collective epistemology and virtue theory. The first is to dive into the issues that I bracketed for the purposes of this chapter: (a) whether collective virtues really exist and (b) whether groups can have both reliabilist and responsibilist virtues. This requires connecting the three models I have outlined and discussed here to the extensive literature on intellectual virtue. To address (a), a general account is needed of when a virtue is a genuinely collective one. Such an account can then be compared to the three models and their different versions I have outlined above. For (b) we need developed accounts of both reliabilist (Sosa 2007; Greco 2010) and responsibilist (Montmarquet 1993; Zagzebski 1996; Baehr 2006; Roberts and Wood 2007) virtues, which can then be used to identify the conditions which groups must meet in order to possess both kinds of virtues. Particularly for responsibilist virtues, which are

often held to require virtuous motivation, this might require a further account of group motivation.

The second suggestion is to develop the three models in more empirical detail, by looking at research from social psychology, sociology, organization science, etc. on group dynamics and performance to identify the specific and measurable conditions under which groups flourish epistemically. The chapters in this volume by Ryan Byerly and Marco Meyer already take important steps in this direction. The models as described above are largely schematic and leave open questions like: what combinations of virtues work together well; which specific vices can produce which collective virtues; what are good organizational structures, cultures, and support systems to cultivate collective intellectual virtues; and so on. Even though the concept of collective intellectual virtue is not widely used in social science, a lot of extant research may well be highly relevant to answering these questions.

## Notes

- 1 See Fletcher (2018) for the basics of the science and technology.
- 2 For these, see the extensive literature on the Condorcet Jury Theorem (Goodin and Spiekermann 2018), the ‘Miracle of Aggregation’ (Converse 1990; Page and Shapiro 1993), Scott Page’s ‘The Crowd Beats the Average Law’ (Page 2008, 209), and information / prediction markets (Wolfers and Zitzewitz 2004; Tetlock and Gardner 2015; Dana et al. 2019).
- 3 See Frey and Šešelja (2020), however, for robustness worries about Zollman’s results.
- 4 Sloman and Fernbach (2017) similarly argue for a collectivist account of cognition.
- 5 In practice, it will be nearly impossible to tease these ‘mere interaction’ apart from ‘culture and structure’: when two or more people collaborate over some period of time, a certain culture and structure inevitably emerge. Moreover, culture and structure aren’t separate from individual interaction. On the contrary, they manifest themselves through individual interactions over time. For analytical purposes, though, it is helpful to focus on structure and culture as separate entities with causal influence on a group’s behavior.
- 6 I’m inclined to think that a system of sanctions can be construed as an element of the group’s structure and culture, but I’m following Miller in listing it separately.
- 7 See also: <https://osf.io>.
- 8 Syed et al. (2018, Part III) provides a wide range of examples and discussion.
- 9 Needless to say, all of the above can conspire to produce vice, too. Stories about dysfunctional organizations, cultures of fear, workplace bullying, harassment, incompetent management, implicitly enforced inequality, silenced or smothered voices, etc. are unfortunately all too familiar.
- 10 In the already cited earlier paper, Fricker (2010) also used this notion to analyze group *motivation* in order to offer an account of virtuous collective motivation as part of a responsibilist account of collective virtue.
- 11 Byerly and Byerly (2016) offer further systematic reasons against using the theoretical apparatus of joint commitment to analyze collective virtue.
- 12 In fact, joint commitment might be more appropriate for analyzing group *structure*. Roles, tasks, responsibilities, and other elements of a group’s

structure are usually explicitly discussed and agreed upon by group members and, in institutionalized settings, they are often specified in official documents. This lends itself readily to an analysis in terms of joint commitments where group members express their willingness to commit to their respective roles and responsibilities in the group while knowing that others have also expressed such willingness.

