

Chapter 3

Objectivity for Sciences from Below

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A distinctive standard for maximizing objectivity in research emerged from feminist discussions of the 1970s and 1980s.¹ This standard had to be stronger than the prevailing ones since the latter had permitted sexist and androcentric assumptions and practices to shape some of the very best research in biology and the social sciences. Of course one could expect social values and interests to influence the results of research projects that failed to insist on the most rigorous methods. But this kind of “bad science” was not the target of criticism here. The offending projects did already meet the prevailing research standards in their disciplines, whether quantitative or qualitative. Instead, the problem seemed to be that “good science” lacked the methodological resources to detect widely-held sexist and androcentric assumptions and practices that had shaped these results of research.²

Remedies for this situation have been debated for several decades. Here the focus will be on one set of principles for maximizing objectivity, referred to as “strong objectivity,” that originated in reflections on practices of the new feminist biology and social science research.³ These principles were articulated as standpoint

¹Another version of this essay, directed to a different readership, appears as “Chapter 2: Stronger Objectivity for Sciences From Below” in Harding 2015.

²For examples of this kind of claim in early feminist research, see Gilligan 1982; Harding and Hintikka 1983; Hubbard et al. 1992; Kelly-Gadol 1976; Millman and Kanter 1975; Reiter 1975.

³The language of “strong” objectivity and the call for symmetrical accounts of the objects and subjects of research – “locating the researcher in the same critical plane as the overt subject matter” – (Harding 1987, p. 8) will remind some science studies scholars of David Bloor’s “strong programme” for the sociology of science (Bloor 1976). Of course Bloor’s conception of the “good science” that should be used to critically examine the researcher and his commitments was

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epistemology or methodology beginning in Dorothy Smith's work in the early 1970s.⁴ Standpoint theories explained how assumptions about the superiority of men and inferiority of women, whether justified in biological or social terms, were so widely accepted in the sciences and their surrounding societies that the prevailing standards and associated practices for good method in each discipline could not detect them. That is, such assumptions are best conceptualized not as idiosyncratic or as ones held by individuals, as the prevailing philosophies of science assumed, but rather as ones shared by groups. Similarly, assumptions such as those of male supremacy, white supremacy, and Eurocentrism were held virtually society-wide. Consequently the repetition of observational procedures by subsequent researchers who shared the same assumptions could not enable their identification. The strong objectivity program then "operationalized" its more effective standards in methodological directives to start off research from outside the conceptual frameworks of the disciplines – for example, from the daily lives of women. Such politically and economically vulnerable groups received fewer of the benefits and bore more of the costs of the conceptual frameworks and everyday practices of dominant social institutions, including research disciplines. From the standpoint of their lives, the assumptions and practices of those who most benefitted from such institutions might well look different.⁵ This was the insight that had generated so many of the early feminist criticisms of the law, government practices, the economy, the health care system, education systems, and dominant models of the ideal family. Standpoint theorists brought such perspectives into an examination of the production of scientific knowledge.

Here I first set in context some of the some main sources of the controversiality of the very idea of such a program as this one. Section 3.2 identifies further flaws with the neutrality ideal that standpoint theory and its strong objectivity have been constituted to meet and explains further the strong objectivity standard and practices recommended to improve both the reliability of sciences and their politics. Section 3.3 notes a number of ways in which this way of thinking about maximally objective research aligns with claims and projects of the social studies

precisely the one that is the target of criticism in the present paper. Ethnographers will be reminded of the reflexivity debates in their field of the 1980s and 1990s (See, e.g. Elam and Juhlin 1998). All of these related concerns were "in the air" and no doubt shaped my thinking when I first began to formulate these issues in the mid-1980s. I recollect that at the time my immediate concern was to capture the concept of objectivity that was already informally in use on behalf of a feminism that was persistently accused of abandoning objectivity, rationality, and good method. For better or worse, I intended to do so with as macho language as possible.

⁴Smith 1987, 1990. Smith always insisted on "the standpoint of women" in order to emphasize its origins in women's everyday lives rather than in feminist theory. See also Collins 1991, Haraway 1988, Harding 1986, Hartsock 1983, Jaggar 1988, Rose 1983. These and other subsequent essays developing and criticizing standpoint theory are collected in Harding ed. 2004.

⁵I first developed the notion of strong objectivity in my 1991 and 1993. Evelyn Fox Keller (1983), Karen Barad (2007) and Elisabeth Lloyd (1996) provide examples of three other valuable but quite different critical approaches to the "weak objectivity" question. Only my strong objectivity project is conjoined to standpoint epistemology/methodology.

of science and technology (SSST). That is, a good deal of the criticism of the strong objectivity program can be accounted for in terms of the “critics” ignorance of or resistance to the accounts produced by SSST in its almost five decades of research and analysis. The final section briefly identifies and responds to some of the most common misreadings and resistances to strong objectivity.

