DIGITAL ACCESS TO SCHOLARSHIP AT HARVARD

Proverbial Economies: How an Understanding of Some Linguistic and Social Features of Common Sense Can Throw Light on More Prestigious Bodies of Knowledge, Science for Example

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters.

Citation	Shapin, Steven. 2001. Proverbial economies: How an understanding of some linguistic and social features of common sense can throw light on more prestigious bodies of knowledge, science for example. Social Studies of Science 31(5): 731-769.
Published Version	doi:10.1177/030631201031005003
Accessed	February 18, 2015 1:05:28 AM EST
Citable Link	http://nrs.harvard.edu/urn-3:HUL.InstRepos:3221093
Terms of Use	This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA

(Article begins on next page)

S|S|S

ABSTRACT An evaluative contrast between learned expertise and lay knowledge is a pervasive and longstanding feature of modern culture. Occasionally, the learned have pointed to folkish proverbs to illustrate the inadequacies of common-sense reasoning and judgement. Proverbs are said perspicuously to display the superficiality, the imprecision, and even the logical contradictions of common-sense thinking. I offer an interpretation of proverbs in their naturally occurring settings as epistemically powerful, mnemonically robust, practically pertinent, and referentially flexible. My purpose is not just to recuperate the value of proverbial reasoning but, ultimately, to show the relevance of such reasoning to a revised appreciation of modern technical practices, including science, technology and medicine. To that end, the paper concludes with some speculative remarks about the linguistic forms in which the heuristics of present-day technical practices are expressed and transmitted.

Keywords folklore, heuristics, metaphor, mnemonics, rhetoric, socio-linguistics

Proverbial Economies:

How an Understanding of Some Linguistic and Social Features of Common Sense Can Throw Light on More Prestigious Bodies of Knowledge, Science For Example

Steven Shapin

Learned expertise describes and commends itself as it describes and condemns vulgar knowledge.[1] This state of affairs is pervasive at the present time and it belongs to a long historical tradition. Scarcely any canonical text of the Scientific Revolution, for example, failed to applaud proper concepts and methods by way of a flattering contrast with the uninstructed ways of the common people. The failings of vulgar knowledge were legion, but two defects were considered paramount among them: its tendency to remain trapped in the world of misleading superficial appearances and its unreflective tolerance of logical untidiness, of incoherence, or even of contradiction. Superficiality, and the unreflectiveness that generated it, were just what the great philosophical modernizers had to overcome. False belief was a popular illness in pressing need of learned therapy.[2]

Social Studies of Science **31/5**(October 2001) 731–69
© SSS and SAGE Publications (London, Thousand Oaks CA, New Delhi)
[0306-3127(200110)31:5;731–769;021937]

Sometimes the learned pointed their fingers at common linguistic forms in which vulgar knowledge was cast and which revealed its superficiality and incoherence in a particularly clear way. Proverbs, and similar folkish expressions, often served the turn. These were brief descriptive and prescriptive generalizations that the common people were known to value and routinely employ. They evidently spoke about how things were in nature ('Great oaks from little acorns grow'), or in human affairs ('New brooms sweep clean'), or they explicitly prescribed how prudent people ought to behave ('Look before you leap'). Quite commonly, proverbs contained metaphors that folded prescriptive elements about human action into apparently descriptive generalizations about nature ('The early bird gets the worm'), or they talked about human nature by drawing on metaphors from human–animal interactions ('Lie down with dogs; rise up with fleas').[3] But to the learned eye a simple inspection of such sayings revealed their inferiority to the propositions and prescriptions of learned expertise. So the 17th-century physician and moralist Thomas Browne contrasted expert reason with vulgar irrationality. The people, he said, were 'unable to wield the intellectual arms of reason', so they tended

> to betake themselves unto wasters and the blunter weapons of truth; affecting the grosse and sensible waies of doctrine, and such as will not consist with strict and subtile reason. [So] unto them a piece of Rhetorick is a sufficient argument of Logick, an Apologue of Æsope, beyond a Syllogisme in Barbara; parables then propositions, and proverbs more powerfull then demonstrations. And therefore they are led rather by example, then precept; receiving perswasions from visible inducements, before intellectuall instructions.[4]

With some notable academic exceptions, this broad learned characterization of proverbial common sense continues in currency. In the late 19th century the logician Alfred Sidgwick announced that

> Proverbs... are frequently employed in arguing by indistinct resemblance. It is the slackness with which any 'striking' analogy will commonly pass muster that leads at all times to the use so freely made of proverbs. To assume that some case comes under some well-known proverb, without a shadow of evidence to show that it does so beyond what may be gathered from the crudest superficial inspection, is still in many quarters a favourite practice.[5]

Philosophers tend to dislike proverbs for the same reason they tend to dislike metaphorical reasoning (and other forms of indexical expressions): both are undisciplined and both are supposed to embody imprecise and superficial modes of inference, leading to inexactitude and error.[6] In social science, too, proverbs are occasionally used as a foil to expert knowledge: in modern textbooks folk generalizations about how people tend to behave are shown to be both shallow and incoherent, needing repair by learned expertise, and the inadequacies of proverbial common sense are offered to students as major inducements to take social science seriously.[7] The learned recurrently talk about proverbs as they address themselves to

common sense and its standing *vis-à-vis* formally instructed expertise, notably including philosophy and the sciences, both natural and social. For this reason alone, proverbs offer a pertinent site for interpreting the pervasive contrast between expertise and common sense, and for suggesting some new ways of thinking about that contrast.

A few caveats, qualifications, and explanations should be made at the outset:

{1} All intellectual traditions generate their subversive elements, and there are well-known counter-instances to generalizations about learned contempt for ordinary reasoning and associated proverbial forms. In philosophy, Montaigne, Hume, James, Dewey, Wittgenstein, Rorty, and some practitioners of 'ordinary language philosophy' have criticized their own discipline for defining its rôle as the repair of ordinary cognition and language-use; in social science, the phenomenologists, the symbolic interactionists and the ethnomethodologists have performed much the same function with respect to 'objectivist' sociology; and in the natural sciences there is, as I later indicate, a strand of thought that rejects the prevalent contrast between common sense and the methods of scientific expertise. For all that, there are scarcely any better sources than these internal criticisms for documenting dominant learned tendencies to condemn common sense and to offer expert repair of common modes of reasoning and judging: that dominance is conceded and described even as it is criticized.

{2} For a host of reasons, it will not do simply to equate proverbs with common sense. For one thing, proverbs are linguistic items, often propositional, and not all everyday knowledge is linguistic or, insofar as it is linguistic, propositional. Proverbs can, however, be usefully treated as markers of common sense, not least because the learned themselves have traditionally used them for that purpose, and their usage is something one wants to inspect and interpret. Using proverbs as a counterpoint to elements of learned expertise has the evident advantage of equitable comparison: insofar as the learned have treated their knowledge as propositional, it is apposite to offer an interpretation of the propositional aspect of proverbs.

{3} When scholars first began collecting, printing, and commenting on proverbs – in the late Renaissance and early modern period – there was a great debate about whether such things were authentically folkish or whether they were of ancient learned origin, achieving wider distribution as they descended the social scale. In the 16th and 17th centuries a general learned approval of proverbs was associated with a view that their genealogy did indeed trace back to learned authorship. The 18th century saw a polite and learned backlash against proverb-use associated with a growing tendency to see such expressions as folkish through and through. For some time, the practical consensus among relevant linguists and folklorists has ascribed proverbs overwhelmingly to the common people. Even where ancient learned usage can be

established, many scholars are now reluctant to take that as conclusive evidence of learned authorship: Socrates, Cicero and Juvenal might well have been expressing learned sentiments in then-current folkish linguistic forms.[8]

{4} So far as common sense itself is concerned, it is useful to retain the phrase as an importantly institutionalized marker – sorting, bounding and evaluating what are taken to be different sorts of knowledge, cognition, people and practices – while retaining the most open mind possible about common sense's coherence, identity, and standing with respect to supposedly different learned forms of cognition and practice. I follow learned characterizations of common sense, and of proverbs as one of its elements, in order to express scepticism about the sorting, bounding and evaluating traditionally marked by those same characterizations.[9]

I argue that many learned condemnations of proverbs are not merely wrong but interestingly misdirected and misconceived. They tell us little about what proverbs are or about how proverbs work in naturally occurring settings, and they set up a contrast with learned knowledge that makes it hard to understand what *that* knowledge is in *its* naturally occurring settings. If we want to get learned knowledge right, that is, we can make a contribution by trying to get proverbial common sense right. Our culture has historically tended to seize-up with anxiety when asked to give an account of the cognitive and linguistic processes of highly valued science, mathematics, philosophy and associated learned practices. When we are not using it merely as a foil to learned expertise, it is easier to engage with common sense in a relaxed and naturalistic frame of mind. I am primarily interested in giving an account of scientific knowledge and related practices, as are most readers of this journal. But if we take a detour by way of common sense and some of its linguistic forms, when we meet up with science again we see it from an unaccustomed angle. I want here just to show some paths that might be taken to achieve this changed angle of vision; I paint the resulting revised picture of scientific expertise only with the broadest of brushes. Nevertheless, I have reason to think that taking this detour might be useful and interesting to students of science and other expert practices.

The first substantive section of the paper briefly characterizes proverbs while pointing out problems associated with any attempt to give them an exact and coherent definition. This section goes on to consider some structural features of proverbs that help us to appreciate their grip on the mind, their ability to circulate undeformed, and the real epistemic and moral value some people have seen in them. I note how a proper appreciation of proverbs' often metaphorical character allows one to understand their semantic and referential scope, while showing that translation from proverbs' metaphorical base to situations-at-hand is unnecessary. The second section argues the importance of considering proverbs as features in naturally occurring scenes of action, spoken by certain kinds of people,

with a view to judging and acting properly in those specific scenes, and against the backdrop of all the knowledge participants bring to those scenes. I call such scenes *proverbial economies*, and I show the insufficiency of treating proverbs solely in their propositional aspect. A proverbial economy, in my usage, is a network of speech, judgement and action in which proverbial utterances are considered legitimate and valuable, in which judgement is shaped, and action prompted, by proverbs competently uttered in pertinent ways and settings: that is to say, a cultural system in which proverbial speech has the capacity of making a difference to judgement and action. In section 3, I comment on the unfoundedness of viewing proverbial common sense as unreflective: if you wanted to treat proverbs solely in their guise as propositions-about-the-world, you could retrieve a host of such propositions that make serious trouble for learned criticisms of common sense as trapped in the superficial world of mere appearance. The fourth section mobilizes evidence that much proverbial common sense is not only reflective but even 'fashionably' relativistic about knowledge-claims, social conventions and cultural authority. In section 5, I dispute a traditional learned condemnation of proverbs as self-contradictory and, for that reason, worthless. Again, I argue that this charge enjoys local plausibility only by virtue of misconceiving the object of attack – as a body of proverbial propositions rather than a scene of speech and action. Finally, I re-visit the contrast between learned knowledge and proverbial common sense. In very general terms, what does this contrast look like at the end of the exercise? What possibilities for understanding science and other formal bodies of learned knowledge are opened up or assisted once we have taken a sideways look at some linguistic and social features of common-sense-in-action? I draw attention here to the *heuristics* of modern expert practices, often embodied as maxims and 'technical proverbs', that are significantly involved in the making, transmission and justification of expert bodies of knowledge.

1. What are Proverbs and How Do They Work?

From the earliest learned engagement with proverbs to the inquiries of present-day academic folklorists, socio-linguists and anthropologists, there has never been notable agreement about how to define proverbs and how to distinguish them from other, formally related, short linguistic genres. Some individual scholars seemed (and seem) confident in their ability to define and distinguish a range of such items – adages, aphorisms, apophthegms, clichés, commonplaces, dicta, epigrams, exempla, gnomes, maxims, precepts, saws, sayings, sententiae and tags – but no definitional scheme seems ever to have escaped learned criticism.[10] Archer Taylor, the premier 20th-century scholar in the area (in terms of art, a paræmiologist), despaired of any structural definition and fell back on competent tacit knowledge:

> The definition of a proverb is too difficult to repay the undertaking; and should we fortunately combine in a single definition all the essential

> elements and give each the proper emphasis, we should not even then have a touchstone. An incommunicable quality tells us this sentence is proverbial and that one is not. Hence no definition will enable us to identify positively a sentence as proverbial. Those who do not speak a language can never recognize all its proverbs...[11]

Moreover, as I will later show, definitions which seek to pin down proverbs by their structural linguistic characteristics give the game away, achieving clarity at the price of pertinence.

