Categories of Expertise at Citizendium

Recently there has been a great deal of interest in open, computer-mediated systems for collaborative knowledge production. Collaborative knowledge production involves people working together to produce knowledge goods of some sort, for example encyclopedia entries, documentary videos, computer software, or scholarly papers. Traditionally, work of this kind accords some sort of value to expertise. But when collaboration is mediated via computer networks and open to anyone who wishes to join, it can be difficult for participants to know the kind or degree of expertise possessed by their fellow collaborators. Indeed, it can be difficult to even define what expertise is or how to determine who possesses it. In this paper I examine one nascent community’s attempt to make sense of these difficult issues as they work together to design a process for producing a high-quality online encyclopedia. Relying primarily on their publicly archived mailing list discussions, I attempt to trace the outlines of some of the participants’ various conceptualizations of expertise, and how these are being translated into rules and processes for the project. I conclude with a discussion of Collins and Evans’ proposal for a theory of expertise,¹ and how it may help clarify some of the challenges facing Citizendium.

The Citizendium project began in September 2006, when Larry Sanger, one of the original founders of Wikipedia, announced his intention to “fork” Wikipedia,² using its existing articles as a starting point for a new online encyclopedia that would “properly” recognize the role of expertise. As Sanger put it in response to a question from *Nature* magazine about the role of scientists in Citizendium:

One central reason we are setting this website up in the first place is to give scientists and other scholars a new organizational framework, as it were, to clean up and improve upon the work started

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² “Fork” is a term taken from open source software development, used to describe the process of using the source code of an existing software project as the basis for a new project with a separate development team, thus creating a fork in the history of revisions to the code.
by Wikipedia. ... It is time, then, that the intellectuals of the world, scientists included, gathered themselves together to, essentially, do Wikipedia right.³

The project website puts it more diplomatically, describing Citizendium as “an experimental new wiki project that combines public participation with gentle expert guidance.”⁴ A flurry of attention followed Sanger's announcement of the project, with some pundits claiming that it was going too far in its embrace of expertise,⁵ and others claiming that it wasn't going far enough.⁶ While the blogosphere raged over the feasibility of the project, Sanger began by setting up some mailing lists for discussing and planning. The following sections are based on discussions of expertise which occurred on these mailing lists from September to November 2006.

The role of experts at Wikipedia

Given Sanger's definition of Citizendium as “Wikipedia done right,” it makes sense to begin with Citizendium participants' perceptions of how expertise has fared at Wikipedia. One oft-cited reason for the creation of the Citizendium project is the perceived exodus of experts from Wikipedia. A page on Wikipedia's internal discussion wiki entitled “Expert Retention”⁷ attempts to document this phenomenon, listing specific instances of experts who have abandoned Wikipedia, and calling for constructive ideas on how further departures may be prevented. Many of the Citizendium participants relate anecdotes which they believe illustrate Wikipedia's inhospitality to experts. These stories often feature experts being driven away in exasperation by those lacking expertise. In some cases these stories refer to specific incidents that have occurred on Wikipedia, while in others they are presented as hypotheticals, presumably standing in for a class of events that happened or could have happened there. One

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particularly common form of the story is the “wise professor vs. the immature student.” Sanger decries the “callow 20-year-old college undergraduate” who drives away “a 50-year-old college professor.”

Another Citizendium volunteer describes the scenario:

*If you and your worst student both worked on a Wikipedia article, he could argue with you to Hell and back over some point of content (on which he's clearly wrong), and be allowed to get away with it. In fact, he'd probably win by virtue of having the most free time.*

In other versions of the story a “crank” faces off against “a bevy of PhDs,” or new agers force “Astral Planes and Crystal Healing” upon scholars of metaphysics. The recurring theme is that of experts doing battle with non-experts at Wikipedia, and losing.