3.1 Sources of Controversy

This project was controversial from the beginning and remains so today. Of course it was initially perceived by many as arrogant and beyond the borders of reason to be challenging the standards that had produced some of the very best of Western sciences. The strong objectivity program seemed to such critics to be abandoning truth, reason, and probably even Western civilization! It was even more offensive to most of such critics to claim that there was something to be learned by starting off from women’s lives to identify just what was wrong with such standards. Such reactions appeared from both the left and the right in the “science wars” of the 1980s and early 1990s.

Reflecting for a moment on how the strong objectivity project differs from the kind of “talking about objectivity” that Ian Hacking has so effectively criticized can lead to recognition of the philosophic context that has made the strong objectivity project and its standpoint theory so controversial to many and so valuable to many others. Citing a maxim of J. L. Austin, Gilbert Ryle, and other Oxford linguistic philosophers, Hacking says “one should be wary of fancy words conceived in philosophical sin – rationality and reality for example. Objectivity is among them” (Chap. 2, in this collection). Instead of invoking such “elevator words” intended to increase the authority of a claim, we should simply talk about the concrete “objective facts” about the issue. For example we can “look at the numbers, their authors, their methods, their interests, etc. Always, I say, work on the ground floor” (Hacking 1999). Hacking is certainly right about the vacuity of far too many invocations of objectivity in support of scientific claims.

Yet I think that my discussion here escapes these charges in several ways. First, it fits under Hacking’s account of the virtues of Lorraine Daston and Peter Galison’s *Objectivity* (2007), “a masterful historical study of an epistemological concept” (Chap. 4, in this collection). He says that “this falls under historical meta-epistemology . . .” which “. . . is a good thing”.⁶ “*Objectivity* is about the concept of objectivity, its past uses, and the practices associated with it” (Ibid.). Such meta-epistemological uses do not fall under his general charge against invoking objectivity-in-the-abstract. Daston and Galison document the changing standards for achieving objectivity in the representations in atlases of plants, animals,

⁶I certainly am not claiming that the work of strong objectivity and standpoint theorists is in the same category as the truly magisterial historical study that Daston and Galison provide.

constellations and other natural phenomena. Similarly, my discussion here is also about history, but in this case it is history-in-the making. It is about how the standards for maximizing objective research around the globe are already shifting in response to identifiable changes in social relations. It, too is about the past uses and the practices associated with the term, “. . . the sites within which they were deployed, who had authority when using them, the actual modes of inscription” (Ibid.).

This last phrase draws attention to how Daston and Galison’s account is about changes in the *methodologies* for achieving “right sight” in the atlases. Thus the introduction of photography and, more recently, nano-technologies each generated new practices for accurately representing natural phenomena. So, too, my discussion focuses on changes in the methodologies for maximizing more accurate representations of nature (and social relations). Here “strong objectivity” specifies particular research practices necessary to improve the reliability and scope of scientific claims.

Finally, the strong objectivity project is in the service of more effectively aligning scientific practices with democratic social and political goals. This epistemology/methodology emerges from and is explicitly intended to advance social, political, and ethical projects: these new standards and practices are intended to produce sciences *for* social justice movements, not just “right sight” for its own sake.⁷ Here, too, my project aligns with Daston and Galison’s. They invoke the phrase “right sight” to capture the ethical as well as epistemic dimensions of shifts in the concept of objectivity. New standards cast an ethical shadow over older standards as they reveal the flaws in the latter. The high quality and value of scientists’ older work can no more be assumed. In the case examined here, these new standards and practices were initially invoked by groups that showed how they had been harmed by the prevailing incompetent standards and practices for maximizing objectivity. Thus the adequacy of these new standards and practices was from their beginnings to be judged on not only epistemological/scientific grounds but also social/political/ethical ones.

Indeed, the most emotionally charged criticisms of the strong objectivity project have arisen because it challenges the particular epistemological/methodological solution that earlier generations settled on in their attempts to align scientific research more effectively with liberal democratic politics, and even with socialist democratic politics. Researchers and theorists between the two World Wars and at mid-century saw commitments to value-neutral research as the only reasonable standard of fairness capable of countering the tendency of fascistic and totalitarian ideologies masquerading as scientific to gain immense political power.⁸ That kind

⁷Of course some elevator uses of “objectivity” may have this goal while yet remaining methodologically vacuous.

⁸See, for example, Richardson 2003 and 2006, and Hollinger 1996. The value-neutrality principle was invoked earlier by Max Weber, of course, and even by Galileo for socially progressive purposes. I discuss George Reisch’s (2005) monumental analysis of these issues in Chapter 5 of Harding 2015.

of concern is certainly still relevant today, though we live in a more complex ethical and political environment.

Indeed, the threats to standards for good research in that era have been exacerbated by new challenges that were hardly imaginable then. The world has changed. Theorists in many democratic revolutions since the 1960s have argued that – paradoxical though it may appear – the supposedly value- and interest-neutrality goals and practices of modern Western sciences are not themselves value-neutral at all. Rather, in modern Western bureaucracies already structured by liberal political principles, appeals to neutrality tend to reinforce the institutional power of elite authority against the equality-seeking claims of economically and politically vulnerable groups. Such claims have been made not only against state and corporate economic and political practices, but also against the natural and social sciences that serve such elite institutions, whether or not intentionally. Furthermore, the emergence of the social studies of science and technology has been producing more and more details showing how the very best Western sciences have “an integrity with their era,” as Thomas S. Kuhn famously put the point (1962, p. 1).

