

## *Cognition on the ground*



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DOUGLAS W. MAYNARD  
UNIVERSITY OF WISCONSIN-MADISON

**ABSTRACT** Suggesting that much of social science is still wedded to the 'dogma of the ghost in the machine,' I discuss my ethnomethodological and conversation analytic approach to the assembly of cognitive objects. It is important to reverse the usual social psychological metalanguage of mind causing behavior, and see how practices in interaction operate to display cognitive states of participants. Two examples are given: one in regard to the assembly of *gestalts*, including social actions in talk, and the other concerning the production of responses as accountable phenomena in the survey interview. While advances are being made in brain imaging, the connections between the neurobiology of the mind and the practices embedded in human conduct are tenuous at best. For the social scientist, approaching cognition through practices puts ghosts and other ephemera in abeyance and allows for analysis of the detail exhibited in behavior when minds are purportedly at work.

**KEY WORDS:** *cognition, conversation analysis, embodiment, ethnomethodology, gestalts*

People, Gilbert Ryle (1949: 32) has said, 'are wedded to the dogma of the ghost in the machine,' the Cartesian idea and 'philosopher's myth' that mind and body are separate entities such that when people act, there are two separate processes – a 'theorizing' or cognitive operation and a 'doing' or embodied performance. Whether in philosophy (Wittgenstein), political thought (Pitkin), sociology (Garfinkel), or elsewhere, so many critiques of the 'ghost' view are available that it is a wonder why it is so strong. But strong it is. For example, in one of the fields where I teach and do research – social psychology – practitioners (Cartwright, 1979), discursive psychologists (Edwards and Potter, 1992), and historians (Danziger, 1997) alike characterize it as highly cognitivist. By this, they mean

that investigators are concerned with the subjective and internal states of actors that have causal relationships to what people actually do.

The reasons for the cognitivist preoccupation are interesting though not relevant here except to say that there are good historical accounts for why social scientists, including social psychologists, maintain a cognition-based 'meta-language' that frames inquiry (Danziger, 1990, 1997). As I will note in the Conclusion, there is nothing wrong in a preoccupation with ghosts – the presently not seen but nevertheless measurable attitudes, values, norms, or other internal factors such as neurobiological ones that may be partially predictive of behavior in the world. It's that partial predictability – what goes under the category of unexplained variance – that is the rub. Even with the best models, the most sophisticated technology, and systematic empirical investigations, immense amounts of behavior go unaccounted for. One can take the approach that we need better models, yet more advanced technology, improved methods of data collection, or more precise analytic procedures, and we'll find and nail those ghosts to the ground. But if one is interested in the panorama of human behavior in all its detail, and wants to do a science that is committed to capturing the range of concerted behavior and the organization it so manifestly displays, then other possibilities present themselves. First, the investigator can do away with the dualisms of mind and body, outer and inner, public and private, and so on, using tools developed in philosophy, political theory, sociology, and so on. This does not necessarily entail critique of cognitivist accounts, but rather, as with phenomenology, it just means being agnostic by not taking a prior position about whether the mind exists and if so, what it consists of. Second, we can appreciate cognition as a manifest part of interactional discourse rather than its progenitor. Such a strategy enables initial appreciation of cognition on the ground rather than in the airy space of heads or brain cells or neural networks. To the degree that we want to know about spaces in heads and cells and networks, this means the possibility of mapping them from what we know about actual behavior rather than the reverse. Along these lines and from my own research, I will give two examples of studying cognition on the ground: how participants may assemble gestalt-like social actions in talk, and how survey researchers manage to measure cognitions.

### *Gestalts in talk*

When teaching courses in ethnomethodology, social psychology, or language and social interaction, I discuss various gestalt figures – organized groupings with 'intrinsic articulation and structures' whereby the whole is larger than its constituent parts (Gurwitsch, 1964: 115) – with the purpose of examining what they are as *social* rather than psychological objects. That is, the literatures on gestalt formation are highly subjectivist, psychological, cognitivist, and sometimes neurobiological in their attempts to explain the phenomenon, and they mostly consist of experimental attempts at such explanation. This is not to

decry the considerable accomplishments of gestalt theorists and researchers, particularly their challenges to the elementarism of structuralist and behaviorist psychologies (Rock and Palmer, 1990). In fact, it is fun to teach about gestalt formation using well-known illustrations including the rabbit-duck, Rubin's vase (which vacillates between being a vase and two faces looking at one another), and the Necker cube, named after the Swiss crystallographer who saw cubic shapes spontaneously reverse in perspective.

