

Did Habermas Cede Nature to the Positivists?

Gordon R. Mitchell

Jürgen Habermas's "colonization of the lifeworld" thesis (1987, 332–73) posits that many of society's pathologies are due to the tendency of institutions to convert social issues that ought to be sorted out by a debating citizenry into technical problems ripe for resolution by expert bureaucracies, thus pre-empting important public discussion. Habermas has attempted to lay bare the pernicious effects of this colonization process in his analysis of public opinion polling, welfare policy, education, German reunification, immigration, and other social issues (see Habermas 1997, 1994, and 1970; Holub 1992). In each of these contexts, Habermas has publicly challenged the encroachment of scientific modes of decision-making into spheres where joint communicative action by deliberating citizens would yield more appropriate and legitimate judgments. This critical impulse is also evident in Habermas's methodological reflections on the proper role of academic scholarship, where he has argued vigorously against attempts to graft "objectivating" methods of natural scientific inquiry onto research projects in the social sciences (1971, 304–17).

From all of this, one might gather that Habermas's commitment to rolling back the influence of technical forms of reasoning is connected to some intrinsic quarrel he has with the natural sciences. Yet such a sweeping generalization is hard to sustain in light of the fact that Habermas does not oppose technical reasoning *per se*; he recognizes that the daunting complexity of social life in late capitalism requires that certain "steering" tasks be delegated to systems that utilize largely instrumental logics to co-ordinate action. Likewise, he acknowledges that the disciplines of the natural sciences necessarily play important supporting roles in such steering projects.

One normative presupposition of Habermas's colonization thesis is that there exists some proper boundary demarcating where the sphere of technical reasoning ends and the realm of communicative rationality be-

gins. On one side of this boundary, Habermas has provided many details on what he sees as the essential qualities of a properly functioning “public sphere,” where “new social movements” continuously reweave the threads of communicative fabric holding society together (1996, 359–87), and where “historico-hermeneutic” academic study reflects on public life, sluicing insight back into the capillaries of democratic deliberations (1987, 374–403).

What lies on the other side of the boundary is murkier. The proper role of natural scientific investigation has received relatively scant attention in Habermas’s critical theory of society, and this has led to some confusion regarding his account of the natural sciences, as well as debate over whether this account has political purchase. One would think that sympathetic commentators, such as Helen Longino (who bases much of her own coherence theory of scientific truth on Habermas), would have reassuring things to say on this point. Yet her lukewarm assessment that, “in trying to clear a space for an autonomous social and critical theory, [Habermas] has ceded nature to the positivists” (1990, 202), raises questions about the flexibility and scope of Habermas’s theory of communicative action as a basis for critique of scientific practice.

One way to test Habermas’s account of the natural sciences on this count is to put his views in conversation with science studies commentators who share a similar commitment to the idea that dialogue and argumentation are constitutive elements of scientific practice. Such an approach recasts the “ceding to positivism” question into a moment of controversy over the role of dialogue, not only as an essential motor driving the scientific enterprise, but also as a vehicle for democratic decision-making on issues related to the purpose and direction of scientific inquiry in society.

Part one of this essay locates discursive norms embedded pragmatically in the notion of scientific objectivity. By bringing a modified version of Habermas’s theory of communicative action into conversation with other approaches to science studies that foreground intersubjective dialogue as the key motor driving the scientific enterprise, I develop a foundation for robust criticism of systematically distorted scientific communication. Specific strategies of this type of normative criticism are elaborated in part two, where I retrieve categories of Habermasian theory (discursive redeemability, the performative contradiction, the objectivist illusion, and politically effective discussion) to serve in the task of challenging scientific speech acts that block discussion and subvert communicative reason.

1. Objectivity

The epistemic and political authority of science in the public sphere is rooted deeply in the concept of objectivity (Porter 1995). Advocates who can claim successfully the mantle of scientific objectivity tend to gain the upper hand in public disputes by virtue of their ability to exploit the ethos of scientific research and tie their arguments to favorable cultural assumptions about scientific practice. This maneuver can be accomplished by drawing upon the tradition of science as a practice that produces knowledge out of a “view from nowhere” (Nagel 1986). On this view, any appropriately trained and reasonably skilled practitioner who follows the rigorous rules of scientific method can attain the perspective of a detached, neutral observer and thus be afforded a direct cognitive window into the workings of nature. Because the “view from nowhere” featured in this framework is said to produce objective knowledge fundamentally different in kind from the contingent, ephemeral insight generated by investigations not performed under the control of the scientific method, it lends advocates a persuasive edge in public disputes over knowledge claims (see Rouse 1996, 1991, and 1987).

The science studies literature features a sprawling complement of works from a large variety of perspectives challenging the account of scientific practice that underwrites such public arguments. From one angle comes the idea that there is no such thing as a “view from nowhere,” because each scientific observation *comes from* a distinctive, idiosyncratic perspective or worldview, with the perspective of each scientist shaping observation in a unique way (Gooding 1992; Nickles 1989; Pickering 1994). The “theory-ladenness” of observation, on this view, destabilizes the strict objectivity of scientific practice as depicted in the “view from nowhere” account.

From another angle, critics dispute the cognitively individualistic model of scientific investigation implicit in the “view from nowhere” description. Scientists, instead of reading facts off the surface of nature in an isolated manner, interact and negotiate with each other in the process of generating knowledge (Knorr-Cetina 1999; Latour and Woolgar 1979; Fleck 1981). Accordingly, the fact that this process of negotiation makes such a significant stamp on the character of scientific findings further complicates the empiricist notion of a context-independent truth.¹

Yet another line of research questions the strict empiricist account by interrogating the fundamental boundary safeguarding the neutrality ideal: the wall between laboratory and society. Contending that social factors have

causal efficacy in determining the course of science, some scholars show that factors such as economics, religion, and culture, play as much or more of a role than nature itself in shaping the course of scientific inquiry (Traweek 1992 and 1988).

