

ORIGINAL ARTICLE

Understanding phenomena: From social to collective?

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Abstract

In making sense of the world, we typically cooperate, join forces, and draw on one another's competence and expertise. A group or community in which there is a well-functioning division of cognitive-epistemic labor can achieve levels of understanding that a single agent who relies exclusively on her own capacities would probably never achieve. However, is understanding also *collective*? I.e., is understanding something that can be possessed by a group or community rather than by individuals? In this paper, I develop an account of understanding phenomena according to which understanding a phenomenon requires reasonably endorsing an adequate and intelligible epistemic mediator that accounts for this phenomenon. I then show that understanding, conceived along these lines, can be attributed to collective entities. An important result of my arguments will be that a collective entity's understanding cannot (always) be reduced to the sum of the understandings of the individuals belonging to it. This is because a collective entity can sometimes be rightfully claimed to understand a phenomenon while none of its individual members understands it.

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1 | INTRODUCTION

Understanding is very often a collective enterprise. In our attempt to make sense of the world we typically cooperate, join forces, and draw on one another's competence and expertise. In our quest for understanding, we rely heavily on the cognitive-epistemic work and the achievements of our fellow inquirers. Especially when the domain we are exploring is particularly complex and issues are controversial, understanding is a goal that can hardly be achieved by a single mind, however brilliant. Understanding typically requires the cooperation and collaboration of many minds. A group or community in which there is a well-functioning division of cognitive-epistemic labor can achieve levels of understanding that a single agent who relies exclusively on her own capacities and epistemic strengths would probably never achieve.

Therefore, there is a social aspect in the dynamic of the production of understanding. However, is understanding also a distinctively collective epistemic phenomenon, i.e., something that can be possessed by a collective rather than by individuals? Suppose that the current attempt of the scientific community to understand the nature of COVID-19 succeeds. Would we be ready to say that the scientific community, as a community, understands the nature of COVID-19? Or would we rather describe the situation by saying that the result of the scientific community's effort (of gathering and analyzing data, of formulating and testing hypotheses and explanations, and so on) is simply that all or most scientists belonging to the scientific community *individually* understand the nature of COVID-19? In other words, when we claim that some collective entity understands a phenomenon, are we literally ascribing understanding to the collective entity, or are we indirectly ascribing understanding to the individuals who belong to it? These are highly controversial questions in the literature, and part of the reason why these questions are controversial is that the nature of understanding is still partially unexplored.

My aim in this paper is twofold. First, I will develop a model of understanding phenomena. The model will define conditions that must be fulfilled for attributions of understanding (such as 'subject *S* understands phenomenon *P*') to come out true. Second, I will suggest that understanding, conceived along these lines, can be rightfully attributed to collective entities such as groups and communities. My analysis will show that a collective entity's understanding cannot (always) be reduced to the sum of the understandings of the individuals belonging to it. This is because a collective entity can sometimes (be rightfully claimed to) understand a phenomenon while none of its members individually understands it. Therefore, not only is there sometimes a social element in the dynamic of the production of understanding; understanding also can be a distinctively collective epistemic phenomenon. Understanding is not something happening (only) in an epistemic agent's mind, and it is not (always) to be ascribed (and credited) to an individual epistemic agent.

The claim that groups and communities can have an epistemic life on their own, which takes (partially) different roads than the epistemic life of their individual members, is not new. Gilbert famously argues that group belief is a distinctively collective epistemic phenomenon, i.e., that it is possible for a group to collectively believe that *p* while none of its members individually believes that *p* (Gilbert, 1987, 1989, 1994, 2004). Many authors have explored and defended the possibility of collective knowledge (Bird, 2010, 2014; Cetina, 1999; de Ridder, 2014; Miller, 2015; Rolin, 2008; Tollefsen, 2013, 2002; Tuomela, 2004; Wray, 2007). Collective understanding, on the other hand, is still a partially unexplored topic. (Important exceptions in this regard are Boyd, 2021; Delarivière, forthcoming; Hauswald, 2019.)

2 | UNDERSTANDING PHENOMENA

What does it mean to understand a phenomenon? What is an understander able to do? What does the doxastic-noetic profile of an understander look like? In this section, I sketch a model of understanding phenomena and offer a tentative answer to these questions. Two introductory remarks will help better locate the noetic state that I am after and that I will be trying to characterize.

Our understanding can be directed to an incredible variety of objects (Baumberger & Brun, 2017). In what follows, I will focus exclusively on our understanding directed to *phenomena*, so what I offer will certainly not be the whole story about understanding. Drawing on (Kelp, 2015), however, I suggest conceiving of ‘phenomena’ quite broadly, as more or less stable aspects or features of the actual world that could in principle recur and be reidentified under different circumstances. (See also Woodward, 1989 for a similar characterization.) Objects (e.g., Halley’s comet), events (the coronation of Charlemagne) and processes (Russia’s invasion of Ukraine) turn out to be phenomena according to this broad characterization.

