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16 Epistemic Collectives, Heterogeneity, and Injustice: The Case for Town Square Academia

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Epistemic collectives are everywhere, immersed in our daily discourse. One often hears that "science confirmed," "our department supports," or that "*Nature* accepted," yet rarely does one think about the characteristics of such institutions qua collectives. The objective of this chapter is to explore a pivotal collective trait—heterogeneity—that characterizes a particular epistemic collective—"Town Square Academia" (TSA)—in order to argue for the epistemic and normative benefits of using TSA whenever possible (alongside standard academia), precisely due to its characteristic heterogeneity.

First, we must specify what a collective is. In chapter 2 of this volume James Griesemer addresses this question, clarifying the meanings of 'collective';[1] its semantic relations to 'group', 'aggregate', and 'superorganism'; and its underling mechanisms of coordination, cooperation, and collaboration. In this chapter we deal with a particular kind of collective: an epistemic collective. In other words, we ask what is the difference between an aggregative sum of beliefs belonging to a collective and a collective belief? According to Beatty (chapter 15, this volume), the knowledge attributed to the group is beyond what the group members know in common, and Beatty's case study of scientific consensus regarding climate change illustrates in what ways collective knowledge differs from the aggregated sum of knowledge that individual agents in the collective possess. Along the same lines, Gilbert (2004, 98) formally refers to collective epistemology as "a collective belief that P without all or most—or indeed any—members of the population in question believing that P."

Our case study for an epistemic collective is TSA, which emerged in 2011, on the outskirts of the peripheral town of Kiryat Shmona, near the sources of the Jordan River, in the midst of the "tent protest" and global social justice movement. The aim of TSA was to galvanize an interdisciplinary, activist and critical academia that would use knowledge (local and scientific) to connect and build a dialogue between heterogeneous groups within a peripheral region. In practice, multiple free courses, led by volunteering—academic and local—experts, are attended by hundreds of citizens from different backgrounds (i.e., ethnicity, gender, age, religious sentiment, and socioeconomic level) in different localities

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outside the campus walls (hummus joints, schools, community centers, etc.) as part of a *learning communit*y.

A TSA course does not open if its enlisted audience is geographically or ethnically homogenous, yet it is also important that the teachers do not all deliver the same message. Therefore, there are typically several expert lecturers: either educated in different disciplines, in different types of expertise (academic alongside nonacademic) or within the same discipline but holding different—often conflicting—views. Not all courses succeed in obtaining all the above heterogeneous aspects, but the heterogeneous aim is clear.

We will argue that heterogeneity helps the core aim of TSA, which is to build an epistemic collective that resists epistemic injustice. Epistemic injustice is described by Fricker (2007, 1) as "a wrong done to someone specifically in their capacity as a knower." Here it means not recognizing the local speaker's words as "knowledge" because of his or her class, gender, ethnicity, and/or residency in a peripheral locality. Because of this motivation, and because of TSA's heterogeneous social composition, its knowledge-production processes can more easily increase the visibility of heterogeneous local knowers via face-to-face deliberation.

Indeed, it is often claimed that standard academia is homogenous in a manner that reproduces hegemonic ideas and hierarchal stratification (Apple and Weis 1986; Freire 1970). For example, Arnett's (2008) analysis, as referred to in Henrich et al. (2010, 89), reveals that "95% of psychological samples come from [Western] countries with only 12% of the world's population." TSA aims to change that exclusive focus on WEIRD (Western, Educated, Industrialized, Rich, and Democratic) crowds (a term coined by Henrich et al.) and so strives to include additional and different crowds.

The next section clarifies the concept of epistemic collective, which may be deliberative or nondeliberative, and elucidates the pros and cons of each option in the case of TSA. The following section focuses on the group trait of heterogeneity, both in general and with regard to its practical meanings in TSA. Finally, based on a better understanding of TSA as a heterogeneous epistemic collective, we conclude with two general arguments for using TSA alongside standard academia whenever possible.

Epistemic Collectives: The Wisdom of Crowds versus Deliberation

Collective knowledge might emerge from deliberative or nondeliberative paths, and there is an extensive debate in the philosophy of science community concerning whether or not group deliberation typically improves or mostly harms the quality of group decisions (Longino 2002; Longino 2004; Solomon 2006; Tollefsen 2006). Throughout this section we shall explicate the pros and cons of both deliberative and nondeliberative paths and illustrate how a *heterogeneous* epistemic collective such as TSA can untangle some of the conflicts regarding the question of deliberation.