Proverbs are not fixed natural kinds: different sorts of people define them differently, depending on their purposes and points of view. One might as well say that proverbs are what these different people have said they are and, for the modern learned, that proverbs are what you find in proverb dictionaries. There are, however, some widely quoted definitions which, in their family resemblances, capture much of what is relevant in present connections. It is relatively uncontroversial to say that proverbs are short sentences, and their brevity is one traditional way folklorists and linguists have of distinguishing them from such more expansive 'short genres' as the aphorism and the apophthegm. But how short is short? Probably 'Short enough to remember and for a lot of people to use in a linguistically stable form'. As it happens, few proverbs found in standard compilations are longer than 10 or 12 words. But brevity is not considered enough to make a proverb, and many commentators conjoin brevity and some notion of pithiness – pointing to the ability of a genuine proverb to distil experience, to say something worthwhile and important in an unusually economical way and, moreover, in a manner that marks it off from the flow of ordinary speech. So the Restoration collector Thomas Fuller famously said that proverbs were 'much matter decocted into few words'.[12]

Other criteria specified that proverbs, properly so called, have a homespun, metaphorical character – indeed, Aristotle defined proverbs as 'metaphors from one species to another'.[13] They are supposed to be a kind of referential poetics, often explicitly compared in that way to the precise and literal propositions of learned speech and writing. Proverbs are said to draw upon familiar, everyday experience – for example, about how birds and dogs behave – but they make their meaning through metaphorical extension to human situations and to other natural situations of interest to human beings. And, while many locutions found in proverb compilations are indeed figurative in this way, others are not, speaking about what's in the nature of priests and cooks, women and men, the young and the old, just as they are.[14] Some attempts to characterize proverbs, and to mark them off from aphorisms, insisted upon their antiquity: the origins of proverbs were either lost in the mists of time or they descended from respected ancient authors, but, in any case, they were not supposed to be the kind of thing that you could now just make up on the spot, claim authorship of, and put into general circulation. There is nothing new in the notion that, as it were, 'the age of proverb-making is past'.[15]

In an overwhelmingly oral culture – such as that of 16th-century England where scholarly proverb-collecting became an important activity – proverb-like sayings were intensively used, by both the learned and the common people. Their form and pithiness gave them great mnemonic and rhetorical force and, when properly used, they secured easy recognition and, often, assent. Their value flowed partly from the primacy of orality and the way that proverb-citing could give the written text some of the authority that then powerfully resided in the oral and the face-to-face. Scholars' and gentlemen's commonplace books were chock-full of them, sometimes arranged under appropriate 'heads' or topics, testifying to the value placed upon them and ensuring their easy retrieval for occasions of argument, pleading, instructing or entertaining. Some modern scholars trace changing learned evaluations of proverbs to the increasing dominance of literate over oral modes of communication, as well as to the declining plausibility of assigning proverbs to specific ancient learned authorship.[16]

Suppose one accepts that proverbs do belong to 'the people' and that a search for their authorship – learned or otherwise – is generally bound to fail. What would this mean for proverbs' identity and authority? In this view – which is the modern learned consensus, and which may well have been dominant among the common people themselves – proverbs express the condensed experience of nameless hosts of knowing ancestors. Barbara Herrnstein Smith nicely characterizes the proverb as a 'saying' rather than a 'said' or a 'says': it is 'speech without a speaker, a self-sufficient verbal object rather than a verbal act, an utterance that asserts itself independently of any utterer – continuously, as it were, or indeed eternally'.[17] The 'they' in the 'they say' commonly prefacing proverb-utterances is generic ancestral wisdom, not a set of nameable authors. That is one reason why a proverbial economy should be pertinent material for anyone taking a sociological, or indeed a historical, view of how knowledge comes to acquire authority. So one commentator perceptively speculates that the denigration of proverbs is testimony to the epistemological individualism of the modern learned classes:

> Perhaps there is now something unacceptable in the very notion of collective wisdom: more to the modern individualist taste is Wilde's quip that 'a truth ceases to be true when more than one person believes it'.[18]

Whatever is thought of the virtues and vices of vulgar knowledge has tended to be thought of proverbs as well. If you don't think much of prudence, practical reasoning, rules of thumb, tradition, and situated knowledge, you probably won't think much of proverbs either.[19]

From the Restoration through the 19th century a list of 'six things required to a proverb' was pervasively cited: the first five items on the list are unexceptional – a proverb should be short, plain, common, figurative and ancient – but the sixth comes as something of a shock against the general run of learned opinion: the proverb is said to be 'true'.[20] What

evidence could there be to support such an apparently perverse claim? And, in general, how might one go about appreciating the considerable authority and grip of proverbial expressions?

First, consider the means by which proverbs arrest attention and grip the mind. A range of linguistic characteristics has the effect of setting the proverb off from the normal run of speech or even of writing. Proverbial expressions, as Erving Goffman might have said, 'break frame'.[21] Metaphor is one way in which proverbial out-of-the-ordinariness is secured, a striking figure allowing the proverb to break free of the supposed literalness of ordinary discourse. In this sense, metaphorical proverbs mark what is being said as special in the same way that poetry does: the juxtaposition of the homespun and familiar with novel situations, the special extension of meaning between the one and the other, and the sense that language has 'gone on holiday' invite special notice.

Still other structural linguistic characteristics work to secure for the proverb what I call *mnemonic robustness* – the capacity of the proverb to seize the mind, to be easily remembered and retrieved, and to resist deformation as it circulates in the culture and over time. Aids to this mnemonic robustness include rhyme ('A stitch in time saves nine'), alliteration ('Many men, many minds'), semantic symmetry, parallelism, or inversion ('Better a lean peace than a fat war'), surprising contrasts ('A shlimazl falls on his back and hurts his nose'), and so on. Indeed, robustness is perhaps too weak a term for talking about how proverbs resist deformation. It is very important to say a proverb just right. If you say 'You can conduct a donkey to the pasture, but you cannot make him consume grass', or even 'A new broom cleans efficiently', you will probably be corrected by those who know the proper form, and the persuasive or communicative effect sought for will be lost, even though the message conveyed by your mistaken form is, from a certain point of view, 'the same'. While there are well-established variant forms of particular proverbs – some people say 'Stolen fruit is sweet' while others say 'Stolen apples are sweetest' – you are supposed to use an established form just as it is – no paraphrase will do – and in this respect proverbs are a form of ritual utterance. The linguist Thomas Sebeok, writing of the 'charm' (or magical incantation) of a Uralic traditional culture, notes that its effectiveness 'depends on its literally exact citation, and, conversely,... any departure from its precisely set mechanism may render the magic wholly ineffective'.[22] And, of course, the same may be said of religious professions, blessings and the formulaic incantations of childhood cultures studied by the Opies.[23] Although proverbs are uttered in, and take their sense from, specific occasions, linguistically they stand apart from, and above, the specificities of those occasions. Their stability, the ethnomethodologist Harvey Sacks noted, 'can be something independent from any occasion of use'. Modifying proverbs at will, like summarizing or paraphrasing their message, would result in something which at once lacked the authority and the 'frame-breaking' character of the proper form: it's not done.[24] Those

who accept Bruno Latour's association of power with that which is immutable and mobile should be interested in how proverbs resist deformation while travelling.[25]

Consider also the *reference* of proverbs and what it is that they counsel with respect to their objects of reference. Proverbs are orientated towards experience. They report on accumulated experience, human and natural; they make those reports efficiently available to people who mean to act in the world; they recommend courses of action in light of experience; and therefore – jarring as it may seem to say so – proverbs represent a widely distributed form of *expertise*. The 'expert' is, after all, someone who has relevant experience, and expertise is that embodied experience. That is to say, proverbs have both a representational and a pragmatic component. They are about the world, but not about it mainly as an object of contemplation.[26] Sometimes they comment upon action taken, drawing or inviting conclusions so that future actions should be better informed, as if to say 'Well, what can you expect?', or 'That's what those sort of people will do', 'That's the way these things turn out'. 'You play with matches, you get burned'; 'The squeaky wheel gets the grease'; 'You can't take trouts with dry breeches'.[27]

Kenneth Burke thought that if you correctly understood how proverbs work you could arrive at a better appreciation of literature in general. Proverbs were a kind of 'medicine' or therapy: it's just a lot easier to say that kind of thing about proverbs than about *King Lear*. Why not, Burke asked,

> extend the analysis of proverbs to encompass the whole field of literature? Could the most complex and sophisticated works of art be considered somewhat as 'proverbs writ large'?

Proverbs, Burke recognized, are indeed about experience (in both natural and human domains) but what they do is to name experiential '"type" situations', and often to counsel how one is to act in these type situations. One orientates to activity as one sees what kind of situation one is in. So proverbs

> are *strategies* for dealing with *situations*. In so far as situations are typical and recurrent in a given social structure, people develop names for them and strategies for handling them.[28]

Or, as Sacks put it, proverbs are used 'to make events noticeable, perhaps to make their ordered character noticeable'.[29]

The matter can be put more strongly than that. Since 'the same' situation is potentially construable (noticeable) in different ways, proverbs are resources for *creating* scenes of observation and action, for making situations recognizable as situations of a certain kind. Confronted, for example, by discussions about military tactics, is the gist of the situation summed up, and its proper purpose identified, by a proverbial pronouncement on the risks of ambition and the misplaced search for certainty – 'The

best-laid schemes of mice and men gang aft agley' – or by one stressing the importance of detail – 'Look high and fall low'? Each proverb can count as a pertinent way of identifying 'what is going on here', of picking out and directing notice to its salient features. And, as each names and configures the situation differently, so each offers resources for acting in it differently, thus *making* it the situation proverbially named. This is how proverbs help to constitute their referential realities. The metaphorical component of many proverbs also provides resources for creating situations through naming them. When we address some passage of human behaviour by saying 'Birds of a feather flock together', we can make available whatever is known about birds for understanding and orientating to kinds of human beings.[30] But what it is specifically about birds that is relevant to the human case at hand is not exactly defined. In Aristotelian terms, proverbs belong to the process known as *deliberation* – the taking of decisions about what to do, what may be brought about by our own efforts, in the realm of the more or less and of the contingent – where absolute certainty is neither available nor rationally to be expected. They belong to the complex circumstances of life-as-it-is-lived, not to the idealizations of philosophy or science.[31] Or, in Stephen Toulmin's vocabulary, proverbs are aids to action not in the domain of Reason but of reasonableness.[32]

What is the experience about which proverbs speak? Like scientific theories and laws, proverbs are *generalizations*.[33] This bears upon – indeed it is another way of pointing out – proverbs' often figurative content. The 'cock' in 'Every cock crows on his own dunghill' is both a generalized rooster and a generalized human being, while the 'every' – as opposed to 'some' or 'many' – marks the fact that a generalization of wide scope is being offered. The 'dirt' referred to when we say 'Throw dirt enough and some will stick', similarly can be a fabricated story of sexual misconduct or a concocted accusation of scholarly dishonesty, but it is rarely garden soil, even if the properties of soil may have some relevance to the reference at hand. This is just a way of pointing out proverbs' enormous semantic reach. Proverbs evidently speaking about what's in the nature of birds, brides and brooms may nevertheless find use in an unpredictably wide range of domains or situations. And as they find those applications, so the proverbs' reference subtly changes. Put another way, philosophical suspicion of proverbs is wholly justified: they are a logical empiricist's nightmare.

None the less, too much should not be made of the move from proverbs' metaphorical base to the particularities of the situations in which they find application. You do *not* have to know very much, if anything, about the ways of chickens or the adhesive properties of garden soil to use the relevant proverbs properly and pertinently. It was only a few years ago that I understood why one might want to look a horse in the mouth: I'd never done it myself, and where I grew up – not exactly horsey country – no one else did either. However, I insist, for many years before that, I was able to understand, and properly use, the proverb 'Don't look a gift horse in the mouth'. That is because I was wholly familiar with a large number of

occasions of competent usage, and I understood – as part of competently knowing what was happening in these scenes of competent usage – what intention was expressed in the saying. Reiterated usage builds up the reference, and, while translation from the farmyard domain may occur for some users, on some occasions, such translation is not at all necessary.[34] That is presumably why we still properly say – and find sense in – such proverbs as 'The exception proves the rule', 'You can't make bricks without straw', and 'Strike while the iron is hot', even though many of those who competently say and hear such things have no experience with the techniques of brick-making and blacksmithing, and have never known the historical sense of 'proving' as 'trying' or 'testing' which puts the 17th-century meaning at 180 degrees from its present-day sense.[35] If enough situational context is available, and enough experience with competent usage is on tap, you don't have to translate from metaphorical proverbs' literal aspect reliably to grasp their meaning here and now.[36] A theory about how proverbs originated, and how they circulated and signified in their original settings, is not necessarily adequate to account for how they circulate and signify in other contexts. Even while resisting deformation in their utterance, proverbs escape any such semantic discipline. And that is a mark of their referential power.

Of course, some currently used metaphorical proverbs may continue to draw upon familiar experience. Most of the educated classes probably still know just enough about lubricating mechanical gadgets to understand literally why 'The squeaky wheel gets the grease', and you don't have to be an ornithologist to know that many birds of the same species just do tend to hang out with each other. In such cases, it can make some sense to talk about an *external* mode of generalizing experience: in order to understand metaphorical proverbs we are supposed to move outwards from their manifest content (for instance, wheels and birds) to their situationally intended reference (complaining academic colleagues and clannish members of the '-ology' down the corridor). But metaphorical proverbs also importantly display an *internal* generalizing disposition. Take the proverb 'A rolling stone gathers no moss', and take for granted that its situational reference is usually competently understood not to be rocks but instances of human behaviour.[37] Perhaps knowledge of stones *is* involved in competent proverb-use: for some people on some occasions it might well be. But what one has to understand here is not something to do with features of that little-oval-gray-stone-with-pyrite-speckles-that-you-trod-on-in-the-desert-last-week. The stone of proverbial reference is not a historically specific stone, just as its rolling behaviour is not a historically specific event. Anyone who presumed otherwise would be judged incompetent, at least pedantic, possibly even mad, and that is why proverbs are sometimes used in clinical tests of mental illness.[38] Rather, insofar as mineral concretions are involved in the reference of this proverb, what's talked about is *stones* and what it is in their nature to do, and about what tends to happen to them as they do what it is in their nature to do.[39]

In Aristotelian terms, what happens to the proverbial stone is that which happens in a certain way 'for the most part', and, therefore, proverbial references to stones, or to pertinently similar aspects of human behaviour, are to be treated as true 'for the most part'. There are all sorts of complexities and contingencies involved in real-life situations (natural or human); and it is only in the mostly irrelevant ideal-world that the essential nature of things is invariably and precisely expressed. The competent proverb-user appreciates that there may be stones in the world that roll and gather some moss; stones that do not roll and nevertheless gather little or no moss; and, indeed, people who are constantly on the go and yet who are boringly habit-bound. Instances may be found that contradict the proverb's experiential generalization, without compromising its truth. This is how generalizing proverbial statements of wide validity ('*Every* cock will crow on his own dunghill') or non-metaphorical proverbs ('Like father like son') can co-exist, without contradiction or damage to their validity, with knowledge of specific counter-instances to the generalization. Indeed, the physical fact that it is *almost never* 'darkest just before dawn' detracts in no way from the validity of its proverbial application, as the proverb, for example, captures something of the psychological trajectory of human despair.[40] Here is yet another way in which proverbs are epistemically powerful things.