13 Byerly and Byerly (2016, §3) also explore this suggestion.

14 Note that the theoretical usefulness of the concept is not uncontroversial (see, e.g., Deumert 2014; Pavlenko 2018).

## References

- Baehr, Jason. 2006. "Character, Reliability and Virtue Epistemology." *The Philosophical Quarterly* 56 (223): 193–212. <https://doi.org/10.1111/j.1467-9213.2006.00437.x>.
- Battaly, Heather. 2008. "Virtue Epistemology." *Philosophy Compass* 3 (4): 639–663. <https://doi.org/10.1111/j.1747-9991.2008.00146.x>.
- Bird, Alexander. 2010. "Social Knowing: The Social Sense of 'Scientific Knowledge.'" *Philosophical Perspectives* 24 (1): 23–56. <https://doi.org/10.1111/j.1520-8583.2010.00184.x>.
- Bruin, Boudewijn de. 2017. *Ethics and the Global Financial Crisis*. Cambridge: Cambridge University Press.
- Byerly, T. Ryan, and Meghan Byerly. 2016. "Collective Virtue." *The Journal of Value Inquiry* 50 (1): 33–50. <https://doi.org/10.1007/s10790-015-9484-y>.
- Converse, Philip. 1990. "Popular Representation and the Distribution of Information." In *Information and Democratic Processes*, edited by John A. Ferejohn and James H. Kuklinski, 369–389. Chicago: University of Illinois Press.
- Cook, Charles E., Mary T. Bergman, Guy Cochrane, Rolf Apweiler, and Ewan Birney. 2018. "The European Bioinformatics Institute in 2017: Data Coordination and Integration." *Nucleic Acids Research* 46 (D1): D21–D29. <https://doi.org/10.1093/nar/gkx1154>.
- Crain, A. Lauren, Brian C. Martinson, and Carol R. Thrush. 2013. "Relationships between the Survey of Organizational Research Climate (SORC) and Self-Reported Research Practices." *Science and Engineering Ethics* 19 (3): 835–850. <https://doi.org/10.1007/s11948-012-9409-0>.
- Dana, Jason, Pavel Atanasov, Philip E. Tetlock, and Barbara Mellers. 2019. "Are Markets More Accurate than Polls? The Surprising Informational Value of 'Just Asking.'" *Judgment and Decision Making* 14 (2): 135–147.
- Dawkins, Richard. 2006. *The God Delusion*. Boston: Houghton Mifflin Harcourt.
- Degani, Asaf, and Earl L. Wiener. 1993. "Cockpit Checklists: Concepts, Design, and Use." *Human Factors* 35 (2): 345–359. <https://doi.org/10.1177/001872089303500209>.
- Deumert, Ana. 2014. "Digital Superdiversity: A Commentary." *Discourse, Context & Media* 4–5: 116–120. <https://doi.org/10.1016/j.dcm.2014.08.003>.
- Devlin, Hannah. 2019. "Black Hole Picture Captured for First Time in Space Breakthrough." *The Guardian*, April 10, 2019. <http://www.theguardian.com/science/2019/apr/10/black-hole-picture-captured-for-first-time-in-space-breakthrough>.

