

## Collective Ethics

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### Abstract

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*People are generally convinced that the US has one of the best economies in the world because of its higher living standards and continuous prosperity, but the frequency and severity of corporate wrongdoings in recent years have constantly perplexed them. The causes of the last two recent economic breakdowns (the dot-com bust of 2000 and the financial meltdown of 2008) were deeply rooted in corporate corruption due to malice and greed. The author in this article argues that collectives are capable of forming beliefs and judgments independent of their members. However, vices and virtues in collectives emerge only in combination with their members, as collectives are not agents and cannot form a virtuous or vicious character on their own. This article distinguishes between formal and informal collectives and argues that the best structural design for formal collectives is a democratic governance system, as it gives them a better chance of achieving epistemic accuracy and wisdom. Finally, this article concludes that epistemic virtue emerges from epistemic wisdom and wise collectives are virtuous collectives.*

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### Key Words:

1. Collective Ethics
2. Collective Belief
3. Collective Cognition
4. Collective Wisdom
5. Corporate Virtue

### Introduction

People are generally convinced that the US has one of the best economies in the world because of its higher living standards and prosperity, but the frequency and severity of corporate wrongdoings in recent years have constantly perplexed them. The causes of the last two recent economic breakdowns (the dot-com bust of 2000 and the financial meltdown of 2008) were deeply rooted in corporate corruption due to malice and greed. In most instances, the same players that brought economic prosperity and technological innovations to our economy also caused it to crash. With each economic downturn, many people lose their jobs and their livelihoods, and many never recover fully. In some key ways, it appears that what has made the US economy great is what causes it to occasionally collapse.

Hardly a day goes by without a well-recognized and highly respected corporation being found guilty of some sort of malfeasance. On May 26, 2016, alone, for instance, the *Wall Street Journal* (WSJ) reported on Lending Club's inadequate loan sales disclosures and the departure of its CEO and other executives, accompanied by a plunge in its stock price; Alibaba's questionable accounting practices and the SEC probe into those practices; the ongoing investigation into the operations of medical technology company Theranos; Countrywide's criminal and civil cases and convictions; golf star Phil Michelson's insider trading scandal; and the recent tendency of financial institutions to reengage with risky business similar to the practices that led to the 2008 crisis.

The *WSJ*'s foreshadowing of financial institutions' reengagement with risky business came to light when, on September 20, 2016, it reported on the Wells Fargo Bank's consumer accounts scandal and commented that Wells Fargo is not much of an outlier when it comes to complaints associated with cross-selling and other sales practice abuses. Less than a year later, on August 8, 2017, the *WSJ* reported that Wells Fargo is facing regulatory scrutiny related to its auto-insurance practices. The latest scandal concern guaranteed asset protection the bank sold through its car dealerships. Wells Fargo confirmed that it had discovered issues related to a lack of oversight and controls surrounding the administration of its guaranteed asset protection. Wells Fargo scandals have continued up to now, on May 17, 2018, the *WSJ* reported that some employees of Wells Fargo improperly altered information on documents related to certain business customers. Wells Fargo was always considered a reliable Main Street lender in the past and largely passed through the financial crisis unscathed.

The *WSJ* reports almost daily on corporate irregularities, with such stories very often making its front page. If the number of corporate wrongdoings is any indication, we are heading for another financial breakdown. This article discusses the collectives in general and formal collectives and corporations in particular. In the first part, this article explains the emergence and characteristics of collectives, and will argue that collectives can form beliefs and judgments distinct from those of their members and will conclude that corporations can be virtuous or vicious in collaboration with but independent of their members.

In the second part, this article argues that employment is a joint commitment with mutual obligations between an employer and its employees for the common good of both—that is, employers benefit from the services of their employees while, at the same time, employees exercise their talents to find fulfillment in their work beyond their compensation. Furthermore, this article argues that formal collectives (institutions in general and corporations in particular) can be wise and achieve epistemic accuracy in their beliefs and judgments, in collaboration with but independent from their members. This article further argues that collective wisdom exists, and properly structured collectives can outperform their members, achieving a higher level of epistemic accuracy. However, there are several conditions that may distort their epistemic accuracy (i.e., their judgments may not be coherent or may be at fault due to malice and greed on the part of individual members).