Given that the generalizations expressed in proverbs are true 'for the most part', or 'in the sense in which they are competently intended', it is not pertinent – it is, indeed, a violation of decorum – to treat proverbially-expressed generalizations either as invitations to systematic inquiry (as prolegomena to empirical study of metamorphic stones and their environmental accretions) or as vulnerable to empirically observed counter-instances.[41] Harvey Sacks noted academics' general tendency to treat proverbs solely as propositions about their explicit referents, 'and to suppose then that it goes without saying that the corpus of proverbs is subjectable to the same kind of treatment as, for example, is scientific knowledge'.[42] Bruno Latour specifically contrasts the referential 'softness' of proverbs to the 'hardness' of scientific propositions. As an example of the distinction, he offers a mother telling her son 'An apple a day keeps the doctor away'. The awkward son replies by citing scientific studies that contradict the empirical validity of the proverbial generalization. What impresses Latour about the exchange is that the proverb's claims to truth cannot stand the test of the resources the son brings to bear on it: the son's 'hard' language-game mobilizes resources that the mother's 'soft' one can't cope with. Latour observes that the proverb is not used, as scientific propositions are, as an argument to win a counter-argument and that it does not have the strength to do so. That's right, of course, but the power of the mother's proverbial utterances is linked to the fact that she will, in this case, accept no counter-argument from nutritional research. The son doesn't win because of the 'hardness' of his scientific speech; he just winds up looking silly or insolent. The upshot of any such exchange is not the triumph of scientific over proverbial propositions; it is a failure in the son's sense of

decorum, as the mother herself would fail were she to interject that proverb into a formal exchange between expert nutritionists.[43]

Sacks observed that 'one of the facts about proverbs is that they are "correct about something"', and Aristotle rather irritably wrote that 'just because they are commonplace, everyone seems to agree with them, and therefore they are taken for truth'.[44] That reputation is a real epistemic advantage, and one index of this advantage is the manner in which proverbs are often used. They are recurrently employed as a kind of coda – a way of summing-up or bringing matters to a head or conclusion, often performing a function similar to Dr Johnson's 'And that's an end of the matter'. *The Economist*'s celebrated house-style continues to use proverbs abundantly to the same effect – summing-up a line of description and evaluation and occasionally at the same time deflating the balloons of fancy economic or management theorizing.[45] Unless the setting is the extended proverb-exchange common in traditional societies, proverbs are not invitations to continued conversation on the topic at hand; they are, rather, conversation-stoppers, signalling that perhaps it's time to move on from this particular subject, that this is, for the moment at least, the last word on the matter.

2. Proverbial Economies

Many proverbial sentences can be thought of as rule-like propositions, used to regulate judgement and counsel action in a range of situations. So it is pertinent to compare them with other rule-like propositions we know about and how these other propositions work. There is a sense in which proverbs are *truer* than those propositional rules which function in economies that *do* invite inquiry as to their validity. Harvey Sacks offered as a comparison the law and its rules:

> [There] if you invoke a rule by reference to precedent, the occasion of using it can provide the occasion for reconsidering the rule to see whether, not only in this instance but in general, it ought to obtain for anything. So that a rule introduced to govern a situation in a law case can be changed altogether.

And so Sacks saw no reason to resist the apparently odd conclusion that 'even a strict precedence system such as [the law] doesn't have objects as powerful and as limitedly attackable as proverbs'.[46] Part of the sensible oddness here consists in the observation that a weak Popperian object – a proposition which resists falsification and which therefore is widely supposed to have no epistemic virtue – is among the most useful and robust elements of our culture.[47] What is supposedly lost in refutability is gained in adaptability.

Whether metaphorical or not, proverbs are generalizations which nevertheless take their meaning as they are invoked in particular situations of judgement and action. The proverb thus appears in two guises – first, the generalizing proposition or prescription, treated as true, held in common,

and circulated as linguistically stable; and, second, its highly variable semantics and reference, deriving from the multiplicities of situations to which it is applied and which determine its meanings. Proverbs link the general and the particular. They make *this* instance of judgement or action understandable or legitimate, in light of statements about what it is in the nature of things to do, or of people to behave, or of situations to turn out. And, as they get applied to further particular occasions, so the references of the generalizations are themselves modified.

The proverb 'Everyone knows where his shoe pinches' can be pertinently brought to bear on lay or expert medical diagnosis, to methodological debates in Anglo-American sociology, to the marketing and design of personal computers, to the distribution of charitable funds, and to innumerable other situations now existing or to unpredictable situations which will come into existence in the future. Such specific situations, as Kenneth Burke observed, 'are all distinct in their particularities; each occurs in a totally different texture of history; yet all are classifiable together under the generalizing head of the same proverb'.[48] The purpose of using this proverb is to draw attention to an accepted and widely known general rule which is illustrated by the case at hand, or, conversely, how the case at hand comes under the compass of some accredited and familiar generalization.[49]

These observations suggested to Sacks a way of understanding proverbial economies as 'atopical' phenomena. The point of the rolling stone that gathers no moss is atopical in that nothing pertinent to its sense and use is to be illuminated by reference to particular mineralogical or botanical findings. It is not a matter here of concrete *versus* abstract modes of thinking, as if failure to comprehend the proverb's moral message were a failure of the ability to abstract. The proverb-as-proposition is quite abstract just as it is, since it is not competently to be understood as concerning the behaviour of any particular stone. I have already indicated that in vernacular usage proverbs are not competently subject to empirical inquiry about their validity, nor are they as a body monitored for logical consistency or non-contradiction. On the contrary, while they may be misapplied – and thus lack in force – proverbs are held to be true, and it is the work of the auditors in a scene to figure out *how* they are true here and now, how they pertinently address judgement and action in this particular setting. This is a very powerful way of organizing bodies of knowledge and action. 'In that way', Sacks noticed, 'instead of constantly revising a body of knowledge by reference to the discovery that it's not correct here, now, for this, you maintain a stable body of knowledge and control the domain of its use'.[50]

It has, indeed, been a notable feature of learned engagement with proverbs to compile them, to make a list of them, to inspect them as a body for coherence and sense, and I shall return to that tendency towards the end of this paper. But the acts of compilation, arrangement and inspection transform their objects. Proverbs-compiled-in-a-list are not the same

things as the vernacular items purportedly compiled. A proverbial economy does not compile its body of short-generic propositions or prescriptions and inspect them in these ways or make their generalizations occasions for inquiry. Were it to do so, then it would be some other kind of epistemic economy. In a proverbial economy the pertinent judgement does not concern the truth of the proverb – that is largely taken for granted – but the pertinence and productiveness of inserting this particular proposition into this scene.[51]

Against the general learned tendency to treat proverbs as naked propositions-on-a-printed-page, there are some anthropological and sociolinguistic recommendations to conceive them as speeches in situations of use, that is, to get to grips with functioning proverbial economies.[52] As early as 1926, the anthropologist Raymond Firth insisted that

> The meaning of a proverb is made clear only when side by side with the translation is given a full account of the accompanying social situation – the reason for its use, its effect, and its significance in speech. It is by nature not a literary product.[53]

Anthropologists recognized that the meanings of proverbs were rarely transparent to naïve or non-native auditors just as they were.[54] They may have to be explicated, de-coded, seen to be correctly chosen, spoken, and applied. Who does that? Who can do that?

Aristotle's *Rhetoric* sounded a significant warning to people about to spout these sorts of sayings:

> The use of maxims is appropriate only to elderly men, and in handling subjects in which the speaker is experienced. For a young man to use them is – like telling stories – unbecoming; to use them in handling things in which one has no experience is silly and ill-bred: a fact sufficiently proved by the special fondness of country fellows for coining maxims, and their readiness to air them.[55]

As general counsels about how to judge and what to do, they just don't *work* when uttered by the kinds of people who are competently known not to have broad experience and not to have the authority to pronounce about what should be done. In a society that acknowledges the epistemic and moral virtues of embodied age-and-experience, you don't ask your grandmother about her warrants for attaching a proverbial generalization to a particular event – for the very same reason that you don't teach her to 'suck eggs', 'get children', 'sup sour milk', or 'grope her ducks' – just because it is her embodied authority that provides adequate grounds for such attachments. And, again, your grandmother's proverbial assertions are not occasions for inquiry into their evidential warrant, just because it is her embodied authority that tells you what adequate evidence is.

Similarly, an African ethnographer observes how proverbs can work to reassure or to reconcile:

> This is also the function of proverbs in modern Occidental culture, or rather of the 'bromides' with which they have been merged. . . . [A]

> proverb is usually quoted to the disturbed individual by a senior, and it comes as the voice of the ancestors, his seniors *par excellence*.[56]

Note the pervasive 'My son' prefacing the Biblical Proverbs – 'My son, keep my words'; 'My son, forget not my law' – and the presumption that proverbs are both repositories of value, that their wisdom may not be transparent to the young and naïve, and that they may require explication by the old and experienced. The young or naïve person is apt to choose proverbs badly or to misapply them, thus rendering them worthless. So said the Apocryphal book Ecclesiasticus: 'A proverb will fall flat when uttered by a fool, for he will produce it at the wrong time'.[57] This was Sancho Panza's problem: his proverbs came out all in a jumble, without due recognition of their proper occasions of use. 'Look you, Sancho', Don Quixote said, 'I do not find fault with a proverb aptly introduced, but to load and string on proverbs higgledy-piggledy makes your speech mean and vulgar'.[58] While many proverbs are indeed propositions, the knowledge of how to store, select, and apply proverbs – and therefore of how to give them force – is itself not propositional: it is a skill acquired by experience and, when acquired and displayed, a mark of wisdom. There are no propositions that adequately specify the conditions of proper usage. This sense of decorum is substantially given by age-and-experience, and it is made manifest to others – and hence potentially transmissible – by the example of embodied wisdom. Absent such examples, proverbs in themselves can have little authority. For this reason, a proverbial economy cannot be described without figuring in the culture surrounding embodied proverb-speakers as well as the occasions of proverb-use.

A similar consideration applies to the metaphorical aspect of many proverbs. If the pertinence of a metaphor cannot be subject to proof, how is it made locally persuasive? In this connection, too, a particular speaker in a particular setting has got to point out, if necessary iteratively, just what it is about, for example, rolling stones and moss in general that competently applies to *this* aspect of human behaviour at hand. This 'matching up' or 'correlation' can draw on any and all aspects of the present scene, but one very potent scenic element is, once more, the embodied attributes and authority of the one who speaks, who invokes the proverb, and who adds his or her personal and generic authority to those of the nameless ancestors for whom he or she now speaks.[59] One cannot properly talk about how proverbs are true and pertinent without talking about the capacity of certain kinds of people in certain kinds of scenes to identify what is to count as truth and pertinence. Just as Aristotle said that you should not utter proverbs until you reached a certain age, so he recognized the 'character' of a speaker as 'almost the most effective means of persuasion he possesses'.[60]

3. Proverbs as Reflective Knowledge

From traditional learned points of view, talking about proverbs – items of common-sense knowledge – as ways of *improving* judgement and action

must seem odd. It suggests a kind of reflectiveness usually associated only with the deliberations and pronouncements of the learned. Indeed, this paper set out by gesturing at a great tradition in which the learned commended themselves and condemned proverbs by noting that proverbial common sense was endemically unreflective. The common people, it is said, take things just as they seem to be, habitually declining to go behind superficial appearance to the truth or pattern that lies behind. However, as stable as this imputation has been over the centuries, there is a sense in which it is flatly contradicted by the most cursory inspection of any proverb dictionary. Thousands of proverbs, in all cultures, enjoin just the sort of reflectiveness that is supposedly absent from common-sense knowledge. They counsel the inexperienced and the naïve against vulgar errors of inadequately justified judgement or undisciplined inference. (Even the vulgar have their vulgarians.) Actors in proverbial economies have available to them a stream of advice that counsels against taking things just as they seem to be. Experience advises otherwise: 'Every light is not the sun'; 'Everyone thinks his own fart smells sweet'.[61]

Proverbs of this sort can be called *inference instructors*, and they come in several varieties. One type of proverbial instruction cautions against premature or over-enthusiastic inference from particular to pattern. It warns those with a restricted stock of experience that it is unwise to infer from one instance, from short-term patterns, or from local manifestations, to the way things will normally pan out, to the course of nature or the nature of people. Such inference-instructing proverbs, when suitably uttered by suitable people, identify the pitfalls to sound judgement that have been noticed by long experience. Indeed, they tell inexperienced people that they *are* inexperienced, and in what ways, that what they might regard as a sufficient stock of experience and basis for inference are no such things. 'One swallow does not make a summer', or 'Don't count your chickens before they're hatched', is something the experienced Chief Financial Officer might tell a young biotech researcher convinced that new experimental results warrant an immediate Initial Public Offering, or, that a father might tell a son celebrating early sporting success, or (as 'One robin doesn't make it Spring') that a sceptical California farmer recently told an agricultural scientist conducting field trials of a new variety of celery.[62] And a mother might say to her adolescent daughter moping over a failed first romance that 'There are many more fish in the sea'. You *think*, the mother means, that you'll never be in love again, but you *will*, probably many times over; no, I can't guarantee it, but that's the way these things tend to work out – usually or for the most part. The proverbial voice here notes that the patterning – and the distorting – influence of a single striking instance may be strong, and it advises prudent actors to recognize its effects: 'Once bitten, twice shy'; 'The burnt child dreads the fire'.[63]

In such ways, naïve persons are told both about what the world is like and about sources of knowledge about the world: the *what* is contained within the proverb; the persons speaking it in a setting help secure its meaning while, at the same time, they constitute themselves as reliable

sources of knowledge about the underlying structure or pattern of the world and as receptacles of collective wisdom. Naïve and unreflective persons are told that they *are* naïve and unreflective, that their stock of experience is in fact restricted, and that there are human sources of knowledge available who embody vast stores of experience and prudence. Proverbs of this sort, when suitably uttered, thus act as vehicles for the transmission of accumulated experience from the old to the young, and, more generally, from the experienced to the inexperienced in any endeavour. They uphold the moral order as they testify to the order of nature.[64]

Despite the torrents of learned commentary deploring vulgar perception and judgement for their entrapment in superficial appearance, yet another large body of proverbs warns against mistaking appearance for reality: 'All that glitters is not gold'; 'All are not friends that speak us fair'; 'You can't tell a book by its cover' or 'wine by the barrel'; 'Just because there's snow on the roof doesn't mean there isn't fire in the oven'; and, more generally and theoretically, 'Appearances are deceptive'. Don't be taken in by flash superficiality. Things are rarely what their surface appearances suggest: 'Truth lies at the bottom of a well' and 'The best fish swim near the bottom'. What is merely superficial – however fashionably and fiercely valued – is likely at the end of the day to prove empty or meretricious. Go for the solid and enduring stuff; don't follow the confederacy of dunces. Neither truth nor any social or material goods worth having are easy of attainment. Anyone who thinks so is a fool; anyone who tells you so is a fraud. Again, it takes accumulated experience to know this. Listen to the voice of that experience and learn. You will then be warned of life's recurrent pitfalls, and freed from the painful necessity of making your own mistakes: 'Experience keeps a dear school, but fools will learn in no other'.

