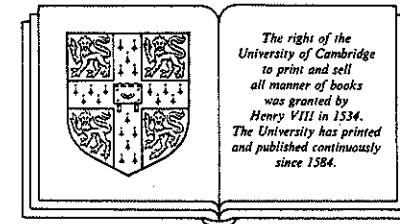


Plans and situated actions

The problem of human-machine communication

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Preface

Thomas Gladwin (1964) has written a brilliant article contrasting the method by which the Trukese navigate the open sea, with that by which Europeans navigate. He points out that the European navigator begins with a plan – a course – which he has charted according to certain universal principles, and he carries out his voyage by relating his every move to that plan. His effort throughout his voyage is directed to remaining “on course.” If unexpected events occur, he must first alter the plan, then respond accordingly. The Trukese navigator begins with an objective rather than a plan. He sets off toward the objective and responds to conditions as they arise in an *ad hoc* fashion. He utilizes information provided by the wind, the waves, the tide and current, the fauna, the stars, the clouds, the sound of the water on the side of the boat, and he steers accordingly. His effort is directed to doing whatever is necessary to reach the objective. If asked, he can point to his objective at any moment, but he cannot describe his course. (Berreman 1966, p. 347)

The subject of this book is the two alternative views of human intelligence and directed action represented here by the Trukese and the European navigator. The European navigator exemplifies the prevailing cognitive science model of purposeful action, for reasons that are implicit in the final sentence of the quote above. That is to say, while the Trukese navigator is hard pressed to tell us how he actually steers his course, the comparable account for the European seems to be already in hand, in the form of the very plan that is

assumed to guide his actions. While the objective of the Trukese navigator is clear from the outset, his actual course is contingent on unique circumstances that he cannot anticipate in advance. The plan of the European, in contrast, is derived from universal principles of navigation, and is essentially independent of the exigencies of his particular situation.

Given these contrasting exemplars, there are at least three, quite different implications that we might draw for the study of purposeful action:

First, we might infer that there actually are different ways of acting, favored differently across cultures. How to act purposefully is learned, and subject to cultural variation. European culture favors abstract, analytic thinking, the ideal being to reason from general principles to particular instances. The Trukese, in contrast, having no such ideological commitments, learn a cumulative range of concrete, embodied responses, guided by the wisdom of memory and experience over years of actual voyages. In the pages that follow, however, I will argue that all activity, even the most analytic, is fundamentally concrete and embodied. So while there must certainly be an important relationship between ideas about action and ways of acting, this first interpretation of the navigation example stands in danger of confusing theory with practice.

Alternatively, we might posit that whether our actions are *ad hoc* or planned depends upon the nature of the activity, or our degree of expertise. So we might contrast instrumental, goal-directed activities with creative or expressive activities, or contrast novice with expert behavior. Dividing things up along these lines, however, seems in some important ways to violate our navigation example. Clearly the Truk is involved with instrumental action in getting from one island to another, and just as clearly the European navigator relies upon his chart regardless of his degree of expertise.

Finally, the position to be taken – and the one that I will adopt here – could be that, however planned, purposeful actions are inevitably *situated actions*. By situated actions I mean simply actions taken in the context of particular, concrete circumstances. In this

sense one could argue that we all act like the Trukese, however much some of us may talk like Europeans. We must act like the Trukese because the circumstances of our actions are never fully anticipated and are continuously changing around us. As a consequence our actions, while systematic, are never planned in the strong sense that cognitive science would have it. Rather, plans are best viewed as a weak resource for what is primarily *ad hoc* activity. It is only when we are pressed to account for the rationality of our actions, given the biases of European culture, that we invoke the guidance of a plan. Stated in advance, plans are necessarily vague, insofar as they must accommodate the unforeseeable contingencies of particular situations. Reconstructed in retrospect, plans systematically filter out precisely the particularity of detail that characterizes situated actions, in favor of those aspects of the actions that can be seen to accord with the plan.

