

Accounting for expertise: Wynne and the autonomy of the lay public actor

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This paper argues that the public understanding of science has eliminated the understanding gap between experts and the public, but erected an ontological gap in its place. Experts are conceived of as unreflexive, but lay public actors as reflexive. To provide a concrete grounding for this claim, this paper offers a conceptual analysis of Brian Wynne's work on the public understanding of science. Wynne's work intersects theorizing about late modernity (explored via a comparison with Beck's and Giddens') and debates about the role of experts and the public in decision-making (explored via a comparison to Collins and Evans). I show that Wynne's work, as with Beck's and Giddens', and Collins and Evans', embodies different conceptions of lay actors. In Wynne's work ambivalence arises concerning whether social identities or social relationships ground the theoretical account. I suggest the tension arises because of the general desire of the social science analyst to preserve the autonomy of the lay actor.

1. Introduction

In much of the public understanding of science (PUS) literature, case study analysis often buttresses the assertion that the lay public(s) possesses expertise(s), understanding(s), and knowledge(s) of its own. Indeed, much of PUS denies the kinds of gap between lay public and expert presupposed in deficit models of public understanding. Yet, while PUS has done much to combat the assumption of an "understanding gap" between lay public and expert, it has in effect erected another gap in its place. The new gap corresponds to a gap between the character of lay public members and experts as human agents in themselves. From an understanding gap, PUS now flies very close to an ontological gap. This claim is not the same as the more common observation that PUS generalizations tend to romanticize the public. Rather, the suggestion that PUS opens up an ontological gap between the lay public and expert involves the claim that the lay public is modeled as reflexive agents whereas the expert is modeled as unreflexive. Given PUS empirical concerns to rehabilitate lay public understanding, it would seem that the public as reflexive agents stems from close empirical analysis. However, this paper suggests an equally important cause is the concern of the PUS analyst to preserve the autonomy of the lay public actor in the face of hegemonic control of meanings by experts.

This paper pursues this thesis in a non-standard style. Yearley has argued the standard PUS style “still depends on establishing critical insights into key assumptions on a case-by-case basis,” yet Yearley recommended both “more case studies and more conceptual analysis” (2000: 107, 120). Here I use conceptual analysis alone in aid of making explicit what has been largely implicit: that is, different programs for increasing the legitimacy of science as a social institution embody different models of the human actor and point to different systems of social, technical and moral reorganization. To keep the conceptual analysis focused, I explore the interlocking topic of human agency and institutional reform via an analysis of the work of Brian Wynne. Wynne’s centrality to and exemplary status within PUS makes his work an ideal node through which to examine the general supposition that an ontological gap may have been opened up in (and by) PUS theorizing.

In what follows, I begin by outlining the so-called “crisis of late modernity” and the differing responses of Beck, Giddens and Wynne. I show how Wynne accounts for the public uptake of knowledge, how a “fulfillment” thesis is central to Wynne’s theorizing, and how the general problem of ontological pictures of the actor figures in Wynne’s theorizing. I indicate how a particular model of the actor is deployed to preserve public autonomy, and I show how such models of the actor inform some ongoing solutions to public engagement efforts. I conclude by suggesting an asymmetry arises in Wynne’s theorizing, but it is an asymmetry eradicable by grounding the theorizing in social-institutional considerations rather than social identities. Possibly the PUS field may wish to focus more attentively on social-structural relations rather than a quasi-normative conception of actors. I also indicate that, despite the accidental asymmetry, Wynne’s work nevertheless remains a powerful statement to the effect that, if science and society are to be brought closer together, scientists need to come closer to the ordinary public rather than the inverse. This paper should be read as in-house constructive criticism, but may not be so by those who prefer their emperor’s clothes to remain above the fray.

2. A transformation in modernity?

Wynne’s work forms part of a broader debate about the troubles attending modernity and how to solve them. Beck’s work is central in this regard. Following Weber’s (1958) articulation of the ambivalence of science (the source of comforts, efficiency, *and* disenchantment), yet in contrast to the claim science is now just one story among many (Bauman, 1991: 243–4), Beck’s notions of the “risk society” (*Risikogesellschaft*) and “reflexive modernization” (1992) recognize that science is *more than* just one story among many. According to Beck, the “scientization” of protest against science means that even to dispute the scientific position of an opponent one usually relies upon science to make a persuasive challenge. We thus find lay public critics of technical proposals using scientific techniques and argumentation in order to research and present their cases (Durant, 2007). According to Beck, the risk society consolidates a shift from industrial conflicts over positives (“profits, prosperity, consumer goods”) to ecological conflicts over negatives (“losses, devastation, threats”). Having struggled to uncover the threats, the risk society now faces an accountability crisis, when the threats are acknowledged in principle but there is as yet no action taken (Beck, 1995: 2–5).

The public becomes involved in such disputes because of what Beck calls “reflexive scientization”: with increased public exposure, science is subjected to increased demystification and deconstruction, especially where legal and rational means are sought as legitimation. Consequently, a dialectic between expertise and counter-expertise is set in motion. Knowledge sources multiply with the increased presence of technical and public actors entering debates (Beck, 1992: 157–63). As Shapiro argued, the jurisdictional zones bounding the operation of

expertise, a function of specialization and professional ideology, become increasingly open to attack in the form of jurisdictional conflicts (Shapiro, 1993). For Beck, the problems with expertise are a microcosm of the problem afflicting modern social institutions: unreflexive in regard to their founding presuppositions in Enlightenment rationalism, especially in terms of certainty, control and provision of the public good, they have become self-refuting. For Beck, such structural failures in social management can only be solved by a reformulation of the institutions of modernity.