When I teach about gestalts, however, I do so in a particular way. In classes and seminars, I use an overhead screen and handouts, videotaping our sessions. The videotape shows that whatever goes on cognitively when we deal with gestalt objects, these objects only have a social reality in the actions and interactions by which participants assemble them in concert with one another. For example, when we deal with the Necker cube, the first thing I do is invite the seminar members to name the figure they see in the handout or on the screen ('Ins' = Instructor; 'Stu1' = student 1):

- (1) Ins: Whaddya see here. What's the name of the object.  
 Stu1: A box.  
 Ins: Okay.  
 Stu1: A cube.  
 Ins: Cube.

When students call the figure either a box or a cube or both, and the rest of us agree with one another on this name, there is a proposal and ratification structure whereby some three-dimensional perception of the object on the paper and on the screen preliminarily comes into being. Then I ask students to describe 'how they see' the box or cube. The transcript at (2) has what I term an *embodied telling of a seeing*: Student 1 (Stu1) both describes what she sees and instructs the others in how to see likewise.

- (2) Stu1: I don't know how to explain it exactly, but you can basically see the two [gesture with both hands] panels, and see them either as being in the back of the cube like this [hands in concave shape]  
 Ins: Uh huh  
 Stu1: or in the front of the cube. [turns hands to convex shape.]  
 Ins: [nods head] Okay.

As she talks, this student has two hands up with palms in front with concave shape; she angles her body, head, and arms, so that her hands, from her own as well as others' view, can be seen in three-dimensional space with a depth that conveys first a concave shape and then a convex shape that are to be iconic analogues of what everyone can perceive on the two-dimensional paper or the screen in front of the class. In the end, the instructor and the other students, through their own looking, their own bodily positioning, and their verbal and nonverbal acceptance of Student 1's proposals, align to these purported

viewings. In these ways, the proximal gestalt perception comes to have not just subjective status but intersubjective status.

Not all such perceptions gain this kind status. Just after Student 1's telling, Student 2 offers this:

- (3) Stu2: Uhm [pause] essentially I'm- sometimes I see it, when I look at it, it looks as though the, the- [gestures with left hand vertically] it's taller than it is [gestures accordion-style with both hands] wide, but other times it looks like it's [draws two hands farther apart] wider than it is tall.  
[SILENCE: others are looking at handout or up at screen]

The silence after Student 2's proposal concerning height and width marks the absence of alignment, and Student 2 gradually withdraws:

- (4) Stu2: It is more clearly [pointing at handout] when I- when I look at it on my- my sheet rather than that one up there.  
Ins: Ah okay. [pause; looking at handout] And can you describe when you see it as being um taller than it is wide. What- how does it present that [pause] feature?  
Stu2: I'm- I'm not sure how it is.  
Ins: Uh huh.  
Stu2: I've got a feeling you can't.  
Many: [laughter]

At least for this moment, the proposal that the cube is wider than it is taller or vice versa according to its perceptual oscillations has no intersubjective status. There is no mutual agreement, and consequently no social reality to these possible gestalts. That there is no social reality also undermines psychological experience of the gestalt, for 'there are no criteria for correct or incorrect description,' as Hilbert (1984: 374) puts it.

But then slightly later, a third student presents an understanding of, and further instructions on, how to see what Student 2 had proposed. Student 3, who is seated close to the screen, gets up and goes to the screen:

- (5) Stu3: If you look at [pause] this [tracing two lines] as the front of the box [turns to class]  
Ins: Uh huh  
Stu3: then it [gestures with right extended index finger up and down] seems to be taller than it is [two hands doing accordion] wide.  
Ins: Okay.  
Stu3: [turns to screen and points to vertical line, Figure 1] But if you look at this as the front of the box [turns to instructor]  
Ins: Uh huh