This third implication, it seems, is not just a symmetric alternative to the other two, but is different in kind, and somewhat more serious. That is, it calls into question not just the adequacy of our distinctions along the dimensions of culture, kinds of activity, or degrees of expertise, but the very productivity of our starting premises – that representations of action such as plans could be the basis for an account of actions in particular situations. Because the third implication has to do with foundations, and not because there is no truth in the other two, I take the idea that actions are primarily situated, and that situated actions are essentially *ad hoc*, as the starting point for my investigations.

The view of action exemplified by the European navigator is now being reified in the design of intelligent machines. In this book I examine one such machine, as a way of uncovering the strengths and limitations of the general view that its design embodies. The view, that purposeful action is determined by plans, is deeply rooted in the Western human sciences as *the* correct model of the rational actor. The logical form of plans makes them attractive for the purpose of constructing a computational model of action, to the extent that for those fields devoted to what is now called cognitive

Preface

science, the analysis and synthesis of plans effectively constitute the study of action. My own contention, however, is that as students of human action we ignore the Trukese navigator at our peril. While an account of how the European navigates may be in hand, the essential nature of action, however planned or unplanned, is situated. It behooves us, therefore, to study and to begin to find ways to describe the Trukese system.

There is an injunction in social studies of science to eschew interest in the validity of the products of science, in favor of an interest in their production. While I generally agree with this injunction, my investigation of one of the prevailing models of human action in cognitive science is admittedly and unabashedly interested. That is to say, I take it that there is a reality of human action, beyond either the cognitive scientist's models or my own accounts, to which both are trying to do justice. In that sense, I am not just examining the cognitive science model with the dispassion of the uncommitted anthropologist of science, I am examining it in light of an alternative account of human action to which I am committed, and which I attempt to clarify in the process.

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In my own field of anthropology, I have enjoyed the intellectual companionship and personal friendship of Brigitte Jordan, whose creative energy and respectful sensibilities toward her own work

simply re-state it. The dependency of significance on a particular context, every particular context's open-endedness, and the essential *ad hocness* of contextual elaboration are resources for practical affairs, but perplexities for a science of human action. And, to anticipate the analysis in chapter 7, it is an intractable problem for projects that rest on providing in advance for the significance of canonical descriptions – such as instructions – for situated action.

4 *Situated actions*

This total process [of Trukese navigation] goes forward without reference to any explicit principles and without any planning, unless the intention to proceed to a particular island can be considered a plan. It is non-verbal and does not follow a coherent set of logical steps. As such it does not represent what we tend to value in our culture as "intelligent" behavior.

(Gladwin 1964, p. 175)

This chapter turns to recent efforts within anthropology and sociology to challenge traditional assumptions regarding purposeful action and shared understanding. A point of departure for the challenge is the idea that common-sense notions of planning are not inadequate versions of scientific models of action, but rather are resources for people's practical deliberations about action. As projective and retrospective accounts of action, plans are themselves located in the larger context of some ongoing practical activity. As common-sense notions about the structure of that activity, plans are part of the subject matter to be investigated in a study of purposeful action, not something to be improved upon, or transformed into axiomatic theories of action.

The premise that practical reasoning about action is properly part of the subject matter of social studies is due to the emergence of a branch of sociology named *ethnomethodology*. This chapter describes the inversion of traditional social theory recommended by ethnomethodology, and the implications of that inversion for the problem of purposeful action and shared understanding. To designate the alternative that ethnomethodology suggests – more a

reformulation of the problem of purposeful action, and a research programme, than an accomplished theory – I have introduced the term *situated action*. That term underscores the view that every course of action depends in essential ways upon its material and social circumstances. Rather than attempting to abstract action away from its circumstances and represent it as a rational plan, the approach is to study how people use their circumstances to achieve intelligent action. Rather than build a theory of action out of a theory of plans, the aim is to investigate how people produce and find evidence for plans in the course of situated action. More generally, rather than subsume the details of action under the study of plans, plans are subsumed by the larger problem of situated action.

The view of action that ethnomethodology recommends is neither behavioristic, in any narrow sense of that term, nor mentalistic. It is not behavioristic in that it assumes that the significance of action is not reducible to uninterpreted bodily movements. Nor is it mentalistic, however, in that the significance of action is taken to be based, in ways that are fundamental rather than secondary or epiphenomenal, in the physical and social world. The basic premise is twofold: first, that what traditional behavioral sciences take to be cognitive phenomena have an essential relationship to a publicly available, collaboratively organized world of artifacts and actions, and secondly, that the significance of artifacts and actions, and the methods by which their significance is conveyed, have an essential relationship to their particular, concrete circumstances.