Understanding is not an all-or-nothing matter. It admits of degrees. We can understand phenomena better or worse, superficially or in depth, to some extent or fully. This seems to be the case even though we sometimes meaningfully use the verb ‘to understand’ categorically, as in statements such as ‘You simply do not understand’ or ‘Now I (finally) understand!’. The claim that understanding admits of degrees is perfectly compatible with the idea that there is some threshold of minimal understanding that must be reached for attributions of understanding (such as ‘subject S understands phenomenon P’) to come out true. Once we have reached the threshold of minimal understanding, we can always get above it. That is, we can always improve, fine-tune, advance, or deepen our understanding until we reach full (or at least very high degrees of) understanding (Baumberger, 2019; Wilkenfeld, 2017). The account of understanding I am about to develop is meant as an account of minimal understanding. It is meant to specify conditions that must be fulfilled for attributions of understanding to come out true. In other words, it is meant to tell us where the line of the understanding threshold should be drawn. Therefore, again, this will not be the whole story about understanding. How to characterize degrees of understanding, or maximal understanding, will remain an open question. (However, as the conditions specified in the model can be fulfilled to a greater or lesser extent, the model could in principle be deployed as a basis to develop an account of degrees of understanding.)

At its core, the model of understanding phenomena I propose amounts to the following:

UP For a subject S to understand a phenomenon P, S must reasonably endorse an adequate and intelligible epistemic mediator that accounts for P.

UP requires some unpacking. What exactly is an *epistemic mediator*? When does an epistemic mediator *account* for a phenomenon? When is an epistemic mediator *adequate* for the sake of understanding? What does one’s *endorsement* of an epistemic mediator involve? When is one’s endorsement of an epistemic mediator *reasonable*? When is an epistemic mediator *intelligible* to one? I now briefly address each of these questions in turn.

2.1 | Epistemic mediator

The idea underlying the model I suggest is that understanding phenomena should be conceived as a *mediated* noetic state. This means that when a subject S understands a phenomenon P, there

must be some theoretical system or device that *enables* *S*'s understanding of or about *P* and that works for *S* as a *source* of understanding of or about *P* (De Regt, 2017; Greco, 2014). I suggest calling such theoretical systems or devices involved in understanding 'epistemic mediators' because they mediate between us and the target of our understanding (the phenomena).

What kinds of objects, exactly, can function as epistemic mediators? Here are a couple of examples. Arnon understands the rise in temperature on Earth on the basis of the theory of anthropogenic climate change. Kate understands the apparent retrograde motion of the planets thanks to an orrery of the solar system. Alison understands the phenomenon of racial segregation via Schelling's model. John understands the phenomenon of superposition thanks to Schrödinger's cat thought experiment. Stephen understands the phenomenon of social isolation thanks to Edward Hopper's paintings, and so on.

It is clear from these examples that the epistemic mediators involved in understanding form a rather heterogeneous bunch. Some epistemic mediators are propositional (arguably, the theory of anthropogenic climate change); some are clearly not (Hopper's paintings). Some are abstract, i.e., they are something we can incorporate into our doxastic-noetic system or navigate with our mind's eye (Schrödinger's thought experiment); some are very concrete, i.e., they are something we can touch and physically manipulate (the orrery of the solar system). Some are meant to be truthful, realistic representations of their intended subject matter (again, arguably, the theory of anthropogenic climate change); some contain radical idealization (Schelling's model) and some are not meant to be even approximately true (Schrödinger's thought experiment). A possible common thread in this colorful variety is the following: the epistemic mediators involved in understanding effectively combine a semantic, or representational, and a cognitive or epistemic function. On the one hand, they represent a phenomenon in a certain way; they tell, or display, relevant aspects of it. On the other hand, they can be used by an epistemic agent for the sake of *learning* something about the phenomenon they (more or less directly, more or less literally) represent.

Epistemic mediators, hence, are understanding-enablers. They are instruments that, in the right circumstances, can lead us to understand the phenomena they are about. It is important to keep in mind at this stage, however, that epistemic mediators can themselves be objects or targets of our understanding. Actually, they are something that must itself be understood to be effectively deployed as a source of understanding of reality. We cannot understand a phenomenon via an epistemic mediator that we do not understand (more on this in Section 2.6).

2.2 | Account

An epistemic mediator must *account* for a phenomenon *P* to provide a subject with an understanding of or about *P*. But what does it mean to account for a phenomenon?

