

The Epistemic Significance of the Collective

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Abstract

This paper discusses recent empirical research on the high epistemic status or reliability of crowds or groups in delivering accurate judgments, even in the absence of deliberation among group members. Using this information, it is claimed that the cognitive community is a crowd or group which has the epistemic virtues mentioned above; The cognitive community is defined as an informal group where meaningful discourses take place between participants who share or agree to a common set of basic beliefs and have similar cognitive capacities. It is then argued that an individual can discharge his epistemic responsibilities of (1) determining the sufficiency or adequacy of reasons for belief and (2) identifying which facts qualify as the right kind of reasons by incorporating the collective judgment of his cognitive community.

Keywords: Wisdom, Crowd, Group, Epistemic, Responsibility, Reason, Collective

1. Introduction.

In recent years, there has been a growing realization among epistemologists that individual doxastic agents ought to tap into the resources of his community and subject his beliefs to public scrutiny, to enhance his own epistemic status. For example, arguing for the epistemic significance of the epistemic community for the epistemic status of the individual's beliefs, Matthew Chrisman (2022) too writes: "...I think the activity of basing one belief on other beliefs, and adjusting one's understanding of the inferential and probabilistic support relations between beliefs, is not something that happens wholly within an individual's head. Rather, it is something that happens in an epistemic community of people with diverse perspectives and cognitive skills." (2022: 133)

According to him, by engaging with the community correctly through the "collective practice of applying shared concepts, correcting each other's application of concepts, and deferring to experts in a community about the implications of these applications, each of our subjective viewpoints becomes a

take on what is objectively the case.” (*ibid.*: 134)

Baron Reed (2018) too appeals to the critical importance of coordinating individual beliefs for enabling information sharing between community members. Henderson and Graham (2019) argue that epistemic norms are fundamentally social norms. They write: “Epistemic norms as social norms serve goods that individuals in a group have reason to pursue. Shared epistemic norms allow for a coordinated community pursuit of epistemic goods. To the extent that epistemic practice in a community is regulated by shared norms, people can readily rely on results gotten elsewhere in the community. In effect, the results gotten through the conforming community practices constitute an epistemic stock of reliably produced belief. One’s conforming compatriots will have formed beliefs in a way one would have sought to produce beliefs for oneself (and others) were one able to be more places at once.” (2019, 428)

The basic ideas underlying the above claims are endorsed by Michael Hannon and Elise Woodard too. They argue that the source of epistemic normativity is the dependence of the individual on the community for his cognitive success. Membership of the epistemic community, like that of any other community, demands compliance with certain rules. Hannon and Woodard argue: “We are bound by the norms and expectations that structure a practice of mutual epistemic accountability, which promotes epistemic rule-following across the community.” (2025, 13)

They further explain: “The general idea is that we have a collective interest in encouraging others to form their beliefs in ways that are generally truth-conducive. To do this, we must subscribe to appropriate systems of norms. By sharing epistemic norms, we are able to cope with the problem of irresponsible believers. This allows us to extend our epistemic reach. When we play by the same set of epistemic rules, we are able to share beliefs without sharing all our evidence...If we did not coordinate our belief-forming rules, it would be difficult to collect every individual’s evidence into a larger communal pool.” (*ibid.*, 10)

Similarly, Hanna Gunn writes: “...each member of the epistemic community commits themselves and the other members to behaviors that support truth-seeking (e.g., our commitment to rational belief formation), and to supporting the affordance of epistemic trust in one another; in addition, they jointly commit to seek these ends with the other members of the community. As a collective or as a body, they commit to acting in ways that will enable them to meet these ends and to being held accountable for failing to do so.” (2020: 572-573)

Sharing of correct information is mutually beneficial for both the community and the individual believer. Such a practice enriches understanding of both parties. On one hand, interaction with the community and public scrutiny of privately held reasons for belief weeds out any non-epistemic, local bias—unconnected to truth and leads to overcoming of individual cognitive limitations. On the other hand, the community gets access to diverse reasons and reasoning for p from its individual

members without expending additional resources in rediscovering the same truths over and over again. Thus, compliance with community's epistemic expectations is a win-win situation for both the individual and the community. Thus, in addition to his own stock of information, the individual ought to tap into the stock of beliefs of his fellow community members and procure reliable information from the community.

