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# Snow's Argument Cultures: From clashing contexts to heterogeneous solidarity

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**ABSTRACT:** Understood as an analysis of clashing argument cultures, C. P. Snow's "Two Cultures" illuminates challenges to interdisciplinarity. Argument cultures involve not only distinct styles of argumentation and background assumptions, but also emotional attitudes and prejudices, including disdain for other argument cultures, that rest on ideals of inquiry and society. Case studies suggest that fruitful interdisciplinary work across such cultures requires institutionalized boundary contexts in which heterogeneous solidarity can develop.

**KEYWORDS:** argument, common good, conflict, culture, ethos, humanities, interdisciplinarity, literature, science, Snow

## 1. INTRODUCTION

This year marks the fiftieth anniversary of a single lecture that continues to draw comment. In his 1959 Rede Lecture on "The Two Cultures," C. P. Snow described a "gulf of mutual incomprehension," even hostility and disdain, that separated scientists from "literary intellectuals." Snow attributed the split to a difference in the cultures of the two groups. However, scientists and literary intellectuals were not exactly on a par in his analysis—whereas literary intellectuals are generally opposed to the future, pessimistically resigned to the status quo, scientists have "the future in their bones," ready to tackle the forms of immiseration that separate the majority of humanity from the benefits enjoyed by the developed world.<sup>1</sup>

The rhetorical punch of Snow's analysis relied more on sweeping oversimplification and anecdote than on clear-headed analysis, and his impugning of literary culture provoked strong critical responses. What interests me here are the particular elements that come together in his conception of culture, which combines the classical idea of intellectual development with the more recent anthropological concept of culture as a way of life or constellation of shared social practices. Because Snow attends

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<sup>1</sup> For Snow's Rede Lecture and his "Second Look," I rely on Snow 1965; unattributed intralinear numbers refer to pages in that book. For the first major critical reactions, see Cornelius and St. Vincent 1964.

primarily to matters of substance, the contrasting contents of scientific and literary cultures, he does not develop his general conception of culture in much detail. However, the substantive points at issue for Snow and his critics reveal interesting connections between culture and argumentation. In this paper I elucidate the general features of Snow's conception as a potential contribution to a contextualist argumentation theory. Although Snow's substantive analysis of literary and scientific culture was open to doubt even in 1959, the general conception of culture operative in his analysis provides a framework that has relevance for understanding cultures of inquiry and discourse—what I refer to here as *argument* cultures, which are differentiated not only by characteristic styles of argument but also by culture-specific emotional attitudes, assumptions about the human condition, and visions of a good society.

My aim, then, is two-fold: first, to clarify the conception of an argument culture as it operates in Snow and his critics; second, to show how the conception has broad relevance for understanding debates at the boundaries of science and society as clashing contexts of argument. I proceed as follows. To begin with, it helps to have a more precise sense of the two cultural groups that Snow wanted to identify, or that one might plausibly construe as targets of his analysis (sec. 2). I then turn to the four general features that constitute Snow's operative conception of culture (sec. 3). These features allow us to identify argument cultures, that is, cultures understood as contexts that condition both the standards and substance of cogent argumentation, but that potentially clash with one another (sec. 4). However, as the subsequent controversy over Snow's lecture reveals, argument cultures rest on a deeper difference between the characteristic common goods that, internal to each culture, project clashing visions of the good society (sec. 5). Such clashes are not uncommon in deliberative and policymaking contexts. Snow's notion of culture suggests that successful mediation between argument cultures requires institutionalized "boundary contexts" in which heterogeneous solidarities can develop (sec. 6).

Before moving on, I should remove some possible sources of misunderstanding. Snow's *Two Cultures* is most readily situated in the ongoing discussion—dating at least from the nineteenth century—over the relation between science and the humanities in education and society (see Collini 1998; Gould 2003, pp. 89-95). That issue as such is not exactly my concern here; rather, I am interested in certain recurrent features of cross-context argumentation that Snow landed on—features one can see in the controversy itself that flared up around his Rede Lecture. I do not claim that Snow's analysis represents a conceptual innovation in thinking about science and society, though that might be an interesting question. In any case, in striking his particular conception of culture and relating it to science-intensive policymaking, Snow put his finger on a matter of paramount importance for postwar society—and for us today.

## 2. JUST WHICH "CULTURES" ARE AT ISSUE?

In advancing his two-cultures thesis, Snow explicitly combines the traditional intellectual and anthropological concepts of culture. Even if literary culture is more diverse, Snow insists that both it and scientific cultures display features of both concepts. On the one hand, each represents a kind of intellectual development or refinement of mental capacities; on the other hand, each qualifies as a culture in the sense of "a group of

## SNOW'S ARGUMENT CULTURES

persons living in the same environment, linked by common habits, common assumptions, a common way of life” (p. 64, also pp. 9, 61ff). Much of what Snow attributes to literary and scientific cultures thus falls under the sociological notion of ethos, understood as a set of attitudes, beliefs, norms, and practices characteristic of some group.

In proposing this combination, Snow links the specific contents of intellectual development—the substance of knowledge—with socio-institutional context. Broadly speaking, this move puts him in the company of sociologists like R. K. Merton and Ludwig Fleck, and in some respects it anticipates the substantive sociology of knowledge, just over the horizon, that would develop initiatives like Fleck’s, explaining intellectual content in relation to the social and institutional contexts of inquiry.<sup>2</sup> What stands out in Snow’s approach, however, is the emphasis he places on the emotional and evaluative elements of culture, more on which below.

But precisely which two cultures does Snow have in mind? Snow’s argument suggests that a particular set of intellectual and emotional attitudes is aligned with some fairly clear-cut social-institutional demarcations, such as the academic disciplines that tend to be lumped under the umbrellas of the sciences and humanities. What Snow claims about these two groups goes beyond the obvious fact that different disciplines have distinct objects of inquiry: Snow wants to combine a set of deeper attitudes, including emotional dispositions and visions of the good society, with sociological demarcations.