There are, however, proverbial aids to right inference from particular to pattern, and accumulated experience is available to identify these aids and to counsel how they should be recognized, applied and acted upon. Many proverbs direct notice to means by which one can reliably discern real states of affairs from visible signs: 'There's no smoke without fire'; 'Nearest the heart, nearest the mouth' (a folk version of the 'Freudian slip'); and 'The eye is the index of the soul'. Still other proverbs speak about the sorts of alterations that are not to be expected, given the nature of things, about how natural and human things tend to work out, usually or for the most part. Take, for instance, 'The leopard does not change his spots', and the series of proverbial commentaries on heredity and development which includes 'What's bred in the bone will not out of the flesh'; 'Like father/mother, like son/daughter'; 'The apple falls not far from the tree'; 'The child is father of the man'; 'Such is the tree, such is the fruit'; and 'Blood will tell'.[65] Here the message is that things in general tend to go on in the future as they have in the past. Given the nature of things, there are limits to the changes of which people and natural processes are capable, and which it is reasonable to expect of them.

'No tree grows to the sky', and 'Whatever goes up must come down'. Singular violent occurrences and extremes meet natural tendencies in the opposite direction. Things – natural and human – tend to even out over time. One extreme is counter-balanced by another. Whatever 'this' is, this too will pass: 'All that is sharp is short'. Learn to recognize the violent, the singular and the extreme for what they are. It is not reasonable to expect that such instances, however remarkable and however much they may grip the imagination and the emotions, offer reliable signs of what is normal, and it is not prudent to plan judgement or action that is predicated on their long continuance or even recurrence: 'Lightning never strikes the same place twice'. In this way, some proverbs teach at once what *is* singular or extreme, as opposed to what is normal, and, again, they do so on the basis of accumulated experience, condensed in proverbs and brought to bear on a particular scene by those entitled to speak in the name of such experience: 'Every dog has his day'; 'After a storm comes a calm'; 'The tide will fetch away what the ebb brings'; 'Pride goes before a fall'; 'What goes around comes around'.

Just when you think that things are really set fair, they will turn lousy. Or when you think that things will never improve, they will get better: 'Every cloud has a silver lining'; 'It's an ill wind that blows nobody any good'. Or, again, when you think the ways things are will never change, they do: 'It's a long lane that has no turning'; 'Sometimes all honey and then all turd'. It's not reasonable to persuade yourself that good comes without bad, or that either good or bad can long continue. In general, there's little purity in the world; things come all jumbled up: 'Every path has a puddle'; 'There's no mirth without mourning'; 'No pleasure without pain'; 'No weal without woe'. Murphy's (or Sod's) Law ('If an aircraft part can be installed incorrectly, someone will install it that way') – made up by the Northrop aeronautic engineer Captain Edward A. Murphy in 1949 – has age-old proverbial predecessors: 'Nothing is certain but the unforeseen'; 'The unexpected always happens'; 'The bread never falls but on its buttered side'.[66]

4. Proverbial Relativism

Proverbial voices warn that it is imprudent to take at face value claims to universal, timeless or absolutely certain knowledge. (The vulgar too have their postmodern moments.) Beware of anyone who tells you that there is a global formula for right judgement or a royal road to right action. Watch out for anyone who claims that generalizations about the real world can hold universally and without exception. Life is too complicated, too rich, and too heterogeneous to support any such assertion. Human intelligence can't compass the jumble of creation or the idiosyncrasy of people, and it's a mark of learned fools that they think their wit is up to the task, that a precise 'theory of everything' is at hand or just around the corner. For every sucker born every minute there's a simplifying rationalizer or a moralizing snake-oil salesman who's willing to take the sucker's money. In

intellectual claims, as in material goods, proverbial voices say '*Caveat emptor*': 'Comparisons are odious'; 'Circumstances alter cases'; 'Every like is not the same'; and neat abstractions tend not to hold good when one is concerned with the contingencies and complexities of real-world judgement and action. Always best to be cautious in one's judgements, and circumspect in the scope of one's conclusions: 'Almost was never hanged'.[67]

As in the natural, so in the moral: there is no one right way to judge and to act that holds good in all places, times and circumstances. Solomon taught that 'To every thing there is a season, and a time to every purpose under the heaven'.[68] The voice of the people concurs: 'Many men, many minds'; 'Other times, other manners'; 'When in Rome do as the Romans'; 'Being on sea, sail; being on land, settle'; 'Horses for courses'. There's no accounting for, or disputing, tastes: 'One man's meat is another man's poison'; 'Chacun à son goût'; 'Every shoe fits not every foot'. 'Live and let live' because 'It takes all kinds to make a world'. People and their predicaments differ, and so their customs, values and standards differ accordingly. There's no exact science of such things, except in the excremental purity of the uselessly abstract. And there should be nothing either surprising or troubling about injunctions to moral or epistemic decorum: 'Measure not another by your own foot', or, as Sly and the Family Stone put it, 'Different strokes for different folks'.

So relativism has deep roots in common sense. Many proverbs acknowledge interpretative flexibility and express suspicion of claims to semantic fixity or the sufficiency of propositions to firmly fix meaning: 'Everything is as it is taken'; 'It is not the matter but the mind'. At the same time, such voices do not proceed from the flexibility of meaning to the commendation of postmodern playfulness. Judgement does vary from situation to situation, but local standards may be, and legitimately are, obligatory. When in Rome you *must* do as the Romans, even though you are well aware that things are legitimately done otherwise in Florence. There is nothing 'mere' or 'arbitrary' about such proverbs' view of local custom. Just as folk wisdom testifies both to the variability and the force of local obligations, so it voices scepticism about either the availability or the necessity of transcendental justification. Justification both comes to an end, and is *bottomed*, in local obligation. Household gods are all the gods going, and they are quite powerful enough.[69]

There is no reason to push too far the claim that folk wisdom is globally relativistic in any very precise academic sense. There are, in fact, other proverbial voices pointing out, or urging, commonality of standards and finding unity in apparent diversity. 'What is sauce for the goose is sauce for the gander' can be used to argue that different categories of people ought to be judged not by different but by the same standards. That 'There is one law for the rich and another for the poor' counts both as a cynical statement about how things are and as an implicit recommendation that they ought to be otherwise. And, in the case of truth and authority, similar sensibilities are voiced by 'Gold speaks'; 'Money is the best lawyer';

and 'If the doctor cures, the sun sees it; but if he kills, the earth hides it'. (Proverbial voices have never spoken well of doctors and lawyers, or, for that matter, millers.) There are also proverbs that direct attention to genuine and pertinent sameness against uninstructed or biased tendencies to see differences and particularities: 'In every country dogs bite' or 'the sun rises in the morning'; 'All the world is one country'. Even a king 'has to put on his trousers one leg at a time', the same king that 'even a cat may look at', and robust subjectivity may turn out to offer a more secure basis for consensus than learned pretences to objectivity: 'Hearts may agree though heads differ'.

The most pervasive sentiment informing such pieces of folk wisdom is not, of course, some formal relativist *position*; it is, rather, an emotionally-charged sceptical, even iconoclastic, deflation of intellectual pretension and moral absolutism. The learned person is likely to prove a fool in ordinary life – and it's ordinary life that really does matter. The pious preacher is quite possibly a hypocrite when it comes to everyday moral action. Those who pretend to speak for God, Truth and Reality usually turn out to be speaking for their own special interests. Grand rational plans, systems and abstractions rarely hold good when they are actually put to the test in the real world: 'It's easier said than done'; 'Talking pays no tolls'; 'Fine words butter no parsnips'. But putting fine words and rational plans to the test of everyday life *is* the appropriate assay: 'The proof of the pudding is in the eating'. So intellectuals come off no better than lawyers: 'A handful of nature is better than an armful of science'; 'A mere scholar, a mere ass'; 'Much science, much sorrow'. Nor do priests and the pious: 'The nearer the church, the farther from God'; 'All are not saints that go to church'. If your concern is with practical judgements in real life, then common sense is a surer guide than book-learning: 'Years know more than books'.[70] As Clifford Geertz maintained about 'common-sense' sentiments in general, 'Sobriety, not subtlety, realism, not imagination, are the keys to wisdom'.[71]

5. Are Proverbs Logically Incoherent?

If you treat proverbs as naked propositions – if you do not bring to bear on their interpretation the culture and contingencies of a setting of use – then they suffer from some quite obvious epistemic flaws. The truth of the proverbial proposition 'A fish rots from the head' seems doubly vulnerable: it is susceptible to counter-evidence that might be contained either in your refrigerator or in a university faculty whose malaise is not obviously the dean's fault. Moreover, there are evidently quite a lot of proverbs – one thinks of weather proverbs about Bredon Hill putting on his cap, about Groundhog Day, green Christmases and white Easters – that are trite, that don't stand up to the findings of modern science, or that continue to circulate in settings where they have little or no predictive value: it's just what you say to have something to say about the weather (though that has its own definite kind of 'phatic' purpose).[72] For all the wisdom one might

want to acknowledge in proverbial economies, and even for all of proverbs' robustness, the body of proverbs is not philosophy, or, to be more precise, not philosophy as it is ideally represented. Proverbial propositions need a lot of situational help in order to be pertinent and true. If proverbial propositions are to be accounted true, then a whole raft of qualifications, reservations, and stipulations about context and contingency, have to be noted or taken for granted as part of their assessment and application. But once they are granted that help – that is, once they are seen as part of a working proverbial economy – then they are powerful stuff.

Yet scholars have historically been reluctant to concede proverbs that situational help. Scarcely had the dust settled on the earliest learned efforts systematically to collect such folkish sayings when it was recognized, and loudly trumpeted, that valued proverbs could be found that formally contradicted other valued proverbs. In Tudor and Stuart England, humanists liked to play with the genre known as *crossed proverbs* – assembling proverbs that self-evidently clashed with each other – to make sport, and sometimes also to make a point about the inadequacy and the methodical indiscipline of the common people's way of thinking.[73] More recently, some social psychology textbooks demonstrate the inadequacy of lay reasoning by drawing students' attention to the phenomenon of contradictory proverbs:

> A standard ploy is the presentation of a set of maxims, proverbs or bits of folk wisdom as 'common-sense theories' of social psychology. Then, when certain pairs of maxims are shown to conflict (e.g. 'Birds of a feather flock together' as against 'Opposites attract'), and the utter senselessness of common-sense psychology has thereby been demonstrated, the writer is free to appraise students of the virtues of the scientific approach to these matters. . . . [E]veryman [is given a] perpetual role as a straw man.[74]

For every apparently sage 'Look before you leap', there is an equally valued and opposite 'He who hesitates is lost'; 'Absence makes the heart grow fonder', but 'Out of sight, out of mind'. How could rational persons find the slightest value in any such generalizing propositions when the body of them was so evidently vulnerable to contradiction? How could vulgar knowledge be anything but worthless when such contradictions were tolerated, amazingly even going unnoticed until the learned collected them, arrayed them in lists, reflected on them, and pointed out their contradictory nature? Elementary logic soundly teaches us that a proposition cannot be true if its opposite is also true: 'Socrates is mortal' is true just on the condition that 'Socrates is immortal' is untrue. And so, to the extent that proverbs massively contradict each other, the body of proverbs is incoherent and its members individually unreliable.

Here, again, the learned criticism mistakes its object. In his study of the relationship between cultural change and the development of literacy, the anthropologist Jack Goody noted an interesting feature of scholarly engagement with proverbs. The first thing the learned did was to *make lists* of them. By that simple act, Goody observed, the learned not only removed the proverb from the contexts in which it had its traditional being,

but also shifted its identity and altered its epistemic value. By taking the proverb out of its oral, situated and purposive setting,

> by listing it along with a lot of other similar pithy sentences, one changes the character of the oral form. For example, it then becomes possible to set one proverb against another in order to see if the meaning of one contradicts the meaning of another; they are now tested for a universal truth value, whereas their applicability had been essentially contextual (though phrased in a universal manner).[75]

The proverb that is thus contradicted by another proverb is a qualitatively different thing from the proposition or prescription uttered in context of practical use.

Given that proverbs are strategies for dealing with situations, they may properly be said to contradict only when both the particular situations they typify and the particular attitudes they express about that situation are the same. But just as proverbs-in-an-economy name (and help create) recurrent situations and point out pertinent similarities between them, so concrete situations lumped together for one purpose may differ in any number of respects, and the respects in which they differ may be pertinent for other purposes. 'Many hands make light work' contradicts 'Too many cooks spoil the broth' just on the condition that, say, all kitchen work is the same with respect to the value of your helping me. But why ever should that be? If I am washing the dishes, if I am fed up with the work, and if my kitchen happens to be big enough, then 'Many hands make light work' is what I might say to sum up a situation, to link it in your mind with other warrantably similar situations, and to summon your assistance. However, if I am whisking up egg-whites for my famous flourless walnut cake, no matter how hard the work is, and no matter how large the kitchen, I decline any help you might offer by saying 'Too many cooks spoil the broth': this is a one-person job, like others to which (you know) that saying has been applied. The contradiction that seems so evident when proverbs are treated as isolated propositions-in-a-list vanishes like smoke when they are interpreted as utterances-in-a-particular-situation.

