



## **‘Science is Social Relations’: Some Reflections<sup>1</sup>**

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### *Introduction*

Returning to Bob Young’s opus is a strange experience for those of us who knew him and worked with him: evoking memories, ghosts, and assorted emotions. Focusing on Bob’s article ‘*Science is social relations*’, which evolved from a talk given at the BSSRS (British Society for Social Responsibility in Science) conference -- *Is there a socialist science?*-- held in February 1975, to the essay which was published in *Radical Science Journal* No. 5 in 1977, proved to be particularly evocative in countless ways. Gary Werskey’s description of this essay as ‘possibly his [Bob’s] most outrageous piece of writing’ (2007: 438) gave returning to this essay a further edge.

### ***Bob Young’s ‘most outrageous piece of writing’***

Taking a cue from Werskey’s (2007) appraisal, Bob’s distinctive mode of writing in that piece merits attention. Bob himself commented about this – telling readers that the article was experimental and there are a number of interjections that form a metacommentary on his uncertainty about his mode of communication. He pronounced that the article was in style ‘sometimes weird’ (Young, 1977: 66). It certainly was very different in mode and presentation from his preceding publications in the history of science (his book- *Mind, Brain and Adaptation* (1970)- and his earlier articles). This publication was distinctive not just in the avoidance of what had become his characteristically ‘long, discursive’ (p. 67) footnotes – a feature which he foregrounds. Reading this essay, it is striking to find how adept Bob was at coining distinctive slogans and aphorisms. Indeed, perhaps he missed his opportunity to produce a distinctive range of commodities -- particularly t-shirts (of a kind which he himself might have modelled). There are many of these aphorisms and slogans, but each is distinctive and merits consideration. They begin with the title: *Science is social relations*.

There follows a long list of others: ‘Science is *not* value neutral’, ‘Science is ideological’ (p. 69); ‘demystification of science entails the demystification of its reifications’ (p.71); ‘Dare to Struggle, Dare to Win; Dare to Snuggle, Dare to Grin’ (p.78); ‘Science as Domination’; ‘Science as Division of Labour’ (p. 82); ‘My science, my findings, are mediations of social relations’ (p. 83); ‘The weight of tradition can be lifted...analysis can help us take its measure’ (p. 88); ‘Which Marxism?’ (p. 90); ‘Theorise our own experiences and experience our own theories’ (pp. 93; 113); ‘Prefigurative struggle’ (p. 98); ‘Make political work relations more personal AND personal relations more political’ (p. 99); ‘Only socialist processes can produce socialist

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results' (p. 100); 'Discipline and work should come from commitment... not from authority or hectoring' (p. 100); 'No mental labour without manual labour' (p. 101); 'Criticism and self-criticism are central to struggle' (p. 101); 'Texture AND structure' (p. 101); 'Power is not to be seized but dissipated; knowledge is to be socialised' (p. 101); 'Prefigure the ends in the means' (p. 101); 'We must combine relentlessness with forgiving struggle' (p. 102); 'Decide which contradictions to confront and which to live with for now' (p. 102); 'We are constrained, squeezed, and fucked up in all sorts of ways by our contexts and ourselves' (p. 102); 'Productive Change or Reproductive Stasis' (p. 102); Be wary of: 'the path of value neutrality and isolated theoretical work' (p. 102); 'You can't get on one's horse and ride off in all directions at once' (p.102); 'If we don't prefigure, we'll reproduce the existing society' (p. 104); 'Theory without action is arrogant and empty; Action without theory is truculent and blind' (p. 105); 'The critique of the factory applies equally to the laboratory' (p. 105); 'existing science, technology, lifestyles and consciousness are imminently alterable sets of conventions' (p. 105); 'demarcate the scientific from its illegitimate overgeneralisation – the scientific' (p. 110); 'All experience, including perception, is metaphysical. Metaphysics is ideology' (p. 110); 'Marxism needs freaks' (p. 110); 'Fear of relativism is a liberal's expansion of the moment between demystifying a cosmology and commitment to another' (p. 112); 'demystify Marxist scientism' (p. 112); 'We treat social relations as if they were laws of nature, treating laws of nature as though they were laws of nature' (p. 113); 'There's no place to go but forward' (p. 113); 'dismantle the world structure of the existing world' (p. 113); 'take sides against the actual' (p. 113); 'We must learn to theorise our own practice and to practice our own theories' (p. 113); 'Struggle. Compassion. Solidarity. Organisation' (p. 113); 'Ask not if your comrade has arrived but if s/he is struggling' (p. 113); 'To be impersonal is to be alienated from one's self and one's comrades' (p. 115); 'prefigure the ends in the means' (p. 115); 'We're going to have to get a move on' (p. 115).