In the case of scientific culture, the sociological demarcations provide a fairly secure starting point, inasmuch as the sciences have well-known institutional boundaries that are named as such (college departments, conferences, societies, etc). Although Snow considers physical scientists “most representative” of scientific culture, he also includes engineers and applied scientists (pp. 4, 66-68). I take it, therefore, that scientific culture, roughly speaking, first of all includes people trained and working as natural scientists or engineers; this presumably includes scientifically trained administrators engaged in science-intensive policymaking. The social sciences, on the other hand, seem to fall into what Snow later called a “third culture” of “social historians,” which he believed was beginning to emerge (70f).

The social-institutional scope of literary culture presents a more difficult case. Although some have identified it with the humanistic disciplines, Snow seems to have something both wider and narrower in mind. Wider, in that he targets creative writers and critics and not simply academics; narrower, in that he targets fiction and poetry above all. Snow further complicates matters by sliding from “literary culture” to “traditional culture,” a move that suggests his demarcation primarily depends on intellectual attitude rather than on a distinct social-institutional setting. (I’ll say more about the idea of traditional culture in section 3.2 below.) In defending Snow, Martin Green apparently accepts the primacy of an intellectual demarcation when he claims that Snow’s label of literary intellectual “applies fully only to modern [i.e., modernist] writers and critics”; whether academics fall within Snow’s group of literary intellectuals depends on their

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<sup>2</sup> Substantive sociology of scientific knowledge (SSK) was still at an embryonic stage in 1959, and would not fully come into the world until the 1970s, with various proposals for a sociology of scientific knowledge (e.g., Bloor [1978]1991). In contrast to SSK, Merton’s sociology of knowledge still focused on institutional conditions for good science, but it did not attempt to explain the actual content of science in sociological terms (Merton 1973). Going beyond Merton, SSK theorists developed earlier initiatives (e.g., Fleck [1935]1979, Mannheim [1936]1955; Kuhn [1962]1996) into a full-blown sociological research program.

attitude and specialization (Green 1965, pp. 15-16). Nonetheless, literary intellectuals in this sense have an identifiable institutional basis, namely the literary conferences “at which ‘modern’ writers predominate” (ibid., 18). This delimitation of scope should not mislead us into thinking that Snow’s intended target is a minor one: Snow holds that “the modernist movement includes a majority, though not all, of the high talents in western literature over a longish period” (p. 95), and Green notes that “Snow’s case [...] is not inapplicable to literary men of other schools and other eras” (Green, p. 16).

The upshot is that if the sciences form a “culture,” then Snow’s literary intellectuals are better regarded as a subculture within the humanities, namely those writers, critics, and academics whose approaches to literary invention and discourse fall within or draw upon the modernist tradition. This group shares a social-institutional context defined, on the one hand, by humanities departments, which they share with other intellectual subcultures, and, on the other hand, by particular conferences dominated by modernists. Thus Michael Yudkin has it right: “there are dozens of cultures, in Sir Charles’ use of the term” (1963, p. 53). But Snow himself seems to be of two minds regarding the scope of his cultures. On the one hand, he acknowledges the diversity in each culture, noting that his two-cultures analysis simplifies a spectrum of “all kinds of tones of feeling.” Thus literary culture includes a wide “spread of attitudes,” and wide gaps and misunderstandings exist between different sciences.<sup>3</sup> More significantly, in his “Second Look” he concedes he made a hasty generalization to Western culture as a whole, based on his limited experience of English academic culture (pp. 68ff). Nonetheless, Snow insists that a micro-analysis would miss important commonalities shared by certain kinds of inquiry (pp. 66-68).

Perhaps the proper level of analysis depends on the kind of conflict one aims to understand. For Snow, the significant conflict was that between humanists and scientists.<sup>4</sup> Given the importance Snow placed on the educational setting for each group, Collini is right to say that at “the heart of the ‘two cultures’ is a claim about academic disciplines,” which involve “two sorts of intellectual enquiry” (Collini, xliii). However, to understand particular cases of conflict, we may sometimes have to examine disciplinary sub-cultures. In any case, ambiguities in Snow’s understanding of literary culture should not put us off from some interesting implications of his general conception of culture. The formal elements of that conception, I argue, identify important factors in conflicts that arise not only between disciplines, but in a range of contexts in which the sciences intersect with society.

### 3. THE FORMAL ELEMENTS OF SNOW’S “CULTURE”

What kinds of features did Snow identify in distinguishing scientific and literary cultures? His analysis suggests at least four, which we might regard as formal features that characterize his general conception of culture: a social-institutional setting, a style of

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<sup>3</sup> Snow (1965, 10f). Also 31: “It is permissible to lump pure and applied scientists into the same scientific culture, but the gaps are wide. Pure scientists and engineers often totally misunderstand each other.”

<sup>4</sup> Here he had the historical record on his side—not only the long-standing concern over the split between the literary arts and sciences, but also the more recent episode, in the 1920s and 30s, in which humanists criticized scientific-technological progress (see Kevles 1979, pp. 180-84, 236-47); as Kevles (p. 181) explains, the self-styled “humanists” included academics, writers, and poets—hence, Snow’s “literary intellectuals.”

## SNOW'S ARGUMENT CULTURES

argument, a set of emotional dispositions, and a particular vision of the good society. I treat each feature in turn, noting how Snow or his critics refer to them. What matters to me are the kinds of features they refer to, not the accuracy of Snow's substantive description of those features for science or literature.

### *3.1 Social-institutional setting*

I have already touched on this aspect of culture in the previous section. As Snow explains, the anthropological concept of culture presupposes "a group of persons living in the same environment" (p. 64). Whether the environment is a geographic location, a network linked by the exchange of letters, or an internet site, what matters is that members of the culture can come together and interact in a socially organized setting that fosters their culture as an ethos, a set of shared assumptions and practices. This is what I mean by a "social-institutional setting." Snow recognizes this environmental or institutional aspect of culture; indeed the gap between the two cultures arises in part because "[t]here seems [...] to be no *place* where the two cultures meet" (p. 16, my emphasis).