Finally, the increasing presence of Muslims and of Islam in the West has raised issues about how much “tolerance,” how much pluralism and multiculturalism, prevailing Western Liberal democracies can and are willing to accommodate.⁹ This kind of challenge emerges in the sciences and science studies also in reevaluations of indigenous knowledge traditions. It turns out that challenges to prevailing standards of objectivity in science seem to require rethinking the principles of Western Liberal democracies. Yet this is a task greater than most scientists, philosophers of science or science studies scholars ever imagined they should have to take on. They are not trained in economic, social and political theory, let alone in the history of non-Western knowledge traditions. And the still-powerful legacy of the between-the-wars generation of philosophers of science directs them to create only “scientific philosophy,” that is, philosophy that does not align itself with particular political positions.¹⁰

Thus the terrain on which defenders of the strong objectivity program find themselves engaged includes an array of suspicious agents, such as funding agencies, tenure committees, the economically and politically vulnerable groups to whom they want to remain accountable, other social justice movements, and also defenders of the powerful epistemological and methodological legacy of social progressives in earlier generations.

⁹Calhoun et al. 2007, Jakobsen and Pellegrini 2008, Levey and Modood 2009. See Chapter 6 of Harding 2015 for further discussion of this issue.

¹⁰Though Richardson (2003, 2006) argues that that generation of philosophers of science was much more flexible in strategizing how to develop standards that advanced both the reliability and social progressiveness of the sciences than is suggested by the rigidly “positivist” positions usually attributed to them today.

3.2 The Logic of Standpoint Epistemology and Strong Objectivity

First, there is no single, fixed, eternal meaning of the term objectivity. Indeed, historians have shown how it is an essentially contested concept. In modern societies it remains a persistent site for controversies over conflicting knowledge claims. “[F]undamental ideals of Western society such as rationality and progress are grounded in certain conceptions of science. So when the value freedom of science is questioned, a fundamental institution in our lives is being challenged” (Kincaid et al. 2007, p. 4). Historian Robert Proctor points out how claims to objectivity sometimes are used to advance and sometimes to retard the growth of knowledge. Moreover, such claims have been made both on behalf of and against democratic research tendencies. He writes of objectivity being used in different historical contexts as “myth, mask, shield, and sword” (1991, p. 262).

In addition to its shifting meanings, the term also lacks a fixed referent. Objectivity – or the incapacity for it – has been attributed to individuals or groups of them, such as in uncomplimentary dismissals of women, African Americans, or the indigenous knowers of non-Western cultures as subjective and incapable of producing the reliable knowledge claims that supposedly can men, whites, Westerners, or some other elite group. In another usage on which historian of science Thomas S. Kuhn (1962) focused, it has been attributed to the particular kinds of inquiry communities characteristic of contemporary modern science. Trained to hold a skeptical attitude toward received beliefs, such communities must also develop principles of mutual respect and trust if such skeptics are not to suffer for articulating their critical perceptions and ideas. Supposedly, in such communities the lowest level graduate student is encouraged to think critically about dominant assumptions and claims, including those of his Nobel Prize-winning lab director. In a third usage, sometimes the term refers to the results of research. Yet we can wonder what this use of the term adds to assertions that these research results are highly confirmed. Here “objective” seems to be a substitute for “true” or truth-like. Finally, in actual research contexts the term is often used to refer to research methodology; this is the focus here (cf. Megill 1994).

The introduction explained how familiar standards and their associated methodology for maximizing objective research do not have the self-critical resources to detect widely-shared social commitments. This only “weak objectivity” is not competent to produce the “view from nowhere” that conventional philosophies of science have demanded. These days, because research tends to be expensive, only the perspectives of those already-advantaged groups who can access funding tend to prevail. Consequently it is their economic, political, and cultural commitments that tend to shape results of most research.

As indicated earlier, starting off research from outside a discipline can enable the detection of those dominant values, interests, and assumptions that make widely prevalent ways of thinking appear reasonable and even natural. Of course one can never get completely outside one’s social location to float freely above one’s

culture and history, as the conventional philosophies of science have imagined to be possible. But finding or creating even just a little distance from prevailing social commitments can be sufficient to enable new critical perspectives to illuminate issues in new ways. How can this critical difference be identified and used to maximize the objectivity of research?