Finally, this article argues that democratic corporate governance plays an important role in achieving epistemic accuracy that eventually leads to collective virtue. Corporations that do not have a participative management style usually fail at a higher rate than their peers. Thus, the best form of corporate governance is a democratic system in which employees can be heard without prejudice whenever their beliefs come into opposition with those of their employers.

## 1. Collectives

Fricker describes three forms of collectives: First, a number of individuals getting together to form a weak collective or a group (such as a group of friends who go for a daily morning run). In this example, the group is reducible to its members. Second, informal collectives that lack formal structures, but nevertheless they follow certain protocols. Informal collectives are generally not reducible to their members (such as a book club). Third, formal collectives or institutions that have formal structures and are governed by certain bylaws and codes of governance and are non-reducible to their members (such as corporations) (Fricker 2010, 236).

The most intriguing characteristic of collectives (particularly the formal collectives and, to a lesser degree, informal collectives) is that they can form beliefs and judgments independent of their members and exercise virtues and vices even though they lack consciousness and will. This characteristic plays a key role in the behavior and actions of corporations as a form of collective. In the remainder of this part, this article will discuss how collectives in general, and corporations in particular, form their beliefs and exercise virtues and vices independent of their members.

### 1.1. Collective Belief

The common view is that collective belief is summative; that is, for a group to believe that  $p$  is logically necessary, all or most members of the group must believe that  $p$  is required (Gilbert 1987, 187). We often attribute beliefs to collectives in our daily conversations. For example, we may claim that the police force of a particular community is brutal and prejudiced; however, this claim does not literally mean that every single member of the society believes that the police force is brutal and prejudiced.

Lahroodi, based on Gilbert's views, argues against summativism on the premise that there is a crucial disanalogy between individual beliefs and collective traits (Lahroodi 2007, 286). Lahroodi uses the term "trait" instead of "belief" in relation to collectives to disassociate any "spooky" or metaphysical ideas from collectives, but for simplicity, this article will use Gilbert's term "belief" in reference to both collectives and individuals.

Lahroodi gives the example of an administrative committee of a church that is vehemently hostile to gay rights. He claims that we can certainly conceive of the existence of such a narrow-minded church committee, but we can also envision that it is plausible that most (or perhaps all) of the members of this church committee could potentially be open-minded about gay rights as individuals (Lahroodi 2007, 287). This example reflects rather neatly that collective beliefs are dissimilar from individual beliefs and summativism is fallacious. Thus, it is not a necessary condition of a group's belief  $p$  that most members of the group believe  $p$ .

Gilbert sums up the characteristics of a collective belief as follows: (1) a collective belief is jointly accepted by the members of the group; (2) collective belief may indirectly impact the thinking of the members of that collective, such that the members of that collective understand that their behavior is subject to certain constraints as long as they are part of that given collective; (3) however, the individual beliefs of members may remain different from the collective belief (the collective mind is independent of the minds of its members); and (4) collective belief is not a matter of logic. For example, an unopposed forceful statement by an influential and outspoken member of a collective can potentially establish that collective's view. Thus, in Gilbert's collective model as in Lahroodi's example, a group can in principle believe  $p$  even though members personally may believe the opposite. This raises the issue that conflicts may arise between members' personal beliefs and the collective belief. If so, a dissident member may either come into conflict with the collective or may modify her belief to accommodate the collective belief (Gilbert 1987, 200-202).

Akira Kurosawa's 1954 movie *Seven Samurai* is an example of a collective that manifests a feature or attribute that is lacked by every single of its member. In this movie, seven men join together and form an unlikely alliance to save a village from a group of bandits and outlaws and manifest a character trait as a group that each single individual lacks. This is based on the premise that once a collective believes  $p$ , then, *ceteris paribus*, collective members are personally obliged not to deny  $p$  or say things that presuppose the denial of  $p$ . Any conflict between personal beliefs and collective beliefs may have several results, such as whistleblowing, accepting the collective belief, or even separation of the member from the collective. However, formation of belief requires some sort of cognitive ability that collectives clearly do not have. To resolve this paradox, this article next examines the formation of collective beliefs.