Turning from fantasies of t-shirts and trendy commodities, surveying this remarkable assemblage and considering both the more substantive features of this essay and situating it in relation to Bob's work as a whole suggest further observations about Bob's distinctive skills and his influence. These reveal continuity between his earlier research and publications and this ostensibly 'outrageous piece of writing' (Werskey 2007: 438). First, it seems clear that it was Bob's impressive capacity for synthesis which was evident here and which links all of his publications – at least those in the history and social studies of science.

The very definition of aphorism as 'a pithy observation which contains a general truth', is directly relevant here. In fact, many would-be slogans and invocations quoted above constitute precisely what that definition encapsulates--'pithy observations'-- which, in most cases, are insightful, stirring, and sometimes unnerving. This is what Bob was so good at and it was this, sometimes eerie, capacity that made interactions with him – intellectually and politically – so stimulating, challenging, and often disturbing -- in both good, and, sometimes, not-so-good, ways.

***The substance of the essay: a time-capsule and transitional retooling***

With reference to Bob's work as a whole and to the contemporary setting the '*Science is social relations*' article could be characterised as a rich time-capsule which represents many components and features of the British radical science movement of the mid-to-late 70s. Retrospective perspectives may be fine, but Bob himself presented the essay as an 'exploratory argument for seeing science *as* social relations' (p. 66) and as an 'exploratory working programme' (p. 95). His exploration was a transitional exercise which documented the thinking informing his move from being 'the bright spark' in history of science and the lauded – if rather controversial- Darwinian scholar, to radical science activist, strategist, and theoretician. It marked his move from contextual studies of the history of ideas and scientific theories to Marxist critiques of science (and as he insisted throughout the piece, of technology and medicine as well). He explained that he set out to 'describe science as much as possible in terms drawn from Marxist political economy and from the critique of industry and the division of labour' (p. 67). As he himself might have observed at the time: he was retooling – intellectually, politically, and personally.

Moreover, the rhetorical 'we' of the piece indicates that he was speaking to and, to some extent, on behalf of a political constituency. This was a document of and for the nascent radical science movement. Bob articulated this in a characteristic formulation that was both provocative, and ambitious [a familiar Bob Young combination], in terms which circulated in the left at that time, explaining that: 'the project is to elaborate a strategy of revolutionary practice for people whose mediating role is based on expertise' (p. 68).

In substance, this article constituted a restless (conveyed by the frequent injunctions about 'needing to move on' that Les Levidow (this issue) highlights) and relentless set of encounters with theories, concepts, movements, and examples as Bob considered what they might offer the project and the movement. Sifting, critically evaluating, resourcing – these are the moves which animate the piece. The resourcing was to be both theoretical and practical. However, it is also useful to distinguish and specify the kinds of resourcing and encounters which make up the article. These are discussed below with reference to: the template, theories, movements, and popular cultural illustrations that shape the essay.

### ***The template***

This was a Marxist project and Bob emphasised that Marxism was his and the radical science movement's primary resource and reference point. He observed that Marx, Engels, and Lukacs had 'made transparent' (p.72) the social relations of bourgeois economic theory and had shaken assumptions about the established capitalist social order. He reflected that:

Sets of human conventions are presented in bourgeois economic theory as unalterable, natural determinations, and marxism demystifies these. Now we must apply that same analysis to the laws of nature themselves and demystify the existing conceptions of unalterable natural determinations and the attendant scientism, fatalism and deference to powerfully authoritarian experts. (p. 72)

The ambition of the project was clear: the vision was the extension of Marxism in a parallel project which would demystify capitalist science and the laws of nature as Marx

and Engels had demystified economic theory, the laws of the economy and capitalism. In this sense, Marxism was not merely a resource, it provided not only intellectual and political insights and inspiration, it was *the template* for the whole project.

### ***Theories***

Nevertheless, Bob also investigated and mobilised in a more detailed way elements of the Marxist theoretical and conceptual repertoire. He pursued the concepts and strands of Marxist theory which he found most promising in analysing science, technology and medicine and in addressing their entanglements with capitalism. These included conceptions of: class, the capitalist mode of production, private property, reification, fetishism, commodification, mystification, alienation, misplaced concreteness, domination, ideology, the labour process, the division of labour, hegemony, and mediation. He disabused ‘vulgar Marxism’ and Althusserian and other attempts to conjure scientific Marxism and identified his own take on Marxism as broadly ‘libertarian’. He borrowed thoughtfully from Marxist commentators including: Braverman, Colletti, Gorz, Gramsci, Mandel, Marcuse, Marglin, Ollman, Sohn-Rethel, Edward Thompson, and Raymond Williams. The version of Marxism on offer in this essay was informed by the reading and discussion groups that had mushroomed within the *Radical Science Journal* collective and the Conference of Socialist Economists (which formed in the 1970s with some members of the *RSJ* collective including Bob as members).