The collective weight of these critiques bears heavily on the “view from nowhere” picture of objective knowledge as impersonal, neutral and detached. However, just as logical positivism has lost credibility, many of the Kuhn-inspired social critiques of science have suffered because their deconstruction of scientific practice goes too far, leaving little room for nature or rationality in explanations of scientific practice. Proponents of “scientific realism” insist that such overreaching, broadside critiques fall prey to the “no miracles” argument, that the only way to explain the previous successes of science in light of the extreme skepticism expressed in the most critical approaches would be to resort to the dubious explanation that such successes were mysterious miracles (see Putnam 1981).

Objectivity as a property of collective dialogue

Some commentators question positivism and dodge Hilary Putnam’s “no miracles” argument by staking out a middle ground between staunch realist and radical social constructivist approaches. These scholars attempt to overcome the twin weaknesses of positivism and social constructivism: an intolerance to indeterminacy in the case of the former, and an inability to explain scientific progress in the case of the latter (Longino 1990, 81). Drawing from philosophers such as Willard Quine and Karl Popper, “post-individualist” empiricists such as Longino (1990); Sandra Harding (1992, 1991, 1981); Lynn Hankinson Nelson (1990), Theodore Porter (1995); Lorraine Code (1995); and Marcello Pera (1994) have sought to retain but revise the notion of objectivity, refashioning the concept as a collective property of discursive interchange.²

Longino and other adherents of “post-individualist empiricism”³ stray from the traditional empiricist legacy by insisting that controversial social value judgments enter inescapably into even routine scientific practice. It is not possible, as early positivists suggested, to carry out scientific hypothesis testing using only the internal logic of the scientific method, because theory comparison entails necessarily assessment (implicitly or explicitly) of auxiliary background assumptions that are suffused thoroughly with value-laden precepts (see Harding 1991, 1981; Longino 1990; Nelson

1990). Unlike some social constructivists, these theorists insist that the value-ladenness of science need not entail a spiral into solipsistic relativism and attendant abandonment of objectivity, since the frank acknowledgment and critical testing of such value laden background assumptions can permit science to progress without being compromised by a reign of idiosyncratic, subjective belief over collective, deliberative judgment.⁴

Intersubjective dialogue and critique, on this account, “blocks” the unwarranted domination of scientific practice by any one subjective preference, working as a protective catchment against collective error: “It is the possibility of intersubjective criticism, at any rate, that permits objectivity in spite of the context dependence of evidential reasoning” (Longino 1990, 71). Subjective preferences, once out in the open, can be evaluated and either discarded or embraced collectively within the ambit of an objective enterprise. Longino explains how background beliefs embedded in auxiliary hypotheses can be thematized and subjected to argumentative testing: “As long as background beliefs can be articulated and subjected to criticism from the scientific community, they can be defended, modified, or abandoned in response to such criticism” (1990, 74). For Longino, this process of collective criticism is what separates scientific truth claims from haphazard, subjective knowledge: “As long as this kind of response is possible, the incorporation of hypotheses into the canon of scientific knowledge can be independent of any individual’s subjective preferences” (1990, 74).

The degree of objectivity achieved in science is here pegged to the degree that intersubjective scientific criticism permits competing perspectives embedded in background beliefs to be tested in the crucible of debate: “[T]he greater the number of different points of view included in a given community, the more likely that its scientific practice will be objective, that is, that it will result in descriptions and explanations of natural processes that are more reliable in the sense of less characterized by idiosyncratic subjective preferences of community members than would otherwise be the case” (Longino 1990, 80).

When post-individualist empiricists such as Harding, Longino, Nelson, and Pera relocated the focus of science studies from individuals to communities, they created potential synergies with Habermas’s discourse theoretic view of empirical-analytic inquiry. These synergies become apparent when one considers salient aspects of Habermas’s discourse theoretic treatment of the natural sciences.

Habermas on objectivity in empirical-analytic science

In *Knowledge and Human Interests*, Habermas relies heavily on Peirce to inform his analysis of the empirical-analytic sciences (1971, 91–130). Following Peirce, Habermas suggests that “[t]he genuine achievement of modern science does not consist primarily in producing true, that is, correct and cogent statements about what we call reality.” Instead, scientific truth is generated by “a method of arriving at an uncompelled and permanent consensus of this sort about our views” (Habermas, 1971, 91). Truth here represents something different than an accurate account of objects in nature; it represents agreement on statements about such objects.

By describing truth in this way, Habermas foregrounds argumentation as an activity central to empirical-analytic inquiry, since it is the process of argumentation that facilitates formation of agreement about validity claims. “The outcome of rational argumentation on the level of discourse is a *consensus* among those engaging in the discourse that some statements are to be accepted. It is this consensus rather than successful technical control that Habermas regards as the criterion of truth of natural scientific statements” (Gutting 1981, 428). In other words, the truth of scientific statements cannot be ascertained by a nonreflective evaluation of the degree to which such statements facilitate pursuit of human interests or copy nature directly. The driver that produces scientific proof is dialogical argumentation; without human interaction, consensus cannot be forged communicatively and statements cannot be warranted legitimately with the rhetorical clout of scientific truth.

Habermas’s emphasis on the argumentative dimensions of scientific epistemology becomes clearer in his reconstruction of objectivity, the rhetorical marker of scientific truth. As a property of knowledge, objectivity for Habermas represents confidence in consensus, not faith in correspondence. The objective standpoint of inquiry, rather than a depopulated “view from nowhere” is for him a collectively shared perspective worked out through discourse in a populated community of human interlocutors.