The ethnomethodological view of purposeful action and shared understanding is outlined in this chapter under five propositions: (1) plans are representations of situated actions; (2) in the course of situated action, representation occurs when otherwise transparent activity becomes in some way problematic; (3) the objectivity of the situations of our action is achieved rather than given; (4) a central resource for achieving the objectivity of situations is language, which stands in a generally indexical relationship to the circumstances that it presupposes, produces, and describes; (5) as a consequence of the indexicality of language, mutual intelligibility is

achieved on each occasion of interaction with reference to situation particulars, rather than being discharged once and for all by a stable body of shared meanings.

4.1 Plans are representations of action

The pragmatist philosopher and social psychologist George Herbert Mead (1934) has argued for a view of meaningful, directed action as two integrally but problematically related kinds of activity. One kind of activity is an essentially situated and *ad hoc* improvisation – the part of us, so to speak, that actually acts. The other kind of activity is derived from the first, and includes our representations of action in the form of future plans and retrospective accounts. Plans and accounts are distinguished from action as such by the fact that, to represent our actions, we must in some way make an object of them. Consequently, our descriptions of our actions come always before or after the fact, in the form of imagined projections and recollected reconstructions.

Mead's treatment of the relation of deliberation and reflection to action is one of the more controversial, and in some ways incoherent, pieces of his theory. But his premise of a disjunction between our actions and our grasp of them at least raises the question for social science of the relationship between projected or reconstructed courses of action, and actions *in situ*. Most accounts of purposeful action have taken this relationship to be a directly causal one, at least in a logical sense (see chapter 3). Given a desired outcome, the actor is assumed to make a choice among alternative courses of action, based upon the anticipated consequences of each with respect to that outcome. Accounts of actions taken, by the same token, are just a report on the choices made. The student of purposeful action on this view need know only the predisposition of the actor and the alternative courses that are available in order to predict the action's course. The action's course is just the playing out of these antecedent factors, knowable in advance of, and standing in a determinate relationship to, the action itself.

The alternative view is that plans are resources for situated action, but do not in any strong sense determine its course. While plans presuppose the embodied practices and changing circumstances of situated action, the efficiency of plans as representations comes precisely from the fact that they do not represent those practices and circumstances in all of their concrete detail. So, for example, in planning to run a series of rapids in a canoe, one is very likely to sit for a while above the falls and plan one's descent.¹ The plan might go something like "I'll get as far over to the left as possible, try to make it between those two large rocks, then backferry hard to the right to make it around that next bunch." A great deal of deliberation, discussion, simulation, and reconstruction may go into such a plan. But, however detailed, the plan stops short of the actual business of getting your canoe through the falls. When it really comes down to the details of responding to currents and handling a canoe, you effectively abandon the plan and fall back on whatever embodied skills are available to you. The purpose of the plan in this case is not to get your canoe through the rapids, but rather to orient you in such a way that you can obtain the best possible position from which to use those embodied skills on which, in the final analysis, your success depends.

Even in the case of more deliberative, less highly skilled activities, we generally do not anticipate alternative courses of action, or their consequences, until *some* course of action is already under way. It is frequently only on acting in a present situation that its possibilities become clear, and we often do not know ahead of time, or at least not with any specificity, what future state we desire to bring about. Garfinkel (1967) points out that in many cases it is only after we encounter some state of affairs that we find to be desirable that we identify that state as the goal toward which our previous actions, in retrospect, were directed "all along" or "after all" (p. 98). The fact that we can always perform a *post hoc* analysis of situated action that will make it appear to have followed a rational plan

¹ This example was suggested to me by Randy Trigg, to whom I am indebted for the insight that plans orient us for situated action in this way.

says more about the nature of our analyses than it does about our situated actions. To return to Mead's point, rather than direct situated action, rationality anticipates action before the fact, and reconstructs it afterwards.