## 1.2. Collective Cognition

Lahroodi argues that mainstream epistemology has been mostly concerned with individual human cognizers and knowers, but collectives can be cognizers like humans (Lahroodi, 2007, 281-282). We often speak of collectives as if they have epistemic cognition: for example, when we say that, "The review board was courageous in questioning what everyone took for granted," we are actually crediting the board for its courage in asking tough questions (Lahroodi 2007, 282-283). When we attribute cognition to collectives, it implies that they can form beliefs or judgments as proto-agents. In general, a well-organized formal collective, such as a corporation, is a good candidate to be considered as a proto-agent—or perhaps even a full-fledged agent, as these collectives can form beliefs and judgments. But how do non-sentient entities such as collectives form such beliefs?

Collectives form their beliefs and judgments with the help of several mechanisms (List 2012, 205). This article will discuss five major doctrines on the formation of collective cognition in the remainder of this section even though there are other views in addition to these five, but the author believes that these five are more applicable to corporations and formal collectives. These doctrines are not mutually exclusive and, indeed, may all simultaneously be present in a formal collective.

### 1.2.1. Division of Labor

Gilbert argues that when individual faculties are pooled together, they form an *as-if* collective faculty or a *collective subject*. Gilbert's notion of pooling individual faculties leaves it open as to how these faculties may be combined to form collective faculties. One intuitive form of collective faculty is division of labor (Fricker 2010, 241-242).

Fricker argues that Gilbert's notion of *collective subject* provides a template for collective cognition and that there is nothing metaphysical or spooky about the cognitive ability of collectives. She gives the example of a night-watch team of four soldiers who sensibly pool their faculties by dividing their labor such that one consistently looks north, another south, another east, and the other west. Alternatively, and presumably less efficiently, they could all constantly shift their gazes in any of these four directions randomly to spot the enemy. Fricker's night-watch team reflects how a collective cognition may emerge in collectives and form a collective belief. In this example, none of the soldiers has complete information on their situation, but the collective has complete and presumably correct information (Fricker 2010, 243). Thus, in the night watch example, individual agents simply communicate and exchange information to form a collective belief.

However, division of labor may not fully explain the behaviors of today's complex economic enterprises. To add to our understanding of how collectives may engage in collective cognition, this article will additionally discuss Condorcet's Jury Theorem, Page's Aggregation doctrine, and Nozick's Invisible-Hand and Hidden-Hand theories.

### 1.2.2. Condorcet's Jury Theorem

The Marquis de Condorcet first argued his *Condorcet's Jury Theorem* as a political science doctrine about the relative probability of a given group of individuals arriving at a correct decision. In its simplest form, the theorem states that where a group votes on two opposing alternatives, the collective is slightly more likely to be right than wrong than is each individual, and as the number of voting members increase, the probability for the majority vote to be correct tends to get even higher (Vermeule 2012, 343). Under this doctrine, agents pool their intellectual resources together to come up with resolutions that they hope are better than those they would have reached individually.

With Fricker's night-watch team, a very different model emerges. In her model, each night-watch soldier gets an imperfect signal: he may or may not know the direction from which enemy is approaching (the answer that the collective is seeking). However, the group collectively has the epistemically accurate information. This scenario recalls the story of the blind men and the elephant. None of the blind men can possibly deduce the shape of the whole elephant just by touching its leg or trunk or other parts; to deduce the truth, they must compose their separate perspectives collectively, thus arriving at an accurate epistemic answer. The Condorcet doctrine, on the contrary, believes that under certain circumstances, each member may think he or she has the complete and correct answer—but through collective deliberations, group members may be able to find a better answer. Generally, a large number of participants with cognitive diversity are more likely to produce a more epistemically fruitful result since diversity initiates dialectics, and dialectics feed into *Condorcet's Jury Theorem* and produce accurate results. The Condorcet doctrine clearly plays an important role in the structural design of democratic corporate governance, where a participative, rather than authoritative, style of management is preferable.

### 1.2.3. Page's Aggregation Theory

There is another process of collective intelligence in which individual agents, far from deliberating or exchanging any information or making any argument, simply provide their opinions and an aggregating algorithm or mechanism tabulates their views and opinions; the majority prevails. The probability that a majority vote is the correct answer becomes more certain as the number of members who vote increases (Vermeule 2012, 343). Page argues that a straightforward mathematical calculation demonstrates that the average prediction of a crowd always outperforms the prediction of the crowd's average member (Page, et al. 2012, 56). The prevailing majority vote does not guarantee that the collective view is an epistemic accurate answer in all instances, but it is statistically more likely to be so. The best example of this claim is performance of the stock market; crowds frequently predict an upcoming economic recession or recovery six months ahead of its actual occurrence.