One participant argues that the reason for the ongoing struggle is that experts have not found a stable role at Wikipedia, because Wikipedians have defined expertise as something that exists wholly outside the project:

*In my experience one of the things that makes Wikipedia work—and also never stops giving it trouble—is the separation between the realm of 'experts' who establish 'true facts' and the realm of 'Wikipedians' who summarize and report on those facts. It is only by designating people outside of the realm of Wikipedia as expert and authoritative (via "verifiability, not truth" thresholds for inclusion) that you can create a space inside Wikipedia where all that is needed for participation is passion for learning and sharing knowledge.*

He goes on to suggest that the challenge Citizendium faces is how to bring expertise “inside” the project, mixing experts with the kind of “knowledge enthusiasts” found at Wikipedia. From this perspective, the problem is not that experts are leaving Wikipedia, but that space was never made for them there in the first place.

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The Fundamental Policies of Citizendium

In order to create such a space at Citizendium, Sanger established a set of “fundamental policies” for the project. The goal of these policies, according to Sanger, is to create “an expert-guided, well-governed system—not, necessarily, a utopian egalitarian one.” The policies are thus primarily concerned with the delineation of three main roles for Citizendium participants and the requirements to be met before one can be granted permission to act in those roles.

The first role is that of Author. An Author can edit or add new content to any page on Citizendium. On Wikipedia, anyone with a web browser has permission to do these things, but on Citizendium a would-be Author must provide her real name and a short biography before she can be granted permission to edit. (The policy initially stated that a CV was required as well, but this requirement was quickly revoked to encourage more applications.) It should be noted, however, that expertise of any kind is not specified as a requirement for Authorship. It is this “category of non-expert authors” that provides the “public participation” component of the Citizendium project. Still, the bar for becoming an Author is clearly far higher than it is on Wikipedia. The ramifications of this for recruiting participants to the project remain to be seen.

The “gentle expert guidance” component of Citizendium is provided by Editors. The name is somewhat misleading—as explained above, Editors share editing rights with Authors. A more suitable name for Editors might be Experts, because the requirements for Editorship include (in addition to the basic

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15 The descriptions presented here are based on the “Statement of Fundamental Policies” as well as a number of other documents at Citizendium.org, particularly the “Call for applications to participate in the Citizendium Pilot Project,” [http://citizendium.org/cfa.html](http://citizendium.org/cfa.html), the “Citizendium FAQ,” [http://citizendium.org/index.html#faq](http://citizendium.org/index.html#faq), and the “Citizendium FAQ,” [http://citizendium.org/index.html#faq](http://citizendium.org/index.html#faq).
requirements for Authorship) documentation of one's expertise: specifically, a CV with links to supporting documents such as conference proceedings, an academic departmental home page, or an official work web page. Given that Authors can edit as they please, what is the role of Editors?

The Fundamental Policies state that Editors have the final say in questions about article contents, and that only they can “approve” pages. “Approving” pages is the proposed process for creating two tiers of content at Citizendium: a curated selection of carefully examined articles for public display, and a larger, less quality-assured repository of “unapproved” articles that are only accessible after clicking through warnings that the content is unreliable. This approach is borrowed from open source software projects, which usually maintain both “stable” and “unstable” versions of their code, recommending that only experts run the latter. As described in the Fundamental Policies, the “unstable” tier at Citizendium sounds very similar to the current Wikipedia, except with an enforced division of participants into Editors and Authors.

What distinguishes Editors from Authors is that the former have authority to which the latter must submit. Making sure that they do so is the task of the final category of participants, the Constables. Constables, whose task is to enforce the Fundamental Policies, must be (according those policies) “persons of mature judgment.” In a message to the Citizendium-l list, Sangers clarifies that this means an undergraduate degree from a four-year college or university.17 Thus the requirement for becoming a Constable is in some ways the most stringent of the three positions. While it is possible that, for example, a precocious fourteen-year-old might become an Editor on the strength of his accomplishments in some particular area of expertise, he would not be allowed to become a Constable until he had received a bachelor's degree. The four-year degree requirement is intended to guarantee a certain level of maturity

among Constables, rather than any specific expertise. In other words, it is meant to preclude Sanger's scenario with the “callow 20-year-old college undergraduate making key enforcement decisions.”