Snow identifies educational institutions as the primary social-institutional setting for each of the two cultures (pp. 17-21, 34). Although, as I noted earlier, Snow does not have exactly the humanistic disciplines in mind, his comments on English educational structures suggest that institutionalized disciplinary structures provide the primary institutional setting where each culture is, to a large extent, formed and sustained. Although conferences might play an important role in literary culture, writers and critics are located, often enough, in colleges and universities. However, what matters for my purposes is the general point that cultures depend on social-institutional sites, whether these are formally institutionalized or merely informal gathering places, where members can come together and sustain their identity as members of the culture in question.

### *3.2 Style of Argumentation*

Each of the two cultures involves a characteristic style of argumentation. Snow is a bit clearer on this point for the scientific culture, which he says "contains a great deal of argument, usually much more rigorous, and almost always at a higher conceptual level, than literary persons' arguments" (p. 12). Snow refers, I take it, to technical arguments that adduce evidence and mathematical considerations in support of some hypothesis or finding. Such arguments presumably depend on the "common standards and patterns of behavior [e.g., methods of inquiry], common approaches and assumptions" of scientific culture (p. 9).

Snow says nothing positive about "literary persons' arguments." What might such arguments even be? Presumably, at the least, those of literary criticism, which after all involves a certain kind of argumentation based on the application of literary standards to the interpretation and evaluation of texts. However, Snow's two major critics, F. R. Leavis and Lionel Trilling, suggest that literature itself involves argumentation. According to Trilling, literature involves a "criticism of life" (Trilling 1962, p. 468); Leavis argues that great literary works confront us with the question, "What, ultimately, do men live by?" (Leavis 1972, p. 56) Inasmuch as literary works—fiction, poetry,

theater, etc.—attempt to depict some aspect of human existence faithfully, in a way that challenges the reader personally to confirm the judgment “that the thing *is* so,” such works invite the reader into a “third realm” situated between the private realm of subjective experience and the public realm of detached scientific observers who quantify and measure (*ibid.*, p. 62). These remarks suggest that literature invites readers and literary critics into a kind of argument, namely a mode of critical reflection on human existence that is not merely private, but calls for confirmation from others. Perhaps we might call this “appeal to common experience.”

We might also understand Snow’s connection of literary culture with traditional culture as a point about its distinctive style of argument. As Snow points out, a hallmark of literary culture is familiarity with the literary canon of great authors, such as Shakespeare—a familiarity that scientists generally lack. To align literary culture and traditional culture, then, suggests that (a) disciplinary competence in the literary humanities involves mastery of the canon, such that one (b) is able to make cogent interpretive arguments about past works of literature, and (c) can judge the quality of creative literary innovation in light of the canon.

### *3.3 Emotional features*

Judging from repeated remarks on feelings, Snow takes the emotional attitudes of a culture as one of its primary features. Indeed, he distinguishes the two cultures in large measure by their opposed feelings:

The feelings of one pole become the anti-feelings of the other. If the scientists have the future in their bones, then the traditional culture responds by wishing the future did not exist. (p. 11)

Here too, the two cultures are not quite on a par. Whereas Snow describes the scientific culture by the optimistic attitude of its members, who have a “social hope” that the conditions of material life can be improved across the globe by science and technology, literary intellectuals appear in largely negative, reactive terms, as the above quotation reveals (pp. 5-7, 9, 27). For some critics, the final straw lay in Snow’s claim that “[i]ntellectuals, in particular literary intellectuals, are natural Luddites” (p. 22). Snow means that literary intellectuals failed to understand the industrial revolution, but instead either “shuddered away” or reacted with “screams of horror,” not realizing that “[i]ndustrialization is the only hope of the poor” (p. 25).

These emotional reactions are bound up with different visions of the good society, more on which shortly. Here I want to emphasize the contrasting emotional reactions that distinguish the two cultures for Snow: one optimistically forward-looking to a better future, the other negatively critical of the present society increasingly committed to science and technology—a negative reaction that at its worst, according to Snow, slides into “the most imbecile expressions of anti-social feeling” (8).<sup>5</sup> Besides these contrasting feelings, Snow also notices a further feeling that the two cultures share: a lack of interest in the other culture, which at certain points becomes downright hostility: “Between the two groups [...] there is little communication and, instead of fellow-feeling, something

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<sup>5</sup> Although Trilling (1962) attempted to deflect this criticism, Green (1965) adduced evidence from literature in its support.

## SNOW'S ARGUMENT CULTURES

like hostility” (pp. 61, also 13ff).

### *3.4 Visions of the good society*

The contrasting feelings and mutual hostility described above form an amalgam with different visions of the good society. This point becomes evident, first of all, in Snow's alleged differences in the evaluation of the industrial revolution. As mentioned above, literary intellectuals tended to react negatively to the revolution, if they did not ignore it altogether. (The latter claim—that intellectuals simply ignored the revolution—was vigorously challenged by Trilling and Leavis.) Unlike members of the traditional culture, however,

[f]arsighted men were beginning to see, before the middle of the nineteenth century, that in order to go on producing wealth, the country needed to train some of its bright minds in science (p. 23).

Interestingly, pure scientists themselves were slow to appreciate the importance of productive industry; according to Snow's description, poor workers and artisans were much quicker to see the benefits of industrialization. Nonetheless, the scientists “found it fairly easy to learn,” particularly as the industrial revolution gave way to what Snow calls the “scientific revolution” that, by his reckoning, only began in the early twentieth century, when science and industry began to forge much closer relationships (pp. 33, 25ff).