The main reason for the failure of aggregation theory is that, for an assortment of reasons, the public may not form unbiased beliefs. Another reason is a lack of direct participation; for example, in corporations, shareholders and boards of directors are expected to vote for the governance rules and the majority view prevails in most, if not all, instances.

However, Page's argument may not work in this case, as most of the votes in public companies are cast through proxy votes<sup>1</sup>. It appears that at least in some instances, the Condorcet and aggregation doctrines support a weak form of summativism in formal collectives, but the reality is that from the mix of individual beliefs, a new property—one which is more than a summation of individual epistemic beliefs—emerges.

#### 1.2.4. Nozick's Invisible Hand

Nozick, following Adam Smith's macro-economic invisible-hand doctrine, articulates another theory regarding the formation of cognitive beliefs in collectives. He argues for an "invisible hand" that guides the beliefs of collectives in a micro-economic environment. Nozick offers an evolutionary explanation based on two arguments: first, a filtering process must exist, where some mechanism within a collective eliminates the elements that do not fit certain patterns and cannot accommodate certain behavior. Second, each member must adjust to local conditions and while simultaneously changing the local environment, such that a continuous and consistent pattern gradually develops within a collective (Nozick 1994, 314).

Fricker advances a similar argument suggesting that certain members in a collective are *passengers*—they lack the motive and/or skills to initiate beliefs but simply go along by minimally acting in the group, as required by circumstances (Fricker 2010, 247). Gilbert similarly argues that there are effectively two routes that members may take as part of a joint commitment: (1) via their personal belief *p*, or (2) via a mere going-along or letting stand of *p* (Fricker 2010, 246).

#### 1.2.5. Nozick's Hidden Hand

Nozick also argues for the existence of a "hidden hand" (the opposite of an invisible hand) that follows a different path and mechanism. This doctrine holds that collective decisions and beliefs tend toward the ruling class and promote their views. The hidden hand coordinates the efforts of a collective to serve the interests of certain individuals; the members of the collective may also benefit from the arrangement, but to a lesser extent than do the elites (Nozick 1994, 314).

The Volkswagen AG (VW) diesel scandal is an example of Nozick's invisible-hand and hidden-hand arguments. In November 2015, irregularities were revealed in VW's measurement of carbon dioxide emission levels, an issue affecting millions of diesel vehicles sold. The initial investigation confirmed that VW had a chain of management command that approved fitting cheating devices or software to the engines of diesel vehicles. Allegedly, the sophisticated software that was able to report false but acceptable emissions levels was developed by a group of engineers in the Silicon Valley area in the US. Clearly, many executives and managers worldwide were involved in this scheme, and rank and file employees simply followed suit. They all had knowledge of this irregularity for many years but did not say anything (Hotten 2015).

Nozick argues that not every pattern that arises by an invisible-hand process is desirable and not every pattern that arises by a hidden hand is undesirable (Nozick 1994, 314). For example, it is common knowledge that Steve Jobs, the late cofounder of Apple, had a very authoritative and mercurial style of management and rank and file employees followed his directions obediently and blindly, but nevertheless Apple was, and still is, one of the most successful and ethical corporations in the US. In contrast, in the VW scandal, and probably in other instances of corporate scandals (such as Enron, WorldCom, and others), it is likely that both Nozick's invisible hand and hidden hand were at play, to disastrous results.

This article has argued so far that collectives can form beliefs independent of their members, even though they lack cognitive faculty. From this, argued that certain mechanisms exist in collectives that function as cognitive abilities. In particular, this article discussed Fricker's division of labor, the Marquis de Condorcet's Jury Theorem, Page's aggregation theory, and Nozick's invisible hand and hidden hand. This article argued that all or some combination of these mechanisms exists in formal collectives at any given time, and that they contribute to the formation of collective beliefs and judgments. In the next section, this article will argue that we can also attribute virtues and vices to collectives.