4.2 Representation and breakdown

While we can always construct rational accounts of situated action before and after the fact, when action is proceeding smoothly it is essentially transparent to us. Similarly, when we use what Heidegger terms equipment that is "ready-to-hand," the equipment "has a tendency to 'disappear'":

Consider the example (used by Wittgenstein and Merleau-Ponty) of the blind man's cane. We can hand the man the cane and ask him to tell us what properties it has. After hefting and feeling it, he can tell us that it is light, smooth, about three feet long, and so on; it is present-at-hand for him. But when the man starts to use the cane (when he grasps it in that special mode of understanding that Heidegger calls "manipulation") he loses his awareness of the cane itself; he is aware only of the curb (or whatever object the cane touches); or, if all is going well, he is not even aware of that. Thus it is that equipment that is ready-to-hand is invisible just when it is most genuinely appropriated. (Dreyfus, in press, ch. 6)

In contrast, the "unready-to-hand," in Heidegger's phrase, comprises occasions wherein equipment that is involved in some practical activity becomes unwieldy, temporarily broken, or unavailable. At such times, inspection and practical problem-solving occur, aimed at repairing or eliminating the disturbance in order to "get going again." In such times of disturbance, our use of equipment becomes "explicitly manifest as a goal-oriented activity," and we may then try to formulate procedures or rules:

The scheme peculiar to [deliberating] is the "if-then"; if this

or that, for instance, is to be produced, put to use, or averted, then some ways and means, circumstances, or opportunities will be needed (Heidegger, cited in Dreyfus, in press, ch. 6)

Another kind of breakdown, that arises when equipment to be used is unfamiliar, is discussed in chapter 6 in relation to the "expert help system" and the problem of instructing the novice user of a machine. The important point here is just that the rules and procedures that come into play when we deal with the "unready-to-hand" are not self-contained or foundational, but contingent on and derived from the situated action that the rules and procedures represent. The representations involved in managing problems in the use of equipment presuppose the very transparent practices that the problem renders noticeable or remarkable. Situated action, in other words, is not made explicit by rules and procedures. Rather, when situated action becomes in some way problematic, rules and procedures are explicated for purposes of deliberation and the action, which is otherwise neither rule-based nor procedural, is then made accountable to them.

4.3 The practical objectivity of situations

If we look at the world commonsensically, the environment of our actions is made up of a succession of situations that we walk in to, and to which we respond. As I noted in chapter 3, advocates of the planning model not only adopt this common-sense realist view with respect to the individual actor, but attempt to bring concerted action under the same account by treating the actions of others as just so many more conditions of the actor's situation. In the same tradition, normative sociology posits, and then attempts to describe, an objective world of social facts, or received norms, to which our attitudes and actions are a response. Emile Durkheim's famous maxim that "the objective reality of social facts is sociology's fundamental principle" (1938) has been the methodological

premise of social studies since early in this century. Recognizing the human environment to be constituted crucially by others, sociological norms comprise a set of environmental conditions beyond the material, to which human behavior is responsive: namely, the sanctions of institutionalized group life. Human action, the argument goes, cannot be adequately explained without reference to these "social facts," which are to be treated as antecedent, external, and coercive *vis-à-vis* the individual actor.

By adopting Durkheim's maxim, and assuming the individual's responsiveness to received social facts, social scientists hoped to gain respectability under the view that human responses to the facts of the social world should be discoverable by the same methods as are appropriate to studies of other organisms reacting to the natural world. A principal aim of normative sociology was to shift the focus of attention in studies of human behavior from the psychology of the individual to the conventions of the social group. But at the same time that normative sociology directed attention to the community or group, it maintained an image of the individual member rooted in behaviorist psychology and natural science – an image that has been dubbed by Garfinkel the "cultural dope":

By "cultural dope" I refer to the man-in-the-sociologist's-society who produces the stable features of the society by acting in compliance with preestablished and legitimate alternatives of action that the common culture provides. (1967, p. 68)

Insofar as the alternatives of action that the culture provides are seen to be non-problematic and constraining on the individual, *their* enumeration is taken to constitute an account of situated human action. The social facts – that is to say, what actions typically come to – are used as a point of departure for retrospective theorizing about the "necessary character of the pathways whereby the end result is assembled" (p. 68).