Accounting for *P* is not the same as explaining *P*. An epistemic mediator accounting for *P* aims at shedding light on, at providing cognitive access to certain aspects of *P*. A successful epistemic mediator accounting for *P* actually sheds light on aspects of *P*, and it does so in such a way that *P* becomes treatable, something one can effectively interact with (cognitively or practically). Sometimes, the best way to make *P* treatable is indeed by providing explanations for *P*, by telling or showing what *P* (causally, probabilistically, nomologically, ...) depends upon and what depends upon *P*. This, however, is not the rule.

Think of a map of a city. Once we are able to read it and navigate it, the map provides us with information about the structure of its intended domain. If it is a good map, it enables an understanding of and an effective interaction with the city it accounts for. Yet the map does not work by

providing explanations. *Why was the city built this way? Why is the road to the station so twisty?* The map does not tell us. The point is that we do not need such explanatory information to get around the city. Descriptive information about the way the parts of the city are related to one another is all we need. To some extent, this point generalizes. Understanding phenomena is sometimes a matter of finding out about these phenomena's structure, of realizing what these phenomena are made of. (See Hubert, 2021 on the relevance of this kind of question for scientific understanding.) Or think of Schrödinger's cat thought experiment. The thought experiment can be thought of as an epistemic mediator accounting for the quantum mechanical notion of the superposition of states. The thought experiment provides no information about why superposition occurs. It tells us: if superposition also applied to middle-sized objects around us, for example, to a cat, this is what we would see. This helps us understand what superposition is.

The idea that understanding is essentially keyed to explanation is widespread and deeply rooted in the literature (for dissenting voices, see Dellsén, 2020; Elgin, 2017; Lipton, 2009). My aim here is not to prove this view wrong. The two examples I described here are meant to support the modest claim that the understanding threshold can sometimes be reached without the aid of explanatory information. This leaves room for the possibility that explanatory information is required to reach higher degrees of understanding (Khalifa, 2017). Arguably, for one to achieve maximal or ideal understanding of a phenomenon *P*, one would need access to an epistemic mediator that accounts for *P* fully, that tells one everything there is to know about *P*. Among other things, such an epistemic mediator will probably explain *P* in every possible way it can be explained (Kelp, 2015). This ideal state of understanding, however, is not the target of my current inquiry.

2.3 | Adequacy

When is an epistemic mediator adequate, for the sake of understanding the phenomena it accounts for? We have seen (in Section 2.1) that an understanding of phenomena can be provided by or embodied in epistemic mediators that are not true, not propositional (and hence not truth-apt), or not even meant to be true. Truth, then, does not seem to be the right kind of 'tether' for understanding (Elgin, 2004, 2013, 2017). An epistemic mediator's adequacy for the sake of understanding cannot depend (only) on its truth content. And yet on the other hand, understanding is unquestionably a reality-directed noetic state. Understanding answers to the facts. A genuine understander is in cognitive contact with reality and has a 'grasp' of what reality is like. Therefore, truth cannot be irrelevant to understanding.

To loosen this tension, it is useful to note that in trying to spell out the relation between understanding and the facts, or between the doxastic-noetic system of an understander and reality, there are two things to be kept distinguished. One is the correctness of the epistemic mediators that a subject deploys in her cognitive interaction with the phenomena; the other is the correctness of the information that the subject is able to *extract* or *derive* from these epistemic mediators. These two things are certainly related, but they are independent. The point that matters here is that even an epistemic mediator that is mostly false, that is not propositional or that is not meant to be true could work as a source of accurate information about reality, given that the subject who deploys it is equipped with the right skills and intellectual background (Greco, 2014; Lawler, 2021; Nawar, 2021; Rice, 2021; Strevens, 2008).

This enables me to formulate the following criterion of adequacy: adequate epistemic mediators are those that can be deployed, in the right circumstances and by a subject who is sufficiently primed, as sources of accurate information about their intended subject matter.

The epistemic mediators involved in understanding, hence, are typically not (literally) true representations of their intended subject matter. They do not need to be. However, they do help us to appreciate truths that might otherwise be hard to discern. We might think of them as glasses that we use to train our sight, that obscure some parts of our visual field and that, in doing so, highlight and make us notice things that would otherwise go easily unnoticed.

2.4 | Endorsement

Which kind of doxastic-noetic attitude is involved in understanding? Given that a subject S understands a phenomenon P via an epistemic mediator EM , which kind of doxastic-noetic attitude best characterizes the relation between S and EM ? Is this the same attitude involved in a subject's understanding of an epistemic mediator or representational system *as such*?

Belief does not seem to be the right kind of doxastic attitude for understanding phenomena (Dellsén, 2017, 2021; Elgin, 2017). We have seen that our understanding of phenomena can be embodied in and generated by epistemic mediators that are not, strictly speaking, true. Some epistemic mediators involved in understanding phenomena are not propositional. Hence, they are not the kind of things that ought to (or that even can) be believed.¹ Belief does not seem to be the right kind of doxastic-noetic attitude to characterize one's understanding of an epistemic mediator either. We regularly understand theories and representational systems that we know or have reason to believe are false. We can understand phlogiston theory, creationism, even astrology. Moreover, we can understand a theory without taking a stance about its truth or falsity.