The different visions of the good society thus appear, first of all, in contrasting reactions to industrialization and the expanding use of scientific-technological knowledge in society. Members of the scientific culture tend to welcome such developments or to carry them further, whereas literary intellectuals either remain indifferent or criticize them. Snow goes on, however, to connect this initial contrast with a particular view on the part of scientists about the most pressing problem confronting the planet and, correlatively, what constitutes the leading point of social betterment. The problem, in his view, is the gap between the rich and poor nations; the most important social improvement thus consist in overcoming that gap, “to remove unnecessary suffering from a billion and a half human lives,” primarily by spreading the material benefits of science and technology around the globe (pp. 78, also 41ff, 77ff).<sup>6</sup> Indeed, he continues, the “scientific revolution is the only method by which most people can gain the primal things (years of life, freedom from hunger, survival for children)” (p. 79ff). Whereas scientists are ready to tackle this problem (and, he naively predicts, will solve it by turn of the millennium), literary intellectuals remain complacent or even resistant.

Snow's claim about the primary problem confronting the globe and its technoscientific solution drew some of the sharpest critical reactions. Picking up on one of Snow's expressions that associates material improvement with the availability of jam, Leavis said Snow represented the “world in which the vital inspiration, the creative drive, is ‘Jam tomorrow’ (if you haven't any today) or (if you have it today) ‘More jam tomorrow.’” In Snow's ideal world, “‘standard of living’ is an ultimate criterion, its raising an ultimate aim, a matter of wages and salaries and what you can buy with them,

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<sup>6</sup> In fact, in his “Second Look,” Snow avowed that he wished he had retained the originally intended title of his Rede Lecture, “The Rich and the Poor” (Snow 1965, p. 79).



reduced hours of work, and the technological resources that make your increasing leisure worth having, so that productivity—the supremely important thing—must be kept on the rise, at whatever cost to protesting conservative habit” (Leavis, p. 58ff).<sup>7</sup> Snow’s critics, in sum, charged him with reducing the good life to the material comforts of consumption—a society that some saw as well underway. As an alternative to Snow’s “vision of our imminent tomorrow” Leavis pointed to a broader vision, involving “mankind [...] in full intelligent possession of its full humanity” and, at the institutional level, universities centered around “vital English School[s]” (i.e., English departments) (Leavis 1972, pp. 60, 63).

#### 4. SNOW’S CULTURES AS CLASHING ARGUMENT CULTURES

In calling Snow’s two cultures “argument cultures,” I do not mean that either science or the humanities, as cultures of inquiry and discourse, are reducible to practices of argumentation. Rather, I mean that in each of these cultures, members engage in inquiry with an eye to making public arguments, whose form and substance are conditioned by the cultural context. In this section I want to fill out this contextual thesis. This claim is trivial at one level, of course. If we focus on different academic disciplines, where the idea of an argument culture has the most purchase, then the difference in subject matters leads directly to different styles and standards of cogent argumentation, which in turn generate a challenge to interdisciplinary cooperation. What makes Snow’s notion of culture interesting, I propose, are two further moves, neither of which is entirely obvious as a general feature of a culture of inquiry: first, he calls for greater communication between the two cultures; second, he identifies affective and evaluative aspects of argument cultures that undermine such communication. I treat each move in turn.

##### *4.1 Cultures as relevant contexts for each other*

In his retrospective on Snow, Roger Kimball (1994) argues that the gulf of incomprehension Snow identified was trivial: true, the gulf is there, but does it really matter? For Kimball, “the more pressing issue concerns the fate of culture in a world increasingly determined by science and technology.” Kimball accepts Leavis’ view that the sciences do not constitute a culture—which is to say: the sciences cannot provide moral guidance—and like Leavis, he accuses Snow of proffering a dim vision of the good society, in which culture disappears as a moral force: “culture is no longer an invitation to confront our humanity, but a series of opportunities to impoverish it through diversion.” In making this argument, however, Kimball accepts the basic fact that the sciences and the humanities misunderstand each other, but he believes one should not expect otherwise, given the challenges of disciplinary specialization. The sciences and humanities pursue such different objects of knowledge, that neither culture, as a context of inquiry and argument, remains relevant to the other’s inquiry and argument. Their divorce is a trivial matter, not worthy of concern.

Snow challenges just that assumption. Although he reserves his harshest

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<sup>7</sup> Roger Kimball (1994) seconds Leavis’ assessment: “In the end, Snow is a naïve meliorist. For him, a society’s material standard of living provides the ultimate, and really only, criterion of ‘the good life’; science is the means of raising the standard of living, ergo science is the arbiter of value.”

## SNOW'S ARGUMENT CULTURES

criticisms for literary intellectuals, he does not fail to recognize the impoverishment that non-communication produces on both sides: the “polarization is sheer loss to us all” (pp. 11, also 13ff). Snow in effect claims that the two cultures, as contexts of inquiry and discourse, are *relevant for each other*.

However, the precise nature of this cross-context relevance, the sort of communication Snow envisions, remains unclear in his *Two Cultures*. Many remarks imply that Snow envisions a kind of moral discourse, in which humanists learn to revise their moral vision by accepting the future-oriented optimism of scientists. As we have seen, Leavis and Kimball reject that idea as the very antithesis of culture—why regard scientists as our moral guardians?<sup>8</sup> At one point, Snow hints that the “clashing point of two subjects, two disciplines, two cultures—of two galaxies, so far as that goes—ought to produce creative chances. In the history of mental activity that has been where some of the breakthroughs came” (p. 16). But what sort of “breakthroughs” could possibly arise from communication between a literary critic and, say, a high-energy physicist? A more compelling piece of science fiction? Snow is elusive on that point. One might, perhaps, point to works of fiction that confront us with the disturbing implications of certain scientific hypotheses, as *A Clockwork Orange* did with behavioural psychology.

In my opinion, Snow's most plausible statement of the kind of communication he has in mind comes out only toward the end of his “Second Look”:

It is dangerous to have two cultures which can't or don't communicate. In a time when science is determining much of our destiny, that is, whether we live or die, it is dangerous in the most practical terms. Scientists can give bad advice and decision-makers can't know whether it is good or bad. On the other hand, scientists in a divided culture provide a knowledge of some potentialities which is theirs alone. All this makes the political process more complex, and in some ways more dangerous, than we should be prepared to tolerate for long, either for purposes of avoiding disasters, or for fulfilling [...] a definable social hope (p. 98).