Yet Wynne argues that Beck's solution overstates the capacity of the institution of science:

[Beck argues] modern institutions might, as it were, save themselves from themselves, and rescue some public legitimacy, by becoming more self-reflexive about those very rationalist discourses which make up their own identity. Science is the key here because it is assumed ... to be the epitome of the unremittingly skeptical, reflexive modern institution ... (Wynne, 1993: 322)

Wynne certainly shares with Beck and Giddens¹ a critique of the self-refuting institutions of modernity, which Wynne had written of as rationalism's "self-delegitimation" (Wynne, 1987), and Wynne shares Beck's emphasis upon the need for a pluralization of expertise (Beck, 1992: 172–3). Yet Wynne differs on a number of key points.

Wynne's critique of Giddens and Beck (set out in Wynne, 1996a) begins by noting how their transformation hypothesis postulates a genuine socio-historical transformation in modernity: from simple to reflexive; or from automatic trust in experts to actively chosen and calculated trust. Wynne opposes this thesis on three grounds: the condition of simple modernity has never been met, the notion of active choosing and calculating is too heavily premised in a rational-calculative model of the individual actor, and the model overemphasizes cognitive dimensions at the expense of the cultural dimensions of public response to expertise. Wynne also opposes what he sees as the realist epistemological underpinning of the basic risks postulated by Beck and Giddens. The claim is that Beck and Giddens contrast "real impacts" with social and cultural knowledge of those impacts: institutional failure to control modern hazards leads to a sense of risk and the public feeling betrayed by modern institutions. Rather than simply failure in fiduciary responsibility to control "real risk," Wynne views risk as a cultural and hermeneutic phenomenon. Risks constitute intrusions into social identities: in-human models are imposed on the public. Risks are also relational, in that "risks" derive from social dependency on untrustworthy institutions. Wynne also disagrees with Beck and Giddens that science is the epitome of a self-reflexive modern institution. Rather, Wynne argues science is the *least* self-reflexive of any social institution. Wynne argues that social and political reform will only come from challenging the self-proclaimed cultural role science has assumed as the default agent of public meanings.

Wynne's solution to the problems of modernity involves "institutional reflexivity": the exploration of prior commitments framing knowledge (1993). Given a number of conditions, all of which Wynne argues exist, the solution is to curtail the authority of science. The conditions include: if "rationalities embody moral and social prescriptions"; if science deploys rational-prescriptive models on the public routinely; and if publics find them wanting in human terms. The solution thus becomes: not recourse to more science, evenly shared, but less scientism (Wynne, 1992a).² Wynne argues public participation must be premised on a broader base than simply the cognitive; it must be hermeneutical and cultural. It must preserve agency, responsibility, and genuine social identity, but curb alienation and social dependency. Science itself must be re-fashioned, its institutional self-reflexivity allowing the problematizing of its own foundations. Science must become less deterministic and more ambiguous in its cultural identity, and more flexible and open to negotiation in its interactions

with the public. It is scientists who should look to the public for a model of self-reflexivity. Here is where the ontological gap begins to appear. Yet at present it looks like the reporting of empirical findings alone. Below I show how the ontological gap is a consequence of both empirical findings and an imported picture of the actor.

3. On Brian Wynne

Arguably Wynne's early experiences with the 1977 Windscale Inquiry into a proposed thermal oxide reprocessing plant, during which he was an advocate for the Network for Nuclear Concern, provided the germinal empirical basis for his less than sanguine view of institutionalized science. The ritual character of the inquiry, and the self-delusion of the nuclear industry, was sustained by an institutionalized inauthentic politics that obliterated social relations. As early as 1982, Wynne was thus asking what happens when such processes, possibly functional for organizational coherence, are not taken into account when such organizations acquire decision-making power (Wynne, 1982). Wynne has continued to ground his critique of institutionalized science in empirical studies (including hazardous waste management, Cumbrian sheep farmers, climate change science, and genetically modified organisms).

Yet, Wynne's critique also incorporates Latour's (1993)³ argument that we can only conceive of modernity and postmodernity by trading on a realist epistemology of expert knowledge (Wynne, 1996a: 60–1, 46–7). While thus sensitive to Latour's point that hybrids regularly blur the boundaries between political and technical, Wynne nevertheless shares with Beck and Giddens a sense of crisis, which for Wynne involves forms of boundary transgression. The driving force in Wynne's dynamic self-delegitimation of modernity is a hermeneutic/cultural intervention (experts and their prescriptive models of the human and social) generating a hermeneutic/cultural response (the protection of identity and the renegotiation of social dependency). I suggest we thus have competing models of crisis at work. We can call the model of crisis posited by Beck and Giddens a house-of-cards kind, and the model of crisis posited by Wynne a stimulus-response kind. Given that experts impose on the public prescriptive models which the public finds wanting in human terms (what I call the "stimulus"), what is the "response"? That is, how does the public take up knowledge? If there were no general answers to this question, and only case-specific answers, then quite simply PUS would be devoid of theory. But what makes Wynne's work an exemplary model in PUS is a consistent line of theoretically informed argument about how the public takes up knowledge and generates knowledge. Below I analyze two key papers setting out Wynne's account of the public uptake of knowledge (1992b, 1993), much of it referring to an exemplary case study on Cumbrian sheep farmers.⁴

Wynne's account begins with the claim that the public experiences science as a "social package"; a package of material social relations, interactions and interests. I suggest this social packaging claim functions like an axiom in the system. It grounds Wynne's claim that experts are reasonably evaluated according to their "body language," or their material, intellectual and cultural links to the institutions and organizations of which they are a part. At the collective level, Wynne thus argues the central issue becomes the extent to which the public is prepared to invest trust and credibility in scientific spokespersons and institutions. Wynne thus notes the public uptake of science is mediated, not by public capabilities in understanding technical information per se, but by trust and credibility. For Wynne this represents a move from the cognitive to the social dimension, yet for Wynne it would be incorrect to think trust and credibility are intrinsic to actors or institutions. Trust and credibility are relational terms, about the nature of the social relationships between the actors concerned.