In making the validity of scientific truth claims dependent on intersubjective argumentation, Habermas sets up a view of objectivity that includes, rather than erases, knowledge-producing human subjects. “Truth is public. No determination that holds only privately for an individual subject can refer to what is real” (Habermas 1971, 100). Habermas joins with Peirce and Toulmin to hold that in science “the progress of knowledge takes place through substantial arguments,” where legitimate grounds are given

for recognition of validity claims and where dialogic interchange fires the heuristic engines of scientific discovery (Habermas 1971, 107).⁵

Objectivity here is a standpoint that can arise only in the midst of symbolic interaction among interlocutors. Habermas uses this premise to support his contention that objective scientific truth claims thus anticipate the “ideal speech situation,” the counterfactual ideal of a domination-free communication community. As Mary Hesse reads Habermas, the ideal speech situation is “presupposed in the decision to enter a certain form of life, that is, the *scientific community* of rational discourse” (1981, 382).⁶

Habermas (1982, 274–77) has affirmed Hesse’s interpretation of his work on this count and added an important stipulation that the assumption of the ideal speech situation in scientific truth claims is accompanied necessarily by a performative attitude that nudges speakers to test validity claims in the “here and now”:

In this connection Hesse proposes an interpretation of the universality of validity claims that I find exceptionally attractive. We cannot simultaneously *assert* a proposition or *defend* a theory and nevertheless anticipate that its validity-claims will be refuted in the future. Only in the performative attitude can we put forward assertions, and this attitude compels us (with the gentle but irresistible force of transcendental necessity) to advance a claim that bursts all local and temporal limits, *transcends* all cultural and historical bounds. On the other hand, we advocate this claim, which could meet with recognition in the forum of an unlimited community in communication, *here and now* (Habermas 1982, 277).

With objective scientific inquiry linked to the notion of transformative criticism in this way, how does one assess whether the conditions within a communication community promote (or at least tolerate) such criticism? Longino suggests four standards: “(1) there must be recognized avenues for the criticism of evidence, of methods, and of assumptions and reasoning; (2) there must exist shared standards that critics can invoke; (3) the community as a whole must be responsive to such criticism; (4) intellectual authority must be shared equally among qualified practitioners” (1990, 76). This set of standards represents a thick normative foundation from which it becomes possible to levy critical assessments of science using the tools and concepts usually reserved for humanistic study of rhetoric and public argument. For Longino (1990), some of the most important concepts for this task are drawn from Habermas’s theory of communicative action.⁷

Although Longino acknowledges a “theoretical kinship” with Habermas, she also argues that Habermas’s strict, in-kind separation of the “historical-hermeneutic” (social) and “empirical-analytic” (natural) sciences (see Habermas 1971, 301–17) is a mistake.⁸ This distinction rests on a dichotomy of human interests at stake in the respective forms of inquiry. Where empirical-analytic inquiry is said by Habermas to be based on a universal human interest in the technical control of nature, historical-hermeneutic inquiry involves pursuit of the universal human interest in dialogue oriented toward mutual understanding. This is the feature of Habermas’s thought that led Longino to wonder whether he “has ceded nature to the positivists” (1990, 202).

Along similar lines, Norman Stockman argues that Habermas “accepts from ‘positivism’ a hypothetico-deductive account of the structure of theories and a deductive-nomological theory of explanation” (1978, 21). Rouse argues further that the normative price of this concession to positivism is foreclosure of certain strategies of political critique. Because the human interest that undergirds natural scientific investigation (technical control of nature) is universal, “Habermas claims that the technical capabilities provided by the natural sciences are thereby immune to political criticism” (Rouse 1987, 193–94). Rouse continues: “[T]here is little scope [in Habermas] for such criticism in the natural sciences, which concern not the orientation of action but the acquisition of the means for its successful completion” (1987, 195).⁹

Given the communal character of scientific objectivity, argues Longino, this critical blind spot is serious for Habermas, since the same kinds of communicative distortions that compromise communicative rationality in the public sphere also function to foreclose the achievement of objective knowledge in the sphere of science. Hence, it would seem that normative criticism of systematically distorted communication should have just as much purchase when directed toward scientific debate as it does when directed toward political dialogue in the public sphere. In a similar light, Rouse suggests, “a political concern for whether scientific discourse is free and undistorted therefore becomes an essential part of any reflection on the cognitive aspects of science” (1996, 19).

2. Habermasian critique of scientific practice

While the preceding discussion has elucidated factors that differentiate Habermas's theory of the natural sciences from strict positivism, a more detailed investigation of the essence of this differentiation is required to judge properly the merits of Longino, Rouse, and Stockman's concern that Habermas's discourse theory of natural science leaves little ground on which to found political critique of scientism. The following pages feature more extended reflection on the question of whether Habermas has "ceded nature to the positivists" (Longino 1990, 202). The discussion begins with reconstruction of the normative assumptions pragmatically embedded in speech acts claiming the status of scientific objectivity. From there it will be possible to assess the political potential of four critical tools derived from Habermas's discourse theory of the natural sciences: discursive redeemability, the performative contradiction, the objectivist illusion, and politically effective discussion.

Objectivity and discursive redeemability

For Habermas, scientific facts are not disembodied pieces of objective knowledge; instead they are performative speech acts, rooted in concrete historical contexts and tied to speaking agents. Claims to scientific validity, in the parlance of speech act theory, are not exhausted by the locutionary force of such utterances – they must be redeemed by subsequent dialogue. Because scientific truth claims are hitched to the notion of consensus, advocates are obliged to submit such claims to the arena of intersubjective argumentation before legitimately deploying the full rhetorical force of scientific objectivity in public argument.

Claims to scientific objectivity anticipate elements of "practical" discourse, where interlocutors assume a reciprocal commitment to disclosure and mutual understanding. While Habermas asserts a differentiation of technical and practical discourses at the level of interests, he hints that they express a common implicit commitment to "discursive redeemability."¹⁰

In the context of practical discourse, discursive redeemability is anticipated by interlocutors as a reciprocal expectation that each other will remain open to critical argumentation regarding not only the surface structure of validity claims, but the deep normative structure that undergirds such claims as well. In the context of empirical-analytic inquiry, a similar

commitment can be deduced directly from Habermas's consensus theory of truth. For as Hesse points out in her interpretation of Habermas, speakers advancing valid scientific truth claims must assume that such claims would be accepted by an unlimited communication community of peers. Habermas elaborates that the genuine expression of this assumption becomes manifest in the pursuit of real dialogic scrutiny in the "here and now" (1982, 277). This formulation squares with Longino's point that *contra* positivistic accounts, a claim to objectivity cannot be an individual cognitive claim, but must be a claim that is backed by the collective voice of a given scientific community.