- Epstein, Brian. 2019. "What Are Social Groups? Their Metaphysics and How to Classify Them." *Synthese* 196 (12): 4899–4932. <https://doi.org/10.1007/s11229-017-1387-y>.
- Fletcher, Seth. 2018. "How Do You Take a Picture of a Black Hole? With a Telescope as Big as the Earth." *The New York Times*, October 4, 2018. <https://www.nytimes.com/2018/10/04/magazine/how-do-you-take-a-picture-of-a-black-hole-with-a-telescope-as-big-as-the-earth.html>.
- Foner, Nancy, Jan Willem Duyvendak, and Philip Kasinitz. 2019. "Introduction: Super-Diversity in Everyday Life." *Ethnic and Racial Studies* 42 (1): 1–16. <https://doi.org/10.1080/01419870.2017.1406969>.
- Foster, Erin D., and Ariel Deardorff. 2017. "Open Science Framework (OSF)." *Journal of the Medical Library Association : JMLA* 105 (2): 203–206. <https://doi.org/10.5195/jmla.2017.88>.
- Frey, Daniel, and Dunja Šešelja. 2020. "Robustness and Idealizations in Agent-Based Models of Scientific Interaction." *The British Journal for the Philosophy of Science* 71 (4): 1411–1437. <https://doi.org/10.1093/bjps/axy039>.
- Fricker, Miranda. 2010. "Can There Be Institutional Virtue?" In *Oxford Studies in Epistemology, Volume 3*, edited by Tamar Szabo Gendler and John Hawthorne, 235–252. New York: Oxford University Press.
- . 2020. "Institutional Epistemic Vices: The Case of Inferential Inertia." In *Vice Epistemology*, edited by Ian James Kidd, Heather Battaly, and Quassim Cassam, 89–107. London: Routledge.
- Gilbert, Margaret. 1987. "Modelling Collective Belief." *Synthese* 73 (1): 185–204.
- . 2014. *Joint Commitment: How We Make the Social World*. New York: Oxford University Press.
- Gilbert, Margaret, and Daniel Pilchman. 2014. "Belief, Acceptance, and What Happens in Groups: Some Methodological Considerations." In *Essays in Collective Epistemology*, edited by Jennifer Lackey, 189–212. New York: Oxford University Press.
- Goodin, Robert E., and Kai Spiekermann. 2018. *An Epistemic Theory of Democracy*. New York: Oxford University Press.
- Greco, John. 2010. *Achieving Knowledge: A Virtue-Theoretic Account of Epistemic Normativity*. Cambridge: Cambridge University Press.
- Grier, David Alan. 2013. *When Computers Were Human*. Princeton, NJ: Princeton University Press.
- Grönlund, Kimmo, Kaisa Herne, and Maija Setälä. 2017. "Empathy in a Citizen Deliberation Experiment." *Scandinavian Political Studies* 40 (4): 457–480. <https://doi.org/10.1111/1467-9477.12103>.
- Hannon, Michael. 2020. "Empathetic Understanding and Deliberative Democracy." *Philosophy and Phenomenological Research* 101 (3): 591–611. <https://doi.org/10.1111/phpr.12624>.
- Hong, Lu, and Scott E. Page. 2004. "Groups of Diverse Problem Solvers Can Outperform Groups of High-Ability Problem Solvers." *Proceedings of the National Academy of Sciences* 101 (46): 16385–16389. <https://doi.org/10.1073/pnas.0403723101>.
- Kelly, Janice R., Megan K. McCarty, and Nicole E. Iannone. 2013. "Interaction in Small Groups." In *Handbook of Social Psychology*, edited by John

- DeLamater and Amanda Ward, 413–438. Dordrecht: Springer Netherlands. [https://doi.org/10.1007/978-94-007-6772-0\\_14](https://doi.org/10.1007/978-94-007-6772-0_14).
- Kerr, Norbert L. 1998. “HARKing: Hypothesizing After the Results Are Known.” *Personality and Social Psychology Review* 2 (3): 196–217. [https://doi.org/10.1207/s15327957pspr0203\\_4](https://doi.org/10.1207/s15327957pspr0203_4).
- Korsgaard, Christine M. 1996. *The Sources of Normativity*. Cambridge: Cambridge University Press.
- Lackey, Jennifer, ed. 2014. *Essays in Collective Epistemology*. Oxford and New York: Oxford University Press.
- . 2021. *The Epistemology of Groups*. New York: Oxford University Press.
- Lahroodi, Reza. 2007. “Collective Epistemic Virtues.” *Social Epistemology* 21 (3): 281–297. <https://doi.org/10.1080/02691720701674122>.
- . 2019. “Virtue Epistemology and Collective Epistemology.” In *The Routledge Handbook of Virtue Epistemology*, edited by Heather Battaly, 407–419. London: Routledge.
- Mercier, Hugo, and Dan Sperber. 2017. *The Enigma of Reason*. Cambridge, MA: Harvard University Press.
- Miller, Seumas. 2010. *The Moral Foundations of Social Institutions: A Philosophical Study*. Cambridge: Cambridge University Press.
- . 2019. “Social Institutions.” In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Summer 2019. <https://plato.stanford.edu/archives/sum2019/entries/social-institutions/>.
- Montmarquet, James A. 1993. *Epistemic Virtue and Doxastic Responsibility*. Lanham, MD: Rowman & Littlefield.
- Morell, Michael E. 2010. *Empathy and Democracy: Feeling, Thinking, and Deliberation*. University Park, PA: Penn State University Press.
- Mutz, Diana C. 2006. *Hearing the Other Side: Deliberative versus Participatory Democracy*. Cambridge: Cambridge University Press.
- Nosek, Brian A., Charles R. Ebersole, Alexander C. DeHaven, and David T. Mellor. 2018. “The Preregistration Revolution.” *Proceedings of the National Academy of Sciences of the United States of America* 115 (11): 2600–2606. <https://doi.org/10.1073/pnas.1708274114>.
- Ozgen, Ceren, Peter Nijkamp, and Jacques Poot. 2012. “Immigration and Innovation in European Regions.” In *Migration Impact Assessment*, edited by Peter Nijkamp, Jacques Poot, and Mediha Sahin, 261–298. Cheltenham: Edward Elgar.
- Page, Scott E. 2008. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*. Princeton, NJ: Princeton University Press.
- Page, Benjamin I., and Robert Y. Shapiro. 1993. “The Rational Public and Democracy.” In *Reconsidering the Democratic Public*, edited by George E. Marcus and Russell L. Hanson, 35–64. University Park, PA: Pennsylvania State University Press.
- Pavlenko, Aneta. 2018. “Superdiversity and Why It Isn’t: Reflections on Terminological Innovation and Academic Branding.” In *Sloganzation in Language Education Discourse*, edited by Barbara Schmenk, Stephan Breidbach, and Lutz Küster, 142–168. Bristol: Multilingual Matters. <https://doi.org/10.21832/9781788921879-009>.