Marxism may have been his deepest reservoir, but it was not the only theoretical and conceptual well from which Bob drew. In this essay he registered and reviewed other intellectual sources which might offer insights relevant to the project of demystifying science. These included sociological and anthropological theories and research – notably deviance theory, sociology of knowledge and education, and comparative anthropology of knowledge systems. He referenced the theories of one of his long-time favourites – the philosopher Edwin A. Burt (who Roger Smith (this issue) has noted was so crucial to Bob’s thinking) - before chastising himself lest he be diverted into ‘bourgeois philosophy of science’ (p. 94). There were even nods towards the sociology of science as Bob noted recent work by David Bloor and Paul Forman (p.83). While he demonstrated that there were insights which merited attention in these fields, he did not hesitate to label some of this theory ‘bourgeois’, he warned against the deference to the natural sciences which could taint them, and he expressed no reservations in insisting that Marxism was his ultimate touchstone.

### ***Movements***

Bob’s trajectory was not exclusively conceptual, and the essay incorporated a remarkably wide-ranging review of social and political movements, as he adjudicated their features, strengths and weaknesses. This included: the Old and New Left (1st and 2<sup>nd</sup> generations), industrial struggles and trades unions, alternative technology and anti-science movements, visionary socialism from the C19 and C20 (Blake, Ruskin, Morris), life-style politics, anti-psychiatry, situationist and new cosmological movements. Although this survey was broad, it is notable that his main reference point throughout the piece was industrial struggle and the trades union movement. He underscored the importance of the

unionisation of scientific, technical, and university workers/experts and of links between theoretical analysis and scientific/technical experts and industrial struggle. Nonetheless, he maintained that the development of more specific forms of politics for ‘mediators’--experts, scientists and other knowledge workers-- was crucial. There were also passing and somewhat anecdotal references to feminism and the women’s movement, to anarchism, and to civil rights and anti-imperialist movements.

Considering the array of social and political movements that figured in Bob’s review some of his assessments are striking and some are amusing. He is generous in his treatment of life-style politics and alternative technology movements but snide about some of the old New Left. This related to his earlier exposition of the neglect of science and forms of scientism in the writings of some members of the British old New Left (including those of Perry Anderson and E.P. Thompson) which he had traced in his earlier essay -- *The historiographic and ideological contexts of the nineteenth-century debate on man’s place in nature* (1973). But perhaps it was his concern with prefigurative politics which was paramount here. While he undertook an explicit exposition of preceding and some contemporary political movements, he also drew attention to emerging political activities which emanated from and sustained the British radical science movement, especially, the Radical Publications Group and the Publications Distribution Co-op. (He and some other members of the *RSJ* collective were participants in these.) Along the way he noted flash points for the radical science movement: the Flixborough (1974) and Seveso (1976) disasters and, more positively, the promise of the Lucas Industrial Plan<sup>2</sup>.

### **Popular culture illustrations**

Finally, Bob mobilised his own more personal resources drawn from popular culture in assembling his working programme. He quoted lyrics by some of his favourite singers (Paul Simon, Arlo Guthrie, Bob Dylan), proffered a list of recent films (around deviance), and inserted some repurposed and original cartoons. He even offered a few jokes, a number of which were rather agitprop in orientation.

Gary Werskey (2007: 436) has emphasised that Bob’s sorting resulted in the disabusing of certain distinctions and positions, notably: use/abuse, internalist/externalist, science/ideology – to which could be added: fact/value, positivism, scientism, technological determinism, vulgar Marxism, as well as notions of value-free or value-neutral science. Werskey foregrounds the negative orientation of the sifting exercise. Nevertheless, Bob also positively identified crucial syntheses: theoretical and agitational, laboratory and industrial struggles, research and applications, trades union activities and life-style politics, various forms of prefiguring lifestyles.

### **Science *is* social relations: invocation and legacy**

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<sup>2</sup> The Lucas Industrial Plan was a proposal produced in 1976 by Lucas Aerospace workers lead by the shop steward, Mike Cooley. Addressing the threat of layoffs, the proposal entailed detailed plans to convert the activities of the company from arms production to socially useful products and to thereby save jobs. Although never adopted by Lucas Aerospace, the plan was widely discussed and influential within the radical science movement and in diverse political settings (including the Greater London Council) in the late 1970s.