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<sup>1</sup> Proxy voting is a form of voting whereby some members of a decision-making body may delegate their voting power to other members of the same body to vote in their absence, and/or to select additional representatives. Proxy voting is a particularly important practice with respect to corporations in the United States, as investment advisers often vote on behalf of their client accounts.

### 1.3. Collective Virtue

Virtue is a disposition, which harmonizes with understanding and helps us to see things as they are, while vice distorts appreciation of the qualities of the relevant situations. This article argues that it is possible to attribute both motivation-based Aristotelian virtues (e.g., kindness, compassion, charity, and generosity) and skill-based Platonic virtues, (e.g., vigilance, honesty, justice, and inventiveness) to collectives. For example, a corporation can contribute generously to certain charities, or a research team can be diligent in its commitment to excellence and thoroughness. In these examples, the collective's members do not necessarily need to possess these particular epistemic or moral virtues individually; rather, by jointly committing to the collective, they each come to possess them qua membership in that group (Fricker 2010, 241). It takes certain philosophical efforts to attribute virtues and vices to collectives, as formal collectives are not reducible to their members. Here, this article focuses mainly on means of attributing virtues and vices to formal collectives, although most of the arguments can be applied to informal collectives as well.

Mackie argues that formal collectives or institutions have rules and principles of action that resemble the game of chess in that they consist of abstract principles and concepts. However, playing chess involves more than applying these abstract principles and concepts—it is a social practice consisting of a sequence of moves made by chess-players depending on many factors that exist beyond those abstract principles and concepts. Similarly, the behaviors of formal collectives consist of abstract rules and principles in addition to the normative content of such behaviors, which is impacted by social expectations and the approvals, disapprovals, and demands of the social environment (Mackie 1977, Kindle Loc. 1296).

Fricker argues that collective vices arise due to several factors: (1) collectives within an institution are negligent in realization of their institutional procedures and structures (e.g., the human resources department is negligent); (2) individual members of collectives are negligent in realization of the institutional procedures and structures (e.g., the vice president of human resources is negligent); or (3) the institutional procedural structures themselves are faulty. Fricker holds that we can only attribute virtues and vices to formal collectives in combination with individuals who work within the structural procedures of these collectives (Fricker 2010, 249), as collectives in general are not agents and lack will.

Procedural structures of institutions must encourage virtue and discourage vice, but most importantly, the members must bring to life virtues imbedded in such structural procedures. Most of the irregularities in corporate environments can be attributed to chess-players (usually the top executive level, referred to as the C-suite<sup>2</sup>). The rank and file employees simply follow as passengers the invisible or hidden hands of corporations.

In the first part of this paper, the author argued that collective beliefs exist. The author also argued that even though collectives lack the faculty of cognition, there are mechanisms in place that enable them to form beliefs and judgments independent of their members. Finally, the author concluded that we could attribute virtues and vices to formal collectives only in combination with individuals who work within the structural procedures of the formal collectives. In the next part, the author will discuss how formal collectives are formed, how they may achieve virtue, and what may distort their judgments.

## 2. Corporations

The formation of formal collectives is based on joint commitment; that is, collectives have certain obligations and their members have commitments to do or refrain from doing certain things. As author has established that collectives can be virtuous only in combination with individuals, in this section the author will argue for democratic corporate governance, in which employees with diverse views have the chance to be fairly heard. Finally, the author will discuss reasons why corporations may go wrong or perceive things incorrectly and conclude that there is a correlation between epistemic virtue and epistemic accuracy.

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<sup>2</sup> C-suite is a widely used slang term deriving from the concept of the "corporate suite." It collectively refers to a corporation's top-level senior executives.

## 2.1. Joint Commitment

Gilbert defines a collective as a group of individuals who, under a condition of common knowledge, jointly commit to a goal or belief. When individuals join collectives or form a collective, they commit to do or refrain from doing certain things. There is always a *quid pro quo* involved in joint commitment that creates obligations for both collectives and their members. Gilbert argues that a joint commitment locks each party into a course of action, and at least two keys are needed to open the lock. Each party holds only one of the keys, with the second key being held by the other party (Gilbert 1993, 694).

Employment agreements are joint commitments between employers and employees that create certain obligations for both parties: no party is committed until all others are committed and no party can rescind from the agreement unless all others have (Gilbert 1993, 693). These obligations are simultaneous and interdependent between the employer and its employees. For example, employees become obligated to follow their employer's code of ethics and bylaws, and employers are obligated to compensate their employees for their services and create an environment in which employees can exercise their talents and find fulfillment in their work.