In other words, the agent is dependent on his community to maximize his chances of securing correct beliefs and avoiding incorrect beliefs. The dependency on the community compensates two limitations that an individual doxastic agent has: (a) Personal emotions and private pragmatic interests, which can interfere with the twin objectives of securing truths and avoiding falsities, and (b) The limited cognitive reach of the agent.

The arguments above hold only if the thesis underlying the above claims is true. The underlying thesis is that a community, group or crowd has a superior epistemic status (i.e. better at generating true judgments or predictions) compared to any individual within that group; That is, the group is better than the individual in at least some cognitive tasks, like taking decisions, making empirical judgments or predictions. Is this claim true? Citing empirical research, I will argue in the next section of this article that, under certain conditions, the claim is true. I will also explain what those conditions are. In the subsequent section, I will clarify and elaborate the notion of *community* that is relevant here.

2. Deliberation is not always desirable

To start with, note that in a particular crowd or a group, different methods can be employed to aggregate inputs (decisions, predictions or judgments) of individual members in order to generate the collective output of a group. Deliberation with others, mathematical aggregation (i.e. weighted average) and prediction markets are the three well known methods. Depending on the method used, the collective judgment can turn out accurate or false. For example, consider the method of deliberation to aggregate individual information from group members. It is accepted as a truism that consulting and coordinating with community members improves the epistemic status of the individual believer. However, Lyon and Pacuit (2013) have identified three major issues with the method of deliberation. One is that there is a tendency for groups to ignore isolated, minority or lower-status members. Secondly, there is a tendency to rely too heavily, or "anchor", a judgement on one piece of information (for example, the first announced judgement, the judgement of the most senior person in the group, or the judgment of the loudest person in the group). Thirdly, information held by all members of the group has more influence on the final decision than information held by only a few members of the group.

Miriam Solomon too argues that 'groupthink' undermines whatever epistemic benefits rational deliberation provides. When a group of individuals aim to reach consensus on some issue, several undesirable factors can influence their final,

common decision. This includes the overwhelming influence of a few dominant individuals or those in authority. This “leads dissenting individuals to change their minds and, perhaps as important, not to share their knowledge of contrary evidence. The dynamics of groupthink frequently leads the group to a polarized position, not to an average or a neutral aggregate of individual opinions.” (Solomon 2006: 31)

Arguing against deliberation as a method of aggregation, she presents some counterintuitive results:

1. “Group deliberation often produces worse decisions than can be obtained without deliberation. (Often enough for epistemic concern.)
2. A group of nonexperts often produces better decisions on a topic than does an expert about that topic. (Thus challenging the traditional deference to the expert.)
3. If group deliberation does take place, outcomes are better when members of the group are strangers, rather than colleagues or friends.” (*ibid.*)

These results are motivated by the nature of actual deliberations that are far from ideal. Unpopular arguments and conclusions by knowledgeable and intelligent individuals may remain suppressed or unexpressed due to peer pressure, “pressure from authorities, pressure to reach consensus, and the salience of particularly vocal group members” whose views may be given undue weightage. (*ibid.*:32) Solomon cites the famous Milgram’s experiment on obedienceⁱ to authority figures and Tversky and Kahneman’s 1970’s experimentsⁱⁱ on heuristics and cognitive bias in our decision-making under uncertainty. Due to such features of ‘groupthink’, Solomon argues, deliberation often leads to a skewed or biased judgment, not to an average aggregate of individual judgments.