In the context of natural scientific inquiry, the implicit commitment to discursive redeemability appears to qualify, in the parlance of discourse ethics, as a "discourse rule" governing this special type of speech act, the claim to scientific objectivity. As Habermas explains: "Whereas chess rules *determine* the playing of actual chess games, discourse rules are merely the *form* in which we present the implicitly adopted and intuitively known pragmatic presuppositions of a special type of speech, presuppositions that are adopted implicitly and known intuitively" (1990, 91). Since the form of truth claims in empirical-analytic inquiry implies commitment to, and anticipation of, intersubjective dialogue, discursive redeemability has plausibility as a discourse rule that is grounded pragmatically in the structure of scientific speech acts.¹¹

One normative principle that would appear to flow from the recognition of such a discourse rule would be the notion that the objectivity of scientific truth claims pivots with the degree to which such claims are open to subsequent validation in the arena of intersubjective dialogue. Longino, although approaching the problem from a different angle than Habermas,¹² endorses this normative guideline: "[T]he greater the number of different points of view included in a given community, the more likely that its scientific practice will be objective."¹³

A related index available for pegging the degree of any given truth claim's scientific objectivity involves qualitative evaluation of accompanying discourse. Discursive redeemability requires effort to insure that the flow of scientific argumentation is relatively free from undue manipulation. The inclusion of a wide range of diverse interlocutors is thus not sufficient to secure the conditions constitutive of objectivity. The character of follow-on dialogue must enable interlocutors to advance criticisms and judge arguments on the basis of cogency, more or less free from covert or overt intimidation.

Should validity claims come to be “comprehended as control media and placed on the same level with other media such as power [and] money,” Habermas (1973a, 5–6) stipulates, they forfeit their discursive redeemability, a concession that unravels the legitimacy of the claim at a most basic level. In this situation, no matter how many voices are included in a discussion, the heuristic function of argumentation will be compromised unless the distorting effects of power and money are thematized and countered.

Performative contradictions in scientific speech acts

Recognizing that the rule of discursive redeemability is embedded pragmatically within the performative fabric of both technical and practical validity claims, it would follow that scientific discourses that claim the mantle of objectivity, on the one hand, but subvert validating dialogue strategically, on the other, could be described accurately as performative contradictions. A central tool of normative criticism for Habermas, the performative contradiction involves a speech act that is frustrated by some aspect of the speaker’s performance.¹⁴ In J. L. Austin’s terminology, the performative contradiction involves a “misfire” of an attempted speech act, as when a speaker makes a promise verbally with fingers crossed behind their back (see Austin 1975, 16). Martin Jay explains how attempts to escape from justificatory dialogue constitute performative contradictions: “[A]ccording to Habermas, the communicative use of language harbors an immanent obligation to justify validity claims, if need be. When the claims one makes on a locutionary level deny the very possibility of such a justification, then a performative contradiction is committed” (1992, 266).

Habermas identifies several communicative practices that reduce validity claims to performative contradictions. One practice involves the limitation of the communicative capacity of interlocutors through exclusion from discussion or imposition of interpretation: “[P]erformative contradictions can be demonstrated in the statements of a proponent who tries to justify the following sentence: . . . Having excluded persons *A, B, C*, . . . from the discussion by silencing them or by foisting our interpretation on them, we were able to convince ourselves that *N* is justified” (Habermas 1990, 91).

Another communicative strategy that compromises the legitimacy of validity claims is reliance on strategic deception as a tool of argumentation: “Since all those affected have, in principle, at least the chance to par-

ticipate in the practical deliberation, the ‘rationality’ of the discursively formed will consists in the fact that the reciprocal behavioral expectations raised to normative status afford validity to a *common interest* ascertained without *deception*” (Habermas 1973a, 108). A consensus manufactured through deception, according to this principle, cannot legitimately support a claim to scientific validity, because it rests on the shaky foundation of a performative contradiction.

The objectivist illusion

Although discursive redeemability appears to be an implicit norm of communication common to both scientific and practical discourses, it would be a mistake to conclude that this shared normative principle functions to level completely the fundamental differences between empirical-analytic and historical-hermeneutic approaches asserted by Habermas. There still exists the fundamental contrast in human interests that serves to set off the two forms of inquiry. By appreciating the relationship between discursive redeemability and this dichotomy of human interests, one can retrieve another tool for normative criticism of natural scientific practice, Habermas’s idea of the “objectivist illusion.”

This illusion is generated from one of positivism’s most seductive but flawed aspects, that is its aversion to self-reflection at the level of human interests: “[B]y making a dogma of the sciences’ belief in themselves, positivism assumes the prohibitive function of protecting scientific inquiry from epistemological self-reflection” (Habermas 1971, 67). Through its pursuit of “pure theory,” uncontaminated by metaphysics, the positivist program aims for knowledge cleanly severed from human interests. As Habermas puts it, “positivism does not come to grips with metaphysics but simply knocks the bottom out of it” (80). Here, the objective illusion maintains its integrity to the extent that the bond between knowledge and human interest is suppressed: “False consciousness,” in this context, “has a protective function” (315).

The danger of the objectivist illusion is expressed in the form of encroaching scientism; as soon as the severance of knowledge from human interests becomes a working assumption, the groundwork is laid for grotesque excesses such as the “freak of a [German] natural physics” and “Soviet Marxist genetics” (315). By cloaking human interests behind the illusion of objectivity, advocates protect the legitimacy of these ominous projects.

“As soon as the objectivist illusion is turned into an affirmative *Weltanschauung*, methodologically unconscious necessity is perverted to the dubious virtue of a scientific profession of faith” (315).