In 1954, the sociologist Herbert Blumer published a critique of traditional sociology titled "What Is Wrong with Social Theory?" (see

Blumer 1969, pp. 140–52). Blumer argues that the social world is constituted by the local production of meaningful action, and that as such the social world has never been taken seriously by social scientists. Instead, Blumer says, investigations by social scientists have looked at meaningful action as the playing out of various determining factors, all antecedent and external to the action itself. Whether those factors are brought to the occasion in the form of individual predispositions, or are present in the situation as pre-existing environmental conditions or received social norms, the action itself is treated as epiphenomenal. As a consequence, Blumer argues, we have a social science that is about meaningful human action, but not a science of it.

For the foundations of a science of action, Blumer turns to Mead, who offers a metaphysics of action that is deeply sociological. Blumer points out that a central contribution of Mead's work is his challenge to traditional assumptions regarding the origins of the common-sense world, and of purposeful action:

His treatment took the form of showing that human group life was the essential condition for the emergence of consciousness, the mind, a world of objects, human beings as organisms possessing selves, and human conduct in the form of constructed acts. He reversed the traditional assumptions underlying philosophical, psychological, and sociological thought to the effect that human beings possess minds and consciousness as original "givens," that they live in worlds of pre-existing and self-constituted objects, and that group life consists of the association of such reacting human organisms. (ibid., p. 61)

Mead's "reversal," in putting human interaction before the objectivity of the common-sense world, should not be read as an argument for metaphysical idealism; Mead does not deny the existence of constraints in the environment in which we act. What Mead is working toward is not a characterization of the natural world *simpliciter*, but of the natural world *under interpretation*, or the world as

construed by us through language. The latter is precisely what we mean by the *social* world and, on Mead's account, interaction is a condition for that world, while that world is a condition for intentional action.

More recently, ethnomethodology has turned Durkheim's maxim on its head with more profound theoretical and methodological consequences. Briefly, the standpoint of ethnomethodology is that what traditional sociology captures is precisely our common-sense view of the social world (see Sacks 1963; Garfinkel 1967; and Garfinkel and Sacks 1970). Following Durkheim, the argument goes, social studies have simply taken this common-sense view as foundational, and attempted to build a science of the social world by improving upon it. Social scientific theories, under this attempt, are considered to be scientific insofar as they remedy shortcomings in, and preferably quantify, the intuitions of everyday, practical sociological reasoning.

In contrast, ethnomethodology grants common-sense sociological reasoning a fundamentally different status than that of a defective approximation of an adequate scientific theory. Rather than being *resources* for social science to improve upon, the "all things being equal" typifications of common-sense reasoning are to be taken as social science's *topic*. The notion that we act in response to an objectively given social world is replaced by the assumption that our everyday social practices render the world publicly available and mutually intelligible. It is those practices that constitute ethnomethods. The methodology of interest to ethnomethodologists, in other words, is not their own, but that deployed by members of the society in coming to know, and making sense out of, the everyday world of talk and action.

The outstanding question for social science, therefore, is not whether social facts are objectively grounded, but how that objective grounding is accomplished. Objectivity is a product of systematic practices, or members' methods for rendering our unique experience and relative circumstances mutually intelligible. The source of mutual intelligibility is not a received conceptual scheme,

or a set of coercive rules or norms, but those common practices that produce the typifications of which schemes and rules are made. The task of social studies, then, is to describe the practices, not to enumerate their product in the form of a catalogue of common-sense beliefs about the social world. The interest of ethnomethodologists, in other words, is in how it is that the mutual intelligibility and objectivity of the social world is achieved. Ethnomethodology locates that achievement in our everyday situated actions, such that our common sense of the social world is not the precondition for our interaction, but its product. By the same token, the objective reality of social facts is not the fundamental *principle* of social studies, but social studies' fundamental *phenomenon*.