One important way to do so has been to create missing diversity in research communities. “Affirmative action” can turn out to provide scientific and political benefits for communities as well as for the individuals newly joining them. Another strategy has been to form alternative research communities. All of the recent democratic social movements have also pursued this project. These two strategies have often combined in the institutionalized structure of U.S. disciplinary organizations. Thus women and “minority” philosophers have formed their own professional organizations which meet alongside the mainstream philosophy conferences, and as groups and individuals they also participate in the mainstream governance and programming. The standpoints of poor people, of racial and ethnic “minorities,” of people in other cultures, of women, of sexual minorities, and of disabled people are perhaps the most widely-used diversity standpoints from which dominant knowledge claims in every discipline have begun to be reevaluated. Such groups have not been the ones who designed and maintain the dominant institutional policies and practices that turn out to disadvantage them. Such institutions do not provide disadvantaged groups with the knowledge and power they need in order to manage their own lives in their own terms. Consequently, like “the stranger” in the classic sociological narratives, whose perspective can identify things invisible to “the natives,” researchers “from below” can highlight features of the dominant economic, political, legal, educational, ethical, and family institutions that the dominant groups either can not or refuse to recognize (Collins 1991).¹¹ These days, many of the deep but only implicit cultural commitments of the modern West in its sciences and their philosophies are also finally becoming visible in the West as we begin to learn how to respect the critical perspectives on the West that arise from the daily lives and the legacies of non-Western cultures (Harding 2011b).

However, it is not enough simply to be able to identify culture-wide assumptions that shape our own research projects. Strong objectivity demands interrogation also of just which cultural commitments can advance growth of the knowledge a particular community desires. It cannot be that all useful knowledge humans might want could be produced by sciences funded primarily by profit-making corporations, militaries, and imperial governments! If sustainable environments, the eradication of poverty world-wide, and the elimination of social inequality were actually the values and interests of the dominant groups, not just what they claimed to believe important when caught in practices that deteriorate such goals, threats to those resources for human flourishing would have been eliminated long ago. Societies with different values and interests have in the past, do now, and will

¹¹The language of “from below” originates in thinking of a society as structured in the form of a pyramid in which the small “top” rules the huge “bottom” of a hierarchical social system.

continue to produce reliable knowledge claims that conflict with ones emerging from dominant Western interests and values. Particular kinds of societies are “co-produced” with the particular kinds of sciences they want: each enables and limits the other.

This observation takes us to a number of ways in which standpoint methodology and its strong objectivity project are aligned with recent findings in the field of the social studies of science and technology (SSST).

3.3 Alignments with Social Studies of Science and Technology

I say “align with” since until recently the science studies work has only rarely identified neoliberal economic and political ideals as a problem or raised issues about the implications for science projects of pro-feminist, multicultural or postcolonial political and scientific goals.¹² In 2006 appeared the *East Asian Science, Technology and Society: An International Journal*. In 2012 an African SSST network was launched, and in 2014 the annual meeting of the main U.S. disciplinary organization in this field, the Society for the Social Studies of Science (4S), met in Buenos Aires jointly with The Sociedad Latinoamericana de Estudios Sociales de la Ciencia y la Tecnología (ESOCITE).¹³ Such “alignments” are clearly becoming sturdier. Here I can only briefly identify these SSST arguments and direct readers to ongoing discussions and debates which are much more complex than I can here represent.

3.3.1 *Objectivity Has a History*

One such alignment can be found in the evidence that objectivity ideals and favored strategies for achieving them have social histories; that is, they change in response to shifts in scientific goals as well as to shifts in processes in and pressures from society.¹⁴ For example, as mentioned earlier, Daston and Galison’s study shows how standards for objectivity shifted as new technologies of observation were introduced

¹²Anderson 2009 identifies several kinds of “alignments” between the postcolonial theory of Franz Fanon, Edward Said and others that has become institutionalized in U.S. English, French, and cultural studies departments and SSST. However, my focus is on alignments between advocacy of “strong objectivity,” on the one hand – which, I argue, appears in all recent democratic liberation struggles – and, on the other hand, mainstream SSST.

¹³See <http://sts-africa.org> and the report of the 2014 conference co-sponsored with the Sociedad Latinoamericana de Estudios Sociales de la Ciencia y la Tecnología (ESOCITE) at <http://www.4sonline.org>.

¹⁴Daston and Galison 2007, Jasanoff 2005, Novick 1988, Porter 1995, Proctor 1991.

in the production of scientific atlases over the last several centuries.¹⁵ Moreover, Daston and Galison argue that scientists' senses of themselves as engaged in the highest moral pursuits are repeatedly challenged with each new objectivity practice. So, too, is the reputation of their work as honorable. Thus challenges to the "right sight" of scientific practices are perceived as challenges to the moral integrity of the scientist and his profession. In this account objectivity thus becomes one more feature of research ideals to lose its aura of universal validity and become located in particular historical contexts.¹⁶ Thus a shift to strong objectivity in the context of increasing demands on states and their sciences for accountability to the needs and desires of social justice movements can be contextualized as just one more such moment in the history of this research ideal.

3.3.2 Sciences and Their Societies Are Co-produced or Co-constituted

Steve Shapin and Simon Schaffer (1985) introduced to SSST the image of the coconstitution or coproduction of sciences and their societies. They did so with their study of the correspondence between Hobbes and Boyle as these figures struggled to bring into existence distinctively modern democracies and sciences. Subsequently, Sheila Jasanoff (2004, 2005) demonstrated how different national anxieties and political cultures required different strategies to secure the objectivity of biotechnology decisions in Germany, England, the U.S., and the European Union. The scientific institutions and practices of different societies can exhibit different standards for maximizing objectivity.