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Unlike common dichotomous worldviews that invariably contrast group and individual levels (see also Gissis, chapter 1, this volume; Griesemer, chapter 2, this volume), collective knowledge does not necessarily require a cohesive group formation or face-to-face deliberation among its members. For example, collective knowledge might emerge out of a nondeliberative process such as a random group of people filling out a questionnaire, as shown in Surowiecki's (2004) book, *The Wisdom of Crowds*. In such cases the collective does not necessarily know that it knows or believes collectively, nor does it necessarily know that it is a collective, but a collective belief or knowledge—if it exists—can still be inferred from the data.

Relative to Surowiecki's crowds, a more complex distinction between group and individual traits is manifest throughout the pages of the present book, especially in the experiments regarding group leadership of Feinerman (chapter 4) and Gadagkar (chapter 5), the evolutionary synthesis of Lubin (chapter 6) and Lloyd (chapter 26), and the mathematical model of Roughgarden (chapter 25). According to Surowiecki, the average of aggregated assessments (the collective epistemology) of a nonexpert crowd often produces more accurate predictions than an average of a few individual experts' assessments, so long as the assessments are independent (i.e., each person makes a decision on his or her own), the aggregation process is decentralized (i.e., each assessment is given an equal weight when calculated), and the relevant knowledge or perspectives of agents are diverse.

Surowiecki warns that excessive communication can damage the independence and thus the diversity and epistemic value of the resulting knowledge. Digging deeper into this point, Solomon (2006) recommends aggregation and averaging of information in many relevant contexts over deliberation, arguing that the former preserves more information and takes into account all the available opinions of agents within the collective. Solomon explains that when deliberation takes place, subtle processes of peer pressure may lead agents to change their minds or withhold information that is contrary to the (seemingly) group convention, leaving that information unknown to the collective as a whole. Janis (1972, 9) called the extreme version of this phenomenon "groupthink," which is a

> mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action. … Groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures.

Following Janis's line of argument, TSA's emphasis on face-to-face dialogue among 20 to 30 course participants seems to be detrimental for its merit as an epistemic collective that renders academic visibility to previously silenced local knowledge. The objection to deliberation is indeed reasonable, but only on assuming an excluding collective–individual dichotomy, visualizing a 'collective' as a cohesive whole that tends to suppress the individuals within it. This contrast between freely conflicting individuals versus tyrant superorganism groups, while a common assumption among leading biologists during

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the Cold War (Shavit 2001; Shavit 2005), is not an assumption we make (Shavit 2008, chapter 2). Instead, we argue for the importance of heterogeneity in collectives as a way to resist groupthink by foregrounding multiple differences and types of differences within a common collaborative group.

Therefore, although we agree with Solomon that deliberation can often lead to information loss, we also support the promotion of deliberation in TSA courses. Here and there we have witnessed the failure of deliberation and incidents that exemplified groupthink within TSA—for example, when respect for a professor brought people to silence their views regarding water quality in their local stream or gender roles within their homes. However, we argue that face-to-face deliberation—at least in the case of TSA—often adds information too. Furthermore, we argue that new knowledge and other epistemic benefits will be sometimes more difficult to attain by TSA as an epistemic collective—if not unattainable altogether—if information is aggregated without deliberation.

Our first justification for the value of deliberation in TSA is the critical and reflective spirit from which this project emerged: an attempt to enhance equal, accessible, and critical higher education in a peripheral area, which recognizes the local knowledge and expertise of its residents. Without a constant aim for deliberation, such a change seems unattainable. This critical origin of TSA gives rise to a second reason why deliberation is less harmful in this case, namely, that TSA does not commonly aim for consensus but for inclusion of more information and perspectives—especially dissenting ones—in the hegemonic academic discourse, and for rendering new scientific information accessible to the local community, without asking anyone to change his or her mind.

Thus, TSA does not aspire to "educate" the "less-informed" public but rather to establish a mutual and cooperative learning process that encourages acquaintance with other perspectives—including, of course, the scientific one—and recognition of them as valuable. This holds true even in those one or two courses per year that hold a large audience aiming to listen to the speaker rather than speak themselves. To put it metaphorically, we do not seek "a single common language" but "a user-friendly translation" among different languages. Since motivation to reach consensus on a controversial topic is a necessary precondition for groupthink (Solomon 2006), and can also go against the common sense meaning of a collective belief (Beatty, chapter 15), the lack of aspiration to reach consensus renders TSA a more reliable epistemic collective and a less likely promotor of groupthink.