Once a collective is formed through a joint commitment (regardless of its type), its subject becomes the *collective subject* rather than the subject of the individual members. Of course, not every joint commitment creates a collective, but if one is formed, a *collective subject* emerges. This may be true even for informal collectives and groups. For example, if John decides to go for a 10-mile run, he can decide to discontinue his run at any time and go for a cup of coffee instead. However, if John makes a joint commitment with Nancy to go for a 10-mile run together, they thereby create an informal collective; if John suddenly breaks off without any warning in the middle of the run and goes for a cup of coffee, Nancy will be at least surprised, if not miffed.

Thus, parties involved in a joint commitment are no longer separate individuals, but rather members of a collective with a jointly decided agenda. This agenda consists of a collective goal, a collective belief, and a common social convention (Gilbert, 1993, 692). In order for parties to become part of a joint commitment, they must express their willingness and consent, but no party is committed until the others have made their commitments. The characteristics of a joint commitment can be summed up as follows: (1) there is a conceptual connection between joint commitments and obligations, (2) obligations create reasons for action, (3) obligations of parties involved in joint commitments are interdependent and simultaneous, (4) a collective subject (rather than individual members) develops the agenda for the joint commitment, and finally, (5) mutual consent is required to change the agenda of a joint commitment.

In the following section, the author will argue that as part of a joint commitment, corporations must provide for the right of contestability, by which employees can express their views and grievances without any fear of retaliation.

## 2.2. Right of Contestability

The author has established earlier that collectives that pool individual intellectual resources together are often more intelligent and wiser than their individual members (e.g., Fricker's night-watch team). The author also argued that collective beliefs are different from their members' beliefs, and the beliefs of individual members may occasionally come into conflict with collective views. Collectives often benefit from a diversity of views among their members and become wiser and more intelligent by providing the right of contestability to their members.

Fricker gives the example of a woman who marries a man in a legal system that technically gives him the right to rape her, as that legal system does not recognize the category of rape within marriage. Even if the husband is a good man who would never hurt her in that manner, this woman loses her dignity and freedom in such a system because she does not have the right of contestability (Fricker 2010, 250). Similarly, members of a formal collective must always have the right of contestability so that they can speak up if they come across any injustice. The hearer, ideally a group, must possess the virtue of "testimonial justice". Fricker holds that an agent is testimonial just if she is capable to reliably neutralize the impact of prejudice in her judgments of speakers' credibility (Fricker, 2010, 250). Fricker argues that a formal collective that lacks the virtue of testimonial justice effectively subjects its members to injustice (Fricker 2010, 251).

Both Sarbanes-Oxley Act of 2002 and Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 have provided for Fricker's concept of testimonial justice by stipulating that employees have access to the highest authority in the organization (i.e., the board of directors) to communicate their grievances or the injustice that they have encountered because of institutional procedures or improper execution of such procedures. What is contentious in today's corporate environment is that employees are reluctant to exercise their contestability rights in some instances or completely bypass Fricker's testimonial justice and report any alleged ethical violation to an outside authority in exchange for rewards.

### 2.3. Epistemic Accuracy

Although not frequently thought of by the average observer, epistemic accuracy is probably the most important, if not the only, gauge to use to determine the success of a corporation. Through epistemic accuracy, corporations can achieve their primary goals, whether that is a focus on increasing shareholders' value or accomplishing a humanitarian goal. An epistemically accurate collective is also a wise collective, and a wise collective is a virtuous collective. A wise collective achieves epistemic intelligence via deliberation and engages its members in its decision-making process. List argues that wisdom is the ability to give all factors their due weight to reach an epistemically accurate conclusion. He argues that collective wisdom exists, and properly structured collectives, such as corporations, can outperform their members and achieve a higher level of epistemic accuracy (List 2012, 203). Once corporations fail to achieve or maintain epistemic accuracy, they may become engaged in activities that not only harm the economic enterprise but also its stakeholders.

