Cognition, 12 (1982) 219–227

Discussion

Why we think what we do about why we think what we do: Discussion on Goodman's "On thoughts without words"

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I find myself in almost complete agreement with Goodman's remarks about thought without words, so I am not going to pick a fight or chime agreement. Everything Goodman says here is plausible. Better yet, Goodman's major claims have the virtue of not being altogether obvious. How then did he get to them? What kind of investigation or research is Goodman conducting—and what methods has he used? Are the methods reliable? What *kind* of results do they yield? On what basis do we respond with agreement, or judgments of plausibility?

What Goodman is doing, clearly enough, is philosophy. It is not even the disguised sort of philosophy that is everywhere discernible in the discussions of cognitive scientists. It is straight, traditional philosophy, but it is also a special sort of straight philosophy of mind, a brand of phenomenology practiced, for instance, by Descartes, Locke, Hume, Kant—but also Wittgenstein and Ryle. The products of this traditional method in philosophy of mind are not presented as discoveries or claims or hypotheses, but as *observations*. The reader is reminded (it seems) of this or that; various things are *pointed out* to the reader, who can presumably acknowledge their truth. Philosophers are used to this diction, but it is, or ought to be, puzzling. What kind of pointing out is it really? What is the method behind the production of these observations?

The method, I think, has two components that are traditionally (and utterly unwittingly) blended together into near total indiscernibility. One component is aprioristic reasoning about *what must be*—what thoughts must be, what meaning must be, what symbols must be, and so forth. This reasoning is based on tacit assumptions—perhaps 'obvious' ones—about what thoughts, symbols, and so forth are *for*, so this is functionalistic aprioristic reasoning. It is also enriched by the facts, concepts and metaphors of the science of the day, but again, the reliance on these ideas is typically unannounced. The other component is a reliance on (and generalization from) quite casual self-observation: 'introspection' in the most theory-neutral, garden-variety sense.

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0010-0277/82/050219-09/$02.50

It is only recently that anyone has come up with any program of research that might actually succeed in distinguishing these two very different components—though there have been plenty of hints in the history of philosophy for the division. Locke *thought* he was championing the latter component, the unbiased self-observation component, when he unveiled his 'historical, plain method' in the *Essay Concerning Human Understanding* (1690).[1] Locke took himself to be an honest *observer* of what happened in his own mind, and while he could not invite the reader to observe with him numerically the same mental operations (due to the unfortunate barrier of the privacy of one's own mental life), he could confidently invite the reader to look into his own mind and observe just the same sorts of things happening. Had Locke reflected at length on why he thought he could so confidently generalize to others, he might have been brought to realize that the true source of his confidence lay in his utterly minimal use of the 'historical, plain method'. Locke wasn't observing; he was constructing a grand *a priori* theory about how 'understanding' *had to work*. It continues to amaze me that students reading the *Essay* today cheerfully acknowledge, as Locke invites them to do, that when they 'look inside' they find themselves doing just what Locke says he himself does. They can in fact seldom 'observe' what Locke describes. Consider a typical Lockean claim:

> When we set before our eyes a round globe of any uniform colour, e.g., gold, alabaster, or jet, it is certain that the idea thereby imprinted on our mind is of a flat circle, variously shadowed, with several degrees of light and brightness coming to our eyes. But we having, by use, been accustomed to perceive what kind of appearance convex bodies are wont to make in us; what alterations are made in the reflections of light by the difference of the sensible figures of bodies;—the judgment presently, by our habitual custom, alters the appearances into their causes. (II, IX, 8).

Locke hasn't directly *observed* any of this in his personal visual experience; he has more or less deduced this from general (and tacit) considerations of optics, perspective, and reflection on how information about three-dimensional shapes and surfaces *must* enter our 'minds'. It is, to be sure, an empirically enriched bit of aprioristic thinking, depending as it must on unmentioned but well known discoveries (by artists and others) about perspective, light, color and vision in general. But this is not the radical first-person-perspective empiricism of phenomenalism, but matter-of-fact, objective-physical-world empiricism, disguised and concealed by the rhetorical format of the new 'historical, plain method'.