As a counterweight to the objectivist illusion, Habermas (1971, 316) suggests that calls for discursive redemption of validity claims can spur reflective understanding of the connection between empirical-analytic inquiry and human interests. Such insight can nourish important judgments regarding the appropriateness of aiming for technical control in particular cases, the direction such technical control should take, and the pace at which such technical control should progress. Discursive redeemability thus dispels the objectivist illusion at two levels. First, within the community of scientific experts, practical discourse functions to uproot the *Weltanschauung* of scientism, through thematization of the human interest in technical control of nature as the primary *telos* guiding empirical-analytic inquiry.¹⁵ Second, a thoroughgoing commitment to the norm of discursive redeemability within the sphere of science clears space for public argumentation regarding the appropriate choice of objectivating versus hermeneutic treatment of problems. The boundaries marking off the object domains of empirical-analytic versus historical-hermeneutic forms of inquiry are not determined essentially, but rather shift through time. It is through the process of practical dialogue that the character of such boundaries can be thematized as issues for public discussion.¹⁶ Where the non-reflective pursuit of empirical-analytic knowledge is insulated from interest-based criticism, such boundaries are drawn by arbitrary fiat and lack “communicative legitimacy” (see Habermas 1973a).¹⁷

Critique mounted from such a normative backdrop can have significant political purchase. When interests motivating research can be elucidated and scrutinized in a communicatively open environment, it becomes more difficult for advocates pursuing specialized political agendas to cloak their interests behind the mask of the objectivist illusion. With the connection between knowledge and human interests locked in as a perennial topic in ongoing discussions about the proper role and direction of scientific inquiry, attempts to enlist the rhetorical clout of scientific objectivity in manipulative ways are more likely to encounter resistance in the field of open argumentation.

This insight should prompt reconsideration of the claim advanced by Rouse, Longino, and others that there is no constructive *telos* to be found in Habermas’s theory of the natural sciences. In working to discredit the objectivist illusion and create institutional conditions favorable for practi-

cal discourse that permits thematization of the connection between knowledge and human interests, Habermas evinces a specific vision of empirical-analytic inquiry. While this vision seems far removed from the progressive “New Science” advocated by Marcuse, it is nevertheless more contoured than the flat epistemology of natural science as it appears from the vantage point of the “view from nowhere.” As Hesse recounts Habermas’s view on this matter, “the *instrumental* aspects of natural science do not change in the liberated society, what changes is people’s attitudes towards science and its application” (Hesse 1981, 374).

Politically effective discussion

Habermas’s discourse theoretic approach stops short of dictating the preferred character of public attitudes regarding science; what is more important is the prior issue of the conditions under which such attitudes are formed. If they are formed in the context of relatively unfettered argumentative practical discourse, a “politically effective discussion,” the possibility is maximized that members of society will arrive at thoughtful judgments regarding the proper scope, direction, and purpose of scientific practice.

Through the unplanned sociocultural consequences of technological progress, the human species has challenged itself to learn not merely to affect its social destiny, but to control it. This challenge of technology cannot be met with technology alone. It is rather a question of setting into motion a *politically effective discussion* that rationally brings the social potential constituted by technical knowledge and ability into a defined and controlled relation to our practical knowledge and will. On the one hand, such discussion could enlighten those who act politically about the tradition-bound self-understanding of their interests in relation to what is technically possible and feasible. On the other hand, they would be able to judge practically, in light of their now articulated and newly interpreted needs, the direction and the extent to which they want to develop technical knowledge for the future. (Habermas 1970, 61, emphasis added)

Should such discussion come to be foreclosed by secrecy, deception, intimidation, exclusion, or other forms of systematic distortions of communication, the result can be calamitous. As Longino suggests, in this environment, “not only will public confidence in the institutions of science be eroded but the ability of the scientific community to make the distinc-

tions between the true and the false, the sound and the unsound, the plausible and the implausible, will be undercut" (1990, 91).

Habermas's suggestion that the university is a key launching point for political dialogue in the public sphere (see Habermas 1970) squarely places substantial responsibility for generation and maintenance of "politically effective discussion" about the pace and direction of science on university intellectuals.¹⁸ In his view, university engagement in the "politics of science" can play an important steering role to counter the drift of military-industrial complex agenda setting: "If the university were enlightened about the politics of science and were also capable of action, it could make itself an advocate of subjecting alternative evaluations of scientific-technological development to political decisions in consideration of its practical consequences, instead of leaving them to the criteria of the military-industrial complex" (Habermas 1970, 47; see also Habermas 1973b). Habermas goes on to identify specific modes of university engagement: "A university divested of its apolitical self-understanding could have an effect in a) preventing research relevant to planning the future from migrating to social sectors outside the university where it is used for repressive ends and b) incorporating the already established and rapidly expanding large-scale research going on outside the university into an overall political decision making process" (1970, 47).

3. Conclusions

For Habermas, objectivity is not a property of disembodied knowledge; rather, it is a type of speech act, a validity claim replete with normative assumptions and performative commitments. Since empirical-analytic inquiry proceeds through a process of unfettered argumentation and consensus building, interlocutors invoking the claim of scientific objectivity necessarily take on the burden of subsequent discourse, that is, responsibility for redeeming their statements discursively in wide-open debate.

When interlocutors make scientific objectivity claims, yet balk on redeeming these claims discursively, they commit what Habermas calls performative contradictions. Habermas identifies forced exclusion from dialogue, strategic deception, and silencing as communicative practices that block the discursive redemption of validity claims and entail performative contradictions on the part of speakers deploying the rhetoric

of scientific objectivity as a *topos* of public argument. Drawing from his theory, Longino offers four standards of collective communication that critics can deploy to assess the objectivity of scientific validity claims (see Longino 1990, 76).