Corporations, like other collectives, use a variety of techniques to achieve epistemic accuracy: Fricker's division of labor, Condorcet's Jury Theorem, Page's aggregation theory, and Nozick's invisible and hidden hands. However, also like other formal collectives, corporations run the risk of falling into the fallacy of composition (coherence challenge) or becoming subject to intentional wrongdoings due to malice and greed on the part of their members. The paper will discuss these risks in the remaining of this section.

#### 2.3.1. Coherence Challenge

List argues that collectives can face the coherence challenge in their judgments (List, 2012, 203). The following example clarifies the concept:

*p* Health insurance coverage for rank and file employees improves employees' morale.

*Q* Increases shareholders' value.

*If p then q* Improving employees' morale results in increased shareholders' value.

Let us assume that the board of directors of a company consists of three board members, and the CEO of the company makes the proposal that health insurance coverage will improve employees' morale, which will result in an increase in shareholders' value.

- The first board member agrees with the proposal.
- The second board member agrees that improving employees' morale increases shareholders' value, but does not believe that providing health insurance coverage to rank and file employees necessarily improves employees' morale.
- The third board member believes that even though providing health insurance improves employees' morale, increased morale does not necessarily result in additional shareholders' value.

The following truth table reflects the logical result of the above scenario:

	<i>P</i>	<i>If p then q</i>	<i>Q</i>
First board member	True	True	True
Second board member	False	True	False
Third board member	True	False	False
Aggregation	True	True	False

Thus, the aggregation does not meet List's coherence challenge due to its lack of consistency (even though that the outcome is expected to be "true," the aggregation result is "false"). This inconsistency can be avoided if the board members simply vote on *q* and ignore the proposition of *If p then q*. List's argument is another confirmation of Gilbert's earlier argument that collective belief is not logical in all instances.

So far, this article has discussed the interaction of agents and collectives and the emergence of collective cognition. If its argument is correct, collective beliefs exist and outperform the members' beliefs in most instances—List's coherence challenge is a noted exception in this claim. The author argued earlier that collectives achieve epistemic accuracy only in combination with their members; however, as a result of recent technological innovations, collectives may obtain knowledge and achieve epistemic accuracy without a human's interference or help.

### 2.3.2. Corporate Vices

The author established earlier that based on Fricker's view, collective virtues and vices occur in combination with the beliefs and values of individual members. Collective members' actions due to malice and greed may drag corporations into wrongdoings. In addition to members' malice and greed, the corporate structure itself might be the cause of corporate wrongdoings. In the following sections, this article will examine how these scenarios may occur.

#### 2.3.3.1. Malice

Earlier, in section 1.3, the author quoted Fricker's assertion that collective virtues and vices arise for several reasons: (1) collectives within institutions are negligent in realization of otherwise proper institutional procedures and structures; (2) individual members of institutions are negligent in realization of otherwise proper institutional procedures and structures; or (3) the procedural structures of institutions are faulty. In recent corporate scandals, most instances of corporate wrongdoing have been due to individual negligence and malice; Theranos is the one of the latest such incidents.

Elizabeth Holmes was a Stanford University dropout with striking good looks, eloquence, and charisma. She founded Theranos, a medical technology company, in 2003 in Palo Alto, California, when she was only 19 years old. She wore black turtlenecks (reminiscent of Steve Jobs) and demonstrated many of the personality traits and management styles of the late Apple cofounder. She even kept a picture of the late Jobs on her desk. One of the hallmarks of Theranos was its secrecy and tendency to keep its employees in the dark—just as Jobs was famous for keeping Apple's products under tight wraps. Theranos claimed that it had developed a blood-testing device named "Edison" that used microfluidics technology and could accurately test a few drops of blood obtained via a finger-stick, rather than requiring the vials of blood obtained via traditional venipuncture. The company was valued at \$9 billion before its testing device was ever subject to a peer-review study. In October 2015, a *Wall Street Journal* investigative reporter revealed that Theranos might have exaggerated the reach and reliability of its technology, a claim that Holmes vehemently denied. Several clinical pathologists and other medical experts also expressed skepticism about Theranos' technology. A week later, the Food and Drug Administration (FDA) stated that the company's miniature blood containers were unapproved for any test other than that for herpes. In 2014, Forbes estimated CEO Holmes' net worth to be approximately \$4.5 billion, revising this estimate to zero in mid-2016 after the revelation of inaccurate presentations and claims. The *WSJ* reported on July 11, 2016, that the Centers for Medicare and Medicaid Services had revoked Theranos' certificate and banned Elizabeth Holmes from the blood-testing business for at least two years. The *WSJ* reported on October 6, 2016, that Theranos would shut down its blood-testing facilities and shrink its workforce by more than 40%. The *WSJ* reported on June 15, 2018, that Federal prosecutors filed criminal charges against Theranos' founder Elizabeth alleging that she defrauded investors out of hundreds of millions of dollars and also defrauded doctors and patients. Theranos is a good example of Nozick's invisible and hidden hands. Nozick is right that the influence of invisible and hidden hands may yield either good outcomes (Apple and its cofounder Jobs) or bad (Theranos and its founder Elizabeth Holmes). Theranos is also a good example of Fricker's first and second vice scenarios, in which faulty individuals drag institutional collectives into wrongdoing. Theranos lost its epistemic accuracy early on and eventually lost its virtue as a collective.