To use the language of “variables,” we can say trust and credibility are not the independent variables on which Wynne rests the theorizing. Rather, trust and credibility are the dependent variables, for they are derived from social relationships, networks, and identities (the independent variables). Yet, Wynne does not posit these independent variables as static. Wynne conceives of social identities as incomplete and open to continual renegotiation in response to cultural interventions in public lifeworlds. Similarly, Wynne conceives of social relationships and networks as evolving, plural, multifaceted and multivalent. Public ambivalence in relation to trust and belief is said to reflect the multiple and conflicting social networks, relations, and identities which various publics inhabit. Wynne stresses that incomplete and contingent social identities are not necessarily in full alignment, or enrolment, with plural and multifaceted networks of social relations. For Wynne knowledge (or beliefs about trust and credibility) is thus a function of social solidarity (the social networks with which one identifies), mediated by relational elements of trust, dependency and social identity. Wynne’s account of the public uptake of knowledge thus entails the construction of understanding being a process of social identity formation.

What of the precise relationship between the variables? Wynne states the dimension of social identities “should be seen as the level from which explanation of lay responses to science is to be derived” (1992b: 298). Thus, in Wynne’s case study of Cumbrian sheep farmers responding to a ban on sheep slaughter and movement after the Chernobyl accident of May 1986, public consent hid private dissent. Local sheep farmers suspected that radioactive contamination around the hill-farming district may have just as much to do with the nearby Sellafield nuclear fuels reprocessing complex as with Chernobyl. One reason for their ambivalence was a deep sense of social solidarity and dependency with friends, family and neighbors who were part of the local Sellafield industrial workforce. Farmers, and the community network they were a part of, “needed to believe Sellafield was well-controlled and its surrounding experts credible” (Wynne, 1992b: 299). Note how Wynne clarifies the importance of social identities to the situation:

... social alienation and identification coexist in the same persons and communities, leaving deep ambivalence and apparent inconsistency in relevant beliefs and structures of “understanding”. *These can only be understood by reference to the multiplex*, not necessarily coherent, dimensions of *social identities* expressed in interleaved social networks and experiences. (Wynne, 1992b: 299; emphasis added)

Yet social relations are also involved, as when the sheep farmers had rich insights into the advice scientists were proffering, “... this richness was pervaded by an ambivalence reflecting their multiple and conflicting social networks and relations” (Wynne, 1992b: 300). We can thus see that social relations and social identities are contingent and mutually feed into each other. Thus, where public actors shift their loyalties, going from apparent trust to distrust, we should conclude, not that a feeling of betrayal was at work, but simply a

very small shift in the balance of components of social identity which people are holding in tension with one another. [This signals an] intrinsic instability in actors’ loyalties ... (Wynne, 1992b: 300)

Thus, social identities are *expressed* in social networks. Ambivalence is *reflected* in social networks. Shifts in social identity lead to shifts in social alignment. Hence, although social identities and social relations are internally related in one sense (they are inter-defined, involving contingent elements),

... *social identity [is] the more fundamental concept for explaining responses to science and risks*, [even if it itself is] not unproblematic. [Social identities are] intrinsically

incomplete and open-ended ... an endlessly revised narrative attempting to maintain provisional coherence across multiple social roles and reference groups. Beliefs and values are functions of social relationships and patterns of moral and social identification. (Wynne, 1992b: 300; emphasis added)

Following the Wittgensteinian injunction to locate the “meaning in the use,” what is the “meaning” of Wynne’s accounting of the public uptake of science?

I want to suggest a number of things. First, Wynne imports a model of the actor as a reflexive, autonomous agent, running together an ontological picture of the actor with the aforementioned *findings* of empirical research. Obviously this is a general difficulty for social science; hence my point here is this ontological import is central to Wynne’s overall contrastive argumentative strategy. The imported reflexive actor is contrasted with competing models of the actor, one an instrumental-calculative creature inhabiting a decisionist model of society, the other a cultural dupe under the sway of dominant discourses and the ideology of routine (see below for further discussion). This contrast helps generate the reflexive, autonomous agent of Wynne’s accounting: it is the reasonable, humane, socially beneficial condition for social actors to be in. The elision between an empirically discovered actor and an ontological picture of the actor thus helps sustain a normatively preferred picture of the actor.

Second, Wynne replaces Beck’s and Giddens’ postulated mechanism driving modernity’s self-refutation, betrayal in response to real risks, with a “fulfillment thesis.” That is, “degree of fulfillment” (a social identity) ultimately drives the ambivalence of the modern public. The appropriate metaphor here would be of “emptying” the actor. Wynne is saying that prescriptive models of the lay actor are imposed by non-reflexive experts, thereby emptying lay public actors of their cultural and hermeneutic ability to respond to intrusions into their identity. For Wynne, the lay actor can be conceived as “unfulfilled” because they are prevented from interacting with experts along the full dimensions of their cultural and hermeneutic identity and set of social relations. Lay actors have their own identity, but are emptied by totalizing expert discourses. Expert discourses in effect lack nutritive value. Prescriptive models of the public fill the public up, turning them into particular kinds of social creature (such as an “uninformed public” requiring reassurance). Ultimately, the unfulfilled public is alienated. Wynne’s solution is to increase fulfillment via the expansion of expert systems—or bodies of knowledge that organize the material and social world—into a forum for culture, not just knowledge.