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[1] Stillingfleet described Locke as having invented 'a new way of certainty by means of ideas, instead of the old way of certainty by means of reason'. Quoted by A. C. Fraser in his (1894) edition of Locke's *Essay*, (Dover edition, 1959, Vol. 1, p. 4n).

Kant, famously, championed the other, aprioristic component: the adumbration of the pure, 'transcendental' conditions of experience, knowledge, understanding—the *a priori* conditions of mentality, in short. But he failed, notoriously, to transcend the potent scientific metaphors of his time, and to cleanse his method of unacknowledged deliverances of unreliable introspection. The resulting Kantian account of the mind is full of strange items of mental machinery and process that can neither be deduced to be indispensable to thought, nor directly introspected to operate in our own cases. Strawson, deploring Kant's descent into 'the imaginary subject of transcendental psychology', attempts to recreate Kant's defensible doctrines in a metaphysically and epistemologically more austere form.[2] But whatever we think of Kant's particular version of faculty psychology, 'transcendental psychology' is not in one sense an imaginary subject at all: it is just what philosophers of mind have been producing since Descartes.

This traditional mixture of self-observation and aprioristic reflection on it seems inevitable, given the subject matter. The inescapable brute facts of our own mental activity are so obvious, it seems, that when radical behaviorists, for instance, claim to deny them they only succeed in undermining their own credibility or sincerity. What can one do with those brute facts but reflect on them in an armchair sort of way, devising aprioristic accounts of their relation to the rest of the brute facts?

Here, for example, is Wittgenstein (writing with his characteristic irony):

> "Can one think without speaking?"—And what is *thinking*?—Well, don't you ever think? Can't you observe yourself and see what is going on? It should be quite simple. You do not have to wait for it as for an astronomical event and then perhaps make your observation in a hurry...
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> When I think in language, there aren't 'meanings' going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought. Is thinking a kind of speaking? One would like to say it is what distinguishes speech with thought from talking without thinking.—And so it seems to be an accompaniment of speech. A process, which may accompany something else or can go on by itself.
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> Say: "Yes, this pen is blunt. Oh well, it'll do." First, thinking it; then without thought; then just think the thought without the words,—Well, while doing some writing I might test the point of my pen, make a face—and go on with a gesture of resignation...
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> But what constitutes thought here is not some process which has to accompany the words if they are not to be spoken without thought.[3]

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[2] *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason.* London, Methuen, 1966, p. 32.

[3] See i327–330 and pp. 107–7 in G. E. M. Anscombe (ed.) (1958), *Philosophical Investigations.* London, Blackwells.

One of Wittgenstein's great contributions to thinking about the mind is the extraordinary suspicion he musters about the apparent deliverances of introspection; his relentless skepticism on this matter then sets an example for the rest of us. But note that his suspicion is not aimless uncooperativeness with the hapless introspecter; it is guided by what he takes to be insights about how thoughts *must* happen, what thinking *could not* be. He has (tacit) *reasons* for disbelieving the plausible claims of the introspecter.

Now note that Goodman's paper consists in the main of *observations* of the sort I have just described. (There are virtually no arguments in it.) Many of his observations are reminders and warnings about conclusions we shouldn't jump to when thinking about thinking—all well taken, I think. There are other sorts of observations as well. For instance:

> First, a thought may involve not, or not only, activities on the way towards but rather, or also, the state of readiness for production. Second, and more important, thinking in words or pictures may often involve preparing or being ready not, or not only, to produce such words or pictures, but rather, or also, to judge a word or picture produced as agreeing or not agreeing with one in mind. When I succeed in 'calling up a mental picture' or a place I saw briefly long ago my ability to produce a picture may be negligible but I am much readier than before to accept some pictures as right and reject others as wrong, and to suggest changes. (See this issue p. 259.)