Beyond Authors, Editors, and Constables, the governing structure of Citizendium is somewhat hazy. Sanger sometimes refers to an “executive committee” composed of “persons who, on anyone's view, are definitely editor material”\(^\text{18}\) who will help to decide the specifics of how and when Authors must submit to Editors and both must submit to Constables. It is unclear to what extent policy changes will be determined by this committee, and to what extent they will be subject to a more democratic process. The governance of Citizendium is an interesting topic, and not unrelated to problems of expertise. However, in the following sections I will leave this issue aside and focus instead on the definitions of and debates about the concept of expertise.

**“True” experts, communicative experts, social experts**

Several participants contrasted “experts” with editors (in the ordinary sense of a people who prepare material for publication, not to be confused with Editors). The former are said to be concerned with issues like truth, accuracy, and correctness. The latter focus on orthogonal aspects like readability, clarity, and organization. As one former tax-law editor (someone who has filled both roles) puts it:

> Think of a professional journal... The "editor" is the one who checks the grammar and spelling and footnotes and makes sure what it says is expressed clearly enough, but the peer "reviewer" is the expert on whether the content is acceptable for publication, either because it reflects what practitioners in that field believe now or because it suggests some new development that they believe may be possible. I'm not saying an editor *can't* be an expert in the subject, I'm saying an editor *need not* be an expert.\(^\text{19}\)

Furthermore, it is suggested that to be effective on a wiki requires special expertise even beyond what

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traditional editors hold, expertise in “social interaction and collaborative editing.” These skills are not described as kinds of expertise in the Citizendium community, but it might be productive to do so, as I will discuss in the final part of this paper.

**Experts as gatekeepers**

Some participants see experts as gatekeepers, seeking to control what kinds of topics Citizendium covers. They worry about Editors using their expert authority to make judgments on worthiness for inclusion. Sanger, seeking to soothe such worries, is emphatic that experts should not seek to constrain *a priori* the subjects to be included, but rather should ask if there is sufficient labor or expertise available to do a given subject justice:

> As we said from practically the first day of Wikipedia, wiki is not paper. Given that, it is puzzling to me why anyone would think there is such a thing as information that is not important enough to be in the compendium. If the information is roughly encyclopedic—if you can imagine it being in an encyclopedia of Yu-Gi-Oh!—the only question is whether we can *properly maintain all information of that sort*.  

Even with such an inclusive approach to topics, however, there is still a role for gatekeeping by experts at Citizendium, as Editors make final judgments about which perspectives on a given topic are worthy of inclusion. In other words, no one can rule out Yu-Gi-Oh! as a topic, but the Yu-Gi-Oh! editor can keep the ravings of fringe Yu-Gi-Oh! theorists out of the public view.

**Expertise and Point of View**

At Wikipedia, the proposed solution to the problem of which perspectives to include in an article on a topic is to find the “neutral point of view,” abbreviated as NPOV. The NPOV, according to official

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Wikipedia policy, is the point from which other views can be seen “fairly, proportionately and without bias.”

Other participants suggest that it is Wikipedia's insistence on a single NPOV which leads to problems, including clashes between experts and non-experts and “POV pushing:”

> The Wikipedia insists that there is one POV, and one POV only - NPOV. It has no mechanism for fairly and clearly presenting all side of a complex argument. Because of this, people feel they must push lest *their* POV be edited out of existence.

They seek better handling of points of view by delegating decisions to expert authorities. One participant suggests that the solution is simply to replace the notion of NPOV with “expert point of view:”

> In my opinion, the best solution is to have a written policy that explicitly assigns one particular point of view as the expert point of view.