6. Proverbial Common Sense and Science Revisited

I began by sketching a pervasive evaluative contrast made by the learned between proverbs (as tokens of vulgar knowledge) and properly expert forms (the propositions of science and philosophy). The vices of proverbial common sense consisted largely in its unreflectiveness, its referential imprecision and its incoherence; the virtues of learned knowledge included its refusal to remain trapped in the world of appearance, its clarity, and its logical tidiness. Accordingly, I end by reviewing some of the epistemic virtues of proverbial economies, and then by reconfiguring aspects of the traditional contrast between our most highly valued forms of expert knowledge and the world of proverbial common sense.

Supposing one wanted to say that proverbs are epistemically powerful and worthy: what sorts of virtues could one now mobilize in their favour?

First, proverbs' linguistic structures flag that something special is being said – for example, summing up a situation or giving an overall judgement about what is to be done – and these same structures facilitate recall and undeformed circulation – what I have referred to as proverbs' mnemonic robustness. Anything that is so readily retrieved, that travels while remaining relatively unchanged in form, and that is put to such a range of practical uses might be thought rather potent. Defining knowledge as that which is archived may point in the direction of one sort of epistemic virtue; defining knowledge as that which can be easily accessed and put to productive use here and now points towards another kind of virtue. Second, while proverbs cannot avail themselves (as aphorisms and quotations can) of the authority that may be attached to the prestigious individual originator, they are compensated by speaking with the voice of tradition, the ancestors and anonymous collective wisdom. No individual or sectional interest attaches to their claims; no special circumstances attending their origins limit their applicability. Third, proverbs-in-use can have a self-referential quality. They tell you what sort of situation you are in, thus orientating you towards appropriate action and, in so doing, they help to create the social realities they describe. Fourth, proverbs-in-use are generalizations about experience and action that are semantically protean and highly adaptable to different situations. They can speak about cocky chickens and cheeky children at the same time, and their potential range of reference is not subject to knowable limits. Their form stays stable, and their truth may be conceded, while both their meaning and their reference change. Fifth, as cherished generalizations, proverbs-in-use are highly protected from refutation by empirically available counter-instances. Competent members of the culture understand that proverbial generalizing speech about chickens is not to be negated by awkward facts available from the expert knowledge of poultry science, nor are such competently used metaphorical proverbs subjectable to queries about the appropriateness of chicken behaviour to the human case at hand. Thomas Kuhn has shown us how deeply entrenched in expert communal life are the paradigms of a scientific practice, but I suggest that it is far easier for members of the appropriate sub-culture to negate or modify the formal generalizations of either poultry science or particle physics than it is to dispute the truth or pertinence of a competently uttered proverb in its naturally occurring economy. For these and other reasons, it is hard to challenge the epistemic power of proverbs in those natural economies. What you can dispute, and what has indeed been repeatedly disputed, is the epistemic *value* of proverbs compared to the propositions of such learned practices as philosophy, natural science, medicine and engineering. How might such criticisms be answered?

Part of the answer has already been given: apples should be compared with other apples, oranges with other oranges, but an equitable and informed comparison is rarely on offer when the learned compare their knowledge and practice with that of the common people. Contrast proverbial propositions with the propositions of formal philosophy or natural

science and they tend to come out badly. But even here learned generalizations about proverbs are often flawed by selective inattention to the variety of sentiments expressed in proverbial propositions. I have shown that it is no hard work to assemble a mass of proverbs commending a reflective and sceptical attitude to superficial appearances or to the claims of established authority and, hence, that it would be an easy matter to reconstruct the sentiments, norms and gross methods of science from the propositions of proverbial common sense. Proverbial propositions are very various. If we mean by common sense the sentiments expressed in its proverbial propositions, then *there is no one direction* in which they collectively point; if, however, we mean by common sense the cognitive capacities employed in an array of everyday reasonings, there is no convincing reason yet offered to distinguish these capacities from those employed in a range of learned activities. More importantly, in learned evaluative contrasts, proverbs are typically denied the help of their natural scenes of use, and the epistemic virtues of a proverbial economy are transformed into the vices of proverbial-propositions-in-a-list.

The unevenness of the comparative playing-field is more evident than that, for a parodic account of proverbs is typically contrasted not to the real worlds of scientific and philosophical practice but to cosmetically worked-up idealizations of science and philosophy. However, if we take a closer look at a range of modern expert practices, we can begin to notice the rôle of linguistic forms strikingly like those the folklorists have documented in everyday life. Present-day learned practices also have their proverbs and other mnemonically robust short genres; proverbial economies are present there too. For example, canonical scientific laws and meta-principles frequently avail themselves of the mnemonic robustness of the proverbial form: 'Ontogeny recapitulates phylogeny'; 'For every action there is an equal and opposite reaction'; 'Opposites attract'; 'All life/cells/organization from pre-existing life/cells/organization'; 'Nature abhors a vacuum'; 'Nature doesn't make leaps'; 'Remove the cause and the effect will cease'. More significantly, proverbial (and similar) forms often express modern technical practices' valued rules of thumb. They identify recurrent predicaments, point out pitfalls, and instruct practitioners how to proceed in different types of situation. Such proverbs only occasionally find their way into textbooks and formal presentations of their practices' knowledge-base, but practitioners would arguably be lost without them. They would find it much more difficult to transmit their cultural heritage from one generation to the next, or, should they wish to do so, to make their principles accessible to cultural neighbours. The case for inarticulable tacit knowledge in science, medicine and engineering is now well established as a matter of principle. But no legitimate appreciation of the tacit dimension in science should dispute the value of mnemonically robust linguistic genres – what I call 'technical proverbs' – in transmitting expert lore within relevant cultures or even across some cultural boundaries. Of course, the understanding of such technical proverbs is dependent upon a prior shared culture but, in practice, such a culture-in-common is sometimes available.

Whether or not it is available in specific cases is a matter for empirical inquiry, not for methodological fiat.[76]

Some of these technical proverbs are by tradition established or imported from common usage; others are evidently recent special creations. In biochemistry, for example, it is a maxim not to 'waste clean thinking on dirty enzymes'; in population biology, and many allied fields, they say 'Statistics is a way of making bad data look good'; an immunologist, discussing the merits of rival hypotheses, reminded readers of the legal and forensic maxim that 'Absence of evidence is not evidence of absence'. Delamont and Atkinson's recent study of doctoral training in science quotes the wisdom a biochemistry supervisor aims to transmit to his students: 'Where... an experiment is not working my attitude is "don't flog a dead horse"', and David Noble documents the 'First Law of Machining' – 'Don't mess with success'. In English law, judges are prudently counselled 'When in doubt do nowt'. Stock-market speculators are warned that 'Many a good mine has been spoiled by sinking a shaft'; that 'No tree grows to the sky'; and that they should 'Buy on the rumour, sell on the fact'. But in a bull market investors are assured that 'A rising tide floats all boats'. Designers of search engines say 'Big guns rarely hit small targets', and start-up companies having a poor sense of their potential market are sometimes reminded by their advisors that 'If your only tool is a hammer, everything looks like a nail'. Venture capitalists are told that 'There's no premium for complexity'; that they should 'Bet on the jockey, not on the horse'; and that 'It takes money to make money'. Optimists among them say 'Go big or go home', while post-dotcom-crash realists say 'More companies die of indigestion than starvation'. Entrepreneurs are warned against the strategy of 'selling vitamins (optional goods) rather than aspirins (necessities)'. Human resource managers sum up their craft's wisdom about remunerating talented technical staff by reminding CEOs that 'If you pay peanuts, you get monkeys'. A Florida state emergency planner stated as an expert adage in his business that one should 'Run from the water, and hide from the wind'. An ecologist summing up his position about Colorado River usage judged that 'The fish doesn't drink up the pond in which it lives'. A baseball pitching coach encapsulated his expert advice by saying 'Challenge early, nibble late', and a Royal Navy officer in the Falklands war referred to a maxim quoted by his public school boxing coach: 'If they fight, box them; if they box, fight them'. In intellectual property law they say that 'Tradition is permission'. A linguist commenting on the 'Ebonics' controversy said that 'A language is merely a dialect with an army'. And a now-influential dictum in macro-sociology has it that 'War made the state, and the state made war'.[77]

From Antiquity to the present, medicine has relied heavily on maxims and aphorisms that economically and memorably transmit expert knowledge of probable causes, valuable therapies, and the nature of life in the medical profession. Some of the Hippocratic aphorisms have proverbial form – 'Life is short, art is long'; 'Desperate cases need desperate remedies'; 'Cures may be effected by opposites'. A few modern medical maxims

are metrically catchy: in dermatology, there is only some whimsy in instructing novices 'If it is dry, make it wet,/If it is wet, make it dry,/If it is red, make it blue,/If it is blue, make it red,/If all this fails, soak it in warm Pablum'. Still others have only brevity, and a certain local vividness, to assist their retention in physicians' unusually well-trained organs of memory. The great clinician Sir William Osler offered some aphorisms that have proverbial warrant – 'The glutton digs his own grave with his teeth' – and many others that are just brief, and well-turned, enough to strike home: 'Feel the pulse with two hands and ten fingers'; 'Depend upon palpation, not percussion, for knowledge of the spleen'; 'If many drugs are used for a disease, all are insufficient'; 'Pneumonia is the captain of the men of death and tuberculosis is the handmaid'.[78] Collections of anonymous medical maxims – terse, but rather less catchy – continue to circulate, especially among students always on the lookout for cribs and abridgements to assist the medical memory under strain: 'Headache due to hypertension is generally occipital'; 'It is uncommon for vascular disease to be limited to one area'.[79] Some modern commentary on the degree of certainty legitimately to be expected in medical practice celebrates the probabilistic character, and proper understanding, of medical maxims: 'Maxims that begin with probability, rather than with certainty, are more faithful to the wisdom of the experienced clinician'.[80]

Computer programming famously contributes to the general culture 'Garbage in, garbage out' and 'What you see is what you get'. And an early guide to writing BASIC, FORTRAN and COBOL was entitled *Programming Proverbs*, the cover designed to look like an old American almanac. It was organized as a series of 26 glossed maxims for programmers, each 'proverb' identifying possible pitfalls or suggesting proven ways of working round them, for instance, 'Never assume the computer assumes anything'. 'As with most maxims or proverbs', the author sagely noted,

> the rules are not absolute, but neither are they arbitrary. Behind each one lies a generous nip of thought and experience. . . . Just take a look at past errors and then reconsider the proverbs. Before going on, a prefatory proverb seems appropriate: 'Do Not Break the Rules before Learning Them'. . . . Experience keeps a dear school, but fools will learn in no other.[81]

We are now in the world of *heuristics*. The term derives from the Greek, designating the art of discovering, and, as it came into modern English usage, it tended to pick out the cognitive processes and linguistic resources used to solve problems and to render judgements when information is incomplete and when the tools of formal logic and probability theory are either inappropriate or practically unavailable. In the mid-1940s the Hungarian-American mathematician George Polya surveyed the heuristics of mathematical problem-solving in his classic *How to Solve It*. These heuristic principles, Polya wrote, 'are general, but, except for their generality, they are natural, simple, obvious, and proceed from plain common sense. . . [T]hey state plain common sense in general terms'. Commonly, Polya

noted, heuristics take proverbial form, and he concluded his book with a section entitled 'The Wisdom of Proverbs'. Folkish proverbs, he observed, often capture crucial aspects of mathematical problem-solving, identifying recurrent pitfalls and prescribing constructive action. Indeed, they are used in mathematical culture to transmit lore and warn of dangers. Heuristic proverbs are not perfect: 'There are many shrewd and some subtle remarks in proverbs but, obviously, there is no scientific system free of inconsistencies and obscurities in them'. And so Polya joined the legions of scholars pointing out their contradictory advices:

> On the contrary, many a proverb can be matched with another proverb giving exactly opposite advice, and there is a great latitude of interpretation. It would be foolish to regard proverbs as an authoritative source of universally applicable wisdom but it would be a pity to disregard the graphic description of heuristic procedures provided by proverbs.

'It could be an interesting task', Polya said, 'to collect, and group proverbs about planning, seeking means, and choosing between lines of action, in short, proverbs about solving problems'. In fact, the proverbs Polya listed in this connection were all of folkish origins, but, when suitably glossed and brought to bear on their new mathematical scenes of use, their previous employment among the common people made them no less valuable: 'Diligence is the mother of all good luck'; 'Perseverance kills the game'; 'An oak is not felled at one stroke'; 'Try all the keys in the bunch'; 'Arrows are made of all sorts of wood'.[82]

By the early 1970s, the most influential work on heuristics was being done by the cognitive psychologists Amos Tversky and Daniel Kahneman, focusing not on mathematical or scientific problem-solving but on the heuristics of everyday judging and decision-making. While Tversky and Kahneman formally acknowledged that the employment of such common heuristics in everyday life was 'highly economical and usually effective', the overall thrust of their research was to show how often and how seriously their use led to 'severe and systematic errors'. Everyday heuristics, such as those encapsulated in 'the Gambler's Fallacy', were identified as sources of 'bias'. Better outcomes would be secured if further information about the situation was sought, or if the tools of logic and probability theory were systematically employed, as they would be by trained experts.[83] Some readers of this work drew the lesson that it was best not to involve the common people in consequential political and technological decision-making activities, as their cognitive processes systematically led them into error.[84] The heuristics of everyday life were poor cousins to the methods used by modern experts and, while Tversky and Kahneman only sometimes supplied the linguistic forms commending these principles of judgement, proverbial versions for many such heuristics and, indeed, for their logical opposites, are easily located.

It was not until fairly recently that dissenting voices emerged from within cognitive psychology. Gerd Gigerenzer and his colleagues in the Center for Adaptive Behavior and Cognition have criticized the notion that

decision-making – lay or learned – ever takes place in scenes where time is very abundant, where total pertinent knowledge is possible, and where computational capacity is unlimited.[85] That is to say, all human judgement that is actually judgement about real-world predicaments is judgement under uncertainty. The learned are in the same boat as the vulgar. As Gigerenzer and his colleagues write, the greatest weakness of the model of unbounded rationality 'is that it does not describe the way real people think'. Not even how philosophers think:

> One philosopher was struggling to decide whether to stay at Columbia University or to accept a job offer from a rival university. The other advised him: 'Just maximize your expected utility – you always write about doing this'. Exasperated, the first philosopher responded: 'Come on, this is serious'.