Insofar as the conditions for relatively unfettered communication do not obtain in a given scientific community, critics have grounds to dispute the legitimacy of objective validity claims authorized by that community. Such immanent critique uses the performative contradiction to illustrate how the structural fabric of speech acts unravel when they default on their own normative commitments. Normally, the checking function of intersubjective dialogue works to “block” domination of subjective preferences in scientific fact building (Longino 1990). In the absence of such dialogic checking, the scientific process itself is prone to breakdown. John Tirman explains how classified military research is a revealing case in point: “Whereas in nonclassified work both the company and the employee generally benefit from a rich and continuous cross-fertilization of ideas, this is not and cannot be so to the same extent in the blinkered environment of classified work. Rather, one tends to become an expert in a narrowly defined area, while the balance of one’s training suffers from disuse. Professionally, this is the kiss of death in fields in which entire technological revolutions take place on the order of every five years” (Tirman 1984, 159). A related phenomenon occurs when doctoral students are blocked from sharing their research by corporate confidentiality agreements, sometimes even to the point of being unable to defend their dissertations. Such agreements may maximize corporate profits and swell grant streams to universities, but they also choke off intersubjective dialogue and criticism, eroding the conditions necessary for communities to claim validly that their data deserve the marker of scientific objectivity.

Overclassification of scientific information and corporate domination of academic research are two contemporary issues ripe for discourse theoretic critique. How would such a critique proceed? Deploying a Longino-like, post-individual empiricist framework, critics could levy judgments regarding the quality of discourse and the pattern of intersubjective debate and criticism exhibited within relevant scientific communities. Since objectivity can emerge only in the midst of free, wide-open and relatively undistorted communicative interchange, critics are justified in questioning the epistemic authority of objective knowledge where scientific practice deviates significantly from this ideal of open and free discussion and criticism: “The maintenance of dialogue is itself a social process and can be

more or less fully realized. Objectivity, therefore, turns out to be a matter of degree. A method of inquiry is objective to the degree that it permits *transformative criticism*" (Longino 1990, 76).

Habermas goes further to suggest how such open discourse is vital to set in motion what he calls "politically effective discussion" on the nature, pace, and direction of scientific practice. He sees the defense of politically effective discussion about science as a crucial normative commitment, tracing the roots of the "freaks" of Nazi physics and Soviet Marxist genetics to the "objectivist illusion." For Habermas, the objectivist illusion is propagated when the accumulation of political power in ostensibly objective research programs breaks free from the burdens of public legitimation, let loose by silences in deliberation about the proper role of science in society.

It was 1963 when Habermas entered his first major public debate, the "positivist dispute in German sociology," a long-running public dialogue that touched on many of the themes discussed in this essay. This lecture series was sponsored by groups such as the German Sociological Association and featured interlocutors Theodor Adorno, Hans Albert, and Karl Popper (Holub 1991, 29–48). It is unlikely that a similar series of lectures would create the same stir in our age, when the remains of positivism gather dust on the philosophy of science scrap heap. However, Code, Longino, Harding, Nelson, and Pera's recent work shows how Habermas's discourse theoretic view of natural science has enduring salience. This essay makes a similar effort to explore the practical utility of a Habermasian critique of scientific practice, one that deploys theoretical concepts such as discursive redeemability, the performative contradiction, the objectivist illusion, and politically effective discussion. With such an effort coming to a close, perhaps it is appropriate to return to the title's question: Did Habermas cede nature to the positivists? Not exactly, but he did entrust the care of nature to those capable of spurring politically effective dialogue on the pace and direction of scientific inquiry.

*Department of Communication
University of Pittsburgh*

Notes

1. Thomas Rouse highlights the key role of human communication in scientific fact-building:

What can permissibly be concluded in any scientific report will be the subject of intense negotiation, first between co-authors, later perhaps between authors and referees.

Scientific experiments are designed, and papers written, in response to the specifically anticipated concerns of other scientists rather than some context-free standard of rationality.” (1987, 121)

In a similar vein, Thomas Nickles notes that “social interaction is essential. . . . Through the process of critical reception, the community in effect ‘licenses’ the use of a body of previous results” (1989, 315).

2. According to Longino, “[t]he objectivity of individuals in this scheme consists in their participation in the collective give-and-take of critical discussion and not in some special relation (of detachment, hardheadedness) they may bear to their observations. Thus understood, objectivity is dependent upon the depth and scope of the transformative interrogation that occurs in any given scientific community. This communitywide process ensures (or can ensure) that the hypotheses ultimately accepted as supported by some set of data do not reflect a single individual’s idiosyncratic assumptions about the natural world” (1990, 79).

3. Other labels for similar notions include “dynamic objectivity” (Keller 1985); “strong objectivity” (Harding 1991); and “new empiricism” (Rouse 1996).

4. In Pera’s view,

We shouldn’t attempt to eliminate subjective wishes and social conventions from science; rather we should try and incorporate them into science without sacrificing its undeniable nature of rigorous and objective knowledge. My claim is that this is possible provided we transfer science *from the kingdom of demonstration to the domain of argumentation*, and conceive its constraints not as universal methodological rules but as historical dialectical factors on which concrete interlocutors in concrete discussions rely. (1994, 47, emphasis in original)

“Dynamic objectivity,” Keller states in a similar light, “is thus a pursuit of knowledge that makes use of subjective experience (Piaget calls it consciousness of self) in the interests of a more effective objectivity” (1985, 117).

5. Similarly, Rouse contends that the validity of scientific claims is constituted in a rhetorical space, where rational persuasion of peers becomes the primary channel through which scientific truth is established: “Scientific claims are thus established within a rhetorical space rather than a logical space; scientific arguments settle for rational persuasion of peers instead of context-independent truth . . .” (1987, 120; see also Overington 1977; Pera 1994).

6. Hesse goes on to say: “[A]n account of empirical science something like Popper’s is incorporated in Habermas’ notion of the ideal speech situation, and the justification of natural science for him is itself an application of the regulative ideal” (1981, 382). These comments should be taken in light of Habermas’ change in position over time on the ideal speech situation—his later thought on the matter recognized the construct as a regulative ideal that might never be achieved fully in practice (see Habermas 1986, 93; Dews 1986, 17).