The objection is then raised that such a policy will not scale:

> How are we to maintain a list of designated expert points of view for each and every possible subject? It seems this amounts to keeping a separate set of criteria-for-expertthood for each article out of millions.

As an alternative to designating a single neutral or expert POV for a given subject, it is sometimes suggested that Citizendum should instead find a way to present multiple points of view side-by-side, calling to mind Haraway's notion of “webbed objectivity,” in which a conversation among multiple partially shared perspectives replaces the illusory “view from above” of traditional objectivity:

> I want to read both POV and read an article that clearly states I am witness to the study and explanation of as-yet unproven theory unfolding in front of my eyes... and being expounded by the very people who are at its forefront.

As the latter part of the previous statement makes clear, however, not all points of view are created equal.

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The writer above wants to read about various expert points of view, from those who are at the “forefront” of a field—not, presumably, from those at its margins. Sanger, arguing for a “proportional representation” approach to presenting competing points of view, takes a similar position regarding the question of which points of view should be included, writing that “when one must portion out relatively limited space to competing viewpoints, one does so in roughly the proportions of scientific opinion on a subject.”28 According to Sanger's policy, when the topic in question is a scientific one, fringe scientists ought to have their perspectives represented on Citizendium, but fringe non-scientists can safely be excluded (as they no doubt will be, since they will not be allowed to become Editors of scientific subjects). He does not however, elaborate on what to do for non-scientific subjects.

Closely related to the expressed desire for expert point(s) of view as an alternative to NPOV is the appeal to the “skeptical” or “objective” point of view, which many Citizendium participants associate with scientific training. One writer, lamenting the activity of “unskeptical fanatics and fundamentalists” on religious topics at Wikipedia, argues that Citizendium ought to define expertise in such a way that, for example, imams would not be considered experts on Islam, due to their lack of skepticism.29 Others suggest that objectivity is a special form of expertise. But just as a subject-matter expert may have expertise on some subjects and not on others, so too do “objectivity experts” have expertise only within limited domains:

> We also need to be aware that people might be objective in one area and biased in another... I think “objectivity experts” need to be up-front about what areas they can and cannot be objective in.30

If we continue along this line of reasoning, it seems that any given topic on Citizendium may need its own set of subject-matter experts for those points of view that have qualified as expert ones, as well as its
own objectivity expert for mediating among the former. And this doesn't even take into account the proposals made for “tiers” of experts, where lower-level experts are entrusted to decide upon lesser issues but must submit to higher-level experts on more fundamental ones. The goal of all this piling of experts upon experts is to avoid the messiness and drama of “POV pushing” that marks the struggle to define a NPOV on Wikipedia. Many of the most active Citizendium participants have been burned in such struggles and are not eager to repeat their experiences. They imagine as an alternative an idealized “scientific” process for constructing explanations, where there is always a “higher-tier” expert or “objectivity expert” to mediate disputes. But as one Citizendium participant eloquently argues, it may not be possible to avoid the messiness of Wikipedia-style debate, no matter how many experts are involved:

_Scholarly and scientific debate just repeats in miniature the sorts of processes of persuasion, consensus formation, argumentation, and ad hominem attack that characterizes the Wikipedia. It is only when viewed from the outside that our scholarly consensus appears as a fixed fact._

But unlike Wikipedia, “scholarly and scientific debate” usually erects barriers to participation. While Citizendium may not be able to avoid the conflict and struggle found at Wikipedia—and thus may fail to achieve the stated goal of many of its early participants—it can at least ensure that they are played out on a smaller and more manageable scale by erecting such barriers. One way of doing this is to require proper credentials.