What are—could be—Goodman's grounds for these observations? (That is not a rhetorical question. I'm not challenging them, but asking, flatly, what sorts of reasons Goodman might have for thinking them true, and I might have for agreeing with him.) The first two sentences apparently express a sketchy bit of presumably empirical theory about the different functional varieties of verbal or pictorial thought. Recalling Wilfrid Sellars' claims about thoughts as 'proximate propensities to speak'[4] we can say that Goodman proposes two varieties of verbal thought: proximate propensities to speak and proximate propensities to hear. This is all very plausible, but why? Well, we all start with the brute and unignorable fact that we find ourselves doing something like talking, and something like listening when we know perfectly well there are no recordable sounds in the environment, and our philosophical task becomes the armchair task of asking what in the world that phenomenon could *possibly* be. Not wanting to bog down in utterly untestable and barely investigatable neurophysiological hypotheses, we settle for more abstract, functionalistic, speculative theorizing—and come up with something like the view of Wittgenstein, or Ryle, or Sellars—or Goodman. The central but traditionally tacit move in the reasoning behind such produc-

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[4] See 'Meaning as Functional Classification'. *Synthese*, 27 (3/4) (1974) 417–437.

tions has recently been brought out of the closet by Jerry Fodor[5]; one presents one's hunch and then asks in effect: *what else could it be?*

The last sentence of the Goodman passage is admirably forthright. It makes what is not only a clearly empirical claim, but one we could probably put to the test now, with a little ingenuity. The heightened readiness Goodman speaks of is a close kin of the heightened readinesses provoked and measured in a host of reaction time experiments.[6] One suspects, however, that Goodman isn't terribly curious to know the results of an experiment here, since if they did not support his claim about heightened readiness, he would be deeply skeptical of their design or the arguments relating his thesis to the experiments in question. (This *ad hominem* speculation is impertinence on my part. Perhaps Goodman's intent on this occasion is to provoke such experiments, but I will suppose that he is a more traditional philosopher than that, and is *so sure* that his observations *must* capture *a* function of thought that he would find experiments almost beside the point.)

There is another way of defending Goodman's (imagined) lack of interest in experimental confirmation here. While he has offered, in somewhat disguised form, an empirical theory sketch of what some of the functions of thoughts are, he might not so much care that it were true as that *some such* story were true—where 'some such' means something like 'such as would be physicalistically un-anomolous—a portion of demystified, kosher science, whatever its details'. This attitude would make good sense if Goodman were to cast himself in the role of theory critic. In this paper one of Goodman's main objectives—nicely achieved, in my opinion—is to convince theorists that 'undrawn pictures or invisible images' are just as well off, theoretically and metaphysically, as inaudible utterances. Thought as silent soliloquy is one good idea; thought as silent music-making or invisible sketching is just as good. If the philosopher's role here is to fend off bad theorizing and illustrate the foibles of certain tempting lines of thought, then it does not matter particularly if this critic proffers the wrong explanation of some phenomenon, just so long as he gets the right sort of explanation—in this case just so long as he points to the sort of explanation that could be comfortably accommodated within some secure scientific enterprise. So viewed, the philosopher is a sort of theory tugboat, nudging and pulling the unwieldy edifices of science in the right general direction, averting embarrassing collisions and unmotivated drift, while not himself always moving in *just* the right direction. This is by its very nature an informal and uncertain activity

[5] *The Language of Thought.* New York, Crowell, 1975.

[6] See e.g., R. Shepard and L. Cooper, and other chapters in W. G. Chase (ed.), *Visual Information Processing.* Academic Press, 1973. Dependent variable other than reaction time can also tease out such 'readiness' differences, of course.

however acutely practiced, and not at all the fount of certitudes philosophy often presents itself to be. And of course it is continuous with the informal intuition-mongering that surrounds and guides all scientific exploration.