This language of coconstitution or coproduction of sciences and their societies was a welcome shift from the earlier language of the "social construction" of science, which had emerged in the early days of the development of SSST (See Hacking 1999). The coconstruction language had even a better fit with Thomas S. Kuhn's demonstration five decades ago that the very best sciences exhibited an "integrity" with their historical era; they made the kinds of assumptions and focused on the kinds of problems characteristic of their particular social moment, but not necessarily of earlier or later ones (Hollinger 1996; Kuhn 1962). Such sciences might be "autonomous" from their societies in the sense that no social authority was explicitly directing their agendas. But they shared the values, interests, anxieties, and, one could say, the distinctive forms of curiosity of the era. However, ensuing critics of the social construction of the very best scientific knowledge sometimes

¹⁵And objectivity became detached from "true to nature" with the introduction a century and a half ago of photography and other mechanical transcribers of nature's regularities. Daston and Galison refer to this new ideal as mechanical objectivity.

¹⁶Cf. Shapin 1994 on truth; Schuster and Yeo 1986 on scientific method; Lloyd 1984 and Prakash 1999, among others, on rationality.

misleadingly suggested that for the social constructionists, nature played no role in scientific research. Yet no scholar ever made such a silly claim. Other critics worried that the social construction idea misleadingly suggested that “the social” somehow existed outside of and prior to scientific projects, which would be counter to the intentions of the social constructivists (cf. Latour and Woolgar 1979).

Yet simultaneous with the Shapin and Schaffer account and even earlier, feminist, anti-racist, and postcolonial SSST were already arguing that discriminatory and less than maximally reliable results of research that supported inequity were the logical outcome of sciences designed by societies invested in inequity. They insisted that it would take changes in these discriminatory social orders to legitimate sciences that were more accurate and that better aligned with democratic social relations. Moreover, changes in the latter would help to transform the former. So the co-constitution/co-production understanding of how change occurs simultaneously in sciences and their societies has been aligned with standpoint methodology and its strong objectivity ideal from the early days of the social justice movements. Unfortunately, with important exceptions, much of this early work, and especially the postcolonial argument, has remained mostly under the radar of mainstream Western SSST.¹⁷

This co-production work showed the internal relations between how we live and what we can know – between being and knowing. It challenged the older understanding of the history of scientific achievements as about either the internal “logic of science” or how external social, economic, and political forces had effects on scientific practices. In these newer accounts, the social reaches deeply into what were thought of as the foundations of our knowledge of the world, a point to which I return. Because of this dynamic nature of sciences, their borders continually shift. What counts as nature or as “real science” in one era frequently is at odds with the commitments of another era. Of course the same is true for what counts as a multicultural democratic society.

3.3.3 *Expanding Expertise*

Harry Collins and his colleagues, among others, argue that recognition of scientific expertise has been far too narrowly restricted. It tends to exclude many non-professionals whose *experience* enables them to “know what they are talking about” (Collins and Evans 2007). Relatedly, Ulrich Beck (1997) has argued that today the production of scientific knowledge is being demonopolized from the control of recognized scientists. Non-scientists increasingly are participating in the production of the kinds of sciences they want. They ask new kinds of questions and recruit

¹⁷For just a few examples of influential postcolonial writings, see Adas 1989, Brockway 1979, Goonatilake 1984, Haraway 1989, Headrick 1981, McClellan 1992, Moraze 1979, Nandy 1990, Petitjean et al. 1992, Sachs 1992, Sardar 1988. See also Harding ed. 2011a.

official scientists to research them. Moreover, when we have urgent health or environmental concerns and scientific accounts provide conflicting results, we are forced to conduct our own research. David Hess (2007) and Karin Backstrand (2003) have in different ways charted the importance of many kinds of “civic science” and “citizen science,” in which ordinary citizens organize in various ways to make contributions to the agendas and practices of scientific research through their investigations of their environments, of patterns of disease, or of risks in and from scientific and technological research and its consequences that they regard as insufficiently appreciated. In these projects they often recruit scientists or engineers to work with them. Standpoint methodology and its strong objectivity are intended to enable the participation in many phases of scientific research of groups whose concerns are underrepresented in the design and management of scientific projects. From such perspectives standpoint methodology and its strong objectivity can be recognized as a kind of citizen science or participatory action research.