**Expert Credentials**

Citizendium participants occasionally voice concerns about “self-declared” experts. One writer worries that a purely internal system of credentialing at Citizendium will give no advantage over the “unskeptical fundamentalists” he wishes to exclude from the group considered to have expertise in religious subjects (see above):

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Citizendium’s system of self-declared experts will be exploited by a priestly class of self-declared experts on their own religions or cults.\(^{32}\)

The clash of various interest groups or “POV pushers” who seek to define expertise in ways that exclude their ideological opponents is portrayed as a major problem at Wikipedia. Another writer warns of “Wikipedia-style fractiousness” characterized by arguments about the nature of expertise:

‘I declare myself an expert on this subject. You disagree because you don’t really know what expertise is.’\(^{33}\)

One strategy for avoiding such disagreements is to require outside support for claims to expertise. Sanger is firm in his belief that claims of expertise must be linked to the outside world via supporting documentation:

*This project is to be *continuous* with the rest of the world, in a real sense, not its own little provincial world with our own identities and our own credentials.*\(^{34}\)

Outside support can be supplied by institutions such as schools or companies via credentials such as degrees or positions held. Work published in venues with known review processes also can constitute such support. The Citizendium call for applications\(^{35}\) lists conference proceedings, departmental home pages, and “official work Web page[s]” as examples of the kinds supporting documentation that should accompany applications for Editorship.

Of course, there are bound to be second-order arguments over the credentialing processes of these outside institutions as well as disputes over the authenticity of the documents provided. *Curriculum vitae* are easily faked, and no mechanism is specified for checking the veracity of claims made. But Sanger believes that Citizendium should not seek to legislate specifically which credentials will be accepted as


\(^{35}\) [http://citizendium.org/cfa.html](http://citizendium.org/cfa.html)
proof of expertise. To do so runs the risk of a overly restricting the pool of volunteers on which Citizendium depends. He argues that “self-selection,” allowing applicants to specify the credentials which they believe qualify them as experts, will result in the broadest spectrum of participation in Citizendium. Instead of specific credentialing documents, he proposes a principal for deciding on a per-topic basis which credentials will be accepted:

[W]hat set of objectively verifiable credentials is an at least minimally sufficient indicator of an ability to identify reliably whether an article on some specialized topic is faithful to a broad spectrum of expert opinion?^{36}

Applying this principle may prove difficult in practice, as participants wrangle over the meaning of “objectively verifiable,” “minimally sufficient,” “reliably,” and “faithful,” not to mention just how broad the “spectrum of expert opinion” is. Still, such arguing over the minutiae of credentialing may be an improvement over the situation at Wikipedia, where the arguments concern whether outside credentials have any meaning at all.

Open source software development, the most well-known and successful example of open collaborative production to date, has historically eschewed outside systems of credentialing for internally-defined meritocracies. As Steven Weber has argued, software development is ideally suited for measuring expertise in terms of contributions made.^{37} Lines of code can be counted, bug fixes tallied, routine runtime speeds timed, all while the compiler and version control software maintain standards. Wikipedia is firmly in the tradition of this “inside” approach, and some Citizendium participants want to continue in that direction, looking not to outside systems of credentialing for salvation but to better technological systems for assessing expertise based on internally-defined criteria, such as “the quality and quantity of content”^{38} contributed:

I would encourage us to explore methods of implementing verification that take into account the 'inside' view.... I'd be interested more interested in karma (or weighted 'whuffie') systems which allows people to share their opinion about how 'true' an article, and which allows readers to judge what other people think about it. It is a more accurate way to model how consensus about knowledge is formed than insisting on 'fore-lock tugging authority' which, in my opinions, imports the vestiges of an untenable expert/enthusiast distinction into Citizendium.\textsuperscript{39}

A number of technological systems for measuring the quality and quantity of contributions have been proposed on the Citizendium mailing lists. Among the measures proposed\textsuperscript{40} are implicit measures of content quality, based on statistics like the number of hits a page receives or the frequency of changes to the page, which would then used to calculate “karma” for the contributors to those pages. They also include explicit rating or tagging of content and participants, as featured in many online marketplaces.