7. In particular, Longino’s fourth criterion of scientific incorporates directly Habermasian theory: “Invocation of this criterion conforms the kinship of this account of objectivity with the account of truth that Jürgen Habermas has developed as part of his theory of communicative competence” (Longino 1990, 78).

8. Habermas’s critique of positivism rests on a fundamental distinction between kinds of human inquiry. Roughly stated, strict scientific (“empirical-analytic”) approaches are here contrasted with social, interpretive (“historical-hermeneutic”) modes of investigation. According to Habermas (1971), the positivist program elides this distinction by embracing a unified model of inquiry, with a uniform methodology dictating the terms and procedures of investigation for all projects, regardless of object domain.

9. This reading finds support in Habermas’s rejection of Marcuse’s vision of a transformed “New Science” (Marcuse 1964, 185) that would take on an emancipatory function in the politics of a liberated society. On Habermas’s view, the neutral political valence of the universal human interest in technical control of nature would preclude the emergence of such a politically progressive scientific practice (see Habermas 1970, 88; for further commentary see Whitebook 1979, 63).

10. As Habermas elaborates, "I see as one of the specific performances of social systems their expansion of control over outer nature through the medium of utterances that admit of truth. Work, or instrumental action, is governed by technical rules. The latter incorporate empirical assumptions that imply truth claims, that is, discursively redeemable and fundamentally criticizable claims" (1973, 9).

11. As Habermas points out, "argumentation is designed to make possible not impartiality of judgment but freedom from influence in will formation. To that extent the rules of discourse themselves have a normative quality, for they neutralize imbalances of power and provide for equal opportunities to realize one's interests" (1990, 71).

12. Where Longino argues that particular interests are inherent in the background knowledge of scientists and need to be balanced in a process of intersubjective criticism, Habermas contends that the requirement of argumentation is embedded as a universal assumption always already anticipated in the advancement of scientific validity claims.

13. This principle can work as a benchmark for evaluative criticism: "While the conditions for objectivity are at best imperfectly realized, they are the basis of an ideal by reference to which particular scientific communities can be evaluated" (Longino 1990, 80).

14. In Austin's account, "performative utterances are commonly the central element of an act, but rarely complete the act themselves. Usually, other conditions need to be satisfied, e.g. supplementary physical acts (handing over money for a bet), and the conditions must be appropriate (the groom must not be married when saying 'I do')" (1975, 8).

15. "What in the empirical-analytic sciences is surreptitiously presupposed by participants in the research process as the basis of their mutual understanding, is reclaimed by interpretive sociology as its proper domain. The communicative context and the experimenting community of the researchers operate on the level of the intersubjectivity of the background knowledge articulated in ordinary language. The strict empirical sciences remain within this horizon without questioning it; the task of sociology is to comprehend it by thematizing it" (Habermas 1988, 109).

16. At a higher level of reflection, the working notions of scientific "community" (see Traweek 1992 and 1988) and scientific "consensus" (see Nelkin 1979) can be complicated and brought into the ambit of discussion. Where notions of consensus and community are imposed by arbitrary fiat, those interested in articulating alternative conceptions of community and consensus should have available grounds of normative critique so as to be free to present competing visions that meet with full and fair evaluation. For further relevant discussion, see Fraser (1989); Felski (1989); and Asen and Brouwer (2001) on the topic of "counter-public spheres."

17. Ferrara (1987) argues that by failing to appreciate fully the importance of *phronesis*, Habermas's theory of truth fails to preserve a space for oppositional strategies that question the basic foundational structures of discourse communities. As this argument illustrates, the importance of avoiding calcified and hegemonically dictated visions of scientific "community" and scientific "consensus" may point to the value of thickening Habermas's discourse theoretic account of science with rhetorical theory. See Duxtader (1995); Farrell (1993); Zulick and Laffoon (1991).

18. For a discussion of Habermas's university-based political initiatives in other areas such as mass media publishing and welfare policy, see Holub (1992).

Works Cited

- Asen, Robert, and Daniel C. Brouwer, eds. 2001. *Counterpublics and the State*. New York: SUNY P.
- Austin, J. L. 1975. *How To Do Things with Words*. Cambridge: Cambridge UP.
- Code, Lorraine. 1995. *Rhetorical Spaces: Essays on Gendered Locations*. New York: Routledge.
- Dews, Peter, ed. 1986. Introduction to *Autonomy and Solidarity: Interviews with Jurgen Habermas*, 1–32. London: Verso.
- Duxtader, Erik. 1991. "The Entwinement of Argument and Rhetoric: A Dialectical Reading of Habermas' Theory of Communicative Action." *Argumentation and Advocacy* 28 (Fall): 51–63.