3. Other methods of aggregation

However, when individual judgments of the members are aggregated mathematically, the group judgment turns out to be more accurate. Weighted average of individual decisions is an example of mathematical aggregation. Simple average is another. Yet another is taking the group judgment to be the one which is held by the majority. However, this last type works only when the options are fixed and limited. James Surowiecki in his 2004 book *The Wisdom of the Crowds* gives this example where individual judgments are aggregated mathematically and the group delivers accurate judgment: In 1906, Galton (the experimenter) asked fairgoers (a random mix of visitors to the fair) to guess the weight of an ox. Galton then averaged their answers. To his surprise, he found that the average answer was extremely close to the true weight; The group of fairgoers was somehow able to guess the weight of the ox though no individual fairgoer’s answer was accurate or close to it. The fair goers were not a group which was assembled together specifically to accomplish the task of determining the weight of an ox. They did not even know that their answers would contribute to a final answer on the matter.

They acted independently, rather than jointly. And yet, a simple average of the answers obtained individually, without discussing or deliberating on the issue, yielded the desired result.

Yet another real-life demonstration of the successful application of mathematical aggregation that Surowiecki mentions in his book- relates to the disappearance of the US submarine *Scorpion* in May 1968. To track down the submarine, instead of consulting a handful of experts, a naval officer named Craven adopted a different approach. He asked a number of different people having expertise in different areas of naval aspects for their opinion on the path and location of the submarine. He also made sure that didn't consult or deliberate with each other before divulging their individual opinions. To bring about an air of genuineness in their opinions, he also ensured that they actually bet on their vouched opinion on the matter. Craven then aggregated the individual guesses to arrive at the collective judgment of the group. Surowiecki describes the result: "The location that Craven came up with was not a spot that any individual member of the group had picked up...Five months after the *Scorpion* disappeared, a navy ship found it. It was 220 yards from where Craven's group had said it would be." (*ibid.*, introduction xxi).

Thus, in this case too, the group, as a whole, had greater information and accuracy compared to any of the members, when individual judgments were mathematically aggregated. Similarly, Sperber and Mercier (2012) report of an experiment by Moshman and Geil, in which participants perform the Wason selection taskⁱⁱⁱ either individually or in groups of five or six participants. It was found that 70 percent of the groups reported the correct solution but only 9 percent of the individuals succeeded in their individual capacity.

Yet another popular method of aggregation of individual judgments that conforms remarkably well with experimental results is the so-called "prediction markets". Prediction markets consist of participants who bet money on unknown future event outcomes. Information is aggregated from such individual bets and predictions of the collective about future events are produced. Until the outcome is decided, the trading price reflects the traders' collective consensus about the expected value of the contract. For example, the Iowa Electronic Markets (IEM) Presidential vote-share markets is a computerized, electronic, real-time exchange where traders buy and sell future contracts, with payoffs based on election outcomes. Thus, it is a prediction market. Berg et al. documented the performance of this market over 964 polls from the five U.S. Presidential elections since 1988. They concluded that "the market is closer to the eventual two-party vote split 74% of the time. Further, the market significantly outperforms the polls in every election when forecasting more than 100 days in advance." (Berg et al., 2008: pp. 287)

This result is counterintuitive because you would expect that the electoral poll would deliver better results as it has a solid methodology behind it, it is statistically rigorous and it is conducted by experts. The betting market, in comparison, consisted of individuals with different backgrounds with no professional expertise in polls and yet they delivered better results. Results of other empirical studies

also show that we are justified in placing credence on the accuracy of market prices which are determined solely through competition. In a study conducted by Pennock et al. (2001), researchers studied the correlation between the going prices and observed outcome frequencies in two different market games which are played online with play money only; In one of the games, the traders can bet on the outcomes of unresolved scientific questions. In the other, they can bet on the outcome of Oscar, Emmy, and Grammy awards. The researchers collected historical price information for 161 expired securities, corresponding to questions that had been definitively answered “yes” or “no”. They found that prices of securities in Oscar, Emmy, and Grammy awards correlate well with actual award outcome frequencies, and prices of movie stocks accurately predict real box office results. Similarly, they discovered that market prices in the other game also strongly correlate with actual observed frequencies.