As designers of reputation systems have learned, such systems need to be able to identify users reliably to be fully effective, otherwise negative reputations can be just be discarded and a new pseudonym registered. Drawing an analogy between the problem of validating claims of expertise and the problem of validating identity claims, some Citizendium participants advocate adopting “web of trust” architectures such as the one used in PGP standard.\textsuperscript{41} Such an architecture could be used either to support outside credentialing by reliably linking online identities to real-world identities, or as a way to ensure that systems for internal credentialing can reliably link participants to their contributions.

Proponents of technological systems for measuring contributions argue that they represent “a way between” the anarchic free-for-all of Wikipedia and “arbitrary” criterion of an academic degree,\textsuperscript{42} and that they needn't replace human judgments:

\textsuperscript{39} \url{https://lists.purdue.edu/pipermail/citizendium-l/2006-September/000156.html}
\textsuperscript{41} \url{https://lists.purdue.edu/pipermail/citizendium-l/2006-September/000191.html}
\textsuperscript{42} \url{https://lists.purdue.edu/pipermail/citizendium-l/2006-September/000389.html}
...it doesn't have to be a replacement for anything that's already in place. It can simply be a piece of the infrastructure that's available to give its opinion when asked.  

### Enforcing Expert Authority

Whether linked to outside institutions or calculated automatically, credentials alone are not enough to ensure that experts can take on a “guiding” role in the editorial process. In fact, one Wikipedia veteran suggests that the issue of credentials is a red herring, noting that in his experience “experts tend quickly to recognise other experts and gang up against the mad people.” The real problem, he contends, is not recognition of expertise, but the experts' lack of authority or power over “the mad people.” Lacking any “special powers” to overrule them, the experts become locked in an unwinnable battle for control.

At Citizendium, the authority of experts is meant to be codified in the Fundamental Policies, which empower Editors to make final decisions, including approval, about articles in their area of expertise. The enforcement of these policies is the duty of the Constables, who have the power to sanction participants who do not submit to the Fundamental Policies. The precise nature of this enforcement is not spelled out in the Policies, beyond the promise that there will be “a process for rapidly removing rulebreakers from the project” and “extensive creative efforts toward effective design of oversight processes” to ensure that Constables' authority is not abused. One aspect of these oversight processes is the “separation of powers” among Constables and Editors: the former cannot make editorial decisions, while the latter cannot enforce their own decisions. In a sense, Constables are expected to have a kind of legal expertise that will enable them to make fair judgments aligned with the Fundamental Policies.

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Categories of expertise

Reviewing the discussion above, there seems to be a multifaceted view of the notion of expertise among Citizendium participants. One might be an expert on a particular subject, an expert at communicating effectively, an expert in social interaction, an expert at being objective about a particular topic, or an expert at deciding fairly. But these categories are not clearly expressed in the discourse around expertise at Citizendium, sometimes leading to confusion. Might a more nuanced vocabulary for discussing expertise help clarify the issues facing Citizendium?

Collins and Evans propose a categorization of expertise as part of a larger theory of expertise that seeks to prescribe how technical decision-making should be divided among experts and laypeople. Unlike discredited theories of expertise which posit experts as having special access to esoteric truth or knowledge, their notion of expertise is based on experience. Giving the the example of social scientists who study other scientists and must familiarize themselves with their informants' work, they define interactive expertise as the level of expertise needed to participate in some activity on a level at which it can be meaningfully analyzed. Contributory expertise, on the other hand, is defined as the level of expertise needed to actually make recognized contributions to some body of knowledge. Finally, referred expertise depends on one's experience of having had contributory expertise in another, related field. Collins and Evans note that managers often have referred expertise with respect to the experts they manage.