Wynne’s expansion plan recognizes that in reforming science “institutional reform of its modes of organization, control and social relations” (Wynne, 1992b: 297) is required. Yet Wynne’s structural blueprint is enacted by enabling the expression of social identity: “new, socially extended peer groups legitimated to offer criticism” will result in less “inappropriate” authority (Wynne, 1992b: 297). The question is whether the two elements of the plan—structural reform and social identities—are suited to working together. The reason for skepticism derives from Wynne’s own important suggestion, which was unfortunately buried in a footnote. Wynne argued that “no social actor is innately reflexive,” and that one could suggest a “simple law of reflexivity—reflexivity is inversely proportional to power” (Wynne, 1993: 337, n. 45). Note this is a structural relation and not a social identity, despite the earlier statement that social identity was the more fundamental explanatory concept.

4. Reflexive theories of social action

If Wynne’s law of reflexivity is a structural relation, then why is it claimed that the proposed program of institutional reflexivity rests so heavily on social identities? The key is to note that Wynne’s reflexivity is owed to “debates about modernity and its transformations” (Wynne,

1996b: 358), which he identifies as originating in part within the ethnomethodological literature (1996b: 382–3, n. 3). Hence rather than emphasize “*internal* debates about [SSK’s] proper identity, claims and methods” (1996b: 359; emphasis in original), as in the reflexive turn of the 1980s (cf. Woolgar, 1988; Ashmore, 1989), Wynne’s reflexivity is focused “*externally*, on the institutional and political-cultural level” (1996b: 359; emphasis in original). This involves the “reflexive identification and articulation of subjective assumptions and commitments shaping positive knowledges ... in public arenas” (1996b: 383, n. 3).

Wynne thus deploys an externally oriented reflexivity the ethnomethodologists called endogenous reflexivity, which “refers to how what members do in, to, and about social reality constitutes social reality” (Pollner, 1991: 370–2). Nevertheless I suggest Wynne inherits a generalization about actors that derives from the more inward-looking reflexivity that Garfinkel called essential reflexivity: all accounts are members’ situated accounting work (Garfinkel, 1984: 7). Garfinkel noted that the analyst recognizes their own account as an endogenous accomplishment, a product of the circumstances of its production, because the analyst is also an actor, from another perspective, and all actors are reflexive (Garfinkel, 1984: 181). That is, all actors are continually engaged in active, interpretive, judgmental work, and in what Giddens called “the reflexive monitoring of action” (Giddens, 1984: 3). As Pleasants has argued, there is an elision in these kinds of argument: a slippage from all *accounts*, whether by actors or by analysts about actors, being endogenous and reflexive, to a statement about the character of the actors/analysts giving those accounts. A picture emerges of the individual as active, reflexive, interpretive, and knowledgeable. Actors choose, decide, persuade, and make things evident. This picture stands in contrast to the picture of the actor as a cultural, judgmental, psychological dope: as some kind of reflection of society, an individual that blindly follows routines and rules, in some kind of automatic, instinctual fashion (Pleasants, 1999).

Admittedly, Wynne acknowledges both the problematic nature of social identities (their fluidity and multivalency) and that one must often “suspend the problematization of entities which *are* nevertheless problematic” (1996b: 384, n. 12; emphasis in original). I thus suggest the theoretical suspension at work here, which allows Wynne’s accounting method to rest on (reflexive) social identities, is best understood as embedded within the normative venture of rejecting models of the lay actor as a judgmental dope. Autonomy is prioritized over determinism and/or conformity, thereby legitimating a model of the public as imbued with its own expertise (social intelligence) and validating calls for democratic participation. The elision between an ontological picture of the actor and empirical findings should be conceived of both as a general difficulty for social theory, and as a theoretical window into the implicit commitments of the analyst. Indeed, in Section 6 below I show that exploring implicit models of the human sheds informative light on competing reform agendas for public engagement initiatives. The “Third Wave” debate pitting Wynne and others against Collins and Evans involved an implicit division over whether to allow characterizations of the lay actor as a judgmental dope or not. In fact, such embedded assumptions about the character of actors were prefigured in the 1990s “Left and Right Wittgensteinians” debate (Bloor, 1992; Lynch, 1992a, 1992b). Wynne (1996b: 383, n. 3) acknowledged this debate as one of the key reflexive interventions in science studies, yet was otherwise silent in regard to it. I suggest this is an instructive silence, as this debate prefigured an implicit feature of the “Third Wave” debate: models of the actor.

Ostensibly the “Left and Right Wittgensteinians” debate concerned the best way to analyze science as a social activity and the most fruitful way to interpret Wittgenstein. Yet models of the actor were prominent. Bloor argued that because meanings can never be fully explicit or context-free, and if we wish to avoid conceiving of actors as endless interpreters, then we must suppose that actors have the capacity to blindly follow rules and routines. That is, actors

are some kind of judgmental dope (Bloor, 1992: 268–70). Lynch objected, citing both Garfinkel (to the effect the question is really how actors are made out as dopes) and (the Right) Wittgenstein (to the effect “blindly follow” did not mean causally determined) (Lynch, 1992b: 285, 286–7). For Lynch, Bloor oscillated between judgment as “conscious deliberation” and lack of apparent judgment as “caused by an unconscious disposition or internalized norm” (Lynch, 1992b: 287). For Bloor, Lynch *presupposed* a consciously deliberative and reflexive model of the actor while nevertheless denying any ontological picture. In contrast, Bloor’s strong program makes the modeling of the human explicit. Some kind of judgmental dope is required: intentional social facts (such as acts of self-reference) rest on non-intentional dispositions (i.e.: habits, custom, biological nature) (Bloor, 2004: 596–7). We can be “blindly conscientious” because “automaticity” is always embedded within socialization processes and a social framework (Bloor, 1997: 51–2).