#### 2.3.3.2. Greed

Charles Ferguson's 2010 documentary *Inside Job* is about the Wall Street capitalists who brought down the US economy in 2008 with the help of certain politicians. The global financial meltdown took place in the fall of 2008, causing millions of job and home losses. It plunged the United States into its deepest economic recession since 1929–33. Through a wide range of interviews, this documentary provides a detailed examination of the elements that led to the economic collapse. Ferguson raises a few key points: first, most of the greedy Wall Street capitalists walked away unharmed and were treated very leniently by the judicial system.

Although it is true that Bernie Madoff and a few executives of Enron and WorldCom are serving times in jail, most of the top-level executives responsible for the economic crash simply walked away unscathed. Second, very little has changed in the past few years. There are still corrupt and greedy executives managing today's corporations and the level of corporate corruption and greed is at an all-time high. Third, greed was widespread among many, including those in academia. In exchange for hefty fees, a few well-known professors at Ivy League schools prepared faulty research reports defending the business models of companies that collapsed a year or two later.

According to Ferguson's documentary, greedy management teams led many corporations during the period leading up to the 2008 financial crisis. These individuals were pursuing their own financial interests and personal goals, and as a result, corporations went down the wrong path. The results were devastating not only for corporate stakeholders but also for the nation—and, indeed, the world—as a whole.

### 2.3.3.3. Faulty Corporate Structure

Fricker's third scenario of faulty corporate structures and procedures has actually been quite rare in contemporary corporate scandals, but there are a few examples, Madoff's Ponzi scheme is probably the most notable one. Bernard "Bernie" Madoff founded his investment firm based on a Ponzi scheme<sup>3</sup> and recruited a number of trusted family members to his firm with the intention of defrauding investors. His sales pitch was that his firm's investment strategy consisted of purchasing blue-chip stocks and taking out options contracts on them, a technique sometimes called a split-strike conversion or a collar. In his guilty plea after the collapse of his investment firm in 2008, Madoff admitted that he had not actually traded any securities since the early 1990s and had fabricated his firm's returns.

### Final Remarks

The author argued that collectives are capable of forming beliefs and judgments even though they lack any cognition faculties. However, vices and virtues in collectives emerge only in combination with their members, as collectives are not agents and cannot form a virtuous or vicious character on their own. The author distinguished between formal and informal collectives and argued that the best structural design for formal collectives is a democratic governance system, as it gives them a better chance of achieving epistemic accuracy and wisdom. Under a democratic governance system, employees have the right of contestability and employers protect the rights of nonconformists. In a democratic governance system, employees are free to follow their conscience without any fear of retaliation from their employers.

Finally, the author argued that Corporations, like other collectives, use a variety of techniques to achieve epistemic accuracy: Fricker's division of labor, Condorcet's Jury Theorem, Page's aggregation theory, and Nozick's invisible and hidden hands. However, corporations, like other formal collectives, run the risk of falling into the fallacy of composition (coherence challenge) or becoming subject to intentional wrongdoings due to malice and greed on the part of their members. Finally, this article concluded that epistemic virtue emerges from epistemic wisdom and wise collectives become virtuous collectives.

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<sup>3</sup> A Ponzi scheme (named after Charles Ponzi) is a fraudulent investment operation in which the operator, an individual or organization, pays returns to its investors from new capital paid to the operators by new investors, rather than from profit earned through legitimate sources.

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