4. When are groups wise?

The examples cited above brings out some remarkable facts about crowds or groups which reliably generate accurate predictions or judgments:

- (i) the epistemic superiority of groups does not necessarily require that the group in question has a particular constitution or nature. Some groups are tightly organized and the members are conscious of their belongingness to their groups. Others are not formally organized. And still others have ever-changing membership, like the cattle market;
- (ii) groups could achieve a high level of accuracy without engaging in mutual exchange of ideas or deliberation;
- (ii) the group sizes were often too small to represent the population about whom they were predicting;
- (iii) there was lack of *demographical* diversity within the groups.

Note however, that no method of aggregation is ideal or one-size-fits-all method of aggregating community opinions or judgments^{iv}. In seeking the opinion or judgment of the group or the community, we may have to combine one or more of the above methods of aggregation to extract the true judgment of the collective. Unless we adopt the right method of aggregation, we may attribute wrong judgments to a group. Consequently, we may mislabel a crowd or group as unreliable. However, ensuring the right method of aggregation is not the only necessary condition for a group to deliver accurate judgments.

Some groups or crowds could be inherently unreliable, regardless of the method of aggregation adopted. Surowiecki observes: “...many groups struggle to make even mediocre decisions, while others wreak havoc with their bad judgment. Groups work well under certain circumstances, and less well under others. Groups generally need rules to maintain order and coherence, and when they're missing or malfunctioning, the result is trouble....there are times—think of a riot, or a stock market bubble—when aggregating individual decisions produces a collective

decision that is utterly irrational.” (*op. cit.*, xix)

Thus, we need to specify the constitutive characteristics or circumstances under which groups *behave well*. Surowiecki suggests that group judgments which are based on diversity^v, independence of individual judgments and groups which are decentralized are particularly reliable. The diversity referred to here is not of the demographic or any other practical kind; it refers to epistemically useful diversity, where different members of the group apply differences in their investigations to the problem.

Commenting on the significance of diversity, Surowiecki, quoting Irving Janis, writes: “when decision-makers are too much alike—in worldview and mind-set—they easily fall prey to groupthink. Homogeneous groups become cohesive more easily than diverse groups, and as they become more cohesive, they also become more dependent on the group, more insulated from outside opinions, and therefore more convinced that the group's judgment on important issues must be right. These kinds of groups, Janis suggested, share an illusion of invulnerability, a willingness to rationalize away possible counterarguments to the group's position, and a conviction that dissent is not useful...Deliberation in a groupthink setting has the disturbing effect not of opening people's minds but of closing them.” (*ibid.*, 36-37)

Surowiecki cites two main reasons in favor of independence. One is that it minimizes the risk of proliferation of individual errors in judgment. If individual judgments in a group are interdependent, a systemic bias creeps in even if the group members have no such intention. The other reason he cites is that “independent individuals are more likely to have new information rather than the same old data everyone is already familiar with.” (*ibid.*, 41) Decentralization in the group is also crucial to making correct judgments. Surowiecki gives several examples of decentralized groups which are efficient in ‘reading the environment’. Bee hives, ant colonies, free market economies, peer-to-peer computer networks are decentralized groups. These groups foster, and in turn are fed by, specialization.

Several other authors too have emphasized the significance of independence and diversity in enhancing a group's cognitive performance. For example, Lorenz et al. (2010) demonstrate through several experiments that the accuracy of the median estimate of a crowd worsened when individual members were informed about the information provided by others in the group on the same question. The information about what others think about the same issue often leads to unjustified and unreasonable revision of an individual's one's own judgment towards consensus, thereby worsening the accuracy of the entire group. Thus, independence is necessary. Similarly, Hong and Page conducted a series of computational experiments and concluded that “a team of *randomly selected* agents outperforms a team comprised of the best-performing agents.” (2004: abstract, emphasis mine). Bhatt et al. (2017) reached similar conclusions about virtual crowds by analyzing online social media (Twitter) communications; They found that a group which is diverse (in terms of tweet content of its members) can outperform both non-diverse and randomly sampled crowds.