- Farrell, Thomas B. 1993. *Norms of Rhetorical Culture*. New Haven: Yale UP.
- Felski, Rita. 1989. *Beyond Feminist Aesthetics*. Cambridge: Harvard UP.
- Ferrara, Alessandro. 1987. "A Critique of Habermas's Consensus Theory of Truth." *Philosophy and Social Criticism* 13 (Fall): 39–67.
- Fleck, Ludwik. 1981. *Genesis and Development of a Scientific Fact*. Chicago: U of Chicago P.
- Fraser, Nancy. 1989. *Unruly Practices: Power, Discourse and Gender in Contemporary Social Theory*. Minneapolis: U of Minnesota P.
- Gooding, David. 1992. "Putting Agency Back Into Experiment." In *Science as Practice and Culture*, ed. Andrew Pickering, 65–112. Chicago: U of Chicago P.
- Gutting, Gary. 1981. "Habermas and the Natural Sciences." In *PSA 1978: Proceedings of the 1978 Biennial Meeting of the Philosophy of Science Association*, ed. Peter D. Asquith and Ian Hacking, 424–37. East Lansing: Philosophy of Science Association.
- Habermas, Jürgen. 1970. *Toward a Rational Society: Student Protest, Science, and Politics*. Trans. Jeremy J. Shapiro. Boston: Beacon P.
- . 1971. *Knowledge and Human Interests*. Trans. Jeremy J. Shapiro. Boston: Beacon P.
- . 1973a. *Legitimation Crisis*. Trans. Thomas McCarthy. Boston: Beacon P.
- . 1973b. *Theory and Practice*. Trans. John Viertel. Boston: Beacon P.
- . 1982. "A Reply to My Critics." In *Habermas: Critical Debates*, ed. David Held and John B. Thompson, 219–283. Cambridge: MIT P.
- . 1986. *Autonomy and Solidarity: Interviews with Jürgen Habermas*, ed. Peter Dews. London: Verso.
- . 1987. *The Theory of Communicative Action*, vol. 2. Trans. Thomas McCarthy. Boston: Beacon P.
- . 1988. *On the Logic of the Social Sciences*. Trans. Sherry Weber Nicholsen and Jerry A. Stark. Cambridge: MIT P.
- . 1990. *Moral Consciousness and Communicative Action*. Trans. Christian Lenhardt and Sherry Weber Nicholsen. Cambridge: MIT P.
- . 1994. *The Past as Future*. Trans. Max Pensky. Lincoln: U of Nebraska P.
- . 1996. *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*. Trans. William Rehg. Cambridge: MIT P.
- . 1997. *A Berlin Republic: Writings on Germany*. Trans. Steven Rendall. Lincoln: U of Nebraska P.
- Harding, Sandra. 1981. "Four Contributions Values Can Make to the Objectivity of Social Science." In *PSA 1978: Proceedings of the 1978 Biennial Meeting of the Philosophy of Science Association*, ed. Peter D. Asquith and Ian Hacking, 199–209. East Lansing: Philosophy of Science Association.
- . 1991. *Whose Science? Whose Knowledge?* Ithaca, NY: Cornell UP.
- . 1992. "After the Neutrality Ideal: Science, Politics, and 'Strong Objectivity.'" *Social Research* 59: 567–87.
- Hesse, Mary. 1981. "Habermas' Consensus Theory of Truth." In *PSA 1978: Proceedings of the 1978 Biennial Meeting of the Philosophy of Science Association*, ed. Peter D. Asquith and Ian Hacking, 373–93. East Lansing: Philosophy of Science Association.
- Holub, Robert C. 1992. *Jürgen Habermas: Critic in the Public Sphere*. London: Routledge.
- Jay, Martin. 1992. "The Debate over the Performative Contradiction: Habermas Versus the Poststructuralists." In *Philosophical Interventions in the Unfinished Project of Enlightenment*, ed. Axel Honneth, Thomas McCarthy, Claus Offe, and Albrecht Wellmer, 261–79. Cambridge: MIT P.
- Keller, Evelyn Fox. 1985. *Reflections on Gender and Science*. New Haven: Yale UP.
- Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge: Harvard UP.
- Latour, Bruno, and Steve Woolgar. 1979. *Laboratory Life*. London: Sage.
- Longino, Helen. 1990. *Science as Social Knowledge*. Princeton: Princeton UP.
- Marcuse, Hebert. 1964. *One-dimensional Man*. Boston: Beacon Books.
- Nagel, Thomas. 1986. *The View from Nowhere*. New York: Oxford UP.
- Nelkin, Dorothy. 1979. *Controversy: Politics of Technical Decisions*. London: Sage.

- Nelson, Lynn Hankinson. 1990. *Who Knows: From Quine to a Feminist Empiricism*. Philadelphia: Temple UP.
- Nickles, Thomas. 1989. "Justification and Experiment." In *The Uses of Experiment*, ed. David Gooding, Trevor Pinch, and Simon Schaffer, 299–334. Cambridge: Cambridge UP.
- Overington, Michael. 1977. "The Scientific Community as Audience: Toward a Rhetorical Analysis of Science." *Philosophy and Rhetoric* 10: 143–61.
- Pera, Marcello. 1994. *The Discourses of Science*. Trans. Clarissa Botsford. Chicago: U of Chicago P.
- Pickering, Andrew. 1994. "Objectivity and the Mangle of Practice." In *Rethinking Objectivity*, ed. Alan Megill, 109–26. Durham: Duke UP.
- Porter, Theodore. 1995. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton UP.
- Putnam, Hilary. 1981. *Reason, Truth and History*. Cambridge: Cambridge UP.
- Rouse, Joseph. 1987. *Knowledge and Power: Toward a Political Philosophy of Science*. Ithaca, NY: Cornell UP.
- . 1991. "Policing Knowledge: Disembodied Policy for Embodied Knowledge." *Inquiry* 34: 353–64.
- . 1996. *Engaging Science*. Ithaca, NY: Cornell UP.
- Stockman, Norman. 1978. "Habermas, Marcuse and the *Aufhebung* of Science and Technology." *Philosophy of Social Science* 8: 15–35.
- Taylor, Charles A. 1996. *Defining Science: A Rhetoric of Demarcation*. Madison: U of Wisconsin P.
- Tirman, John, ed. 1984. Introduction to *The Militarization of High Technology*, 1–33. Cambridge, MA: Ballinger.
- Traweek, Sharon. 1988. *Beamtimes and Lifetimes*. Cambridge: Harvard UP.
- . 1992. "Border Crossings: Narrative Strategies in Science Studies and Among Physicists in Tsukuba Science City, Japan." In *Science as Practice and Culture*, ed. Andrew Pickering, 429–67. Chicago: U of Chicago P.
- Whitebook, Joel. 1979. "The Problem of Nature in Habermas." *Telos* 40: 41–69.
- Zulick, Margaret D., and Elizabeth A. Laffoon. 1991. "Enclaved Publics as Inventional Resources: An Essay in Generative Rhetoric." In *Argument in Controversy: Proceedings of the Seventh SCA/AFA Conference on Argumentation*, ed. Donn W. Parson, 249–55. Annandale, VA: Speech Communication Association.