The debate between Collins and Evans, and Wynne, repeats a key point of dispute between Bloor and Lynch. Lynch takes reference to the human agent as a judgmental dope as implying causal determinacy and as threatening the autonomy of the actor. Bloor’s account presupposes that any explanation of an autonomous actor is going to involve theorizing a level at which the human agent follows routines as a matter of course. In debates over the respective roles of public and expert, Collins and Evans presuppose a level of social action at which generalized, routine social competences are at work rather than conscious deliberation *per se*. In contrast, Wynne avoids talk of cultural dopes and the power of socialization, *except where it applies to scientists*. In recent work by Wynne this is explicit. Discussing the globalizing effect of risk discourse, Wynne notes that (scientific) “institutional actors ... [are] ... immersed in and agents of the discourse culture that reflects the assumption of [objective risk, for instance].” These “rigid failures” of the scientists are *contrasted* with the presumed (but suppressed) “autonomous capacities” of citizens (Wynne, 2005: 68). Discussing genetically modified organisms, the “dominant discursive constructions” of the “scientific experts” have “become (probably unwittingly) accomplices to the systematic patronization of the public.” *In contrast*, “public judgment” is a sophisticated “ethical-intellectual” attempt to highlight limits to knowledge and relations of trust (Wynne, 2001: 447). Section 5 thus analyzes this contrasting argumentative strategy, before turning back in Section 6 to a discussion of competing reform agendas and their relation to models of the human actor.

5. Three models of the human actor

Though it does seem Garfinkel was presupposing a general theory of a reflexive actor, Lynch was correct that Garfinkel asked how one does it when he/she makes out the actor as a cultural dope (Garfinkel, 1984: 68). Yet why restrict the question to cultural dopes? How are active and reflexive actors made out *as* active and reflexive? I suggest Wynne establishes his model of the actor via a contrast with competing models. The accounting procedure begins with a general account of empirical findings from the field of public understanding of science. Thus

... public experiences of risk, risk communications or any other scientific information is never, and can never be, a purely intellectual process, about reception of knowledge *per se*. People experience these in the form of material social relationships, interactions and interests, and thus they logically define and judge the risk, the risk information, or the scientific knowledge as part and parcel of that “social package”. A corollary of this is that people do not simply not understand science when they are seen to disregard it; they do not recognize it, or identify with it, morally speaking. (Wynne, 1992b: 281–2)

We then move to a picture of the actor, as we can see below in Wynne's study of apprentice workers at the Sellafield nuclear fuels reprocessing plant in Cumbria in northern England. Having found, to his surprise, the workers vigorously defending their ignorance of radioactivity, Wynne nevertheless concluded

... they were ... intuitively competent sociologists. [They were busy maintaining a] ... necessary social fabric of interdependency. ... They were vigilant and active seekers of knowledge; but the relevant environment for them to monitor, and the information to gather, discuss among their peers, evaluate and interpret was mainly social knowledge pertaining to the trustworthiness of the rest of the organization on which they knew they were unavoidably dependent. They were actively, if tacitly and intuitively, positioning themselves, using their knowledge of their social relationships and institutions, and the extent and basis of social trust and dependency. (Wynne, 1992c: 39)

The resonance with the ethnomethodological model of the actor as an "endlessly reflexive monitor of action" is clear.

According to Wynne, the reasoning skills and understanding of the lay public are "better" and "more elaborate" than what survey research indicates; public ignorance is actually "actively constructed"; individuals offer "rich and reflective" views on science and their social position; technical ignorance could be "a function of social intelligence." Moreover, "the lay public in this case [radiation workers at Sellafield nuclear plant] exhibited an elaborated reflexive capacity for problematizing and 'negotiating' their relationship with science; in so doing they also problematized 'science' itself." Wynne infers from self-reflexive identity formation processes in specific cases to "[t]his could be regarded as a generalized account of the point that science can never be experienced free of imputed interests" (Wynne, 1993: 327–8). The inherent "social packaging" of science is thus partly generated by what *the lay public* exhibits as a character trait (reflexive capacities). The generative mechanism for these character traits resides in a series of contrasts between competing models of the actor (see Figure 1).

The model of the instrumental-calculative (IC) actor is attributed to Beck and Giddens, based upon four assumptions Wynne feels Beck and Giddens make (Wynne, 1996a). The first two are that risks are epistemologically real and that publics rationally inquire as to whether modern institutions are protecting them. The third is that public feelings of betrayal follow

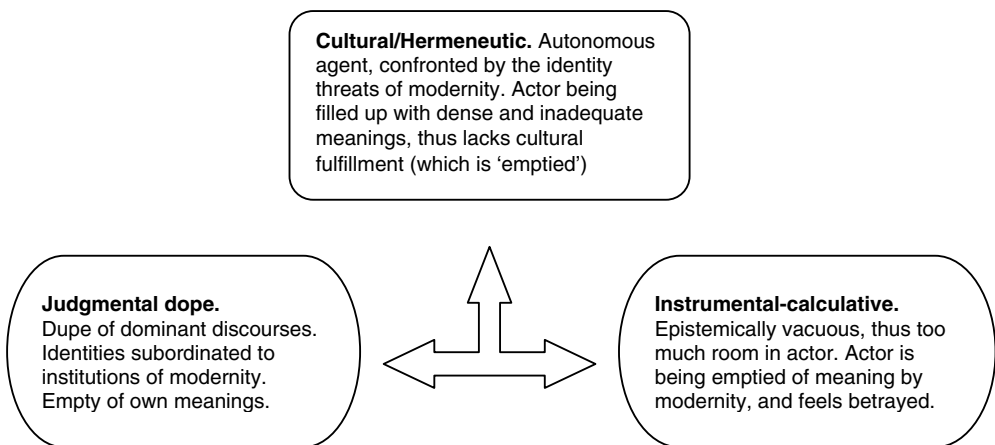


Figure 1. Wynne's modeling activity.