Acting on the Gambler's Fallacy – the belief that, for example, the probability of heads on the ninth toss of the coin is greater than 50% after eight tails in a row – will, indeed, lose you money, just on the condition that the game is an ideal, unbiased one, but in real-life gambling one is often faced with the decision about 'what kind of game this is', crooked or straight, and, if crooked, in what way, what to do about it, and what one's opponents will do in light of what one does. Moreover, what Gigerenzer and his colleagues call 'fast and frugal' heuristics are not only surprisingly adequate to tasks at hand, they can also be demonstrably superior to problem-solving techniques that attempt to secure further information, to survey a wide range of possible outcomes, and to compute in a more thoroughgoing manner. The best, as the proverb has it, is truly the enemy of the good. Like Tversky and Kahneman, Gigerenzer's group do not seek to identify the linguistic embodiments of such 'fast and frugal' heuristics, but, towards the end of their important book, they offer an intriguing comment on how such heuristics may be acquired: 'Simple heuristics', they say, 'can be learned in a social manner, through imitation, word of mouth, or cultural heritage'. And they note that 'cultural strictures, *historical proverbs*, and the like' are effective ways of transmitting such powerful 'fast and frugal social reasoning'.[86]

Where, then, is a legitimate contrast between, say, science and common sense? And is there a rôle for such linguistic forms as proverbs (and related short genres) in any such legitimate contrast? Nothing in this study argues that there can be no legitimate contrasts between various modes of cognition and practice, that all, so to speak, is on a level, and for all purposes. Much, however, cautions against facile assumptions about the domains to be contrasted. What counts as common sense is probably pretty diverse in its attitudes and counsels. Geertz argued that 'there are really no acknowledged specialists in common sense', correctly gesturing at pervasive lay suspicion of learned expertise and its pretensions.[87] Yet such a claim seems to rest on an excessively homogeneous, and too systematic, view of any such cultural entity as 'common sense'. There may be no

specialized experts in 'common sense', but there are acknowledged specialists in fishing, gardening and market trading. There are also quite common people who are conceded such expertise as there is in finding and holding a spouse, bringing up the kids and gauging the credibility of different sorts of folk. As individuals and as members of groups, some common people are conceded to be very experienced in such things; others less so. And just as proverbs' counsels, and proverbial scenes, are very various, so there is little reason to presume the distinctive unity of learned practices or of the forms of reasoning employed in the different moments of any one learned practice.

In Galileo's *Dialogue Concerning the Two Chief World Systems*, the Aristotelian Simplicio, objecting to Salviati's mathematical physics, claimed that 'these mathematical subtleties do very well in the abstract, but they do not work out when applied to sensible and physical matters'.[88] Bringing Simplicio up to date, and giving him his due, one is tempted to say that all learned practices, when they are dealing with real-world contingencies, implicate judgement under uncertainty. So the Aristotelian might concede that proverbial economies may be attached to physics rather than mathematics, or, in a more contemporary sensibility, that such economies are to be found in engineering, medicine, politics, business and cookery rather than in pure science, mathematics, philosophy or logic. Conceding engineering (and its cousins) to the world of proverbial economies is indeed an important step, but it is not enough. As we have learned more about the practice of science, so we have learned to appreciate the extent to which it is *like* how we understand engineering to be, the extent to which the conduct of science is like a craft or an art. Like the proverbs of the common people, the heuristics of science belong to the domains of the more or less, the usually or for the most part, the *ceteris paribus* and the *mutatis mutandis*. Philosophers have rightly warned us not to seek a 'logic of discovery', and in the processes of discovery the rôle of proverbial heuristics should be uncontentious. But the making and the justifying of ideal worlds are themselves a real-world business. Learned practices for judging and for justifying also involve judgement under uncertainty, and there too proverbial economies may be found. Only in the ideal worlds produced by the real worlds of learned practices is there judgement under total certainty, and only there might one expect to dispense with proverbial economies. But it is good to remind ourselves that no human practitioner has ever yet been to such an ideal world to confirm the expectation.[89]

While learned opinion has historically tended to contrast the cognitive processes used by the learned and the vulgar, it is not impossible to find scientists themselves arguing to the contrary. In the 1850s, T.H. Huxley wrote that 'Science is, I believe, nothing but *trained and organised common sense*'.[90] 'The whole of science', according to Albert Einstein, 'is nothing more than a refinement of every day thinking'.[91] Max Planck agreed: 'Scientific reasoning does not differ from ordinary reasoning in kind, but merely in degree of refinement and accuracy...'.[92] And so did J. Robert Oppenheimer ('Science is based on common sense; it cannot contradict

it'), the chemist James Conant (science is 'one extension of common sense') and the biologist C.H. Waddington ('Science is, after all, largely common sense').[93] If proverbs belong to the worlds of common-sense practice, they and their short-generic cousins belong also to the worlds of science, and what we can understand about proverbial economies should be available as a resource for anyone wanting to understand real-world scientific practice.

So if we seriously want to make some cultural distinctions, this study of proverbial economies suggests three things: first, that we ditch the traditional straight-up contrast between proverbial common sense and the cognitive resources of learned expertise; second, that we look to differences in how, as Huxley suggested, knowledge economies are organized, how their members interact with each other and how they relate to their cultures' stock of knowledge; third, that the objects of comparison be individuated: 'science' *versus* 'common sense' doesn't work, but why shouldn't we be interested in the differences and similarities obtaining among, for example, accountancy and botanical taxonomy, fly-fishing and neurology, cooking and chemistry? 'The devil', as the proverb has it, 'is in the details'. But, as another proverb says, so is God.

Notes

Part of the work on this paper was done during a Fellowship at the Center for Advanced Study in the Behavioral Sciences at Stanford, California, and I thank the Center and the Andrew W. Mellon Foundation for their support. For valuable comments on an earlier version of this paper, I am indebted to Geoffrey Bowker and, especially, to Michael Lynch. For help during its composition, I thank Barbara Herrnstein Smith, Sander Gilman, Daniel Wegner, Tim Costelloe and Steffen Lauritzen. Not all of the six referees for this journal thought this paper should be published in any form or in any journal, but all helped to make the result more coherent than it would otherwise have been.

1. The defining exercise can in principle go the other way round – common people can take a view of, and condemn, learned fools – but the learned have, until recently, controlled the presses.
2. See, among many examples, Galileo Galilei, 'Letter to Madam Christina of Lorraine, Grand Duchess of Tuscany, Concerning the Use of Biblical Quotations in Matters of Science [1615]', in *Discoveries and Opinions of Galileo*, ed. and trans. Stillman Drake (Garden City, NY: Doubleday Anchor, 1957), 196, 200; William Gilbert, *De Magnete*, trans. P. Fleury Mottelay (New York: Dover, 1958; orig. publ. 1600), 318; John Wilkins, *The Mathematical and Philosophical Works of the Right Rev. John Wilkins*, 2 Vols in 1 (London: Frank Cass & Co., 1970; facsimile reproduction of 1802 edition; tract orig. publ. 1638), I, 11; Isaac Newton, *The Mathematical Papers of Isaac Newton*, Vol. VI: *1684–1691*, ed. D.T. Whiteside (Cambridge: Cambridge University Press, 1974), 192.
3. Ralph Waldo Emerson, 'Nature', in Emerson, *The Complete Essays...*, ed. Brooks Anderson (New York: The Modern Library, 1940; art. orig. publ. 1836), 1–42, at 18: '[T]he memorable words of history and the proverbs of nations consist usually of a natural fact, selected as a picture or parable of a moral truth'.
4. Thomas Browne, *Pseudodoxia Epidemica: Or, Enquiries into Very Many Received Tenets, And Commonly Presumed Truths* (London, 1650; orig. publ. 1646), 4–6.
5. Alfred Sidgwick, *Fallacies: A View of Logic from the Practical Side* (London: Kegan Paul, Trench, 1883), 266.
6. See here Barry Barnes and John Law, 'Whatever Should Be Done with Indexical Expressions?', *Theory and Society*, Vol. 3 (1976), 223–37.

7. This tendency is documented and criticized in Daniel M. Wegner and Robin R. Vallacher, 'Common-Sense Psychology', in Joseph P. Forgas (ed.), *Social Cognition: Perspectives on Everyday Understanding* (London: Academic Press, 1981), 225–46.
8. For entry into the secondary literature on scholarly attitudes to proverbs as folkish or learned items, see, for example, Natalie Zemon Davis's superb 'Proverbial Wisdom and Popular Errors', in Davis, *Society and Culture in Early Modern France* (Stanford, CA: Stanford University Press, 1975), 227–67; also excellent work by James Obelkevich, 'Proverbs and Social History', in Peter Burke and Roy Porter (eds), *The Social History of Language* (Cambridge: Cambridge University Press, 1987), 43–72; Mary Thomas Crane, *Framing Authority: Sayings, Self, and Society in Sixteenth-Century England* (Princeton, NJ: Princeton University Press, 1993), esp. 50–51, 206 (n.23); Ann Moss, *Printed Commonplace-Books and the Structuring of Renaissance Thought* (Oxford: Clarendon Press, 1996); Kevin Sharpe, *Reading Revolutions: The Politics of Reading in Early Modern England* (New Haven, CT: Yale University Press, 2000), e.g. 101–5, 193–98, 320–22; and Adam Fox, *Oral and Literature Culture in England 1500–1700* (Oxford: Clarendon Press, 2000), Chapter 2. I will be writing in the future about the early history of contrasts between learned expertise and common sense.
9. It would be very valuable to have a systematic 'history of ideas' survey of the temporally changing, and synchronically varying, references and evaluations of 'common sense': the *sensus communis* (the sense that mediates the five special senses); the shared sensibilities of Common Sense Philosophy; what everybody ought to know; what everybody knows if they have not received special instruction; the intellectual basis for prudence (or merely for prudence); what the common people only think they know; how everybody ought to think; how the common people think they think; etc. etc.
10. The indispensable source here is Archer Taylor, *The Proverb* (Cambridge, MA: Harvard University Press, 1931). Of course, in lay society proverbs are probably most commonly defined through ostention, by giving examples and trusting the inquirer to see the pertinent family resemblances. For a few other definitional exercises, see George B. Milner, 'What is a Proverb?', *New Society*, No. 332 (6 February 1969), 199–202; Wolfgang Mieder and Alan Dundes (eds), *The Wisdom of Many: Essays on the Proverb* (Madison: University of Wisconsin Press, 1994), vii-xiii; W. Carew Hazlitt, *English Proverbs and Proverbial Phrases* (London: Reeves & Turner, 1907), vii-xxx; Richard Chenevix Trench, *Proverbs and Their Lessons* (London: George Routledge & Sons, 1905), 1–25; Nigel Barley, '"The Proverb" and Related Problems of Genre Definition', *Proverbium*, Vol. 23 (1974), 880–84; Neal R. Norrick, *How Proverbs Mean: Semantic Studies in English Proverbs* (Berlin: Mouton, 1985), 65–79.
11. Taylor, op. cit. note 10, 3.
12. Thomas Fuller, *The Worthies of England*, ed. John Freeman (London: Allen & Unwin, 1952; orig. publ. 1662), 5.
13. Aristotle, *Rhetoric*, 1413a 15. All quotations from Aristotle in this paper are from *The Complete Works of Aristotle*, 2 Vols, ed. Jonathan Barnes (Princeton, NJ: Princeton University Press, 1984). See also Jan Fredrick Kindstrand, 'The Greek Concept of Proverbs', *Eranos*, Vol. 76 (1978), 71–85, at 78–80. For metaphor in the definition of proverbs, see, for example, Peter Seitel, 'Proverbs: A Social Use of Metaphor', *Genre*, Vol. 2 (1969), 143–61.
14. Beatrice Silverman-Weinrich, 'Towards a Structural Analysis of Yiddish Proverbs', in Mieder & Dundes (eds), op. cit. note 10, 65–85, at 78, 80. Silverman-Weinrich acknowledges that no single semantic, phonic or rhetorical marker is found in all proverbs, but she insists that most proverbs – properly so-called – have at least one such marker.
15. It is fair to say that the extent of our culture's present-day experience with the ways of farmyard animals has greatly diminished, and hence that this metaphorical base is being hollowed out. One has only to turn the pages of a dictionary of proverbs to see how many now need explication just because we no longer have the stock of familiar experience, or of common usage, to make sense of them. And, on these grounds alone, it is very likely that many proverbs current several generations ago have now passed out

of use, and that many others will soon do so. But it is hard to understand how it can be seriously maintained that late modernity does not use and make proverbs, and the concluding section of this paper will retrieve a sample arising from present-day technical subcultures. For a claim that 'The proverb is a language form which has largely passed from usage in contemporary American culture', see William Albig, 'Proverbs and Social Control', *Sociology and Social Research*, Vol. 15 (1931), 527–35. Albig reckoned that proverb-use was an inverse index of the extent of social differentiation, conflict and change – so to speak, a marker of modernity.