However, if our understanding (of a phenomenon, on the one hand, and of a representational system or epistemic mediator, on the other) is not, or at least not only, a matter of believing information (or truths) about them, what does it involve? My suggestion is this. When we understand a representational system *as such*, either while taking it to be false or while not taking a stance about its truth or falsity, we *accept* it (in a sense to be explained below, roughly following Bratman, 1992 and Graham, 2006). When we understand phenomena of reality via a certain representational system, instead, we do not simply accept the representational system; we *endorse* it or are *committed* to it. If we endorse a representational system, we do not necessarily take it to be true, but we take it to be good enough, or *true enough*, given our cognitive and epistemic goals. Let me briefly elaborate on this distinction.

Acceptance and endorsement share relevant features. Both attitudes can be directed to contents that one does not take to be (strictly) true, or that are not truth-apt. Moreover, they are both connected to the practical domain (Cohen, 1989). Given that we accept or endorse p , we are both able and disposed to work cognitively with p , perhaps even to act on the basis of p in certain circumstances. Both acceptance and endorsement can result in the disposition to share the contents accepted or endorsed with others (although the speech acts involved will not typically be speech acts of assertion, of presenting-as-true). However, there are important differences between acceptance and endorsement.

Acceptance happens at will. We can accept anything we want, as long as it serves our contingent practical purposes. I can accept astrology for the sake of entertaining my guests at dinner. Endorsement, in contrast, is reality-directed. What we endorse, we take to be worthy of being deployed to achieve certain cognitive and epistemic aims. Among other things, we take what we endorse to be a good (maybe the best) instrument to find out truths about the relevant subject matter. An important consequence of this is that our endorsement is subject to constraints. Endorsement is not indifferent to evidence. Moreover, the content of our already established intellectual background

can obstruct endorsement. It can be unreasonable (or something akin to it) for me to endorse a theory that conflicts with or does not mesh well with other theories that I already endorse. (More on this in Section 2.5.)

Acceptance, thus, is something we can ‘wash off’ ourselves in changing contexts, as we change clothes to get ready for the party. What we accept right now might not be what we will accept in a couple of hours, as our practical goals might change. Endorsement, on the other hand, is more persistent. This is because it is an attitude that it is not completely detached from reality, i.e., from how we take reality to be.

2.5 | Reasonability

Not everything we endorse is something we should endorse or is worthy of being endorsed. For the sake of understanding, our endorsement must be reasonable, but what does that mean? When is an epistemic mediator worthy of being endorsed?

Drawing on Dellsén and Elgin (Dellsén, 2021; Elgin, 2017), I suggest that the reasonability of a subject’s endorsement of an epistemic mediator depends, at least in part, on how it compares with and stands out in the set of available alternatives. This set comprises not only the alternatives the subject actually considered, compared and evaluated but also the alternatives the subject could and should have considered, compared and evaluated given what is accessible and potentially comprehensible to her or him in her or his epistemic environment. (See also Khalifa, 2017)

Reasonability, however, has a further component. An epistemic mediator that we reasonably endorse is not only the winner among the relevant alternatives (given, e.g., empirical evidence). It also *makes sense* to us. It fits into our already established worldview. It is properly connected to, and does not clash with, what we already believe or endorse about the relevant subject matter and about subject matters in the ‘neighborhood’ (Malfatti, 2021; Schurz & Lambert, 1994).

To have a more concrete grasp of this fitting component of reasonability, imagine we incorporate into our noetic system an epistemic mediator (a scientific theory) involving backward causation, i.e., admitting the possibility of effects temporally preceding their causes. Suppose now that our already established noetic system comprises a standard metaphysical theory of time, according to which time flows and the future consists of unrealized possibilities—or of nothing at all, until it comes into being (Maudlin, 2007). Clearly, incorporating such an epistemic mediator into our noetic system will generate serious theoretical puzzlements. We will wonder: How can something not (yet) real (the ‘future’ according to the default theory of time we are endorsing) affect real (past or occurrent) events? Arguably, theoretical puzzlements of this kind will have to be amended for our endorsement of the relevant theory to be reasonable. Backward causation simply will not make sense to us until we adjust (revise, correct) our already established worldview. (One possibility here would be to revise our metaphysical assumptions and to embrace a static or tenseless theory of time according to which past, present and future all deserve the same status of ‘reality’.)