In this passage Snow has his finger on the problem of expertise in policymaking contexts (cf. Snow 1961). This problem is indeed plausible, having been on the agenda for more than a century, and it now has the growing attention of scholars working in science and technology studies (STS).<sup>9</sup> Here a kind of moral discourse should indeed take place, albeit a discourse in which humanists have an equal voice and, *pace* Snow, do not simply bow to the alleged moral superiority and foresight of scientists.

Notice too how Snow expands the horizon in the above quotation. No longer are simply two academic cultures at issue, but rather the relationship between scientific inquiry and policymaking. Indeed, the kind of danger Snow describes potentially applies to any boundary context where scientific arguments and findings bear on practical decisions, be they personal, medical, political, legal, or administrative. Thus the more general point we can draw from Snow is this: at the boundaries of science and society, quite different cultures of inquiry and discourse, as contexts of cogent argumentation with subject matters as far apart as fiction and physics, can become relevant for each other. Such cross-context relevance can take different forms (see Rehg 2009b). Here it means

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<sup>8</sup> In fact, by 1959 there was a strong trend to assert the “moral equivalence” of scientists, i.e., to claim that scientists were no more virtuous than the ordinary person, were just as liable to self-interested and mundane motives; see Shapin 2008, chap. 3.

<sup>9</sup> The problem of expertise is as old as Plato; for work in STS, see Chilvers 2008; Lengwiler 2008; Collins and Evans 2007; Turner 2001.

that when some question *Q* arises at the boundary of science and society—as such questions can in expert advisory committees—that question concerns both cultures. Consequently, arguments made in one culture *C*<sub>1</sub> about the proper answer to *Q* deserve consideration in the other culture *C*<sub>2</sub>, where the cogency of arguments from *C*<sub>1</sub> are legitimately subject to further critical scrutiny. The opposite relation might also hold. But this is hardly a pleasant prospect, given Snow's second move, his emphasis on the affective side of culture.

#### 4.2 *Argument cultures as clashing contexts*

The idea that diverse argument cultures, as diverse as fiction and physics, can be relevant contexts for the evaluation of one another's arguments, is readily supported by contemporary controversies at the science-society boundary. The most obvious cases are those that involve decisions about the direction of scientific research, the adoption of some new technology, or the regulation of some previously unregulated area of social life. Ought we to direct more medical research to the cure of rare cancers, or to combating malaria? Shall we promote the construction of nuclear power plants to meet looming energy demands? Must international rules be established regulating the conduct of pharmaceutical trials in poor nations? Scientists clearly have a role in answering such questions, which all involve technical considerations that bear on any assessment of the prospects and consequences of possible courses of action.

But other non-scientific cultures of inquiry have something to say about such questions as well, a point that Snow tended to downplay or ignore altogether. STS research has now established the importance of local folk knowledge in answering many such questions (see Collins and Evans 2007; Fischer 2000; Wynne 1989). One can extend the point to the humanities. These too have a place at the table, at least in the broader public discourse, if not directly on every expert committee. Literary cultures in particular, by which I mean not only fiction and poetry but also film, have the means to pose the existential aspects of the question—for example, to depict the human costs of unregulated clinical trials in Africa, as in Le Carré's *Constant Gardener* (2001). In doing so, they confront us with our humanity and pose the question of the good society in graphic terms. Such depictions constitute contexts for evaluating scientists' claims about the benefits of some proposed technology, or claims about the importance of a line of research. They bring abstract scientific arguments and statistics down to the earth of concrete human experience. But as contributions to a public discourse, literary depictions may not proceed arbitrarily: narratives and films are open to potential criticism for distorting the facts. To that extent, literary works are subject to scientific evaluation.<sup>10</sup>

However, if cultures as diverse as fiction and physics are relevant for each other, then the differences in subject matter and style of argumentation, which make communication so difficult, can hardly be waved off as a trivial problem of no concern. If two contexts are mutually relevant, then cross-communication is a *legitimate demand*. But differences in style of argument are the least of our worries. Such differences are tractable—one can learn different vocabularies and styles of argument, as rhetoric of

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<sup>10</sup> A recent example is Michael Crichton's *State of Fear* (2004), which boils down to a literary argument, complete with footnotes citing scientific journal articles, against the environmental movement; in making such an argument, Crichton's work calls for critical evaluation from a scientific perspective.

## SNOW'S ARGUMENT CULTURES

science scholars in English departments indeed have. Snow ups the ante by associating cultures with different “tones of feeling,” including mutual hostility, and emotionally laden visions of the good society. If Snow’s conception of culture applies to the different groups that we expect to sit down and reason together at the boundaries of science and society, then a certain amount of mutual disdain should not surprise us. Indeed, this surmise has been documented even within scientific culture, as in the case of the multi-disciplinary controversy over the cause of the dinosaur’s extinction (Officer and Page 1996, pp. 9ff, 77-81). Nor should we be surprised that, more or less below the surface, parties are clashing over different evaluations of what is socially desirable. This kind of clash is particularly clear, for example, in the debates over embryonic stem cell research in the United States. Such clashes tend to be emotionally charged, precisely because they partly turn on visions of the good to which participants are deeply attached. If Snow is right about argument cultures, then affective sources of conflict pose a significant challenge for public deliberation and policymaking. However, the problem involves a deeper layer of conflict, which I take up next.

### 5. ARGUMENT CULTURES AND COMMON GOODS

Up to this point I have attempted to ferret out a conception of an argument culture from Snow’s *Two Cultures* and its critics. I now develop a connection between argument cultures and conflicting notions of the common good, which has further implications for the clash of argument cultures. But before I tackle that issue I first recapitulate the conception of an argument culture in more precise terms, insofar as precision is possible in such matters.