Philosophy of mind thus demythologized looks as if it might on occasion be useful—as surely it is, whether we are looking at Locke or Kant or Wittgenstein or Goodman—but hardly reliable. Considering its traditional silence about the source of its own somewhat oracular observations, and considering how often the characteristic plausibility of those observations has turned out to be spurious, we might hope to develop a better method for performing the same task. Suppose for instance we were to attempt a deliberate and explicit separation—so far as that was psychologically possible—of the two sorts of sources: aprioristic functional hypotheses and self-observation. What would the resulting enterprise look like? It would look like Artificial Intelligence (AI). In fact, of course, people in AI have notoriously relied on casual self-observation for their ideas about the likely breakdown of processes and events in cognitive systems, and have often been seduced, like many philosophers before them, into reading strict necessity into whatever eccentricities of their own cognitive styles first captured their attention and imagination. But at least in AI the rhetoric of the enterprise is importantly different: AI, even at its most 'philosophical', does not consist of *observations*, but of hypotheses, hunches, suggestions of ideas worth trying, claims about what might be shown to be right.

Consider, for instance, the questions lurking just beneath the surface of Goodman's paper: what are these various types of thinking *for*? Why do we engage in them? Why should these sorts of thinking be so slow and clunky and one-track and uncertain in operation—and *conscious*? Why couldn't all the readinesses and rehearsals and processes of preparation go on much better in some unconscious speedways of cognition? A vivid way of addressing these questions would be: if we were to build a robot, a truly sophisticated robot, would there be any reason to endow it with (analogues of) the capacities Goodman is sketchily describing? To what sort of use would what sort of cognitive system put the preparations, readinesses, propensities Goodman describes? Perhaps answers to these questions are implicit in Goodman's account, but devising explicit versions of them would not be trivial.

One plausible idea is that many of the forms of thinking Goodman alludes to are in effect makeshift techniques of self-stimulation hit upon in the prehistory of social interaction, and rendered traditional. Just as we learned to milk cows, and then to domesticate them for our own benefit, so we learned to milk each others' (and then our own) minds in certain ways, and now the techniques of mutual- and self-stimulation are deeply embedded

in our culture and training. A rich philosophical source of hints on this score is Gilbert Ryle's posthumous collection *On Thinking.*[7] How surprising that the notorious 'logical behaviorist', the philosopher who most adamantly disparaged loose talk about the supposed inner life of the mind, should have the most acute suggestions to offer about the *point* of silent soliloquy!

> We are not often enough or deeply enough puzzled by the notions of thinking, pondering, reflecting, and the like, namely of what Rodin's *Le Penseur* looks as if he is absorbed in. ... What is *Le Penseur* doing, seemingly in his Cartesian insides? Or, to sound scientific, what are the mental processes like, which are going on in that Cartesian *camera obscura*? ... Notoriously some of our ponderings, but not all, terminate in the solution of our problems; we had been fogged, but at last we came out into the clear. But if sometimes successful, why not always? If belatedly, why not promptly? If with difficulty, why not easily? Why indeed does it ever work? How possibly can it work?[8]

What *Le Penseur* is doing, Ryle suggests, is 'plying himself with might-be cues, clues, reminders, snubs, exercises, spurs, and the like, of types that are sometimes or often employed unexperimentally by teachers...' (p. 67). But what good would *giving oneself cues* do? Why isn't that as pointless as leaving yourself a generous tip after preparing yourself a nice lunch? Ryle could not bring himself to peer too deeply into that abyss, for he had long set himself implacably against *any* theorizing that divided a person into subpersonal parts and theorized about their interrelations.

> I am this morning going over my oration for this evening, but I am not orating to a tiny audience, namely my Alter Ego, this morning, else why do I begin 'Ladies and gentlemen...'? And why do my jokes elicit no laughter, or my appeals for subscriptions fetch not even a penny from my left-hand pocket? Obviously I am not orating yet—we cannot orate *silently* or *sotto voce.* I am, perhaps, in solitude and silence, rehearsing my words for my public oration-to-be. Even if I mutter these words audibly, and you are there to hear them, I am not muttering them for you or for anyone, even for me, to hear them.[9]

Plausible, but *just false.* Here Ryle's *a priori* theoretical predilections get in the way of both his self-observation and his functionalistic speculation, and lead him away from the good idea that a main function of silent oration (or out loud oration alone in a room) is *precisely* so our own ears—or whatever lies just inboard of our ears—can 'hear' those words. All one needs to suppose in order to make sense of this idea is the by now familiar idea

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[7]Edited by Konstantin Kolenda. Totowa, New Jersey, Rowman and Littlefield, 1979.