2.6 | Intelligibility

An epistemic mediator accounting for *P* must be intelligible to a subject to be effectively deployed as a source of understanding of or about *P*. Intuitively, we cannot understand phenomena of reality via an epistemic mediator that we do not understand (De Regt, 2017). What does it mean to understand an epistemic mediator?

An important aspect of understanding an epistemic mediator is knowing how to read it, i.e., seeing how it is meant to relate to the domain it represents. Consider, for example, a map of the world. The distance between the points labeled ‘Rome’ and ‘Miami’ on the map is, suppose, approximately 50 cm. The map comes with a scale: 1 mm: 10 miles. Someone who understands the map can read it, i.e., can translate features of the map to features of the real world. If the map is a good map, knowing how to read it can lead one to extract accurate information about its intended subject matter. Alternatively, consider an idealized model, such as the ideal gas model. The model represents gas molecules as being perfectly spherical, infinitely small, and never colliding. These are radical departures from reality, i.e., from the way real gases (probably) are. An important aspect of understanding an idealized model such as the ideal gas model is knowing that the model is idealized. If one is aware that a model is idealized, one will not interpret it as a realistic representation of its intended subject matter. In the best-case scenario, one will know which parts of the model are to be interpreted realistically and which, instead, are merely fictional. In other words, one will know how the model is meant to relate to reality (Frigg & Nguyen, 2021; Greco, 2014).

Moreover, understanding an epistemic mediator is a matter of having it, to use Hills’ terms, under one’s cognitive control (Hills, 2016). If an epistemic mediator is under my cognitive control, I am aware of which informational units belong to it, and of the way they relate to one another and depend upon one another to build a meaningful whole, but not only this. I can be aware of the content and structure of an epistemic mediator simply by learning every single bit of it by heart. However, an epistemic mediator that I understand and that is under my cognitive control is not ‘inert’ in my doxastic-noetic system. It is something that I can cognitively interact with, that I can cognitively navigate. If I understand an epistemic mediator, I can reason well on its basis. I can use it as a basis to draw nontrivial inferences. I can appreciate (observable or non-observable) consequences of it, apply it to the phenomena, and use it to formulate hypotheses about future occurrences of events. If the epistemic mediator that I understand contains explanatory information, I can draw on it to formulate explanations and probably also to provide answers to what-if-things-were-different questions (Grimm, 2011, 2014).

It should be noted at this point that, given that the epistemic mediator that one understands is also adequate, having it under one’s cognitive control will immediately translate into an ability to interact effectively with the phenomena the epistemic mediator is about. For example, the predictions that one makes on the basis of the epistemic mediator will turn out to be correct; the explanations one formulates will enable one to predict, and potentially to control, the phenomena’s behavior and development; and so on.

3 | COLLECTIVE UNDERSTANDING

With this model of understanding phenomena in the background, I turn now to the question I started with, namely the question of whether understanding is something that can be possessed by a collective rather than by individuals. In everyday life, we regularly encounter and are disposed to utter statements such as the following: ‘The scientific community understands the increase of the average temperature on Earth’, ‘The World Health Organization understands the origin and spread of COVID-19’, ‘We understand your concern’, ‘The public’s understanding of science should be increased’. These are, no doubt, meaningful statements, but what do we mean by them? And what makes statements of this kind true?

We seem to have two options here. We could opt for a *summativist* view of collective understanding, according to which a collective entity's understanding is nothing over and above, i.e., can be reduced to the sum of all or most understandings of the individuals belonging to it. If the summativist view of collective understanding is correct, our talk of groups and communities as subjects of understanding turns out to be metaphorical. When we claim, e.g., that the scientific community understands the increase in the average temperature on Earth, what we actually mean (and what would make our statement true) is that all (or most) individual scientists belonging to the scientific community understand the relevant phenomenon. Alternatively, we could opt for a *non-summativist* view of collective understanding, according to which a collective entity's understanding is *not* reducible to the sum of the understandings of the individuals belonging to it. If non-summativism is correct, our talk of groups and communities as subjects of understanding should be interpreted literally (at least sometimes). Note that if summativism is the way to go, there is nothing *distinctively* collective in a group's or community's understanding. The subjects of understanding are the individuals belonging to the group or community and not the group or community itself.

To prove summativism ultimately wrong we would need a so-called *divergence argument*, i.e., we would need to show that there can be a divergence between the relevant epistemic-noetic phenomenon at the collective level and the corresponding phenomenon at the individual level. More precisely, we would need to show that it is possible for a collective entity to be in an epistemic-noetic state of understanding, while its individual members are not. In what follows, I provide such a divergence argument. I show that as far as understanding phenomena is concerned, collective entities can have a life on their own that takes different roads than the lives of their individual members. If my arguments are on target, when we rightfully claim that some group or community understands a phenomenon, what makes our statement true are not (or at least not always) facts about the individuals belonging to the group or community.