One possible criticism to this line of argument is that even if TSA holds no aspiration to reach consensus, in practice there exist powerful social forces that nonetheless create groupthink and consensus. In TSA a lecturer's reported "fact" or "proof" tends to carry more weight than similar claims made by a lay learner. Nonetheless, since most TSA participants acknowledge this common failure, heterogeneity of lecturers—namely, having several dissenting experts who teach the course together—reduces these risks. We will further elaborate on additional benefits of dissent bellow, but first a few clarifying words on the meaning of 'heterogeneity' are due.

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Epistemic Heterogeneity—When Perspectives Interact

The various meanings of 'heterogeneity' are elucidated elsewhere (Shavit, Kolumbus, and Ellison 2016) and will only be mentioned here in relation to epistemic collectivity.

The literature is unclear as to the differences between heterogeneity and diversity and often uses theses terms as synonyms (Shavit, Kolumbus, and Ellison 2016). Page (2011) makes a distinction between three kinds of diversity: (1) *variation*, or diversity within a type, referring to quantitative differences in a specific variable; (2) *diversity of types*, referring to qualitative differences (such as different species in biology); and (3) *diversity of composition,* or the way types are arranged (such as recipes). In our use of "heterogeneity" we focus on the two latter kinds, claiming that in the case of epistemic collectives, relating only to variance of a single variable is insufficient to describe the complex and dynamic nature of their epistemic heterogeneity.

We characterize 'heterogeneity' as an interface of different variables that mutually affect one another within a collective, while "diversity" does not require a collective link among the different variables (Shavit, Kolumbus, and Ellison 2016).

A heterogeneous collective holds a certain common goal (in humans) or function (in the life sciences), which is always context dependent (S. Gissis, personal communication, July 20, 2016) and may differ within and between collectives. Thus, when a collective is identified as "heterogeneous," it is important to notice the particular context of its heterogeneity, that is, the collective goal or performance to which its heterogeneity applies, and verify that the collective's operation and its identification as heterogeneous are congruent. Otherwise, incongruence between collective characterization and functioning is likely to occur, which may lead to epistemic stagnation and injustice. For example, a TSA course about "Evolution and the Bible" may seem heterogeneous just because it held diverse ethnicities, ages, and genders, yet if none of the participants had identified themselves as a true believer in the Bible, then it would have actually been a homogenous course and would have probably ended, as many academic seminars do, with bewilderment as to why "those people" do not "simply understand" obvious facts and accept well-established science. Such epistemic stagnation did not occur during this particular course since one of the lecturers was an orthodox Jew, the other two lecturers disagreed about which evolutionary models "actually" fit nature, and the course took place within a deeply conservative neighborhood.

This context-dependent conceptualization of heterogeneity characterizes TSA, facilitates its inclusiveness, and also calls for explicating one's sense of heterogeneity every time anew. Such attention to 'heterogeneity' also helps to clarify the concept of epistemic collective, wherein participants are different in *multiple interrelated variables* that are relevant to their *collective* goal or performance, and typically hold different *perspectives* regarding that goal or performance.

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Griesemer (2014) comprehensively explains the importance of perspectives for directing our attention, both for tracking phenomena and for building theoretical and material models that fit those phenomena. Bohman (2006) discusses perspectives in the social realm and differentiates perspectives from reasons (i.e., opinions and values): "While reasons are items to be considered in deliberation … perspectives are cognitive properties of deliberators … that inform these reasons and give them their cogency" (Bohman 2006, 179). Perspectives are thus not reducible to any particular set of values or opinions but are their experiential source.

Bohman goes on to reveal two main senses of perspectives: a social sense, namely, "practical stances toward the world that are informed by experiences that agents have," and an adaptive–reflexive sense, such that "Competent social agents are able to adopt and to employ a variety of social perspectives, often … by taking the perspective of others" (Bohman 2006, 180). Examining the social sense of an agent's perspective, Boisot and Li (2005, 313) write that "if we take epistemology to be *observer-dependent* then epistemic heterogeneity reflects the diversity of situations that observers find themselves in as well as differences in their respective abilities to capture such situations" (original emphasis). Agents have different ways of perceiving, explaining, and evaluating information about their world, which grant them unique epistemic perspectives.

Well-established psychological studies (Asch 1955; Morris and Miller 1975) showed that conformity and compliance—which facilitate groupthink—are more likely to occur when the group's opinion is unanimous, but it is enough to have one member who expresses a different opinion to deflate the compelling power of the group. Since in TSA one's belief and/or knowledge are always expressed within a heterogeneous setting, since more often than not there is more than a single expert leading the learning in each course, and since TSA does not aspire to reach consensus, participants have less reasons to conform and give up their vantage point.