Recent work by psychologists Davis-Stober et. all (2014) assert two important conclusions about ideal crowds. Firstly, “a crowd becomes wisest when it is maximally informative, which entails that its members’ judgments are as *negatively* correlated with each other as possible, as opposed to being independent.” This point is corroborated by other researchers too: “In general, the research finds that crowds are more accurate when each member knows something different, meaning that their judgments are correlated with the criterion but uncorrelated with one another (or even negatively correlated).” (Fischhoff and Broomell, 2020)

Secondly, they conclude, we should use a weighted aggregate of judgments rather than select the single best group member, even if the crowd members are biased. The decrease in variance resulting from aggregating the individual judgments offsets the bias, if any.

5. The notion of the cognitive community

We began with discussing the significance or influence of the community or the collective in affecting the epistemic status of the individual. Then, we explicated the epistemic virtues of crowds/groups. We have also discussed the conditions under which crowds are able to generate accurate collective judgments. But we are yet to delineate the role of the community in improving the epistemic status of the individual. In the section below, I would explicate how an individual can improve the epistemic status of his beliefs by utilizing the superior knowledge pool of his community.

But before doing that, we need to identify the relevant crowd or group from which an individual ought to extract information or evidence for his beliefs. This is important because, as we have discussed above, not all groups are wise. Due to the function the relevant group or community performs in the epistemic life of an individual, let us name it the *cognitive community*. It is this group that the individual ought to consult (in a collective sense) for procuring true information. In order to clarify our notion of cognitive community, we need to look closer into another notion often used in philosophical parlance- *epistemic community*.

Mathew Chrisman argues that we should think of the activity of maintaining a belief “as embedded in and structured by social rules constituting *epistemic communities*. And when these social rules promote mutual understanding of the world, they are the sorts of norms, conformity to which fosters the very kind of doxastic autonomy presupposed in saying that someone (epistemically) ought to believe something.” (2020: 19, emphasis mine)

In his *Belief, Agency and Knowledge* (2022), he invokes the notion of “epistemic community” again to ground epistemic normativity in our essential sociality. “...epistemic norms have their grip on us because of our membership in a community of information-sharers and because of our joint participation with others in the epistemic practices of this community... membership and participation in an epistemic community is inescapable, unlike membership and participation in

particular linguistic communities.” (2022:11).

He takes epistemic communities to be constituted by “relationships of epistemic dependence (e.g., teacher–student, expert–policymaker, someone with a particular experience–someone making generalizations).” (*ibid.*: 10)

Similarly, Hanna Kiri Gunn identifies mutual cooperation and trust for the pursuit of truth, through reasons, as a key feature of epistemic communities: “...epistemic dependence is a constitutive feature of epistemic communities. ...a joint commitment to belief regulation would be sufficient for creating an epistemic community...” (2020:574)

From the above passages, it is clear that the notion of epistemic community, which the above philosophers espouse, serve many of the purposes a group is supposed to serve. However, note that we are interested in merely demarcating the relevant group which is better-suited, compared to any individual, in generating accurate judgments. There may, or may not be an actual community that corresponds to it. Chrisman, on the other hand, seems to think that epistemic communities are real communities.

Moreover, unlike in an epistemic community, membership in a cognitive community is not determined by social rules. Whenever two or more agents manage to participate in a meaningful discourse, they can be said to belong to the same cognitive community. A meaningful discourse takes place whenever the participants share or agree to a common set of basic beliefs and have similar cognitive capacities; That’s all. This commonality often manifests itself as constitutive social rules of an epistemic community, but such manifestation may not always happen.

Thus, a cognitive community may not be coextensive with the linguistic community of a natural language. Two individuals speaking the same natural language may belong to different cognitive communities. It may also happen that two persons are members of the same geographical / social community with respect to certain issues (which are of common concern) but belong to different communities when it comes to a different set of issues. This can happen if one of them is a layman whereas the other is a professional with respect to the set of issues under discussion. That is, a community may not be coextensive with the geographical or temporal boundaries within which the believer lives.