It is widely acknowledged in the literature that a group's stance can interestingly differ from the stance of the individuals belonging to the group. A committee can adopt the view that candidate *x* is the best candidate for the job, while none of its members individually would have picked *x*. A jury can adopt the view that the defendant is innocent, while none of the members of the jury individually believes this. Maybe a certain piece of evidence that speaks for the defendant's guilt has been legally invalidated, i.e., cannot be used by the jury as evidence in the decision process, and yet it is still 'epistemically active' in the doxastic-noetic systems of the individual members of the jury (Gilbert, 2004; Lackey, 2014; List & Pettit, 2011). How exactly we should characterize a group's 'adopting a view' or 'taking a stance' is a controversial question in the literature. The important question for us here, however, is this: can a collective entity such as a group or community reasonably *endorse* an adequate and intelligible epistemic mediator that accounts for a phenomenon, while none of the members of the group or community individually does²? *Prima facie*, the answer to this question seems to be *yes*.

Imagine a panel of experts gathering to decide on the treatment to recommend for a COVID-19 infection. There are multiple epistemic mediators accounting for the nature of COVID-19 available in their epistemic environment, which are all equally intelligible to them. The mediators all have their merits, but they contradict each other and are pragmatically incompatible: they would result in different and incompatible treatment recommendations. The experts consider and evaluate the alternatives. They agree on the factors that should play a role in their decision process; however, they weight these factors differently. As a result, they disagree on which epistemic mediator should be endorsed. At an individual level, the experts agree to disagree. However, as a group, as a panel, they need to reach an agreement, because action must be taken quickly. Hence, they

pick the epistemic mediator that stands out as everybody's second choice according to their rankings, decide that this epistemic mediator will be the one they will be committed to *as a group*, and write their recommendations accordingly.

Suppose now that the epistemic mediator that was the experts' second choice turns out to adequately account for the nature of COVID-19 and to be the best of the available alternatives. Individually, none of the members of the panel endorses the relevant mediator. Hence, none of them can be claimed to *understand* the nature of COVID-19. Individually, the experts have the wrong doxastic-noetic profile: they endorse an epistemic mediator that they should not endorse and/or they do not endorse the epistemic mediator that they should endorse. The panel seems better off. It is tempting to say that, unlike its individual members, the panel has the right doxastic-noetic profile: it shows some sort of commitment to the epistemic mediator that adequately accounts for the nature of COVID-19.

Is this enough to claim that the panel, as a panel, understands the nature of COVID-19? There are actually two potential worries here. The first concerns the nature of the doxastic-noetic attitude that the panel entertains with the relevant epistemic mediator. Is it endorsement, as understanding requires, or is it rather something else, e.g., a form of acceptance (Faria, 2021; Tuomela, 2003; Wray, 2001)? Recall that, as I proposed to conceive of these notions, acceptance happens at will. We can accept anything we want as long as it serves our contingent practical aims. Endorsement, on the other hand, is reality-directed. It is not indifferent to evidence. It is subject to (evidential) constraints. What we endorse we take to be worthy of being deployed to pursue certain cognitive and epistemic aims—among other things, to find out truths about the relevant subject matter. However, it does seem as if the panel simply *decides* to adopt a certain view about the nature of COVID-19. More precisely, the panel settles on a certain decision procedure for generating a collective standpoint, and this results in a certain outcome. However, the panel could have easily settled on a different decision procedure, and this would probably have resulted in a different outcome. Therefore, one might worry that the panel's stance is not sufficiently grounded on evidence to be considered a form of endorsement.

There is also a further, closely related, worry. As I described the case, the fact that the outcome of the decision procedure is the only epistemic mediator that adequately accounts for the nature of COVID-19, that is true enough and that is the best of the available alternatives seems very much like a happy accident. The panel has been lucky: it could have easily settled on a different decision procedure and could hence have easily adopted an epistemic mediator that did not fulfill an adequacy requirement, was not true enough, and/or was not the best of the available alternatives. This might be a problem for the panel's alleged understanding because the achievement of tracking down the right epistemic mediator is not fully creditable to the panel. The world lent a hand.³

However, here is another case that seems to avoid both of these problems.

