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The Need for Rhetorical Listening to Ground Scientific Objectivity

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ABSTRACT: Recent work in feminist and postcolonial rhetoric demonstrates various meanings of silence (Glenn 2004). Listening rhetorically in order to comprehend silences (Ratcliffe 2006) is particularly difficult in scientific contexts, I argue, because the common ground for scientific discourse assumes a culture of disclosure. Rhetorical listening is also important to science because listening accounts for silence as well as disclosure, and so maximizes the diversity in recognized perspectives that provides scientific objectivity (Longino 1990; 2004).

KEYWORDS: disclosure, dissent, diversity, epistemology, listening, objectivity, rhetoric, science, silence, virtue

1. INTRODUCTION

Scientific communities are somewhat unique in demanding from individual members publication of new understandings and ongoing critical engagement among them, yet even scientists don't disclose all their experiences and beliefs. Furthermore, science is not isolated but integrated to various degrees with other communities, which contributes to the objectivity of scientific discourse. Yet, these extra-scientific environments don't enforce the same norm of disclosure, and in these other environments silence conveys a range of different meanings. Therefore, to draw understanding from other communities, science must address the various significances of silence, and employ the rhetorical skill of listening. Indeed, because rhetorical listening addresses both silence and disclosure, I argue that it is a more basic scientific value than disclosure.

2. DISCLOSURE SERVES OBJECTIVITY

The role of criticism in science depends on scientists disclosing their understandings. The *availability* of conflicting viewpoints is necessary for scientific objectivity, and likewise for objectivity in many less empirical forms of inquiry, as Helen Longino argues (1990, 75-6). Objectivity depends on the logical publicity of science to provide criticism that is not available for other understandings, such as the mystical or emotional (Longino 1990, 70). The environment in which scientists explore alternative theories, conflicting evidence, and various social purposes relies on the medium of a common language and the existence of objects that are independent of subjective individual experience.

By contrast, outside of science we don't expect people to disclose all of their experiences or understandings. Disclosure generally depends on a perceived "need to

know,” that is on there being a reason to share, although we do withhold information that is clearly valuable to others when we are competing with them or wish them not to succeed. Although competition among scientists encourages premature publication and falsification of data, which is quite destructive, such behaviour is exceptional. The generally characteristic lack of competition among scientists, in view of their shared project of creating knowledge and specific shared investigations, well may be what permits the scientific mandate of disclosure.

I do not mean to support the outdated view that science is distinguished from non-science by reasoning that involves *no* background assumptions (Longino 1990, 45). Scientists never reveal everything that they know or believe, and much personal baggage and belief is left at the laboratory door. Some personal beliefs actually conflict with a person’s scientific work. Witness creationists who also work in biology and make regular use of the theory of evolution by natural selection. Also, beliefs that don’t directly conflict with scientific assumptions are kept silent: personal views and thoughts — regarding one’s children’s progress in school, or a bad haircut — are put out of one’s mind and kept out of conversation. Sharing beliefs or experiences that are not relevant to the task at hand would be problematic in many ways. After all, in no context ought people to express every passing thought.

Although silence is always necessary, silence in science is always in tension with the ongoing practice of disclosure. The expectation of disclosure is evident from the *scandals* about scientists keeping secrets and failing to disclose their findings, including the long history of the tobacco industry and more isolated instances like the Nancy Olivieri case in Toronto. Although sometimes the scandals depend on moral concerns, in addition, I suggest they involve epistemic matters. Cognitive concerns include in the first place science’s basic function to provide education; and, secondly its dependence on critical dialogue to provide objective understanding. Longino explains the social nature of objectivity:

Publication in a journal does not make an idea or result a brick in the edifice of knowledge. Its absorption is a much more complex process, involving such things as subsequent citation, use and modification by others, et cetera. Experimental data and hypotheses are transformed through the conflict and integration of a variety of points of view into what is ultimately accepted as scientific knowledge (Longino 1990, 69).

Therefore, “the greater the number of different points of view included in a given community, the more likely it is that its scientific practice will be objective.” (1990, 80) That is to say, the greater the range of disclosure, the greater the objectivity of the results.