But it may be coextensive also. For example, the involuntarily-geographically isolated community of a tribe is one such community; the geographical and historical constraints of the tribe demarcate the cognitive limits of the members of the community. Similarly, believers in the same geographical location but separated by time, belong to different communities. In short, if no meaningful dialogue can take place between two doxastic agents with respect to the given belief, then they belong to different communities. In light of the above discussion, it is more appropriate to consider a cognitive community as a crowd or a group rather than a community.

Now that we have clarified the meaning of a cognitive community, let us turn to the issue of how an individual can improve the epistemic status of his beliefs by utilizing the superior knowledge pool of his cognitive community.

6. Cognitive community to the rescue of the individual doxastic agent

Regardless of whether you are an internalist or an externalist about justification, it is undeniable that being able to offer sufficient or adequate reasons in favor of one's own belief counts in favor of holding that belief. Failure to offer the *right* reasons counts against holding it. In other words, it is our epistemic responsibility to have the right reasons for our beliefs.

But there is another issue related to epistemic reasons. There could be reasons or facts which have a bearing on the truth value of the proposition under consideration but they are cognitively inaccessible to a person, either due to the limitations of his personal cognitive faculty or due to external factors (such as physical remoteness, which keeps the fact out of physical reach). It is obvious that we cannot hold that person responsible for his failure to take such inaccessible reasons into account. Echoing this line of thought, John Gibbons writes:

“Your epistemic reasons are completely determined by your epistemic position, or the information available to you in the most straightforward sense. And information is available to you in that sense when you're in a *position to know* it. So I think that epistemic justification supervenes on what you're in a position to know.” (2013:176, emphasis mine)

In another passage, he clarifies that *in a position to know* should not be conflated with *being introspectively available*: “The facts have to be accessible in some sense in order to make a difference to justification. But they don't have to be introspectively accessible. It's enough if it's something you're in a position to know. When we say that I should have known where my keys were, we're committed to the idea that I could have known where my keys were. But I couldn't have known that on the basis of introspection.” (*ibid.*, 180)

Kate Nolfi makes a similar point: “Advice, guidance, or direction presupposes that its target is (at least in normal circumstances) capable of following or being guided by its recommendations. This suggests that the fact that a believer is capable of changing the way she regulates her beliefs in response to and in a way that is guided by epistemic praise or criticism explains (at least in part) why she is an appropriate target of prescriptive evaluation for believing as she does.” (2014: 98)

Thus, epistemic responsibility is a function of those epistemic reasons which are accessible or available. That is, the individual is epistemically responsible for only those reasons or facts which she is in a position to know. So, for example, if the truth value of the state of affairs A has a bearing on fact p, then A is a reason for believing that p. But suppose, an individual is not in a position to know A. In this case, he cannot be held accountable for not taking into consideration the truth value of A while judging whether p. The question now is, when is one not in a position

to know? Our discussion of the cognitive prowess of crowds or groups suggest that it will be a mistake if we limit the notion of availability or *in a position to know* to only what is available or capable to be known to the person concerned. This is because the crowd or group, under the conditions specified above, is often in a better position to know, compared to any individual member. Thus, if any individual taps into the collective knowledge pool of his cognitive community, he or she would be in a position to know a lot many truths (or reasons) which were otherwise inaccessible to him or her. Therefore, the availability of reasons should be understood as availability to the cognitive community of the individual, not just to himself or herself^{vi}. Because of the superior reliability of the group in making accurate judgments, an individual is epistemically responsible to access the collective information and incorporate them amongst his reasons for or against a particular belief.

We can fulfil our epistemic responsibility (at least partly) by:(1) determining the sufficiency or adequacy of reasons for belief and (2) identifying which facts qualify as the right kind of reasons.