Indeed, a TSA participant will often let P stand (e.g., in a course on local history: "It is known that it was a tragic misunderstanding which caused the death of eight settlers in 1920 rather than the intent of Sheikh Kamel Hussein to kill Jews"), while immediately adding his or her own personal disagreement ("I personally can't accept this post-modern type of history"). This citation in effect demonstrates an epistemic collective: holding a collective belief that P without all or even most members of the collective believing that P. This way, while deliberation takes place, it is neither necessary nor common for information to be lost; rather, more information is brought to the table.

Moreover, one could say that the group deliberation processes common in TSA are useful in the sense described by Sunstein (2003) in Solomon (2006, 32): "epistemically useful diversity results when different individuals use their differences in their investigation of the problem domain." For example, in a course about ADHD situated at an elementary school in an underprivileged neighborhood, the problem of discouragement was

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discussed in a heterogeneous group composed of a schoolmaster, schoolteachers, school-consultants, parents of children with attention deficit hyperactivity disorder (ADHD) from several schools, college students of education, and an academic expert on this subject. A meeting place for all these perspectives helped build a different—less judgmental and accusative—dialogue between the teachers and the parents and produced a new theoretical model (A. Raviv and Y. Silver, personal communication).

Tollefsen (2006) suggests that splitting a team into subgroups while working on a problem—as was sometimes done in the above ADHD course—may help in preserving dissent and preventing groupthink while maintaining deliberation. When subgroups work separately, each one devises different strategies and methods. Heterogeneity is manifested here not on an individual level, but on an intersubgroup level. Later, when the subgroups return to the original group and engage in deliberation, they encounter dissenting perspectives of out-groups and are forced to consider them and examine their own perspective closely (even for the purpose of successfully defending their point of view and convincing others that it is worthwhile). According to Tollefsen, this self-scrutiny and the actual encounter with critique from other groups reveals problems such as inaccuracies, leaps and gaps, and uncertainties, thus giving the subgroups and the group as a whole a chance for revision and self-correction. When agents are backed by members of their subgroup, it is less likely that they will suppress their opinion, even if it diverges from the opinion of the majority.

Moreover, evidence from social experimentation shows that heterogeneous interactions—for example, the mere anticipation of interaction with a dissenting other or the very presence of a person from a different race—improve deliberation and data analysis processes compared to homogenous interactions (Loyd et al. 2013; Phillips, Northcraft, and Neale 2006; Sommers 2006).[2] In addition, deliberation facilitates an association between knowledge and knowers. Although that association could lead to epistemic injustice if based on prejudice, it could also reduce existing epistemic injustice. When one's input is being acknowledged, face-to-face deliberation provides an opportunity for self-empowerment and for recognition of local idiographic knowledge by academics and nonperiphery residents.

That said, aggregation of heterogeneous beliefs clearly includes additional knowledge and knowers and, in that respect, also reduces epistemic injustice, as the tendency of lay persons is to erase, question, or simply withhold their personal knowledge and experience in the face of contrary information or views held by a college professor. Lay residents of a peripheral area filling in an anonymous questionnaire will probably express their views though. Thus, aggregation of beliefs alone can indeed provide a useful output—the result of calculation of aggregated inputs—but it does not provide agents with an opportunity to reflect on their own views during deliberation and so ameliorate their appraisal views or methods. For example, during a TSA course on local history, the hardship and hope of the local Palestinians, Sephardic and Ashkenazi Jews suddenly became a legitimate

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part of history. Such a reflective discussion—and in that sense recognition—of the Palestinian disaster ("Nakba"), the abuse of trust many Sephardic Jews discerned in the Zionist establishment, and the deep poverty of those living in kibbutzim would probably not be part of the discourse without deliberation. Overall, it seems that combining aggregation *and* deliberation may be epistemically better than using only one without the other.

We have so far shown the benefits of heterogeneity in improving the process of deliberation and its benefits for increasing the accuracy of aggregative results, yet we should remember that heterogeneity of perspectives makes for a more complex and slower learning process. A delicate and involved interaction must be maintained if a heterogeneous epistemic collective is to avoid falling apart. Yet, as previously shown, excluding heterogeneity of perspectives is even worse.

One major supporter of heterogeneity, pluralistic deliberation, and objective knowledge is Longino. TSA's heterogeneity relates to Longino's criticism of the ideal of value-freedom in science, which is "impartial (unbiased, socially neutral) science and universally valid science, that is, results that would hold for anyone, anywhere" (Longino 2004, 139–140). Longino argues that although there is no such a thing as value-free science, this does not mean that bias cannot be counteracted or that confirmation is unattainable. She argues for a social account of objective knowledge, claiming that, in order to counter the biasing effect of hidden value assumptions that guide scientific inquiry, it is essential to recognize the constructive role of values in science and to structure the scientific community to allow critical examination of them. For that purpose, deliberation is crucial, according to Longino. It is necessary to have "effective critical interactions" that "transform the subjective into the objective, not by canonizing one subjectivity over others, but by assuring that what is ratified as knowledge has survived criticism from multiple points of view" (Longino 2002, 129).