from a negative answer to the protection question, indicating Beck and Giddens hold a rational social-contract theory of society. The fourth is that Beck and Giddens presume science is meaning-free or meaning-neutral, and thus busily emptying the public of meaning (to the extent the public adopts scientific rationality).

The judgmental dope (JD) model remains a shadowy figure, never being directly linked to any particular theorist. Nevertheless it acts as a foil to Wynne's positive thesis about the autonomy of the actor. Thus, we should *not* conclude that Sellafeld apprentices were "uncritical slaves suborning their identities to the organization" (Wynne, 1992c: 39). Instead their ignorance was social intelligence, and they possessed elaborated reflexive capabilities. Similarly Wynne is skeptical of analyses that "sometimes imply the *automatic* power of elite discourses" (emphasis in original), but recommends analyses that stress "the autonomy of dominated groups." Wynne recommends Adrian Desmond as an example of the latter analysis. Desmond's study of artisans and evolution in Britain developed a picture (in Desmond's words) of "artisan-craftsmen not as passive recipients of bourgeois wisdom, but as active makers of their own intellectual worlds, their own really useful knowledge" (Wynne, 1996a: 49–50). Wynne's cultural/hermeneutic (CH) model of the actor is generated via the contrast with these competing, but "inadequate," models of the actor.

Rather than assume science is meaning-neutral (the IC model), Wynne argues science is "dripping with impoverished and expropriated meanings, and ones in which there is no longer ordinary participation and access" (Wynne, 1996a: 60). Science seeks to impose prescriptive models of the social order, relations and identities on the public, yet the public finds these models alienating and inadequate. Science intervenes in public lives along cultural dimensions, not just cognitive dimensions. The public responds in kind, along cultural dimensions, focusing on institutional body language. The IC model thus misdiagnoses both the intervention and the response: though acknowledging lay public reflexivity, the IC model conceives of it along intimate and interpersonal lines, as implicitly calculative. Wynne finds such a view of lay public reflexivity "inadequate" (Wynne, 1996a: 46). The conception of "reflexive processes ... as thoroughly calculative, under the autonomous authorship of an individual subject" makes clear the extent to which culture is often "described in terms of its subjects' calculative faculties, implying a deliberative constitution" (Wynne, 1996a: 78, n. 1). For Wynne, this questionable description is (regrettably) central to some forms of science studies (Wynne, 1996b).

For Wynne, many debates about analytic neutrality presuppose a "decisionist model of society: that is, of social relations composed only of choice, actively strategizing actors and instrumental reason (even if based on social interests), to the exclusion of routinized practices, hermeneutics and culture" (Wynne, 1996b: 359). Wynne thus criticized the Beck–Giddens IC model of the actor for not capturing public judgments of institutional body language which, rather than being instrumental-calculative, reflect a "process of apprehension and response [that] is *more immediate*, engaged and *less deliberative* than this, more captured by describing it as *partly an emotional process* of identification or otherwise with those organizations and the kinds of human relations and identities which they appear to reflect, uphold or deny" (Wynne, 1996a: 79, n. 4; emphasis added). While this appears to flirt with a judgmental dope (JD) model of the human agent, in fact an ambiguity has arisen instead.

The ambiguity concerns which level is fundamental to theorizing the public uptake of science. Critiquing Beck and Giddens, Wynne cites a number of case studies, which are taken to show

... how ambivalent public relationships with expertise are, and how deeply *dependency relationships* are enculturated into social habits and identities. (Wynne, 1996a: 51; emphasis added)

In contrast to our previous finding (Section 3), where Wynne had claimed “social identity [is] the more fundamental concept for explaining responses to science and risks” (Wynne, 1992b: 300), I suggest the mechanism driving this enculturation is *not* social identity negotiation. For instance, Wynne considers several systems of knowledge along a spectrum of complexity, alienation and impenetrability: a coal company, a dam, biotechnology and information revolutions, and American GIs in the Vietnam War, who naturalized the confusion of war into a “technological spectre.” The closeness and pervasiveness of these “systems” requires people, according to Wynne, to construct “working rationalizations” of them. Combinations of physical and social realities are thus codified into specters, which exist as metaphors for the social relations “controlling” people’s fate (Wynne, 1996a: 53–5).

This kind of enculturation process *normalizes and consolidates* whatever dependency and lack of agency is thought to exist. It obscures the alienation and ambivalence or worse which people may feel in relation to elites and expert institutions. (Wynne, 1996a: 55; emphasis in original)

No doubt there is identity negotiation at work here, and the risk to social identity remains the fundamental dimension of public *response* to experts and expertise. Yet, this identity negotiation rests upon a *social relation of dependency* and *social process of enculturation*, not upon social identity per se. My suggestion is that Wynne recognizes this ambiguity, but wants the theoretical apparatus to point toward social identity instead of social relations. The choice about what to problematize was, I suggest, structured by the desire to preserve the autonomy of the actor in the face of controlling social relations.