Given the above responsibilities, the person can be held accountable if, either she (i) misidentifies a non-epistemic (wrong) reason as an epistemic reason, or (ii) assigns inappropriate/disproportionate weights to her epistemic reasons.

In both these activities, wisdom of the crowds can greatly benefit the individual. To appreciate how, note that one can fail to properly discharge the two epistemic responsibilities because individual practical considerations and biases can (and do) heavily influence the assignment of weights to evidence. For example, suppose police confronts a boy's father with strong, scientific evidence that his son takes marijuana; They show blood test report to him, which turned out to be positive; He was also found to be in physical possession of several pouches of the banned substance. This evidence is sufficient for a rational third person to conclude that the boy is a drug addict. However, the father may incorrectly assign low or nil weight to such evidence by hypothesizing, for example, that the police is corrupt and trying to make his son a scapegoat to save someone else; the police, according to this hypothesis, have in fact planted the evidence to frame his son.

In order to even out such local, private biases and in view of the superior epistemic reach of the community, it is plausible that the assessment of weight should depend on the cognitive community's verdict on the matter. The community's verdict can be overruled in specific cases where the doxastic agent can demonstrate publicly that he has additional information about the context which is not available to the rest of the community. In all other cases, community's prescription about the weight should be followed.

Personal practical interests and psychological biases or emotional factors can also influence one's ability to identify the right kind of reasons for belief. In one's zeal to get his practical interests fulfilled, one may misidentify a practical reason for belief as an epistemic reason, so that the belief can be justified and defended. To

overcome this problem, one ought to again refer to the collective judgment of the cognitive community about whether a particular reason is epistemic or otherwise. It is very likely that the community will correctly identify the genuine, right reasons because practical interests are most-often private/local; I may not be having any interest in some of the things you desire, and vice versa. Therefore, non-epistemic reasons cannot be universalized; they may appear as genuine reasons for a particular belief only to the individual, not to other members of his cognitive community. On the other hand, most epistemic reasons (evidence) can be shared and universalized within the cognitive community. Thus, by consulting the collective judgments of his cognitive community, the individual minimizes his chances of misidentifying a non-epistemic reason as a genuine, right reason for his belief.

7. Conclusion

This paper argues that an individual doxastic agent can greatly improve his epistemic status by incorporating the collective judgment of his cognitive community, provided that the incorporation is done by using a proper method of aggregation of individual judgments. The individual can benefit from the collective because the cognitive community functions as a crowd or group which fulfils the conditions of diversity, independence and decentralization. Groups which are constituted on these principles have been demonstrated in empirical studies to yield accurate collective judgments or decisions. Therefore, an individual doxastic agent can use the collective judgment of his cognitive community to discharge his twin epistemic responsibilities of identifying the right reasons for belief and assigning the correct weights to the identified reasons.

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ⁱ Stanley Milgram's experiment demonstrates how individuals have a strong tendency or disposition to comply with the instructions of an authority figure even though such instructions may conflict with his personal conscience.

ⁱⁱ Tversky and Kahneman conducted a series of experiments which demonstrate that we use judgmental shortcuts or heuristics whenever we discover that the event under consideration is similar, in some sense, to a prototype or stereotype that we already have in mind. Generally, application of such heuristics is successful but it can also lead to errors in judgment. For instance, we might overestimate the degree to which a small sample from a large population is representative of the entire population.

ⁱⁱⁱ It is a famous experiment in psychology, designed to test deductive reasoning skills using four cards. See Ragni et al. (2017) for a description of the task.

^{iv} See Lyon and Pacuit (2013), for shortcomings with different methods of aggregation.

^v Note however, that diversity, as meant here, does not imply the stronger condition that the crowd must be a representative sample of the larger population.

^{vi} There is of course the question of whether an individual can always access the knowledge pool of his cognitive community? Since by definition, all members of a cognitive community have the linguistic and cognitive capacity to engage in meaningful discourses, it should not be cognitively impossible for an individual member to access the collective knowledge pool. However, that does not preclude the presence of other obstacles to access, such as prudential, societal or cultural restrictions.