3.3.4 Intervening in Nature Can Be a Criterion of Good (and “Real”) Science

Several philosophers have argued that Western philosophy of science has tended to overvalue the importance of representing nature’s order and undervalue the importance of intervening in it (Hacking 1983; Rouse 1996). And sociologists have argued that since industrial research can often itself produce new understandings of nature’s order, scientific and technical research are not as cleanly divisible as customarily assumed. These critics undermine also the claimed superiority of theoretical accounts over pragmatic ones, of “knowing that” over “knowing how,” and thus of scientific over technical research (Nowotny et al. 2001; Shapin 2008). These insights legitimate the perception that starting off research from the concrete technical activities of economically and politically vulnerable groups can in some cases lead to recognition of how these contribute to the growth of scientific knowledge. This point is particularly salient to the reevaluations of indigenous knowledge that have been underway for some four decades (Selin ed. 2008). Conventionally evaluated by Westerners as only technologies, or only speculations (ie theories) lacking empirical support, indigenous knowledge is now increasingly recognized as valuable systematic knowledge about parts of nature and social relations about which Western sciences have often been ignorant.¹⁸

¹⁸Consider, for example, legal struggles between Western pharmaceutical corporations and indigenous groups over who should have rights and benefits from the Western appropriation of indigenous pharmacologies and agricultural products (See, for example, Brush and Stabinsky 1996, Hayden 2005). See also Schiebinger’s work on colonial botany as the “big science” of its era. It required that the colonists and explorers extract plant materials and knowledge of their uses from the indigenes to turn them into products Europeans could sell (Schiebinger 2004, Schiebinger and Swan 2004, Brockway 1979, Harding 2015).

3.3.5 *Nature Is Disordered, Modern Western Sciences Are Disunified and Plural*

Philosophers and historians have argued for the disunity and pluralism within MWS (Galison and Stump 1996; Kellert et al. 2006), and for recognition of the necessary “disorder of nature” (Dupré 1993). As Kellert, Longino and Waters point out, such multiplicity has a number of sources, including the diversity of human goals, the indeterminacy of certain regularities of nature, and the complexity of so many natural phenomena (p. xi). The diversity of human interests and goals alone justifies standpoint methodology’s production of perspectives on nature and social relations that often conflict with those of dominant groups. The widely recognized complexity and indeterminacy of social relations provide additional reasons to value scientific pluralism. For Helen Longino and some other feminist philosophers, the benefit of a plurality of views is that it provides criticisms and alternatives to other views that cannot be achieved in other ways.¹⁹ This is not to say that research shaped by racist, sexist, and other socially iniquitous assumptions or goals should be equally welcomed into the diversity of human knowledge claims. It is a fact that these exist, but not all existing human assumptions and goals need be regarded as equally desirable or correct. Standpoint theory is not committed to a pernicious relativism. We return to this point below.

Yet one can wonder how “deep” such multiplicity and plurality must go into scientific world views. Is the transformation of sciences and their philosophies called for by social justice movements just a matter of adding missing facts about nature and social relations? Could the epistemologies and ontologies of the world’s sciences be unified even if the routes to such unity varied? This is too complex an issue to go into here. However, we can at least note that if nature itself is too indeterminate and complex to be captured in a unified “theory of everything,” and if human interests are so diverse that they will continue to explore new phenomena and new ways of knowing, then there is good reason to think that the pluralism of science “goes all the way down” through its methodologies, epistemologies and metaphysics. Kellert et al. (2006) insisted that their pluralism of sciences is a program and a matter of empirical evidence, not a manifesto. Yet we can wonder why it should not be a manifesto in today’s context of ever-expanding market economies that systematically disrespect biological and cultural diversity (Harding 2015).

¹⁹Yet see Kristen Intemann’s (2011) discussion of this kind of assessment of the value of pluralism, shared with the views of John Stuart Mill, in which the commitments to pluralism or diversity should not satisfy feminist agendas.

3.3.6 *Modernity/Tradition Contrast Misleading*

Finally, some science studies scholars have suggested that the solution to the diverse dissatisfactions with modernity, its sciences and their philosophies, is not to abandon modernity, but rather more rigorously and comprehensively to attain it. Contemporary Western philosophies of science in fact have only been partially modernized, the argument goes, since they still have not developed the conceptual resources effectively to examine critically their own cultural locations. They are still too traditional in their lack of a comprehensively critical program (Beck 1997; Nowotny et al. 2001, See also Harding 2011b). They are epistemologically underdeveloped in such respects. These philosophies are still invested in pre-modern tendencies to universalize the desirability of the beliefs and practices of one's own tribe or culture.²⁰ Standpoint methodologies and their strong objectivity can here contribute to such analyses. They require a thoroughly modern reflexivity – a “robust reflexivity” – such that one learns to see as reasonable others' conflicting perspectives on oneself.²¹

3.4 Criticisms and Challenges

This notion of strong objectivity and its standpoint methodology have disseminated across disciplines and also independently emerged wherever social justice movements claim authority for the distinctive ways that they see the world. In the West, both its fans and critics have sometimes tried to fit it into methodological practices and epistemological positions already familiar to them, in the course of which its strengths and limitations often are misread. A number of such criticisms that emerged in its early years are rarely still raised since they have been shown to be misunderstandings of its claims or grounded in precisely the older philosophies of science to which strong objectivity objects. Yet these and others also often raise interesting questions that cannot yet be settled.²² Here I will summarize main criticisms and responses to them.

²⁰This project is aligned with Latour's (1993) famous argument that “we have never been modern,” though it is not his solution to that situation.

²¹See Elam and Juhlin 1998, Harding 1998 (Chap. 11).