It is possible that a collective containing multiple points of view but sharing the same perspective—for example, that scientific standards are always better than local narratives—will be nonetheless relatively homogeneous epistemically. This possibility relates to the importance of noticing the context dependency of heterogeneity. Indeed, Longino (2004, 134) recognizes that hidden assumptions shared by all members of the community will be immune to criticism, and perhaps even reinforced since they have (ostensibly) survived a multiplicity of critical attacks. Such consensus regarding hidden assumptions is more likely to happen in homogeneous than heterogeneous collectives, and more likely to create a resentful response from the "nongrateful" public, especially in underprivileged localities. Neutralizing hidden assumptions and then confirming theories that are based on them could end up as a recipe for replicating mainstream ideology—just the effect Longino would not want to happen.

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Conclusion: Why Should Science Use TSA Whenever Possible?

After discussing the concepts of heterogeneity and epistemic collectivity throughout this chapter via multiple examples and illustrations, we hope it is clear that heterogeneity of perspectives—in the sense specified by Griesemer and Bohman—is epistemically relevant—perhaps even important—for the scientific community, a resource for producing more and more relevant and accurate knowledge and more innovative, comprehensive, and fruitful discussions. We would like to conclude with two general arguments, the first epistemic and the second normative, for why the scientific community should attempt to establish TSA centers alongside standard academia whenever possible and relevant.

Scientific results and procedures examined within a more heterogeneous collective are justified under broader (some would say more robust),[3] context-sensitive, and mutually interactive conditions. Throughout this chapter we repeatedly showed that expanding the study's range of possible methods and outcomes, enabling the participants—researcher and learners—to interact with additional (often dissenting) facts, opinions, and perspectives, and expecting the researcher to attempt to learn from those he or she never considered before often improve the study. So research justified within and by a heterogeneous epistemic collective is likely to be better justified. Heterogeneity is a constitutive element of TSA, while "science as usual" tends to test itself mainly in homogenous social settings, regarding the studied subjects as context-independent representations of a general population. Therefore, scientific results and procedures can—and when they can, should—employ TSA alongside traditional procedures of justification.

In addition, scientists—being normatively committed to accurately and comprehensively describe, explain, and predict reality—typically hold a basic requirement to use all relevant available sources of information. For that purpose, and given the existing heterogeneity of perspectives in society, in the human sciences and in other disciplines, it is important to include a heterogeneous pool of perspectives in the research practice. However, most research is undertaken within a rather homogeneous community, with very little public interaction. Consequentially, many potentially useful perspectives in philosophy of science are excluded from the public and the scientific realm. This, perhaps, makes it problematic to argue for the generalizability of these philosophical and scientific theories. In addition, a homogeneous composition that tends to characterize the scientific community is more susceptible to phenomena like groupthink. Groupthink facilitates an exclusion and disregarding of perspectives—especially those of minorities and nonexperts—thus resulting in a loss of information and, more importantly, epistemic injustice inflicted against minorities and nonexperts. The scientific community typically aims for being "right" in both the epistemic and the moral sense (Longino 2004). Therefore, this community has a basic need to proactively render its perspective composition more heterogeneous and appeal to the public for participation in the scientific process whenever it is possible to do so. Such

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heterogeneity of perspectives and public involvement are core features of TSA. Therefore, science—in the normative sense—can—and when it can, should—employ TSA.

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Notes

1. In this article, we use the analytic tradition of concept notation. If quoting the concept's usage, it will appear as "X" (e.g., Fisher's "diversity" is defined as …), when explicitly mentioned as a concept it will appear as X (e.g., the concept of diversity is …), and when implicitly mentioned as a concept it will appear as 'X' (e.g., 'heterogeneity' here describes …).

2. Therefore, even in those few courses where no group deliberation takes place, where a single professor speaks about (say) quantum physics while everyone else only listens and, at most, asks clarifying questions, the mere fact that the professor looks at an audience so different from his or her usual "home base" improves the professor's explanations and clarifying examples (G. Rytbow, personal communication, October 2015).

3. In that sense, some might say that it is more robust, but it is merely better confirmed by the addition of one more setting—an extremely different setting—for testing.

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