#### *5.1 Argument cultures in sum*

As I understand the anthropological concept, to identify a distinct culture minimally presupposes that one can identify a (more or less bounded or well-defined) collection or group of human beings, who live or interact in some socially/institutionally structured setting or locale, such that their living together and interacting within that setting allows them to sustain and develop a more or less shared group ethos, i.e., some characteristic set of ideas, beliefs, norms, goals, social practices, etc. The qualifier “more or less” (bounded or well-defined, shared) is necessary to allow for the complexities and ambiguities of cultural membership—identifying a culture is not like defining a biological species. By combining this concept with the classical concept of culture, Snow in effect introduces a condition that members have been (or are being) educated into a practice of inquiry, discourse, and creative expression. However, Snow also includes affective elements in his conception, which further specify the content of the ethos. Finally, if we understand Snow’s conception of culture as an argument culture, then we must introduce a further condition to the effect that the ethos conditions argumentation.

Putting the above features together, we get the following set of conditions for identifying a distinct argument culture (AC). That is, one must identify:

- (i) a more or less well-defined collection or group of human beings,
- (ii) who have been (or are being) educated into a practice of inquiry, discourse,

- and creative expression, and
- (iii) who interact in some socially/institutionally structured setting or locale,
- (iv) such that their interacting within that setting allows them to sustain and develop their practice of inquiry and expression (ii above) as part of a more or less shared ethos that is characteristic of the group, that is,
- (v) a set of ideas, beliefs, assumptions, norms, goals, social practices, and affective dispositions, including affectively charged evaluations (a vision of the good society), which
- (vi) condition what counts as cogent argumentation for members of the culture.

These conditions are either explicit in Snow's text or presupposed by it. When we put them together, however, a disturbing conclusion emerges. If argument cultures are contexts of argument (as in (vi) above), and if such cultures include affectively charged evaluations, then such evaluations and feelings condition what members regard as a cogent argument.

But hasn't that point been obvious for millennia? After all, Aristotle spent considerable time in his *Rhetoric* detailing the ins and outs of *pathos*. However, the above analysis goes a step farther, linking pathos not simply with audience and rhetorical occasion but with cultures of inquiry. More to the point, Snow's analysis implies that arguments are conditioned by emotionally charged visions of the good society that characterize entire cultures of inquiry. This claim hardly appears obvious, indeed we might wonder how it could possibly be true for technically circumscribed forms of inquiry. To be sure, I have not insisted that Snow accurately described scientists and humanists in every respect. My interest lies with his conception itself. But does that conception find any real examples? Do such cultures actually exist? I think they do, but probably at a different level than Snow initially supposed. As he later admitted, he had characterized two English subcultures, at best. So perhaps argument cultures in the above sense of (AC) are more likely to exist as micro-cultures. However, some controversies, such as the stem-cell and creationist debates in the United States, indicate that argument cultures can be larger, though they might not neatly divide by discipline. In any case, the presence of such controversies at the boundaries of science and society suggests that (AC) presents an interesting hypothesis for understanding such debates. I thus take it as an open question, awaiting empirical study, as to whether one can in fact identify cultures that meet the above six conditions.

### 5.2 *The common good*

We can now turn to the common good. When we connect (AC) with that notion, some interesting further conclusions follow. The notion of the common good comes into view once we notice that a culture or group ethos functions as a kind of common good, as various authors have maintained (Hollenbach 2002, chap. 3; Taylor 1990; cf. Tuomela 2007, p. 7). In calling the ethos a common good, I mean that the ethos is both *shared* and *good*.

In saying that argument cultures are shared, I do not refer to a merely fortuitous confluence of attitudes, but rather to a kind of collective commitment (see Tuomela 2007). Through their training into a culture's practice of inquiry and argument, members

## SNOW'S ARGUMENT CULTURES

(e.g., scientists) come to accept elements of the cultural ethos (standards of conduct in experimentation, writing papers, etc.) as binding on their behaviour in the appropriate circumstances (i.e., when they act in the role of scientist, say at a conference or in the laboratory). Failures to adhere to the ethos typically incur sanctions from other members—criticism, puzzlement, marginalization or even expulsion from the culture.

In calling the cultural ethos a good, I mean that members regard it as something beneficial and therefore promote or sustain it. An ethos can have a two-fold goodness for members. On the one hand, it provides the social-institutional conditions for producing goods of inquiry, invention, and creative expression: greater understanding of nature in the sciences, beneficial technologies in engineering, and compelling works of art in the humanities. From that perspective, the ethos is an instrumental good, a means to realizing various beneficial intellectual and physical objects. Those realized goods, the products of Snow's two cultures, benefit not only members of the discipline but, allegedly, the whole society. On the other hand, the kind of ethos that characterizes an argument culture is not merely instrumental, in the way that money is merely a means to acquiring something that otherwise has no relation to money. There are at least two reasons for this. First, insofar as an argument culture exemplifies culture in the classical sense, it involves a cultivation of intellectual excellence on the part of its members. This is clearest in the case of pure science and the humanities. One cannot enjoy the products of those cultures without participating in the cultures themselves and attaining a modicum of the mental development they demand. One cannot appreciate a work of art if one has no understanding of the ethos from which that work emerged, and one can appreciate a scientific advance only in the barest sense if one has no curiosity about nature or sense of the challenges scientists overcame in making the advance. Second, education into an argument culture tends to form the personal identity of members. Although some members might pursue a career in some field merely as a routine job, I suspect that many, particularly those at the doctoral level, enter a particular discipline because it fits with their personal interests and aspirations for life. The ethos for them cannot be merely instrumental, bound up as it is with their sense of who they are and want to be, what they hope to achieve in life.

If a cultural ethos is a non-instrumental common good in the above sense, then we can make sense of the idea that argument cultures have an affective dimension, including possibly a level of disdain for other cultures. As noted above, education into an argument culture requires one to join in a collective commitment, which becomes stronger the farther one advances. Like most strong commitments, the commitment to the goodness of a shared practice of inquiry is likely to carry considerable emotional charge for those who have made that commitment over the course of their education. And in grasping the goodness of one's own way of inquiry and argument, one can be tempted to dismiss other forms of argument as second-rate, shoddy, or even delusional. Consider also the fact that successful members' grasp of the goodness of their ethos or argument culture lies, to a significant extent, at an *experiential level*. For them, the goodness of an ethos is as much *felt* as it is intellectually justified. As members' experiential sense of their disciplinary practice develops in the course of their education and ongoing participation in the practice, they can become increasingly convinced of its obviously compelling character, its *right to prominence* in any educational curriculum, more so than other disciplines.