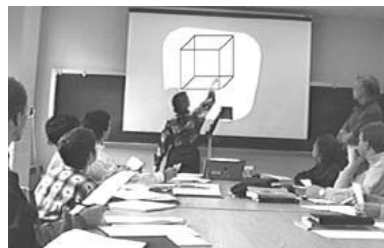


FIGURE 1

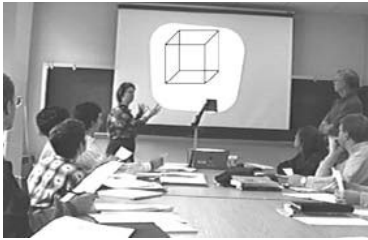


FIGURE 2

- Stu3: Then it [two hands doing accordion, Figure 2] seems to be wider.  
 Prof: [continuing to gaze at screen] Okay.  
 [nodding]

Finally, then, Student 2's perception as proposed to the group receives ratification from the group because Student 3 demonstrates her alignment to the proposal through another, a second and more public embodied telling of a seeing. This venture is affirmed not only by the instructor but also by additional students.

The challenge is to get perception out of the mind, out of the individual's somewhat solitary cognition, for sociologically or social psychologically it is not just a matter that gestalt figures and objects present different faces *in perception*. Instead, we accord these faces the accent of reality according to the ways we act in concert with one another. Our phenomenal social world, in other words, consists of these gestalts that we accountably assemble in our actions and interactions. Overall, the intelligibility of the world, in a myriad of ways, depends upon public embodiment, gesturing, positioning, movement, and talk. In this sense, a perceptual object as an intersubjectively real thing *is* an embodied visualization, telling, and responding *among* participants. This cognition on the ground, as displayed and discoverable in concrete social practices, accords with other arenas in which research approaches cognition as less about perception and more about skilled productions of gestalt phenomena. For example, in recent work on autism, I attempt to show how participants produce social actions as the gestalt forms of showing concern, asking for advice, and 'testing' the other in and through identifiable practices of talk-in-interaction (Maynard, 2005). Specifically, the analysis concerns question-answer sequences of the 'what do you do when X happens' kind, such as 'what do you do when you're hungry', 'what do you do when you're tired', and so on. There are commonsensical and autistically intelligent interpretations of such queries, both accessible through appreciating cognition on the ground – that is, by way of participants' interpretive practices.

### *Measuring cognition*

In addition, for a number of years, I have been doing collaborative research with my colleague, Prof. Nora Cate Schaeffer, who is an expert on survey methodology. One of our efforts is an attempt to examine, as an interactional matter, what survey methodologists conceive to be an individual and internal cognitive process – how respondents come up with answers to survey questions according to a four-stage model:

. . . the respondent interprets the question, retrieves the requested information, evaluates the information for the purposes of reporting it, and finally maps his or her answer onto the response categories and reports an answer. (Schaeffer and Maynard, 1996: 65)

Although it is recognized that respondents' thinking about how to answer may be affected by such things as the order of questions in the survey, researchers have accorded very little attention to how the interviewer's conduct during the interview can enter into the *accountable* ratiocinations of respondents.

Accountability is a notion deriving from Garfinkel's (1967) ethnomethodology. Here, this notion refers to ways in which parties, through the 'interactional substrate' (Maynard and Marlaire, 1992: 178) of standardized interviewing, show its products to be 'objective, verifiable, valid, properly achieved, and so on, where that achievement depends upon an organization of concerted practical actions that constitutes the participants' interaction.' In our research on the survey interview, we examined a single question (25B-2) from the labor force participation section of the US Current Population Survey as interviewers asked this question in six different episodes. Over and over again, we found ways in which respondents produce answers by using the interviewer as a resource, even while their answers come to be recorded as reflecting the individual's own knowledge. The question as it looks on the computer screen to an interviewer is depicted in Figure 3. Interviewers are to read the question and the list of four response categories just as they are worded. (The notation '[blind]' next to 'don't know' and 'refused' means that these are available for the interviewer to use if the respondent invokes one or the other option, but are not for reading to the respondent.)

Q25B-2

Is this business or organization mainly manufacturing, retail trade, wholesale trade, or something else?