- Quinton, Anthony. 1975. "Social Objects." *Proceedings of the Aristotelian Society* 76: 1–27.
- Ridder, Jeroen de. 2014. "Epistemic Dependence and Collective Scientific Knowledge." *Synthese* 191: 37–53.
- Ritchie, Katherine. 2015. "The Metaphysics of Social Groups." *Philosophy Compass* 10 (5): 310–321. <https://doi.org/10.1111/phc3.12213>.
- Roberts, Robert C., and W. Jay Wood. 2007. *Intellectual Virtues: An Essay in Regulative Epistemology*. Oxford: Clarendon Press.
- Sloman, Steven, and Philip Fernbach. 2017. *The Knowledge Illusion: Why We Never Think Alone*. New York: Riverhead.
- Smart, Paul R. 2018a. "Mandevillian Intelligence: From Individual Vice to Collective Virtue." In *Socially-Extended Epistemology*, edited by Joseph Adam Carter, Andy Clark, Jesper Kallestrup, Spyridon Orestis Palermos, and Duncan Pritchard, 253–274. Oxford: Oxford University Press.
- . 2018b. "Mandevillian Intelligence." *Synthese* 195 (9): 4169–4200. <https://doi.org/10.1007/s11229-017-1414-z>.
- Sosa, Ernest. 2007. *A Virtue Epistemology: Apt Belief and Reflective Knowledge, Volume I*. Oxford: Clarendon Press.
- Syed, Jawad, Peter Murray, Donald Hislop, and Yusra Mouzughy, eds. 2018. *The Palgrave Handbook of Knowledge Management*. Cham: Palgrave Macmillan. <https://www.palgrave.com/gp/book/9783319714332>.
- Tetlock, Philip E., and Dan Gardner. 2015. *Superforecasting: The Art and Science of Prediction*. New York: Crown.
- Tuomela, Raimo. 1992. "Group Beliefs." *Synthese* 91 (3): 285–318. <https://doi.org/10.1007/BF00413570>.
- . 2004. "Group Knowledge Analyzed." *Episteme* 1 (2): 109–127. <https://doi.org/10.3366/epi.2004.1.2.109>.
- Vertovec, Steven. 2007. "Super-Diversity and Its Implications." *Ethnic and Racial Studies* 30 (6): 1024–1054. <https://doi.org/10.1080/01419870701599465>.
- Weisberg, Michael, and Ryan Muldoon. 2009. "Epistemic Landscapes and the Division of Cognitive Labor." *Philosophy of Science* 76 (2): 225–252. <https://doi.org/10.1086/644786>.
- Wolfers, Justin, and Eric Zitzewitz. 2004. "Prediction Markets." *Journal of Economic Perspectives* 18 (2): 107–126. <https://doi.org/10.1257/0895330041371321>.
- Zagzebski, Linda T. 1996. *Virtues of the Mind*. Cambridge: Cambridge University Press.
- Zollman, Kevin J. S. 2010. "The Epistemic Benefit of Transient Diversity." *Erkenntnis* 72 (1): 17–35. <https://doi.org/10.1007/s10670-009-9194-6>.