Imagine that a high school's principal is organizing a *Save the planet!* day to sensitize the students about the causes and effects of climate change. The hope is to raise the students' awareness and sense of responsibility for the planet. The principal asks all the science teachers to organize an open desk where students can come and ask questions about climate change and ask for advice about how to behave in a more climate-friendly way. The teachers build a research group to achieve this aim. They prepare accordingly (e.g., by reading and discussing the reports of the Intergovernmental Panel on Climate Change) and come to understand the theory of anthropogenic climate change. Individually and outside the school, all the science teachers are climate change deniers. They believe that the rise in temperatures on earth has nothing to do with human activity and pollution and that it is a natural process that will be followed by a phase of tempera-

ture reduction. However, they think that their stance as a research group should align to the stance of the scientific community. This is not only what the principal expects from them; they also do not want their students to be infected by their fatalism. They want them to trust science and the scientific community, although they are unable to trust; they want them to base their views on the best available evidence and on expert opinion, although their worldview does not allow them to do this. Therefore, as a research group that can be addressed at the open desk, they are *committed* to the relevant theory. This means, roughly, that they are ready to present the theory of anthropogenic climate change as the theory endorsed by the group, and that they are ready, when acting as members of the group, to use the theory as a basis to draw inferences, formulate explanations and provide answers to any question about climate change that might arise.

Do the science teachers of this thought experiment individually understand, say, the rise in temperature on Earth, or the fact that global sea levels are rising? Do they understand climate change phenomena? Arguably, they do not. (See Malfatti, 2019 for a full defense of this claim.) They do understand *the theory* of anthropogenic climate change, and this will put them in the position to exercise certain abilities. The theory of anthropogenic climate change is something the teachers can cognitively interact with. They can cognitively navigate the theory. They can reason well on its basis. They can use it as a basis to draw nontrivial inferences. They can appreciate (observable or non-observable) consequences of it, apply it to the phenomena and use it to formulate hypotheses about future occurrences of events. They can draw on the theory to formulate explanations and probably also to provide answers to what-if-things-were-different questions. When a student asks, 'What difference does it make for the planet if I bike to school instead of driving?', any teacher could explain how even small actions can contribute to normalizing the planet's temperature.

However, the teachers' doxastic-noetic profiles are clearly inadequate. The teachers are not entertaining the right doxastic-noetic attitude with the theory of anthropogenic climate change. They are not endorsing a theory that they should endorse, given their best evidence and given the current stance of the scientific community. Actually, the teachers are not in position to endorse the relevant theory, given their already established intellectual background. Their existing worldview and their fatalistic attitude obstruct the endorsement of the theory. Individually, they can merely accept it for the sake of providing answers on its basis and then 'wash off' their acceptance as soon as they walk away from their students, or as soon as the *Save the planet!* day is over.

The research group's doxastic-noetic profile is interestingly different. First, the research group does not hold any fatalistic views like its individual members. None of its members would be ready to present fatalism as the stance of the group. The group's members agree that their private views should remain private. Therefore, the fitting requirement is trivially satisfied. At the group level, nothing obstructs the endorsement of the relevant theory. Moreover, the group's stance is persistent. The group is not in a position to 'wash off' its commitment to the theory of anthropogenic climate change. The commitment to the theory is bounded to the group's existence. As long as the research group exists, its stance will remain the same (assuming that the evidence available to the group will remain the same, i.e., that the theory of anthropogenic climate change will remain the theory endorsed by the scientific community). If the group was invited to a different *Save the planet!* event at another high school, it would deploy the same theory as a basis for interacting with the students. The group, hence, is constrained in ways in which its individual members are not.

Note that this thought experiment avoids the problems of the experts' panel case. The research group's stance is significantly grounded in evidence: the members of the group recognize the scientific community's opinion as evidence that, as a group, they cannot ignore. This evidence leads them to the particular stance they have. Moreover, and relatedly, the fact that the epistemic medi-

ator the group is committed to is the right one is not a happy accident. Would the group have easily adopted an epistemic mediator that did not fulfill an adequacy requirement, was not true enough, and/or was not the best of the available alternatives? *No*, at least not if we assume that the scientific community reliably delivers epistemic mediators with such desirable features.

If my arguments are convincing, nothing stands in the way of saying that the teachers' research group *endorses* the theory of anthropogenic climate change, in the sense that matters for understanding, while none of its individual members does. The group's endorsement is reasonable: it is constrained by evidential considerations, the theory is the best of the available alternatives, and it does not clash with any other group's view. The further requirements for understanding also are all satisfied: the theory of anthropogenic climate change adequately accounts for climate change phenomena and is intelligible to all members of the group.⁴ Arguably, the research group understands climate change phenomena, while the climate change deniers who are members of the group do not because they do not have the right doxastic-noetic profile. The epistemic life of a group and that of its individual members can diverge as far as understanding phenomena is concerned. A summativist view of collective understanding, therefore, is probably wrong. A collective entity's understanding does not always reduce to the sum of the understandings of the individuals belonging to it.

4 | CONCLUSION

In this paper, I argued that understanding a phenomenon requires reasonably endorsing an adequate and intelligible epistemic mediator that accounts for this phenomenon. The model I proposed highlights that understanding phenomena has two components or dimensions: practical and theoretical.