Members become convinced of the goodness of their disciplinary culture through

their ongoing participation in its practice. This conviction involves two things: commitment to a practical conception of cogent argumentation, and commitment to the value of the products of one's inquiry and argument. I thus propose a critical hermeneutical principle: when two argument cultures advance competing visions of the good society, in the manner Snow describes, one should ask whether their members might be projecting convictions about the common goods of their respective practices onto society at large. In fact, the controversy between Snow and his main critics seems to confirm this suspicion. Although Snow spoke in a literary style in his Rede Lecture, he essentially spoke from the standpoint of the scientific culture in which he had originally been educated. As a former scientist, Snow had become committed to the common goods of the technoscientific culture—above all to its technological products.<sup>11</sup> Because science and engineering could and did produce material benefits, Snow took that goal as the primary norm for *general social* betterment: basic material benefits are the most pressing common good. Conversely, Leavis and Trilling were committed to the products of literature, works that confront us with our humanity and the ultimate question of human existence. Consequently, they could not abide any vision of the good society that would give priority to material comforts—as Snow's vision did. Rather, they envisioned a society in which the humanities would play the central role.

The remarks on Snow and his critics are conjectural, to be sure. But given the conception of an argument culture, the proposed hermeneutical principle is reasonable: the affective aspect of a cultural ethos makes it understandable that members could tend to develop a particular conception of the common good for a whole society, in which their contribution would play the central or most necessary role. Notice that on this analysis, one need not appeal to crass expectations of personal gain, nor need one deny that the goods at issue are real. The principle follows from the normative aspects of an argument culture and its goals. Because members have first-hand experience of the common goodness of their ethos and its products, it is obvious (to them) that those products are essential components of a good society.

## 6. CONCLUSION: IMPLICATIONS FOR THE UNDERSTANDING AND PRACTICE OF PUBLIC ARGUMENTATION

The foregoing analysis has, I propose, implications not only for science-intensive policymaking contexts, such as expert advisory committees, but also for cross-context argumentation in general. As I have developed it, the idea of an argument culture applies most readily to modes of inquiry and discourse that tend to be associated with academic disciplines. Although argument cultures are not confined to school settings, they presuppose training in a mode of inquiry or discourse, and thus tend to draw their membership, first of all, from educational institutions. As distinct contexts whose standards, norms, and background assumptions condition argumentation in culture-specific ways, argument cultures can clash wherever two or more cultures converge on the same question—thus in any collaborative or deliberative setting in which some hypothesis or political-legal outcome calls for input from different epistemic perspectives. These clashes become all the more intense insofar as members are committed to different emotion-laden conceptions of what counts as cogent

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<sup>11</sup> Cf. Snow 1961; on Snow's background as a failed scientist, see Collini (1998, xvii-xxii).

## SNOW'S ARGUMENT CULTURES

argumentation and good inquiry. Such clashes have been documented in STS, not only within the sciences, that is, in multidisciplinary debates, such as the dinosaur extinction controversy (see Glen 1994), but also in science-intensive policymaking contexts, where one can find tensions between technocratic and democratic models of good policymaking (see Jasanoff 1990).

Does the idea of an argument culture extend beyond cultures of inquiry and discourse? That is, might we regard any interest group or subcultural perspective in political deliberation as a potential argument culture? I think we might indeed, insofar as (a) these perspectives are held by members of some group (and not merely individually), and (b) members committed to the perspective are also committed to a particular mode of inquiry or discourse distinctive of the perspective. Religious groups, for example, typically include members who have been trained in a style of theological inquiry whose standards, methods, values, and assumptions depend in some measure on the particular religion. Thus evangelical Christians tend to argue by relying heavily on Biblical authority, whereas Catholic bishops, when they speak publicly, often draw on philosophical lines of argument. Such groups tend to have rather fully elaborated visions of the good society (e.g., Catholic social doctrine).

If this extension goes through, then the idea of an argument culture has rather general application for the understanding of political discourse. It also complicates the analysis of discourse, inasmuch as we would have to expect that any given participant might bring a mixed background of argument cultures to the table—for example, a biologist with strong religious convictions. Even if we hesitate to extend the idea that way, three further implications appear plausible. I close by briefly sketching these.

(1) Today we expect that public deliberation on political issues will often involve different groups whose positions on specific proposals are grounded in competing visions of justice, a good society, and the common good. In pluralistic societies, the parties to deliberation are likely to have different religious and ethnic worldviews. Snow's conception of argument cultures complicates this picture by suggesting that different ideas of the good society can arise not merely from the usual subcultural groups and special interests, but from the very disciplines of inquiry that provide methods and information for guiding reasonable debate. That is, the experts whose role is to inform or advise policymakers and citizens, or to develop methods of structuring deliberation, might themselves harbour strong commitments to different visions of the good society that then influence their contributions. If so, then they do not assist deliberation as neutral advisors, but enter the fray as additional interested parties.

In putting together expert committees, this possibility must be kept in mind. Notice, however, that the problem is not quite the standard concern about conflicts of interest that skew a scientist's judgment on topics that touch on, say, the interests of a corporate sponsor. At the National Academy of the Sciences, for example, potential committee members must report such conflicts of interest, which are assumed to arise from a scientist's funding sources or corporate affiliations, and outside criticisms of expert knowledge often tend to target just this sort of conflict (Brown 2008; Hilgartner 2000, pp. 63-65, 91-98; Boffey 1975). But Snow's analysis suggests a subtler scenario, one in which the scientific expert projects the common good of his or her practice of inquiry onto the public stage, as the good for a whole society. Among the clearest examples are the proposals by some scientists and writers in the past century for a world



government by scientists (e.g., H. G. Wells, Leo Szilard). Snow seems to have fallen into a similar trap when he takes science and technology as *the only path* to overcoming global inequality. He thereby projects the material goods of technoscience onto a vision of global justice.