3. EPISTEMICALLY VIRTUOUS BIAS

Ordinary experiential belief is not sufficient for scientific objectivity, which Longino argues requires ongoing confrontation and revelation of bias. For her some biases not only fill the gap between evidence and theory, they promote objectivity by revealing other biases, or background assumptions. Diversity of perspectives benefits scientific inquiry not by eliminating bias but by making biases more visible, and allowing specific scientific projects and individual scientists to be more *accountable* for their biases. This accountability provides the epistemic advantage that standpoint theorists argue is most readily available to people who oppose oppression (Hartsock 1983; Haraway 1990;

Hundleby 1997). For other social epistemologists, including Longino, the cognitive advantage of scrutinizing bias is not a matter of an individual person's situation, disposition or experience, but a matter of the publicity of competing views.

In any case, people, including scientists, are often silent about those aspects of our own points of view understood to be biases, especially the social and political values commonly viewed as negative impacts on understanding. However, personal biases of all sorts are considered necessary and inevitable aspects of science by many social epistemologists, such as Helen Longino (1990; 1994; 1997), Miriam Solomon (2001), Richmond Campbell (1997), and various standpoint theorists (Hartsock, 1983; Harding 1991; Hundleby 1997). The popular argument is that bias is necessary because of the underdetermination of theory by data. Theoretical assumptions mediated by various social and political values inform all evidence claims.

Thus, addressing silence is necessary for Longino's "contextual empiricism" in which scientific objectivity directly *requires* "making visible" background assumptions, such as sexist assumptions (1997). Because "visibility" on Longino's account depends on critical dialogue, and so on disclosure, it ignores the significance silence can have. Accounting for silence requires switching from a visual to an aural framework.

4. THE SCIENTIFIC PROTOCOLS OF DISCLOSURE

Institutional enforcement distinguishes the operation of disclosure in science. We expect disclosure from each other in all sorts of contexts, formal and informal. Some communities to which we belong, such as cities and countries and businesses, demand to learn things from us. The appropriateness and meaningfulness of disclosure depends substantially on the particular social environment, and how institutionalized it is. The more institutionalized, the more clear and the less negotiable are the practices regarding silence and disclosure. So, I argue that, as well as science's epistemic and specifically empirical focus, disclosure distinguishes science among other communities partly because it involves specific protocols that define which sorts of information scientists exchange. These protocols of disclosure make sharing information an obligation and having it requested a distinguishing honour.

Expectations regarding disclosure are not so clear in personal relationships, where the nature and extent of disclosure varies, and can be negotiated and renegotiated. Disclosure is extensive in personal relationships – family and friendship. So we may demand the truth from each other, but such demands tend to test existing social relationships, and sometimes to stretch and even to disrupt them. To request disclosure is to request a reconfiguring, or at least confirmation, of the nature of the relationship, to set new bounds for, or clarify, existing expectations of silence and sharing. Although if I ask that you to tell me about your date last week, it may be just a prompt, noting that I expect that sort of disclosure in our friendship, it can be a request for a new form of intimacy between us, a change in our relationship.

The boundaries within which scientists expect disclosure from each other are less negotiable. Laboratory operations, conference procedures, publication demands, and legal restrictions on intellectual property establish requirements for silence and disclosure. Similar rigidity defines academic discourse in general, and other institutionalized forms of inquiry. In legal environments and businesses, for instance, there are regular protocols

governing what is disclosed and what kept silent. Legal summons, or one's job description, can require one to disclose one's understanding, by legal summons for testimony. Such protocols seem to hold generally for any and all communities and organizations that pursue inquiry and develop knowledge. Indeed, such epistemic functions of a group may depend on its scientific status. The objectivity of a community requires similar protocols of disclosure, such as laws, collective agreements and contracts.

Nevertheless, by contrast with other institutions that develop knowledge (and all must to some extent), the *central and dominant* purpose of science is the development of knowledge; so, the expectation that scientists will disclose specific understandings is relentless. Whereas a silence of authoritative judgment or simple respect frequently greets legal testimony and business reports, scientific reports demand engagement. Otherwise, if a report receives neither challenges nor citation, the article was unworthy of publication or other scientists fail to find it worthwhile, and in either case science fails to progress.

The main exception, the acceptable silence, concerns assumptions about scientists' common personal background, an assumption that is warranted to various degrees by their similar training. Ignoring that assumption is efficient, and streamlines discourse, but it prevents *interrogation of the assumption itself*. Ignoring scientists' backgrounds and personal subjectivities encourages false assumptions and discourages consideration of the significance of the cultural baggage carried by individual scientists, and by theories these scientists develop.