²²Two collections of essays are addressed respectively to Dorothy Smith's and Nancy Hartsock's particular formulations of standpoint theory (Campbell and Manicom 1995; Kenney and Kinsella 1997). Two extended analyses and critiques of standpoint theory by distinguished feminist theorists appeared in *Signs: Journal of Women in Culture and Society*, each with responses by some of the original standpoint theorists (Hekman 1997, Walby 2001). A recent collection of essays brings together the original standpoint essays plus a number of diverse readings and criticisms of it (Harding ed. 2004). Additional analyses and criticisms can be found in book reviews of the work of the standpoint theorists.

3.4.1 Does the Strong Objectivity Program Introduce Politics into Otherwise Value-Neutral Sciences?

No. It identifies how prevailing politics have already directed research projects and left its fingerprints on the results of research. And it shows how some kinds of politics (anti-sexist, anti-racist, and others) can in fact advance the growth of knowledge.

3.4.2 Does the Strong Objectivity Program Advance an “Identity Politics” Claiming Privileged Knowledge for Oppressed Peoples?

No. Men have productively and with ethical sensitivity started off research from issues arising in women’s lives, whites from back lives, Westerners from colonized lives, and so forth. Moreover, no knowledge claims can gain automatic assent. Standpoint claims are as corrigible as any others. But the strong objectivity project does argue that seeking out the perspectives of excluded, politically and economically vulnerable groups can be an important source of resources for enlarging bodies of knowledge and increasing the reliability of the results of research. And when such a group itself takes on a project of collectively articulating its needs and desires, it can become a group “for itself” rather than only “in itself”, that is rather than a group constituted only by others as an object of their knowledge and policy.

3.4.3 Don’t the Natural Sciences Already Have Adequate Safeguards Against Social Biases? Can Strong Objectivity Be Relevant to Them?

Such critics presume that eventually the social is always winnowed out from results of research in the natural sciences thereby leaving pure facts and value-free explanations of them in the resounding successes of physics, chemistry, and biology. However, research in biology, medicine, environmental studies, engineering, and even physics and chemistry have shown how these knowledge systems, too, are co-constituted with their social orders and will share distinctive social features with them. To be sure, one should not expect to find the kinds of now-obvious social features in the more abstract sciences. Yet the latter, too, are co-constituted with their social orders and can benefit from questions arising “elsewhere,” as critiques by later generations and from other cultures have compellingly demonstrated. Social justice movements cannot wait for the large-scale social transformations that will more easily enable the detection of widely held erroneous assumptions in the natural

sciences, too – ones that support what are now powerful inequities. Rather, they hold that such transformations can themselves be hastened by challenges to false and oppressive knowledge claims. That is, the “co-production” of sciences and their societies can be an agent’s category for social intervention in the natural sciences, too, not just a descriptive category for non-interventionist observers.²³

3.4.4 Is Strong Objectivity Too Modern? Is It Too Postmodern?

Does strong objectivity retain too much of the Enlightenment, or positivist, or logical empiricist conceptual framework? Or, alternatively, does it abandon concerns for truth and the reliability of scientific knowledge claims? The prevalence of both criticisms reveals that standpoint methodology is doing something different from the principles of both camps in these kinds of “science wars.” It does not give up Enlightenment, positivist, and logical empiricist concerns that research should be fair to the empirical evidence, to its strongest critics, and to the highest ethical principles and the goals of social justice (See Novick 1988). Of course what counts as each of these has differed from generation to generation and culture to culture. Such struggles are vividly depicted in recent histories of science, as indicated earlier (Daston and Galison 2008; Jasanoff 2004, 2005; Richardson 2003, 2006). Standpoint projects importantly advance Enlightenment goals as these make sense for our world today. As I have argued elsewhere, postmodern critics often themselves make kinds of modernist assumptions that standpoint projects challenge. For example, in their rejection of philosophies of “science” they, too, assume that there can be one and only one set of institutions and practices to which that term can apply. They are unfamiliar with the postcolonial SSST discussions (Harding 1988), as well as, I would now add, the proposals of Western scientific pluralism.

3.4.5 Does Strong Objectivity Embrace or Fall into Relativism?

Does strong objectivity endorse the position that every man is his own best historian, as Novick (1988) put the point? Does this practice abandon the importance of truth, value-neutrality, and universally valid claims and practices about nature and social relations? In my opinion, there are two acceptable ways to answer this question. One is to argue, as I have above, that strong objectivity standards simply recognize facts about nature and social research practice that could not be detected in earlier eras. For example, there is no “view from nowhere” possible from which one can see every social and natural reality past, present, and future. As indicated earlier,

²³Sheila Jasanoff has suggested this role for co-production as an agent’s category in the introduction to her 2004.

new human desires for knowledge are forever emerging, and the world is too indeterminate and too complex to permit such a totalizing understanding of nature and social relations. So such new apparent truths require new kinds of scientific standards and practices.