16. For proverbs and orality, see Walter J. Ong, SJ, *Rhetoric, Romance, and Technology: Studies in the Interaction of Expression and Culture* (Ithaca, NY: Cornell University Press, 1971), esp. 29–31, 78–81, 286–87; Ong, *Orality and Literacy: The Technologizing of the Word* (London: Routledge, 1988), 16ff., 34–35; also Obelkevich, op. cit. note 8; Fox, op. cit. note 8.
17. Barbara Herrnstein Smith, *On the Margins of Discourse: The Relation of Literature to Language* (Chicago, IL: The University of Chicago Press, 1978), 69; Obelkevich (op. cit. note 8, 62) describes a shift in polite fashion during the 19th century from the anonymous proverb to the specifically authored quotation and aphorism: 'To cite a quotation', Obelkevich says, 'is to identify with the genius of the author and to lift oneself above the common herd'.
18. Obelkevich, op. cit. note 8, 65.
19. Early anthropology is a rich source for characterizations of proverbs as expressions of the 'primitive mentality' and its faulty modes of reasoning; see, for example, Edward B. Tylor, *Primitive Culture*, 2 Vols (London: John Murray, 1920; orig. publ. 1870), I, 83–90 (for proverbs as 'mines of historical knowledge' and as 'survivals' of past culture, and the view that the age of proverb-making was definitively past); for more recent anthropological evaluations, see Christopher R. Hallpike, *The Foundations of Primitive Thought* (Oxford: Clarendon Press, 1979), 110–12, and Jack R. Goody, *The Domestication of the Savage Mind* (Cambridge: Cambridge University Press, 1977), 125–26.
20. The list originated with the 17th-century English churchman and antiquary Thomas Fuller (op. cit. note 12, 5).
21. Erving Goffman, *Frame Analysis: An Essay on the Organization of Experience* (New York: Harper & Row, 1974), though proverbial utterances do not usually lead to the bewilderment and annoyance Goffman ascribed to the frame-breaking passages he noted.
22. Thomas A. Sebeok, 'The Structure and Content of Cheremis Charms', in Dell Hymes (ed.), *Language in Culture and Society: A Reader in Linguistics and Anthropology* (New York: Harper & Row, 1964), 356–71. (I owe this reference to Jay Jasanoff.) Some of proverbs' authority may possibly flow from these linguistic signs linking them to other forms of utterance – religious, legal and magical – known to be authoritative. Treating aphorisms rather than proverbs, Murray Davis has usefully drawn attention to the capacity of short-generic formulae to *interest*: Murray S. Davis, 'Aphorisms and Clichés: The Generation and Dissipation of Conceptual Charisma', *Annual Review of Sociology*, Vol. 25 (1999), 245–69.
23. Iona Opie and Peter Opie, *The Lore and Language of Schoolchildren* (Oxford: Clarendon Press, 1959).
24. Harvey Sacks, 'On Proverbs', in Sacks, *Lectures on Conversation*, ed. Gail Jefferson (Oxford: Blackwell, 1992), Vol. I, 104–12, at 109, 111. This is a combination of several lectures given in 1964/65. Note, however, that proverbs can be purposefully adapted to achieve twists on the original message and, when this is understood to be done, the effect can be totally different from that of a mistake. Take the present-day statistician's proverb, 'The *n* justifies the mean'; the economist's expansion, 'There ain't no such thing as a free lunch, but there is a cheap one'; the professor's, 'You can lead a boy to college but you can't make him think'; Corporal Klinger's, 'The nose is the window of the soul'; and Mae West's, 'A hard man is good to find'. In each case, the authority of the modified form piggy-backs on that of the undeformed original.

25. Latour himself, however, is notably unimpressed with the proverb, using it as an example of a 'soft fact', something which may indeed spread stably in its expression over time and space, but whose reference is easily adapted and transformed by its users: Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, MA: Harvard University Press, 1987), 207–09.
26. For example, Heda Jason, 'Proverbs in Society: The Problem of Meaning and Function', *Proverbium*, Vol. 17 (1971), 617–23, at 618.
27. George Herzog, *Jabo Proverbs from Liberia: Maxims in the Life of a Native Tribe* (London: Oxford University Press, 1936), 2; Ruth Finnegan, *Oral Literature in Africa* (Oxford: Oxford University Press, 1970), 419.
28. Kenneth Burke, 'Literature as Equipment for Living', in Burke, *The Philosophy of Literary Form* (Berkeley: University of California Press, 3rd edn, 1973; orig. publ. 1941), 293–304, at 296–97; see also Paul D. Goodwin and Joseph W. Wenzel, 'Proverbs and Practical Reasoning: A Study in Socio-Logic', *Quarterly Journal of Speech*, Vol. 65 (1979), 289–302, at 290.
29. Sacks, op. cit. note 24, 107.
30. I shall, however, note below that translation from one experiential domain to another is not a necessary feature of proverb use and meaning, even where proverbs are metaphorical. See also Seitel, op. cit. note 13, 145.
31. For example, Aristotle, *Nicomachean Ethics*, 1112a 17–1113a 14: 'Deliberation is concerned with things that happen in a certain way for the most part, but in which the event is obscure, and with things in which it is indeterminate. We call in others to aid us in deliberation on important questions, distrusting ourselves as not being equal to deciding'.
32. Stephen Toulmin, *Return to Reason* (Cambridge, MA: Harvard University Press, 2001).
33. Herzog's study of a West African proverbial economy (op. cit. note 27, 2) makes a large claim for the place of proverbs in everyday generalization: '[I]n the realm of conversation and verbal expression proverbs furnish almost exclusively the means by which generalizations are made explicit'. It would be interesting to have an ethnographic study of how generalization actually happens in ordinary modern Western social life and in its technical sub-cultures.
34. This claim opposes an evidently common view that translation *must* be involved: see, for example, Geoffrey M. White, 'Proverbs and Cultural Models: An American Psychology of Problem Solving', in Dorothy Holland and Naomi Quinn (eds), *Cultural Models in Language and Thought* (Cambridge: Cambridge University Press, 1987), 151–72, at 152–55.
35. We now say 'The exception proves the rule' mainly to express a view that rules just do have exceptions, while the historical sense was that apparent counter-instances tested a rule which, if legitimate, should have *no* exceptions. That sense of 'proving' survives among bread-makers: proving the dough, letting it rise once to test whether the yeast is active. See Taylor, op. cit. note 10, 78; Linda Flavell and Roger Flavell, *Dictionary of Proverbs and Their Origins* (London: Kyle Cathie Ltd, 1993), 91.
36. Susan Kemper, 'Comprehension and the Interpretation of Proverbs', *Journal of Psycholinguistic Research*, Vol. 10 (1981), 179–98.
37. That's an interesting proverb because there is radical contemporary divergence about what it means when applied to human conduct. Some reckon that it is an injunction to keep active, commending the virtues of busy-ness (keep on the move and you won't get mentally fusty). Others use the proverb to convey quite opposite sentiments (if you don't stay in one situation long enough, you won't acquire those desirable softening and stabilizing qualities signified by the moss coating stones in a quiet stream). And there are still other interpretations and uses: see Barbara Kirshenblatt-Gimblett, 'Toward a Theory of Proverb Meaning', *Proverbium*, Vol. 22 (1973), 821–27.
38. Failure to 'get the point' of metaphorical proverbs, or a tendency to take them literally, is treated as a pathological sign. In a vast literature on this subject, see, for example, Donald R. Gorham, 'A Proverbs Test for Differentiating Schizophrenics from Normals', *Journal of Consulting Psychology*, Vol. 20 (1956), 435–40, and Wolfgang Mieder, 'The

Use of Proverbs in Psychological Testing', *Journal of the Folklore Institute*, Vol. 15 (1978), 45–55.

39. Clifford Geertz characterizes common sense as representing 'the simple nature of the case': 'An air of "of-courseness", a sense of "it figures" is cast over things', or at least of certain things; 'They are depicted as inherent in the situation, intrinsic aspects of reality, the way things go': C. Geertz, 'Common Sense as a Cultural System', in Geertz, *Local Knowledge: Further Essays in Interpretive Anthropology* (New York: Basic Books, 1983), 73–93, at 85; also Geertz, *Islam Observed* (Chicago, IL: The University of Chicago Press, 1968), 90–94.
40. I owe this point to Geoffrey Bowker.
41. Two British epidemiologists have recently subjected to sceptical statistical inquiry the health, economic and cognitive benefits proverbially associated with being 'early to bed and early to rise': 'Our results suggest that... the time of going to and getting up matters little'. The Christmas issue of the medical journal in which the paper was published is, however, well known for its attempts at medical levity: Catharine Gale and Christopher Martyn, 'Larks and Owls and Health, Wealth, and Wisdom', *British Medical Journal*, Vol. 137 (19–26 December 1998), 1675–77, at 1677; cf. Wolfgang Mieder, 'Early to Bed and Early to Rise: From Proverb to Benjamin Franklin and Back', in Mieder, *Proverbs are Never Out of Season: Popular Wisdom in the Modern Age* (New York: Oxford University Press, 1993), 98–134.
42. Sacks, op. cit. note 24, 105, 109. Chaim Perelman and Lucie Olbrechts-Tyteca argue a somewhat weaker case with respect to 'maxims': 'a maxim can always be rejected,... the agreement it calls forth is never compulsory, but so great is its force, so great is the presumption of agreement attaching to it, that one must have weighty reasons for rejecting it': C. Perelman and L. Olbrechts-Tyteca, *The New Rhetoric: A Treatise on Argumentation*, trans. John Wilkinson and Purcell Weaver (Notre Dame, IN: University of Notre Dame Press, 1969), 165.
43. Latour, op. cit. note 25, 206–07. Latour imagines the proverbial utterance accompanying and justifying the doling out of a maternal apple. In my experience, however, mothers tend to say this proverb as part of a general injunction to sensible eating, or, sometimes specifically, to consuming fresh fruit and vegetables – in which case, the son would in fact be hard put to cite expert studies contradicting the mother's counsel. In section 6 of this paper I will warn against, so to speak, comparing proverbial apples with scientific oranges: it will be useful to consider how real, as opposed to ideal, scientific practice itself may incorporate features of a proverbial economy.
44. Sacks, op. cit. note 24, 105, 109; Aristotle, *Rhetoric*, 1395a 12–13; see also Quintilian, *The Institutio Oratoria*, trans. Harold E. Butler, 4 Vols (Cambridge, MA: Harvard University Press, 1960), II, 295 (Book V, Chapter 11, 41–42): 'Generally received sayings... would not have acquired immortality had they not carried conviction of their truth to all mankind'.
45. Take, for instance, this concluding sentence of a measuredly sceptical survey of management consultancy: 'As the Chinese proverb has it, in a good wind even turkeys can fly; but management consultancies may be headed for the doldrums': *The Economist* (22 March 1997), 20. (It may be part of the intended pawky humour that there were no turkeys in China until modern times.)
46. Sacks, op. cit. note 24, 105.
47. I owe this point to Michael Lynch.
48. Burke, op. cit. note 28, 301–02; see also Taylor, op. cit. note 10, 82; Perelman & Olbrechts-Tyteca, op. cit. note 42, 166. Sounding here more like a cognitive scientist than a literary critic, Herrnstein Smith argues (op. cit. note 17, 70) that *selective* mechanisms underwrite the broad range of situations to which a proverb can be 'appropriately affirmed': 'By a sort of natural selection, those proverbs that survive are literally the *fittest*; that is, they fit the widest variety of circumstances or adapt most readily to emergent environments'.

49. For example, E.E. Evans-Pritchard, 'Meaning in Zande Proverbs', *Man*, Vol. 62 (1962), 4–7.
50. Sacks, op. cit. note 24, 110; also Herrnstein Smith, op. cit. note 17, 72.
51. Gilat Hasan-Rokem, 'The Pragmatics of Proverbs: How the Proverb Gets Its Meaning', in Loraine K. Obler and Lise Menn (eds), *Exceptional Language and Linguistics* (New York: Academic Press, 1982), 169–73.
52. See, for example, Dell H. Hymes, 'The Ethnography of Speaking', in Thomas Gladwin and William C. Sturtevant (eds), *Anthropology and Human Behavior* (Washington, DC: Anthropological Society of Washington, 1962), 13–53 (for programmatic statements); E. Ojo Arewa and Alan Dundes, 'Proverbs and the Ethnography of Speaking Folklore', in John J. Gumperz and Dell Hymes (eds), *The Ethnography of Communication*, Special Issue, *American Anthropologist*, Vol. 66, No. 6, Part 2 (December 1964), 70–85; and Seitel, op. cit. note 13.
53. Raymond Firth, 'Proverbs in Native Life, with Special Reference to Those of the Maori', *Folk-lore*, Vol. 37 (1926), 134–53, 245–70, at 134.
54. Indeed, sometimes proverbs are intentionally used as code – so that the translation from their metaphorical base is *not* transparent to certain auditors, or so that other aspects of their linguistic specialness restrict access to their meaning. So a mother may say to her husband – *devant les enfants* – 'Little pitchers have big ears', confident (at least for a while) that the children will not understand that parental discretion is being counselled in a sensitive matter.
55. Aristotle, *Rhetoric*, 1295a 3–6. For proverb-speaking in relation to age-and-experience, see Goodwin & Wenzel, op. cit. note 28, 291–92; Finnegan, op. cit. note 27, 417; William P. Murphy, 'Oral Literature', *Annual Review of Anthropology*, Vol. 7 (1978), 113–36, at 128–29.
56. Herzog, op. cit. note 27, 2. See, in this connection, the nauseatingly packaged, but famously popular, collections of proverbs and aphorisms currently marketed in America as the *Chicken Soup for the Soul* series.
57. Jesus Ben-Sira, *Ecclesiasticus or The Wisdom of Jesus Son of Sirach*, ed. John G. Snaith (Cambridge: Cambridge University Press, 1974; orig. comp. ca. 190 BC), 103.
58. Miguel de Cervantes Saavedra, *The Adventures of Don Quixote*, trans. J.M. Cohen (Harmondsworth, Middx, UK: Penguin, 1950; orig. publ. 1604–14), 742; also 510, 591, 655, 688, 695, 741–44. Nevertheless, Sancho knows enough to upbraid those whose proverb-citing is even more undisciplined than his own (ibid., 500). See also Fox, op. cit. note 8, 165–67.
59. Seitel, op. cit. note 13, 147–48, 155–58.
60. Aristotle, *Rhetoric*, 1358a 12–13.
61. Murray Davis's very funny essay on how sociological theories become 'interesting' stresses the necessity that they visibly set themselves against what is supposedly taken-for-granted, and, in passing, he identifies the taken-for-granted with the proverbial: '[A] new theory will be noticed only when it denies an old truth (proverb, platitude, maxim, adage, saying, common-place, etc.)': Murray S. Davis, 'That's Interesting: Towards a Phenomenology of Sociology and a Sociology of Phenomenology', *Philosophy of the Social Sciences*, Vol. 1 (1971), 309–44. Here I mean to show that proverbs can be 'interesting' in just the same way that their theoretical negation is 'interesting'.
62. For celery, see Christopher R. Henke, 'Making a Place for Science: The Field Trial', *Social Studies of Science*, Vol. 30, No. 4 (August 2000), 483–511, at 501.
63. Tim B. Rogers, 'Proverbs as Psychological Theories... Or Is It the Other Way Around?', *Canadian Psychology*, Vol. 31 (1990), 195–207.
64. This is precisely the intention of E.D. Hirsch, Jr's repellent *A First Dictionary of Cultural Literacy: What Our Children Need to Know* (Boston, MA: Houghton Mifflin, 1991), the very first section of which (1–5) is a compilation of proverbs, accompanied by short interpretative homilies.
65. Compare, however, 'A black hen may lay a white egg'; 'A wise man commonly has foolish children'; and 'From the thornbush comes the rose'. The corpus of proverbial wisdom does indeed recognize 'regression to the mean'.