This final set of reflections pertain to the assertion and title of the article: *Science is social relations*. There is a real sense in this essay of Bob saying: ‘Up yours!’ to the established world of the history, philosophy, and sociology of science that he had left behind. This article is significant as a vehicle for his personal and political transition from the academic world of the history of science and in it he does express outrage about the world he is leaving. The reasons for this emerge from the collection Bob edited with Mikuláš Teich (*Changing Perspectives in the History of Science*, 1973a) and the ‘state of the field’ reviews in both the co-editor’s introduction (Teich and Young 1973b) and Bob’s *Man’s place in nature* (1973) article. In the latter - his own contribution to the collection- Bob summarised his survey of key texts, contending that ‘these works [of the late 50s and early 60s] ...made up a formidable orthodoxy in favour of treating the history and philosophy of science in relative isolation from their social, economic, and political contexts’ (1973: 355). In a much later overview, another key figure in the history and sociology of science, Steven Shapin was scathing about the state of the field, noting that science studies researchers of the 1930s to 1950s had been engaged in ‘defending and justifying some current arrangements of science in society’. He extended his assessment, contending that: ‘the generation which began coming into the history and sociology of science from the mid-1970s...have tended to be more interested in performing rites of disciplinary purification than in changing the world’ (1992: 357).

Gary Werskey joined this critical chorus when he observed: ‘The history of science, first at Cambridge and then more widely, was established on an explicitly anti-Marxist and “internalist” historiography . . . as an intellectual movement driven by the achievements of isolated, aristocratic geniuses’ (2007: 418- 19). Without making sweeping assessments of a complex and diverse field here, there are good grounds for seeing continuities between these commentaries and Bob’s project in this essay. Hence, Bob’s title and invocation: *Science is social relations* – can be read as a passionate and determined assertion—as he insists—to the history, philosophy, and sociology of science communities and others-- that science *IS* socially embedded and constituted.

But perhaps the insistence conveyed by this invocation also betrayed Bob’s own more personal frustrations not just with the state of the field, but also with his own efforts within it. Bob himself seemed to be scouring and scurrying in dealing with this injunction in his efforts to discern ways of working with it. In his *Fragmentation of a common context* essay (first published in 1973) he was already reflecting that perhaps he was at the end of his own path in and through the history of ideas. He writes there of coming:

up against the limits of the legitimate explanatory power of the history of ideas...The questions I have raised cry out for consideration from the point of view of social, political, and economic historical research. These are perspectives which historians of science have yet to adopt in a serious and sustained way on most topics...In order to carry my own research further I now realize that I must embark upon a process of self-education for which I have had no preparation in eleven years as a student (and five as teacher) in philosophy, science, medicine, and history and philosophy of science – all of which were taught without reference to the historical forces at work in the socioeconomic order. (1973; 1985b: 128-9)

From the perspective of the history and sociology of science Marxism both enriched and complicated Bob’s position. Quite obviously as the *Science is social relations* essay

demonstrated: there were rich pickings within the Marxist coffers for probing the social making of science—and this is certainly a big part of what this *RSJ* article was about. On the other hand, and again the *RSJ* essay makes this clear, the immersion in Marxism upped the stakes considerably. His project was no longer one of pushing or pulling an academic field along – it was about changing the world!

Gary Werskey's take on this is that Bob and the radical science movement ran with 'the Labour Process Perspective' because it enabled the analysts of this movement to 'talk more systematically about the structuring of social relations, in and out of scientific practice' (Radical Science Journal Collective 1981:38; quoted in Werskey 2007: 437). To some extent this was the case, Bob having enthusiastically reviewed Braverman's *Labour and Monopoly Capital* (1974) in the preceding issue of *RSJ* (Young: 1976). But as Werskey indicated, 'further detailed research on the history of science as social relations' was still required from the end of the 1970s and Braverman's insights did not sustain the field on the right [or left] track as Shapin's subsequent appraisal suggests.

This brings us to the question of the legacy of the *Science is social relations* invocation and here we can offer a few rather inconclusive suggestions.

- 1) *Science is social relations* – was a powerful rallying call. Nevertheless, if Bob would forgive this rather capitalist and now somewhat dated metaphor, it was and, perhaps remains, something of a blank cheque. It *could* and probably continues to haunt, inform, and encourage those setting out to critically analyse science, technology and medicine. However—crucially, it does not chart how to proceed in doing this.
- 2) Perhaps it is the emphasis and tone of Bob's injunction which matters most. The article makes it clear that there is a lot at stake in understanding, working in, and living with science, technology and medicine. The tone of Bob's injunction and the substance of the piece cautions against versions of, encounters with, and interpretations of science which deny or lose sight of the social and the political – becoming positivistic, scientistic, technocratic, etc. To adapt Shapin's (1992) terminology – it cautions against forms of 'purification' both within science and within science studies. We might be mindful here of Steven Shapin and Simon Schaffer's concluding comments in *Leviathan and the Air Pump: Hobbes, Boyle and the Experimental Life*: 'The language that transports politics outside of science is precisely what we need to understand and explain' (Shapin and Schaffer 1985: 342). In this sense, *Science is social relations* is a cry of outrage, but it is one that is too important to be dismissed as *merely* 'outrageous'.

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