An agent who understands a phenomenon *P* is one who has developed and is in the position to exercise certain abilities. An understander of *P* can cognitively navigate the epistemic mediator(s) accounting for *P* that she endorses. Moreover, an understander of *P* can interact effectively with *P*, thanks to the epistemic mediator(s) that she endorses. However, understanding phenomena is not only a matter of having developed and of being in the position to exercise certain abilities. Understanding *P* is a matter of having the right 'doxastic-noetic profile'. Understanding phenomena requires epistemic mediators of the right kind—that adequately account for the phenomena, that are good enough for or true enough of their intended subject matter and that can be used as sources of accurate information about it. Moreover, an agent who understands *P* entertains with the relevant epistemic mediator the right kind of doxastic-noetic attitude. She does not merely accept the mediator, e.g., as she accepts phlogiston theory during science class or Hamlet's monologue during acting class. She endorses it. She takes it to be an excellent (maybe the best) instrument to pursue her epistemic and cognitive aims. And her endorsement is reasonable or well-grounded, not only in the sense that the epistemic mediator stands out in the set of alternatives available to her but also in the sense that it fits well into her already established intellectual background.

With this model of understanding phenomena in the background, I explored the possibility of collective understanding. I argued that the doxastic-noetic profile of a group can interestingly differ from the doxastic-noetic profile of its constituent members. If my arguments are on target, a group can reasonably endorse an epistemic mediator that adequately accounts for a phenomenon, while none of its members individually is ready to commit herself to the mediator in question, despite being able to use it and cognitively navigate it. In a similar

case, one crucial requirement for understanding is satisfied at the group level, while it is not fulfilled at the individual level. This suggests that a collective entity's understanding is sometimes something over and above the sum of the understandings of the individuals belonging to it.

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ENDNOTES

¹In Section 2.3, I argued that an adequate epistemic mediator is such that it can be deployed as a source of accurate information about its intended subject matter. It might be argued that, in light of this, belief re-enters the picture: the accurate information that a subject is able to extract from an epistemic mediator should be believed. Therefore, belief is involved in understanding after all. This strikes me as correct. However, I think we should acknowledge that belief cannot be all there is to understanding. Epistemic mediators are not like ladders that help us climb a wall, and that we can leave behind once we have reached the top. They are deeply woven into the fabric of understanding. They are essential parts of an understander's noetic system. And the doxastic-noetic attitude that the understander entertains with them cannot be belief.

²The phenomenon of group endorsement I am about to explore overlaps with, but is also different from, the phenomenon of joint commitment as described by Gilbert. If a group is jointly committed to *p* in Gilbert's sense, each member of the group is ready, when acting as a member of the group, to talk and behave as if she believed *p*. Something similar, I think, happens in group endorsement. Given that a group endorses *p*, each member of the group is ready to present *p* as endorsable in relevant circumstances and when acting as a member of the group. The endorsement of *p*, however, additionally involves the disposition to work cognitively with *p*, i.e., to use *p* as a premise in reasoning, inference and action when one's end are cognitive. Moreover, endorsement in my sense is always reality directed and responsive to evidence, while commitment in Gilbert's sense can be but does not have to be. Moreover, the normativity of endorsement in my sense and of commitment in Gilbert's sense seems different. Whether one's endorsement is reasonable depends, among other things, upon the content of one's already established intellectual background. Gilbert's notion of commitment does not seem to be subject to a similar constraint.

³Whether understanding can be lucky, and to which extent, is a highly controversial question in the literature. Kvanvig famously argues that understanding is compatible with veritic epistemic luck (Kvanvig, 2003). Pritchard refines Kvanvig's suggestion and argues that understanding is compatible only with a specific kind of veritic epistemic luck, which he labels environmental epistemic luck (Pritchard, 2005). For more recent attempts to defend the possibility of lucky understanding, see Morris (2012) and Rohwer (2014).

⁴As I described the case, the intelligibility requirement of understanding is satisfied in a purely summative fashion: the research group understands the theory of anthropogenic climate change in the sense that each member of the group understands the theory in question (can cognitively navigate the theory, draw nontrivial inferences and provide explanations on its basis, see how it relates to the phenomena, and so on). It could be argued that, in light of this, I have not actually shown that collective understanding is possible. To show this, I would need a case in which all the requirements for understanding are satisfied at the group level, while they are not at the individual level. I have two possible lines of response to this objection. First, collectivizing the intelligibility requirement of understanding is not an impossible task. Understanding an epistemic mediator is a matter of having certain abilities; what I would need, then, is to modify the thought experiment in such a way that the research group can do things that its individual members cannot do alone. (See Boyd, 2021 for a similar strategy). Second, I could claim that I do not actually need to collectivize all the conditions for understanding to show that collective understanding is possible. Given that there are several requirements for understanding, any of these requirements could give rise to a sense in which understanding is collective (de Ridder, 2014).

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