For topics like physics, where concepts of truth and knowledge are generally viewed by the public as fixed, expertise is firmly associated with specific kinds of credentials, leading to statements like “I want

physics articles to be primarily written by people with doctorates in physics." But due to Sanger's inclusive approach to article topics, there are bound to be a great number of topics for which official credentials do not exist. In these cases it may be useful to consider whether would-be Editors have contributory expertise or interactive expertise in a given area, and how much weight should be accorded to the two kinds of expertise. Collins and Evans note that in some areas such as the arts, interactive expertise (such as that held by art or music critics) may be privileged over contributory expertise, while in the sciences usually only contributory expertise is recognized.

Collins and Evans also argue that certain kinds of decisions required a combination of forms of expertise to be made effectively. While Citizendium is not concerned with decision-making per se, there is still a need for various kinds of experts with knowledge in separate domains to work together. Collins and Evans posit that for such a combination to take place between two groups of experts, one of the groups must have interactive competence in the other group's area of expertise. However, they go on to prescribe that, in such cases, the group lacking interactive expertise ought to be represented by someone with enough interactive expertise to fairly represent that group's perspective. This role is filled by a translator.

A translator is a person with interactive expertise in two or more areas, who takes on the role of outsider in respect to two or more groups of experts and translates between them, allowing them to combine their expertise. A translator need not have contributory expertise in any area, but possesses the hard to define skills of effective communication, skills that Collins and Evans attribute to “the journalist, the teacher, the novelist, the playwright,” and “the qualitative sociologist.” A list of characteristics of a good Citizendium editor sounds very much like Collins and Evans' description of a translator, using

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47 “Third Wave of Science Studies,” 58.
interactive expertise to arbitrate and mediate among other experts.

While translation is concerned with bringing experts together, *discrimination* focuses on distinguishing them from non-experts. Discrimination is the ability to make judgments about claims to expertise, even in areas where one lacks any expertise, based on one's “social knowledge,” or interactive expertise in living in society. When we use knowledge about prestige, credibility, character, or consistency to decide whether to trust someone as an expert authority, we are exercising discrimination regarding claims to expertise. Making discriminations of this kind is what Patrick Wilson describes as recognizing “cognitive authority:”

> All I know of the world beyond the narrow range of my own personal experience is what others have told me. It is all hearsay. But I do not count all hearsay as equally reliable. Some people know what they are talking about, others do not. Those who do are my cognitive authorities.⁴⁹

Collins and Evans take pains to distinguish discrimination from mere criticism:

> Distrust is easy; sophisticated evaluation is difficult. The hard problem is to make the evaluations sophisticated enough to be able to do more than just criticize; the public has also to struggle with the very, very difficult problem of making positive evaluations...⁵⁰

Translation and discrimination could also be useful concepts for the Citizendium community as they seek to define the role of Editors. For example, should Editors have contributory expertise in the subjects for which they are responsible, or will interactive expertise suffice? The former may be preferable for relatively stable subjects, but for less settled subjects an Editor with interactive expertise across a range of relevant areas of knowledge may be preferable. And whether or not an Editor has to translate between knowledge domains or points of view, she still must translate between expert authors and lay readers.

Regardless of how effective some participants might be at translation, there will inevitably be situations

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⁵⁰ “Third Wave of Science Studies,” 281.
in which Editors fall into dispute. In these cases Constables must be able to discriminate among competing claims to expertise and decide who should be granted cognitive authority. It is interesting to consider whether the “separation of powers” between Editors and Constables might generalize to a design pattern in which the translation process is insulated from the discrimination process and vice versa.

A prescriptive theory for reasoning about the role of expertise could be a great help to planners and designers of systems for open collaborative knowledge production. The Citizendium project provides an excellent opportunity to observe a specific community struggle with issues of expertise, and thus to develop and refine such a theory. Ironically, while Collins and Evans are mainly concerned with the problem of how to bring the “non-experts” (those lacking credentials) into a decision-making process, their theory may prove equally applicable to the problem of how to bring the experts into the peer production process.