Manufacturing  
Retail Trade  
Wholesale Trade  
Something else

[blind]Don't know  
[blind]Refused

FIGURE 3

In only one of the six instances we examined – involving a female respondent whose occupation was a beautician – did question 25B-2 and its answer approach being what we call a 'paradigmatic' sequence, where the interviewer reads the question and obtains a relatively immediate and codable answer (in this case, the respondent selected 'something else').

Usually, the respondent engaged in a variety of activities that invited the interviewer to aid in selecting an answer category. Here is one instance, where the male respondent (MR) works for an insurance company ('FI' denotes the female interviewer):

- (6) (Schaeffer and Maynard; modified transcript)
- 01 FI: Is this business or organization mainly manufacturing,  
02 retail trade, wholesale trade or something else?  
03 (1.0)
- 04 MR: It's a service industry  
05 (1.8)
- 06 FI: so it'd be under::?  
07 (2.0)
- 08 MR: Well: it wouldn' – wouldn't be manufacturing or retail or  
09 (0.9)
- 10 MR: or anything like that it's:  
11 (0.7)
- 12 MR: I don't know how- I don't know what you'd (.) classify it=  
13 FI: =Under something else=  
14 MR: =Yeah:  
15 (1.0)
- 16 FI: And what kind of work do you usually do at this job that  
17 is (.) what is your occupation. . .

How does this respondent understand question 25B, which the interviewer reads at lines 1 and 2? Notice that there is a silence at line 3, indicating possible difficulties with answering; then MR produces 'It's a service industry' (line 4). Whereas the first three answer possibilities are consistently business or organizational categories, 'something else', by not being such a category, can be heard in this sequential context to invite the naming of one that applies to the respondent's workplace. This is consistent with what Sacks (1992: 726) has shown, that the 'position of an item on a list is relevant to hearing what that item is'. Indeed, in work on standardized testing, we have shown how sequencing can lead to misunderstandings, and even incorrect answers (Maynard and Marlaire, 1992).

Here, at line 6, the interviewer displays the unacceptability of MR's 'service industry' answer by *probing*, an allowable strategy in standardized surveys so long as the inquiry does not lead the respondent to a particular response category. In conversation analytic terms, it is a kind of repair initiation (Moore and Maynard, 2002), suggesting that the respondent do the repair itself by using the categories already supplied rather than introducing a new one. However, the respondent delays for two seconds and subsequently (line 8) reviews two items ('manufacturing or retail trade') from the initial question in the order in which they were originally presented, ending with a denial of fit (line 10), and adding an expression of uncertainty (line 12). As we noted before, 'From a psychological perspective this response could be taken to exhibit cognitive processing – it could

be a spontaneous retrospective think-aloud displaying how the respondent arrived at his original answer' (Schaeffer and Maynard, 1996: 73).

We also observed that such a perspective utterly neglects the fundamentally interactive character of the response. In sequential terms, the action of MR's turn at lines 8 through 12 is to solicit guidance or help. And even before this, at two other places the respondent tacitly invites the interviewer to talk and possibly provide the answer category. One place is at line 8, where MR names and rejects two items from the list of possible categories and then hesitates after 'or' (silence at line 9). But FI passes this opportunity to interject something, and MR at line 10 restarts (with another 'or') with a generalized third item ('or anything like that . . .'), which now appears (because of this re-start) as a third item on his list of rejected possible categories. Furthermore, this item is 'weakened' by being generalized and as such is a device for inviting co-participation in assembling a list (Jefferson, 1990). When, at line 11, the interviewer again refrains from taking a turn at talk, the respondent issues the expression of uncertainty. In the context of the two prior offered opportunities for the interviewer to talk and, more specifically, to help the respondent with his displayed difficulties, line 12 is a third and *exacerbated* request for help. Finally, then, the interviewer proposes one of the original categories as a possible answer (line 13). The respondent's agreement at line 14 accepts the proposal and ends the exchange for this question.