(2) Of course, the projection of the good of a particular argument culture onto inquiry in general or onto society as a whole need not, and often does not, occur when argument cultures come together or enter political contexts. Such projection is merely a possible trap, into which some members of the culture sometimes fall. Nor does the problematic character of such projection follow simply from the fact that in projecting, one takes a good that one has experienced in one's own practice and extends it to further contexts. Rather, the problem lies in the fact that projection involves a *unilateral imposition* across contexts, rather than a *dialogical proposal*. In projecting the good with which I am familiar onto other disciplines or society as a whole, I overlook shifts in context. Nonetheless, the goods internal to, or produced in, one context or culture of argument may indeed be relevant for other contexts—they might well deserve consideration abroad, as it were. This is just what Snow wanted to argue, I think, when he insisted on the relevance of the sciences for social welfare. However, he failed to situate his proposal within a broader vision that did justice to the concerns of humanists. In any case, Snow's lecture raises questions for argumentation theory about how we ought reasonably to assess the cross-context relevance of the goods of particular argument cultures.

(3) The third implication I want to mention concerns deliberate efforts to work across disciplinary boundaries, say in interdisciplinary research teams or in expert committees charged with producing a report on some science-intensive question. If my analysis is on target, then we should expect such initiatives to involve clashes of argument cultures, at least to some extent—tensions generated in the collaboration by the members' different training experiences, background knowledge, methods of inquiry and experiences of good science. Given that each member is strongly committed to his or her particular argument culture and its disciplinary ethos as a common good, clashes within the collaborative enterprise can become emotionally charged, as members disagree on what counts as a cogent argument or report.

In fact, one can see such clashes between subdisciplinary groups. In his detailed study of the large collaboration at Fermilab responsible for the discovery of the top quark, Kent Staley (2004) describes a clash between two subcultures in the physics community. The Collider Detector at Fermilab (or CDF) Collaboration—named for the particular system of detectors the collaboration employed, and involving around 450 scientists—relied on a number of different methods of detecting high energy events and analyzing data. The collaboration thus involved a number of subgroups dedicated to different methods. In 1992-1993, the data they collected by these different methods pointed to the existence of the top quark, a subatomic particle that had been theoretically predicted but not yet detected in high energy events. To present their findings, the collaboration undertook a process of writing a lengthy paper arguing that the team had found evidence for the existence of the top quark. But an acrimonious controversy arose within the collaboration over whether the analysis of a particular subgroup actually contributed to the evidence—in effect, whether that analysis supplied additional inductive support for the top-quark hypothesis. The kinematics group employed methods that many of the other

## SNOW'S ARGUMENT CULTURES

physicists, less familiar with that type of analysis, did not entirely trust. In part, the controversy involved two argument subcultures in the physics community: physicists comfortable with kinematic analysis, which involved arcane mathematics and computer simulations, and those committed to the more straightforward counting methods, which sought the quark in statistically significant numbers of certain types of high energy events.<sup>12</sup> In the end, the collaboration included the kinematic data merely as consistent with the evidence supplied by counting methods—not as evidence per se but as a kind of cross-check. One member of the kinematics group, however, remained skeptical of the evidence supplied by the counting methods.

To overcome such clashes, members of collaborations and multidisciplinary advisory committees must learn to forge a new *heterogeneous* argument culture that allows them to work together toward a common goal—be it a longer-range research goal, an ongoing advisory obligation, or simply a one-shot report or paper. If such groups are to become genuine argument cultures, then presumably their collaboration must involve or develop the conditions I listed above (sec. 5.1). But rather than assume that their scientific training already prepares them for cooperation within a shared argument culture, members of the group must educate themselves, in the very course of their collaboration, into a suitable practice of inquiry that creates a shared ethos of argumentation. In fact, Staley's study reveals that the scientists at Fermilab did just that. They constructed a fairly sophisticated set of procedures for writing their paper on evidence for the top quark. Those procedures distinguished different roles and set forth rules for a more civil, inclusive mode of discussion—a set of institutionalized norms for dialectically adequate critical discussion (for details, see Staley 2004, chap. 4; Rehg and Staley 2008; Rehg 2009a, chap. 6). Insofar as such procedures support an argument culture within the collaboration, they help scientists to achieve a kind of heterogeneous solidarity in pursuit of a common intellectual goal.

There also seems to be evidence for such heterogeneous argument cultures in regulatory science domains, where scientific experts from various disciplines must work together with each other and with administrators to produce technical advice for science-intensive policymaking. Studies of expertise suggest that regulatory science works best when committee procedures and membership rules serve to foster a style of interaction and argument that is both participatory and consensual. Participatory, because the effective application of scientific knowledge beyond the laboratory depends on diverse forms of experience, including that of lay persons informed about local contexts of application. Consensual, in order to avoid the counterproductive effects of an overly dictatorial technocratic style on the one hand, and an overly contentious adversarial style on the other (Collins and Evans 2007; Chilvers 2008; Jasanoff 1990). Western polities have developed characteristic regulatory argument cultures—or as Sheila Jasanoff puts it, “civic epistemologies”—that differ in how well they meet these requirements. For example, in the area of biotechnology regulation, the United States tends to have a contentious style, Great Britain leans toward a communitarian approach, and Germany uses a more consensual civic epistemology (Jasanoff 2005, chap. 10).

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<sup>12</sup> I simply significantly: the kinematics controversy was not the only debate in the collaboration, and it also involved charges of data-sharing with non-collaboration members, as well as problems with the ethos and pathos of the involved scientists; see Rehg 2009a, 176-79; on counting versus kinematic methods, and the kinematics controversy, see Staley 2004, 113-30.

My remarks on the above implications remain sketchy, I admit. But I hope they provide at least some grounds for thinking that Snow may have something to say to argumentation theorists today, fifty years after he delivered his famous lecture on “The Two Cultures.”

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[Link to commentary](#)

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