In sum, disclosure is necessary for scientific objectivity, and expected because of institutional protocols. Protocols can be rigid and thus become ineffective if they impose silence over understandings that are relevant to the subject of inquiry. Or, the scientific function of silence, which is to set apart what is relevant to inquiry, may be the only recognized function of silence, projected onto other communities and cultures. People enculturated in the scientific functions of silence may ignore, forget or fail to realize how differently and flexibly silence operates in other contexts.

In other communities, the meaning of silence is less predictable. The common ambiguities, fluidities and the general *significance* of silence contrasts with the ways that science and the law regulate silence and disclosure. Silence is often more than a background limitation on the standards for disclosure; it is a *form* of communication.

5. THE RHETORIC OF SILENCE

Silence is frequently misunderstood, especially when we assume it signifies either acceptance or ignorance, and hence passivity. To the contrary, respect or deference, even disagreement or denial, can be signalled by silence. Being silent or imposing silence can serve strategic purposes, as Cheryl Glenn argues in Unspoken: A Rhetoric of Silence (2004, 4-5). "Silence can deploy power; it can defer to power. It all depends." (Glenn 2004, xi) "In our talkative Western culture... speech is synonymous with civilization itself and... silence-as-obedience is frequently rewarded." (Glenn 2004, xii) Thus, I suggest, our Western science may benefit from considering how silence may not mean acceptance, or even the obedience that passes for acceptance. Silence may in fact signify resistance to current scientific practices, and understanding such resistance would serve the objectivity of science.

Science institutionalizes the dominant European norms of conversation,¹ and conversation implies equality: no interruptions, taking turns, and no silence. Yet, positions of power, such as science and scientists hold, provide monopolies over the floor and the topics, and also provide the prerogative to remain silent at will. For instance, contemporary science ignores eugenics for moral reasons. Outside the institution of science, however, in conversations with negotiable boundaries, the longer the silence the more it indicates that the mode of speech is failing to produce conversation and needs to be changed (Glenn 2004, 6). Indicating the need for conversational change is one of the common meanings of silence.

Using silence effectively depends on power. The right to remain silent is important because silence provides power, or the ability to resist power. Glenn argues that the power of silence is demonstrated by the ways that former U.S. President Bill Clinton demanded the right to be silent about his infidelities, and in turn his wife received the authority to defend him. On the other hand, silence can be imposed: judges can require silence, and although women may speak more often than men, women are more frequently interrupted (Glenn 2004, 21-43). Consider how Monica Lewinsky was legally silenced, and the Clinton's other partners were criticized for coming forward (Glenn 2004, 77-106). Further, consider Anita Hill's summonsed testimony for the U.S. Senate Judiciary Committee about sexual harassment by her supervisor Clarence Thomas. (Hill does not herself use the words "sexual harassment", but what she describes is -- literally - - a textbook case.) Her choice to be silent for ten-years was treated as evidence of her dishonesty, although the type of public humiliation and loss of employment she subsequently endured obviously discourages disclosure about sexual harassment (Glenn 2004, 52-76). In addition to Glenn's explicitly political examples, feminists give reason to believe that many private activities, such as the production and consumption of pornography, are political because they silence women (MacKinnon 1993).

Such cases demonstrate specifically how the effective wielding of silence depends on gender, race and class. People may retreat into silence to protect themselves from attack of various kinds, yet silence does not always provide or signal safety. Silence can be a *symptom* of oppression, simply insofar as it is a sign that people feel vulnerable; but it can also be part of the *protocol* of oppression, a way of *making* a group of people vulnerable (Glenn 2004, 43-48).

Because silencing, or imposing silence, can be hurtful, a form of domination, protocols of silence are neither generally beneficial, as they are in science, where they frame and support institutional conversation, nor even benign. Confusion about silence is often warranted, and silence is notoriously and sometimes painfully ambiguous. Also, different ambiguities occur in different cultures, where people use silence to mean various different things; so, ambiguities multiply across cultures. Further, a position of privilege eliminates the need and discourages the desire to engage perspectives other than one's own. Thus privilege impedes the ability to understand another's silence, but science commands social prestige, and scientists generally have economic privilege. So both scientific communities and individual scientists have certain tendencies against understanding the various rhetorical functions of silence. This is a truly destructive form of bias.

¹ Some European rhetorical traditions are not conversational.