6. Role playing: public and expert

Competing models of the actor informed the recent (“Third Wave”) debate about how to theorize public engagement. Collins and Evans (2002) argued there can be too much as well as too little public participation: a normative conception of expertise, and classifications of kinds of science and phases of debate, were deemed necessary for deciding when to leave matters to the experts and when to discuss them more broadly. For Wynne (2003), Collins and Evans help themselves to the boundary between science and politics, remain complacent about science’s de facto role in modern society as the agent of public meaning, and neglect the way public issues are framed and given meaning. For Collins and Evans, Wynne’s conclusion that “the proper participants are in principle every democratic citizen” (Wynne, 2003: 411) runs the risk of being applied “by design or accident of rhetoric” to “every discussion” (Collins and Evans, 2003: 439).

For Collins and Evans, Wynne misreads routine aspects of culture as islands of specialist knowledge. Such islands of specialist knowledge do exist in lay public culture, but Wynne posits too many islands according to Collins and Evans. The resulting over-population poses a theoretical problem, for it makes it difficult to solve the problem of extension: “how far should participation in technical decision-making extend?” (Collins and Evans, 2002: 237). If participation is to be decided upon on the basis of expertise, and expertise was everywhere, then there is no limit to participation. This concern is not difficult to fathom. Much work in public understanding of science contains boilerplate lines such as “laypeople have minds that are chock-full of intellectual strategies for dealing with the problems of everyday life ... the public [are] experts to varying degrees and in a variety of ways in their own sphere” (Gregory and Miller, 2001: 65). This seeming contradiction, the possession of specialist knowledge about the mundane, was discussed by Wynne in the context of grocery shopping. Rather than

assuming the shopper is simply attempting to check all items on their list for the least cost, Wynne argued “the shopper is trying at the same time to juggle several other situationally specific objectives” (Wynne, 1993: 325). From a specific instance of the reflexive monitoring of action, Wynne generalizes the point. As with the “multi-dimensional variability and open-endedness” of grocery shopping, so too “for most real-world problems to which people apply their reasoning skills, even if they express the ‘ideology of routine’ to describe these mundane occasions” (Wynne, 1993: 326).

The ideology of routine endangers the autonomy of Wynne’s lay actors, for it embodies a view of the lay public as “unreflexive cultural dupes who are tradition-bound and incapable of critical reflection” (Wynne, 1993: 325). Yet note that Bloor also used a grocery shopping example in defending a (Left) Wittgensteinian position: the shopper does many things automatically, as part of a language game in which such and such just is what is done, and it is this habitual action that provides the very grounds for meaning (Bloor, 2004: 597). The question that arises at this point is the following: if there is an ideology of routine, why not an ideology of reflexivity? If an ideology of routine is a means to manage complex and ambivalent relations of social solidarity (Wynne’s line of theorizing), then why not conceive of an ideology of reflexivity as a language game mediating social solidarity toward a different end? That is, choices concerning tasks one devotes social time to, and an interpenetrating language game of preserving one’s social identity as a “concerned member of society.” I suggest the reluctance to theorize the ideology of reflexivity is synonymous with the reluctance to theorize just how broader aspects of social structure get down into the social actor.

Wynne’s theorizing has been critiqued along such social-structural lines before. Michael (1998: 314–15) feared Wynne-kind of work might romanticize the lay local, making it a place both devoid of internal conflicts (homogenized) and separated from wider cultural dynamics (hermeticized). Michael argued Wynne’s sheep farmers’ high regard for their local knowledge could rest in their sense of consumer choice, with notions of self and citizenship shaped by “a dispersed set of cultural and social ... networks and flows” (Michael, 1998: 315). Similar to Michael, Collins and Evans reinterpreted the sheep farmers’ expertise: they were not lay experts, but had contributory, experience-based expertise that was continuous with that of government scientists (Collins and Evans, 2002: 255–6, 261–3, 271–2). In their distinction between ubiquitous trust in general (we all have it, via socialization) and local (locally acquired, via direct experience) discrimination (2002: 259–61, 277–8), Collins and Evans in effect posited something akin to a distinction between routine behavior and the reflexive monitoring of action.

Collins and Evans referred to Wynne’s case study in which radiation workers spoke of having no need to contribute to their own safety by understanding the science of radioactivity. Wynne had explained this by arguing their social understanding grounded their trust in their employer. In response, Collins and Evans invoked an analogy with banking: are we intuitive knowledge seekers, reflecting on our social relations, when we deposit a check? Is our ignorance of economics a social intelligence? “Yes,” they say, but to talk in such terms is to talk

... of the relations of trust in general that pertain throughout any smoothly functioning human society, rather than a specific locally acquired discriminatory ability ... [Here we are talking about] ... *the capabilities of humans in general, in virtue of their “socialness”*. (Collins and Evans, 2002: 277–8; emphasis added)

At this point we see that different models of the actor are maintained and defended in the face of similar social processes.

For Wynne, the lack of overt dissent points to awareness of dependency and lack of agency. To argue that no opposition implies trust is, for Wynne, to lapse into a cultural dope

model (Wynne, 1996a: 50). To avoid such a conceptualization, the lay actor is conceived of as “deeply imbued with reflexivity even though no public dissent or contestation is apparent” (Wynne, 1996a: 50). For Collins and Evans, the lack of overt dissent points to human actors *as* socialized beings. Previously, Collins had defined socialness as: “Socialness is the capacity to attain social fluency in one or more cultures” (Collins, 1998: 497). Collins recommends celebrating socialness. Contra the fear that conservatism will flow from any kind of cultural dope model of the actor, an “oversocialized” conception of the actor, Collins argues that sociology falls into an “undersocialized” conception of society and its members if socialness is not embraced (Collins, 1998). So here again we see models of the actor informing theorizing about the public uptake of science, and calls for institutional reform.