66. For surprising scientific confirmation of Murphy's Law, see Robert A.J. Matthews, 'The Science of Murphy's Law', *Scientific American*, Vol. 276, No. 4 (April 1997), 88–91. Note also the recently overheard 'The tendency of an event to occur varies inversely with one's preparation for it'. For oral citation of Sod's Law in the scientific training of PhD students, see Sara Delamont and Paul Atkinson, 'Doctoring Uncertainty: Mastering Craft Knowledge', *Social Studies of Science*, Vol. 31, No. 1 (February 2001), 87–107, at 97, 99.
67. See, for example, Goodwin & Wenzel, op. cit. note 28, 301, and, for the civic setting of proverbial probabilism, see Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago, IL: The University of Chicago Press, 1994), Chapter 3.
68. *Ecclesiastes* 3:1.
69. See Steven Shapin, 'Rarely Pure and Never Simple: Talking about Truth', *Configurations*, Vol. 7 (1999), 1–14, esp. 14.
70. Taylor, op. cit. note 10, 20–21, 168–69. On proverbs as a 'subversive kind of wisdom' among the common people, see Obelkevich, op. cit. note 8, 49.
71. Geertz, 'Common Sense', op. cit. note 39, 89. Geertz rightly picked out (91) the 'anti-expert, if not anti-intellectual' tone of many proverbial expressions.
72. Taylor, op. cit. note 10, 4, 9. For example, 'If Candlemas day [2 February] be sunny and bright, winter will have another flight; if Candlemas day be cloudy with rain, winter is gone and won't come again'. This can hardly have any predictive value in a range of settings where such sayings continue to circulate, including Punxsutawney, Pennsylvania (where the official American groundhog lives), and would only seem to have any chance of being correct in Mediterranean conditions. On the other hand, lots of proverbs about diet and regimen smack of *dernier cri* medical thinking: see Steven Shapin, 'How to Eat Like a Gentleman: Dietetics and Ethics in Early Modern England', in Charles E. Rosenberg (ed.), *Every Man His Own Physician* (Baltimore, MD: Johns Hopkins University Press, in the press). The notion of 'phatic communion' – linguistic acts whose purpose is just the establishment and maintenance of social bonds – belongs to Bronislaw Malinowski: see his 'The Problem of Meaning in Primitive Languages', in C.K. Ogden and I.A. Richards (eds), *The Meaning of Meaning* (New York: Harcourt, Brace, 8th edn, 1956), 296–336, esp. 315–16.
73. For example, John Heywood, *A Dialogue of Proverbs* (London, 1546); Nicholas Breton, *A Crossing of Proverbs* (London, 1616), and Michael Drayton's sonnet 'To Proverbe [ca. 1602]', in *Minor Poems of Michael Drayton*, ed. Cyril Brett (Oxford: Clarendon Press, 1907), 45. For general introduction to the topic of crossed proverbs, see Archer Taylor, 'Proverb', in Maria Leach (ed.), *Dictionary of Folklore, Mythology and Legend*, 2 Vols (New York: Funk & Wagnalls, 1949–50), II, 902–06, at 903.
74. Wegner & Vallacher, op. cit. note 7, 231; cf. Jon Elster, *Alchemies of the Mind: Rationality and the Emotions* (Cambridge: Cambridge University Press, 1999), esp. 10–13. See in this connection Merton's famous discussions of 'norms and counter-norms' – some of which take proverbial forms – in Robert K. Merton and Elinor Barber, 'Sociological Ambivalence', in Edward A. Tiryakian (ed.), *Sociological Theory, Values, and Sociocultural Change* (Glencoe, IL: Free Press, 1963), 91–120; also Robert S. Lynd, *Knowledge for What? The Place of Social Science in American Culture* (Princeton, NJ: Princeton University Press, 1940), Chapter 3.
75. Goody, op. cit. note 19, 125–26; on this point, see also Sacks, op. cit. note 24, 105. In this connection, Goody is preferred to Geertz, who invokes contradictory proverbs to illustrate what he calls the 'immethodicalness' of common sense. When Geertz says of proverbs ('Common Sense', op. cit. note 39, 90) that 'it is not their interconsistency that recommends them but indeed virtually the opposite', he is implicitly retaining the conception of proverbs as an inspectable set of propositions – whether consistent or inconsistent – that Goody rightly challenges.
76. See, for example, H.M. Collins, 'The TEA Set: Tacit Knowledge and Scientific Networks', *Science Studies*, Vol. 4, No. 2 (April 1974), 165–86; Collins, 'Tacit

Knowledge, Trust and the Q of Sapphire', *Social Studies of Science*, Vol. 31, No. 1 (February 2001), 71–85.

77. It would be pedantic to provide references for all of these, and I assume readers will have their own samples readily at hand. Almost needless to say, what's wanted in this connection is a much more systematic study of proverbial genres in expert practices. This part of the paper is intended to stimulate interest in the subject, and it is offered as the result of merely casual – though long-standing – inquiry on my part. A crude compilation of some social scientific and natural scientific proverbs is Alexander F. Chamberlain, 'Proverbs in the Making: Some Scientific Commonplaces', *Journal of American Folk-lore*, Vol. 17 (1904), 161–70, 268–78. For important brief remarks on the 'maxims' of science, see Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago, IL: The University of Chicago Press, 1958), 30–31, 50, 54, 88, 90, 125 (citing Polya), 153–58, 162, 170, 311–12. For the biochemist's advice, see Delamont & Atkinson, op. cit. note 66, 95; for the machinists' maxim, see David F. Noble, 'Social Choice in Machine Design: The Case of Automatically Controlled Machine Tools', in Andrew Zimbalist (ed.), *Case Studies on the Labor Process* (New York: Monthly Review Press, 1979), 18–50, at 44; for rules of thumb in technicians' practice, circulating as 'as stories or snippets of advice', see Stephen R. Barley and Beth A. Bechky, 'In the Backrooms of Science: The Work of Technicians in Science Labs', *Work and Occupations*, Vol. 21 (1994), 85–126, at 109–10.
78. Sir William Osler, *Aphorisms: From His Bedside Teachings and Writings*, ed. William Bennett Bean (Springfield, IL: Charles C. Thomas, 1961), 103, 105, 137, 141.
79. William S. Reveno, *711 Medical Maxims: Diagnostic and Therapeutic Aids for the Physician*, 3 Vols (Westport, CT: Technomic Publishing Co., 1951–76); also Fielding H. Garrison, 'Medical Proverbs, Aphorisms, and Epigrams', *Bulletin of the New York Academy of Medicine*, Vol. 4 (1928), 979–1005.
80. Harold Bursztajn and Robert M. Hamm, 'Medical Maxims: Two Views of Science', *Yale Journal of Biology and Medicine*, Vol. 52 (1979), 483–86, at 485; see also Harold Bursztajn et al., *Medical Choices, Medical Chances: How Patients, Families, and Physicians Can Cope with Uncertainty* (New York: Delacorte Press, 1981), esp. 69–70, 204; Paul Atkinson, *Medical Talk and Medical Work: The Liturgy of the Clinic* (London: Sage, 1995), 140–47; Arthur S. Elstein, with Linda Allal et al., *Medical Problem Solving: An Analysis of Clinical Reasoning* (Cambridge, MA: Harvard University Press, 1978), esp. Chapter 10.
81. Henry F. Ledgard, *Programming Proverbs* (Rochelle Park, NJ: Hayden Book Co., 1975), 3. Jerry Ravetz, who elsewhere strongly defended a view of science as 'craftwork', nevertheless regarded the use of 'aphorisms' as a sign of scientific 'immaturity', to be eventually replaced by more certain 'universal laws': Jerome R. Ravetz, *Scientific Knowledge and Its Social Problems* (New Brunswick, NJ: Transaction Publishers, 1996; orig. publ. 1971), 375–76.
82. G[eorge] Polya, *How to Solve It: A New Aspect of Mathematical Method* (Princeton, NJ: Princeton University Press, 2nd edn, 1973; orig. publ. 1945), 3, 221–25; for the invocation of folkish proverbs in surgical problem-solving, see Trevor J. Pinch, H.M. Collins and Larry Carbone, 'Inside Knowledge: Second Order Measures of Skill', *The Sociological Review*, Vol. 44, No. 2 (May 1996), 163–86, at 163; and, in the training of biochemists, Sara Delamont, Paul Atkinson and Odette Parry, *The Doctoral Experience: Success and Failure in Graduate School* (London: Falmer Press, 2000), 60.
83. Notably, Amos Tversky and Daniel Kahneman, 'Judgment under Uncertainty: Heuristics and Biases', *Science*, Vol. 185 (27 September 1974), 1124–31, quoting 1124, 1131.
84. To be fair, Tversky and Kahneman themselves stipulated (ibid., 1130) that 'The reliance on heuristics and the prevalence of biases are not restricted to laymen. Experienced researchers are also prone to the same biases – when they think intuitively'.
85. Gerd Gigerenzer, Peter M. Todd and the ABC Research Group, *Simple Heuristics That Make Us Smart* (New York: Oxford University Press, 1999).

86. Ibid., 7–10 (for the model of 'unbounded rationality'); 9 (for philosophers' practical rationality); 25–26 (for remarks on the history of heuristics); 363 (for proverbs; my emphasis). See also Gerd Gigerenzer, *Adaptive Thinking: Rationality in the Real World* (Oxford: Oxford University Press, 2000), 15–25 (for criticisms of cognitive psychological tendencies to conceive of everyday heuristics as biases); 290–91 (for the Gambler's Fallacy); Robert Nozick, *The Nature of Rationality* (Princeton, NJ: Princeton University Press, 1993, 163–72 (for sympathetic views of 'Philosophical Heuristics'); William C. Wimsatt, 'Heuristics and the Study of Human Behavior', in Donald W. Fiske and Richard A. Shweder (eds), *Metatheory in Social Science: Pluralisms and Subjectivities* (Chicago, IL: The University of Chicago Press, 1986), 292–314; Michael E. Gorman, *Simulating Science: Heuristics, Mental Models, and Technoscientific Thinking* (Bloomington: Indiana University Press, 1992), esp. 193, 210–13; and Herbert Simon and Allen Newell, *Human Problem Solving* (Englewood Cliffs, NJ: Prentice-Hall, 1972). The specific objection to Tversky and Kahneman on the Gambler's Fallacy is my own, not Gigerenzer's, though I take it to be broadly compatible with his point of view.
87. Geertz, 'Common Sense', op. cit. note 39, 89–91.
88. Galileo Galilei, *Dialogue Concerning Two Chief World Systems*, trans. Stillman Drake (Berkeley: University of California Press, 2nd edn, 1967; orig. publ. 1632), 203.
89. Following Alfred Schutz, Harold Garfinkel set up a contrast between 'the rational properties of scientific and common sense activities', identifying the special 'maxims of conduct' that distinguish the two modes. Yet he later felt obliged to warn against the domains such a distinction legitimately marks out: 'To avoid misunderstanding I want to stress that the concern here is with the attitude of scientific *theorizing*. The attitude that informs the activities of actual scientific inquiry is another matter entirely': H. Garfinkel, 'The Rational Properties of Scientific and Common Sense Activities', in Garfinkel, *Studies in Ethnomethodology* (Englewood Cliffs, NJ: Prentice-Hall, 1967), Chapter 8, at 269–70, 272 (note).
90. Thomas Henry Huxley, 'On the Educational Value of the Natural History Sciences', in Huxley, *Collected Essays, Vol. III. Science and Education: Essays* (New York: D. Appleton, 1900; orig. publ. 1854), 38–65, at 45 (Huxley's emphasis). For experimentally based claims that scientists are not notably better at formal logic than other sorts of people, see Michael J. Mahoney, 'Psychology of the Scientist: An Evaluative Review', *Social Studies of Science*, Vol. 9, No. 3 (August 1979), 349–75; and Michael J. Mahoney and B.G. DeMonbreun, 'Psychology of the Scientist: An Analysis of Problem-Solving Bias', *Cognitive Therapy and Research*, Vol. 1 (1977), 229–38.
91. Albert Einstein, *Ideas and Opinions* (New York: Crown Publishers, 1954), 319.
92. Max Planck, *Scientific Autobiography and Other Papers*, trans. Frank Gaynor (New York: Philosophical Library, 1949), 88.
93. J. Robert Oppenheimer, 'The Scientific Foundations for World Order', in Ernest Llewellyn Woodward et al., *Foundations for World Order* (Denver, CO: University of Denver Press, 1949), 35–51, at 51; James B. Conant, *Science and Common Sense* (New Haven, CT: Yale University Press, 1951), 32; C.H. Waddington, *The Scientific Attitude* (West Drayton, Middx, UK: Penguin, rev. edn, 1948), 117. For a famously splenetic attempt at putting Huxley, Einstein, Planck, Oppenheimer, Conant, Waddington (and the sociologists of science) in their place, see Lewis Wolpert, *The Unnatural Nature of Science* (Cambridge, MA: Harvard University Press, 1992), e.g. 11: 'I would almost contend that if something fits in with common sense it almost certainly isn't science'.

Steven Shapin is Professor of Sociology and a member of the Science Studies Program at the University of California, San Diego. Currently, his major research interest concerns the changing relations between knowledge and virtue in late modernity.

Address: Department of Sociology, University of California, San Diego, La Jolla, California 92093–0533, USA; fax: +1858 534 4753; email: sshapin@ucsd.edu