6. FORMS OF SILENT BIAS

Bias in science may be silent in various ways. Certainly some beliefs must function only in the background. Making assumptions is necessary, and making every assumption explicit is impossible. Yet scrutiny of background considerations improves the objectivity of knowledge, according to Longino. Discussion of the assumptions underlying a scientific theory requires making those assumptions visible, or audible. What cannot be seen or heard cannot be watched or listened to, and cannot have its role assessed. At least two distinct forms of silence about background assumptions affect science. The first concerns the background assumptions of accepted science, and the second alternative background assumptions.

It can be very difficult to scrutinize or even recognize the background assumptions in accepted science. The human tendency to seek out like-minded views and avoid dissenting views is known as the “confirmation bias.” In addition, when people in a group share the same biases, they are likely to reinforce each other’s bias. So, considering how the views of individuals may be distorted by shared biases becomes an issue of epistemic responsibility, as Hilary Kornblith (1995) argues. Yet shared biases become reinforced by scientific practice, as Kathleen Okruhlik (1995) argues: thorough testing of scientific theories only entrenches sociopolitical assumptions if that testing is never against theories supported by contrasting background beliefs. So, if only men in patriarchal cultures develop scientific theories, the result will be sexist science. Even if the culture is more diverse, as it certainly is, the confirmation bias entails that dissenting views are still rarely considered, and there is a tendency to homogeneity in outlook. The result is that science tends to preserve existing dominant background views. Even if nonsexist views are available in a scientific culture with a patriarchal heritage, they are unlikely to receive serious consideration. Alternatives are likely to be silent or silenced, and difficult to develop.

Silence does not necessarily indicate passive agreement or lack of understanding. Instead, politeness or deference, resignation to voicelessness, and even fear can mask dissent. Dissenters may feel threatened, especially if the dissent in any way resonates with their membership in a social minority, and they may retreat into the relative safety of silence (Glenn 2004). Finally, many scientists at home in the culture of disclosure — which they must be to some extent because of their scientific training — will have difficulty understanding and recognizing the potential to misunderstand how socially marginalized people use silence. This problem is exacerbated if their scientific training dovetails with their own European heritage.

How do we counteract the regressive misunderstandings of silence and the invisibility of background assumptions? Interaction between scientific and other communities, for instance communities of other professions and ethnic cultures and genders, provides valuable diversity in background assumptions that counteracts the confirmation bias. Western scientists have fairly uniform training complete with the European rhetorical heritage. Other communities become involved, however, in scientific work, when scientists deal with research ethicists, lawyers, plumbers, and even their own family members. These others may be better able than scientists themselves to critique the background assumptions of scientists because they are less vulnerable to the

confirmation bias as it operates in science. Therefore, they can contribute to the objectivity of science.

In these other environments, expressing or even developing one's own view is only sometimes encouraged to the extent it is in scientific communities. Certainly lawyers share a similar culture; they are forthcoming with their views, which may be attributed to the European rhetoric of disclosure. This aspect of European heritage clearly provides effective means for inquiry, and I don't mean to suggest that we need to change the central practices of science or the law. But we do need to think a bit more about the underlying values, about what exactly makes the norm of disclosure serve objectivity and the limits of that service. Disclosure facilitates confrontation among competing beliefs, but confrontation is not the universally effective means to advance understanding that many of us – including philosophers especially (Moulton 1983) – tend to assume it is.

Regulated disclosure is the exception, especially as scientists engage with non-European cultures, and across lines of oppression, such as race, gender and sexuality. In other contexts what is disclosed is much more subject to negotiation. So, to obtain disclosure, scientists must consider what it serves, and find common ground with silence, a basis for trust that is provided by the rhetoric of listening.

7. CONCLUSION: THE EPISTEMIC VALUE OF RHETORICAL LISTENING

The information conveyed by silence may be recognized only through careful listening practices. Understanding the rhetoric of silence, and developing rhetorical skill at listening, is necessary to recognize *relevant* silence: the silence that involves dissent or consent, trust and mistrust, all of which affect the objectivity of science. Ultimately, listening is a more basic scientific value than disclosure because listening addresses both the disclosure typical of science and the various forms of silence that can affect scientific inquiry.

Listening may seem to be unnecessary because the protocols of science govern what needs to be disclosed. However, the boundaries of disclosure are less clear outside of communities of inquiry such as science, and these communities affect the background assumptions of scientists, and in the social sciences the background assumptions of subjects. Scientists need to be sensitive to the rhetoric of silence, and develop rhetorical skill at listening in order to maximize objectivity and counteract the confirmation bias.

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[link to commentary](#)

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