7. Concluding thoughts

Wynne has his own prescriptive model of the public as an (unfulfilled) reflexive agent, drawn in explicit contrast to a cultural dope who is slave to routine and tradition. We have seen that competing models of the actor are built into different solutions to the problem of the legitimacy of science. Beck and Giddens rely on the innate reflexivity of the scientific community to provide an exemplar for broader institutions to model themselves upon. Collins and Evans (2002) enact a structural version of a wise guidance policy, largely leaving scientific institutions alone but also theorizing how to cast the participation net wide enough to solve contentious technical and political problems. Wynne (2003) suggests reformulating the institutions of science via external input into problem framings themselves.

Models of the human are central to such reform agendas, but remain largely implicit in debates. Just as conceptual problems arise when implicit models of the human are prescriptively deployed by scientists, so too a conceptual problem arises from Wynne’s own implicit model of the human. Ultimately Wynne’s theorizing remains accidentally asymmetric with regard to its diagnosis of the problems of expert behavior and public participation. Wynne’s proposed “institutional reform of [science’s] modes of organization, control and social relations” (Wynne, 1992b: 297) is directed *at* scientists and scientific institutions, which are the source of the problem, because of the “lack of reflexivity on the part of scientific institutions and actors” (Wynne, 1993: 325). Wynne introduces the “dimensions of power and social relations” at this point, in order to account for how any scientific reflexivity is in fact “bounded within common ideological confines” (Wynne, 1993: 325). To bring the asymmetry into view, perform a few substitutions. Substitute “rationality” for reflexivity and make the story about the public and not the scientists: the public lacks rationality, with the social dimension and ideological thinking restricting the ability to act/think rationally.

I say accidentally asymmetric because Wynne buried a symmetrical view of the problem in a footnote, as previously indicated:

It is the social-institutional position of different actors which influences their propensity to be reflexive. In general, it is tempting to propose the simple law of reflexivity—reflexivity is inversely proportional to power. (Wynne, 1993: 337, n. 45)

The immediate dilemma posed by this formulation is that specialization itself is a social-institutional position or role. As such, the question arises as to whether specialization and its accompanying efficiency may be deeply incompatible with a reflexive attitude.

Several arguments have posited a distinct incompatibility. Collins and Yearley argued against reflexivity: compartmentalization is necessary for any kind of positive theorizing (Collins and Yearley, 1992a, 1992b). Barnes argued that reaping the benefits of expertise, albeit

tragically, commits society to alienating powers to those specialists (Barnes, 2001). Turner argued that we would lose the advantages of specialization if all were political (some facts need to be taken for granted for political discussion to ensue) (Turner, 2001). If institutional reflexivity is incompatible with the maintenance of legitimacy and efficacy, then reformist programs that seek to bring the institution of science into line with a normative conception of a reflexive lay public actor may face insurmountable difficulties. The danger here is the mirror-twin of the creeping realism claimed by each side to plague the other side in the game of epistemological chicken (Collins and Yearley, 1992a, 1992b; Callon and Latour, 1992). Possibly PUS may fall into a creeping reflexivity, imputing demons to scientists in order to exorcise them and imputing haloes to the lay public in order to admire them. Is not the effort to find something special in the lay public, in order to validate their involvement, analogous to the claim that we should trust scientists because of their special access to the truth?

In conclusion, it is now said that PUS has moved on to PES (public engagement with science). Bringing science and society closer together is said to depend upon the creation of "scientific citizens" (Irwin, 2001) and "scientific communities" (Elam and Bertilsson, 2003). The PES literature acknowledges that the test of the "democratic turn" in PUS will follow from how engagement programs are framed (Irwin, 2001: 15; Elam and Bertilsson, 2003: 240; Wynne, 2005: 68). The continuing political value of Wynne's theorizing just may be its complete lack of ambiguity in regard to the direction of movement required to bring science and society closer together: institutionalized scientific actors need to become more like ordinary folk, who are constructed as reflexive and autonomous.

Notes

- 1 I admit to conflating Giddens and Beck at this point. Such a conflation is, of course, an oversimplification at best, and a significant error at worst. Nevertheless, both agree that a transformation in modernity is in progress, both adopt a semi-realist epistemology and tend toward an instrumental-calculative model of the public actor's response to experts, and both recommend a unified expert/lay public sphere. Giddens at first argued the questioning of authority was due to globalization and alienation, tending to take for granted public trust in experts. Giddens only moved toward Beck's position, in which the public feels betrayed by experts, in later works. See Giddens (1990, 1991, 1994).
- 2 For Wynne the rejection of scientism has a distinct political edge, as seen in his defense of the Strong Programme:

SP's whole point was surely to disinter the social underpinnings of "natural" truth and authority. What else could this imply if it was not ultimately to encourage greater reflexivity in public discourse about the roles, agency, and responsibility (and hence the identities) of social actors? [The SP project, with hindsight, is] ... continuous with questioning the dire effects of Enlightenment categorical distinctions of subject-object, with reflection upon "human interests" and with the reflexive impetus toward problematizing, bringing into authorial view, and ultimately renegotiating the human subject. (Wynne, 1996b: 358)

- 3 As Latour concludes: "Modernism was not an illusion, but an active performing" (1993: 144).

- 4 Further discussion of the sheep farmers' case can be found in Wynne (1989), which is reprinted in Wynne (1991).

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