Rather than this respondent's answer being something that he derives from an internal cognitive process, it shows external, intricate behavioral coordination between the interviewer and respondent. And although invited to do so, it is the interviewer who initiates the proposal-acceptance sequence by which the co-participants arrive at an answer. In other iterations of this question, we identified additional devices whereby interviewers become involved in the respondent's answering. An additional way in which a respondent can invite interviewer intervention is through the use of 'reporting' (Drew, 1984; Moore, 2004; Schaeffer and Maynard, 1996, 2002). Instead of choosing an answer category, respondents announce information that allows the interviewer to gather the upshot for purposes of selecting a relevant category. Or, when a respondent struggles in answering, an interviewer can also *offer* help, more or less strongly, without being invited. Regularly, the interviewer makes some degree of interactive contribution to what officially is seen – by way of the coding and aggregating answers – as respondents' own or sole efforts at four-stage cognitive processing and thereby presenting their own knowledge to an interviewer. That is, the interviewer, the coders, the project directors, the researchers all treat a recorded answer as a respondent's own cognitive product.

What happens in the survey interview is an analogue to other arenas in which displays of knowledge, opinions, or other minded states, are collaborative productions that nevertheless have the achieved appearance or accountable feature of being properties of individuals (Antaki, this issue). The work of transforming collaboration or co-production into accountably individualistic

processes can be analytically transparent in educational testing (Marlaire and Maynard, 1990; Maynard and Marlaire, 1992), in neurobehavioral examinations (Lynch, 1984), and many arenas besides survey interviews. That this transformation is not ordinarily so transparent, analytically or otherwise, is only due to the ways that participants rather hide the work of achievement by being 'not interested' in the practical actions providing for known-in-common features of settings (Garfinkel, 1967). Yet when a cognitive state of a participant acquires its facticity, we can make inquiry into its groundedness in the concreteness of actions and social interactions. Like *gestalts* in talk, survey- and member-analyzable cognitive states involve coordinated, embodied work – orderly tellings, invitings, offerings, proposals, and other devices along with their responses.

### *Conclusion*

As for the ghost in the machine, we need to recognize that we are in an era when the sophistication in medical imaging, molecular biology, and genetics is making ever more accessible the anatomy and physiology of the brain. In turn, this renders possible attempts to map 'top-down and context-driven brain states' – that is, *gestalt*-structures – as never before (Westheimer, 1999: 12). Yet the advances here are modest. As Westheimer (1999: 13) remarks,

Attempts to synthesize our perceptual experiences through knowledge of the structure and function of our physical and physiological sensory apparatus invariably reach a point so well articulated by Hering . . .

In response to a Helmholtz remark on the need to take the visual system apart like a watch to look at its cogs and gears, Hering urged that when we want to figure out what a watch does and are prevented from inspecting its inside, we should look at its hands. Looking at the hands of people rather than watch hands implies a concern with practices – examining cognition on the ground.

Regarding the neurobiology of behavior, Schegloff (2003) has emphasized that there are two important components to this phrase, and that if neurobiology and behavior are ever to be linked, we need descriptions of the natural organization of each. Any success in either or both endeavors may then allow for their intrinsic relations to be better understood and we can begin to dissolve mind-body dualisms. In the meantime, we need to understand cognition without the ephemeral and intrusive overlay of ghosts, which can inhibit appreciation for the panorama of practical detail in conduct as participants themselves adduce their mutual and complementary cognitive states. With whatever minded properties they take to be real facets of their everyday lives together, it is participants in everyday as well as more specialized settings who achieve the objectivity of these properties in and through interaction. Social scientific investigation can build its analysis upon such ground.

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DOUG MAYNARD is a Professor in the Department of Sociology, University of Wisconsin, Madison. Recently, he was co-editor (with Hanneke Houtkoop-Steenstra, Nora Cate Schaeffer and Hans van der Zouwen) of *Standardization and Tacit Knowledge: Interaction and Practice in the Survey Interview* (Wiley Interscience, 2002), co-editor (with John Heritage) of *Communication in Medical Care: Interaction between Primary Care Physicians and Patients* (Cambridge University Press, 2006), and author of a monograph, *Bad News, Good News: Conversational Order in Everyday Talk and Clinical Settings* (University of Chicago Press, 2003). Current research addresses a variety of topics in ethnomethodology and conversation analysis, including the interactional measurement of cognitive functioning in survey interviews, meaning assessment sequences in clinics and ordinary conversation, defensiveness in talk, autism in interaction, and others. ADDRESS: Department of Sociology University of Wisconsin, Madison, WI 53706, USA. [email: maynard@ssc.wisc.edu]