But at this point one could use the term “principled relativism” to refer to standpoint theory and its strong objectivity, as did Frederic Jameson (1988, p. 144). Strong objectivity is committed not to all knowledge claims being equally valid, to “anything goes” in the results of research. It is committed rather to “situated knowledge,” in Donna Haraway’s (1988) words. That is, it is committed to the inevitability of deeply conflicting knowledge claims, each with impeccable evidence for such in the eyes of its claimant. The situations of such knowers always both enable and limit what they can know. Finally, we can recollect that almost all research in the natural sciences is “mission directed” to improve health, generate greater profit, produce effective weapons, defeat global warming, and so forth. This is so whether or not the individual scientist is motivated purely by his curiosity. Yet no one thinks the results of such research invalid simply because such projects were undertaken for such human purposes. So strong objectivity is always relative to its purposes. Of course we can and should continue to debate just what are good places in the social order from which to start thinking scientifically.

3.4.6 Is Strong Objectivity Too Western? Is It Too White?

This epistemology has itself been produced at a particular time and place for specific purposes and within the discourses available to its creators and users. It is like all others in this respect. Philosopher Uma Narayan (1989) points out that the validation of women’s experience on which Western feminists insist cannot carry the critical edge in a society where it is already validated, such as in Hindu society where the genders are conceptualized as having complimentary rather than hierarchical relations. Of course such societies can oppress and exploit women no less than in societies with hierarchically organized gender. Yet some other epistemological/methodological strategy is needed for those circumstances. Moreover, she notes that standpoint theory and strong objectivity were developed in opposition to positivist tendencies in research. Yet positivism has not had the hegemonic official status in other societies, such as India, that it has had in many Western societies. Indian feminists face other serious problems with their local research establishments and need different epistemic/methodological tools for their projects. Chela Sandoval (1991) has developed a form of standpoint epistemology/methodology that she finds more useful for U.S. women of color, and Patricia Hill Collins (1991) and Bell Hooks (1983) have given it distinctive transformations to serve their needs as Black feminist theorists. Walter Mignolo (1995) began by claiming Gloria Anzaldúa’s (1987) “borderlands” version of a standpoint theory as the grounds for his own arguments for a distinctive Latin

American standpoint on neocolonialism and colonial diasporas today, but later developed his notion as the “colonial difference” (Mignolo 2000).²⁴

Indeed, it is clear that there are a number of other distinctive and possibly problematic cultural assumptions that shape much Western feminist work. For example, few feminists have critically examined the distinctively Christian and Protestant religious and spiritual commitments that have been identified as embedded in a Western secularism that is also a foundational commitment of Western sciences and their philosophies and methodologies.²⁵ This is too complex an issue to pursue here, but we can note that one of its effects is a resistance to countenancing culturally embedded indigenous knowledge projects as “real science” regardless of the empirical evidence presented in support of them.

3.5 A New Harmonizing of Multiple Sciences?

What kinds of sciences do we want for today’s multicultural, democratic societies? What kind do we want for a West that is already encountering repeated decentering in today’s global political economy? These are not the issues faced by the influential philosophers of science two and three generations ago. Yet many of us share with the latter commitments to developing more fair and socially responsible societies and the kinds of sciences that can serve such goals. We share the desire to work cooperatively in local and international contexts. We share valuing knowledge of how our worlds actually work – of what are their regularities and underlying causal tendencies (Richardson 2003, 2006). We can commit ourselves to a new kind of “unification” of global sciences (if one wants to consider resuscitating that term) through strategizing how to maximize and harmonize the scientific and political benefits of multiple scientific questions, conceptualized from multiple social perspectives, with a multiplicity of useful methods. Our challenges here for sciences and their philosophies are those that face international relations more generally these days. This kind of harmonization will have to be created through negotiation and compromise, as always already occurs within the practices of successful Western sciences themselves (Galison and Stump 1996).

Just how we could succeed at such goals in today’s world requires public discussion in local and global contexts. Unfamiliar terms and concepts can become comprehensible through public discussion of their benefits and limitations (Think

²⁴I am not claiming that hooks, Anzaldúa, and other authors who do not explicitly refer to standpoint theory or strong objectivity in fact are merely tweaking the arguments developed by the feminist standpoint theorists cited earlier. Rather, as indicated earlier, I propose that the strong objectivity and standpoint positions tend to emerge whenever new groups organized on their own behalf (“for themselves”) critically evaluate the inadequacies of dominant views, policies, and practices. The strong objectivity program and its standpoint theory are organic “logics of scientific inquiry” for creating critical “sciences from below.”

²⁵See, for example, Sands 2008 and Sullivan 2010.

of the history of such terms as genes, tectonic plates, biodiversity, ozone holes, and black holes in space.). Since we now can see that sciences and their societies are co-constituted, we further justify the importance of starting off from the society side of the co-constitution in today's social justice movements to identify research ideals and strategies that address progressive, though multiple and often conflicting, scientific and political goals. The co-constituting of societies and their sciences can be human agents' projects, not just a description of events and processes only passively witnessed by individuals and their societies. Such projects raise puzzling questions, but those are the relevant ones on which we could focus. Strong objectivity and its standpoint theory provide one useful way to begin such projects.

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