[8]'Thinking and Self-Teaching', in *On Thinking, op. cit.* See also 'Thought and Soliloquy' and other chapters in that book.

[9]'Thought and Soliloquy', p. 36.

that there is some partial isolation and specialization of cognitive subsystems. Crudely put, pushing some information through one's ears-and-auditory-system may stimulate just the sorts of connections one is seeking, may trip just the right associative mechanisms, tease just the right mental morsel to the tip of one's tongue.[10]

Just as one can notice that, say, stroking oneself in a certain way can produce certain only partially and indirectly controllable but desirable side effects (and one can then devote some time and ingenuity to developing and exploring the techniques for producing those side effects) so one can come to recognize that talking to oneself—*sotto voce* or not[11]—often has desirable but hard to control or predict side effects: nifty ideas come bubbling up, fogs dissipate, connections stand forth for the first time. Some people are better at this activity than others. It's an acquired technique with many different personal styles.

An integral part of acquiring techniques of such self-stimulation is acquiring fluency in new media of (mental) representation. The effects of these new fluencies on our cognitive capacities have been insightfully explored by Goodman in his earlier work. As Goodman says here, '...the forms of what we think of are by no means independent of the forms of what we think in. The form of classical music heard is affected and constrained by the structure of the notation in which the score is written'. A familiar point in some quarters, no doubt, but it has an implication not sufficiently acknowledged: the human cognitive system must have an extraordinary lability if it is to mould itself to encountered forms so deftly. We all know the experience of the access of power when we learn our way around in a new language or a new formalism, but these are not the only cases. Learning to use a new tool—an adze or paintbrush or word processor or violin—also engages our capacity for achieving fluency in new media of representation with new formal properties.

It is often suggested with a bit of wishful handwaving that this capacity of ours is roughly but usefully analogous to a computer's chameleonic capacity to emulate other computers, or interpret new programming languages, but I doubt that the analogy is all that useful. No computer is chameleonic without a great deal of help from programmers who must position its new software costume with exquisite precision and attention to

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[10] Epistemologists and philosophers of mind have traditionally overlooked or underestimated the need for such tactics. This is surprising, since, as Lawrence Powers shows in 'Knowledge by Deduction', *Phil. Review*, 1978, pp. 337–72, it was a central but disguised theme in Plato's *Meno*.

[11] And this may well *not* be a negligible difference in techniques, as any lecturer may discover on actually hearing himself say the words he has mentally mouthed a hundred times while preparing the lecture.

detail if the computer is to don it successfully. Getting a computer to let some found portion of the world impose aspects of its form on the computer's representation of it is proving immensely difficult. John McCarthy once described to me an elegant unsolved problem of robotics: make a robot that has two mechanical hands and that can hold a broomstick firmly with both hands several feet apart—and then can waggle the broomstick around without either breaking or dropping it. One sees 'intuitively' that such a robot must in some fashion let the broomstick itself control the relative orientations of the hands, but only partially, of course. The robot must after all move the broomstick, not *vice versa*. And if the robot is to be psychologically realistic, the broomstick itself mustn't directly control the hands; that task must fall to a representation of the broomstick. For note how effortlessly and realistically you can waggle an *imaginary* broomstick in your hands. (If you are Marcel Marceau you can perform virtuoso feats of this sort, but we are all quite good at it.) The capacity to engulf and digest the formal properties of objects and environments in such high fidelity and high efficiency representations has not yet been well modeled by AI. Philosophers don't have any working models of this either, but they have been thinking about it informally, and often powerfully, for some time.