4.4 The indexicality of language

Our shared understanding of situations is due in great measure to the efficiency of language, "the typifying medium *par excellence*" (Schultz 1962, p. 14). The efficiency of language is due to the fact that, on the one hand, expressions have assigned to them conventional meanings, which hold on any occasion of their use. The significance of a linguistic expression on some actual occasion, on the other hand, lies in its relationship to circumstances that are presupposed or indicated by, but not actually captured in, the expression itself.² Language takes its significance from the embedding world, in other words, even while it transforms the world into something that can be thought of and talked about.

Expressions that rely upon their situation for significance are commonly called *indexical*, after the "indexes" of Charles Peirce (1933), the exemplary indexicals being first- and second-person pronouns, tense, and specific time and place adverbs such as "here" and "now." In the strict sense exemplified by these commonly recognized indexical expressions, the distinction of conventional or literal meaning, and situated significance, breaks down. That is to say, these expressions are distinguished by the fact that

² For a semantic theory based on this view of language, see Barwise and Perry 1985.

while one can state procedures for finding the expression's significance, or rules for its use, the expression's meaning can be specified only as the use of those procedures in some actual circumstances (see Bates 1976, ch. 1).

Heritage (1984) offers as an example the indexical expression "that's a nice one" (p. 143). There is, first of all, the obvious fact that this expression will have quite a different significance when uttered by a visitor with reference to a photograph in her host's photo album, or by one shopper to another in front of the lettuce bin at the grocery store. But while linguists and logicians would commonly recognize the referent of "that's" as the problematic element in such cases, Heritage points out that the significance of the descriptor "nice" is equally so. So, in the first case, "nice" will refer to some properties of the photograph, while different properties will be intended in the case of the lettuce. Moreover, in either case whichever sense of "nice" is intended is not available from the utterance, but remains to be found by the hearer through an active search of both the details of the referent, and the larger context of the remark. So "nice" in the first instance might be a comment on the composition of the photograph, or on the appearance of the host, or on some indefinite range of other properties of the photo in question. What is more, visitor and host will never establish in just so many words precisely what it is that the visitor intends and the host understands. Their interpretations of the term will remain partially unarticulated, located in their unique relationship to the photograph and the context of the remark. Yet the shared understanding that they do achieve will be perfectly adequate for purposes of their interaction. It is in this sense – that is, that expression and interpretation involve an active process of pointing to and searching the situation of talk – that language is a form of situated action.

Among philosophers and linguists, the term "indexicality" typically is used to distinguish those classes of expressions whose meaning is conditional on the situation of their use in this way from those such as, for example, definite noun phrases whose meaning is claimed to be specifiable in objective, or context-independent

terms. But the *communicative* significance of a linguistic expression is always dependent upon the circumstances of its use. A formal statement not of what the language means in relation to any context, but of what the language-user means in relation to some particular context, requires a description of the context or situation of the utterance itself. And every utterance's situation comprises an indefinite range of possibly relevant features. Our practical solution to this theoretical problem is not to enumerate some subset of the relevant circumstances – we generally never mention our circumstances as such at all – but to “wave our hand” at the situation, as if we always included in our utterance an implicit *ceteris paribus* clause, and closed with an implicit *et cetera* clause. One consequence of this practice is that we always “mean more than we can say in just so many words”:

[S]peakers can . . . do the immense work that they do with natural language, even though over the course of their talk it is not known and is never, not even “in the end,” available for saying in so many words just what they are talking about. Emphatically, that does not mean that speakers do not know what they are talking about, *but instead that they know what they are talking about in that way.* (Garfinkel and Sacks 1970, pp. 342–4, original emphasis)

In this sense deictic expressions, time and place adverbs, and pronouns are just particularly clear illustrations of the general fact that all situated language, including the most abstract or eternal, stands in an essentially indexical relationship to the embedding world.

Because the significance of an expression always exceeds the meaning of what actually gets said, the interpretation of an expression turns not only on its conventional or definitional meaning, nor on that plus some body of presuppositions, but on the unspoken situation of its use. Our situated use of language, and consequently language's significance, presupposes and implies an horizon of things that are never actually mentioned – what Schutz referred to as the “world taken for granted” (1962, p. 74). Philo-

osophers have been preoccupied with this fact about language as a matter of the truth conditionality of propositions, the problem being that the truth conditions of an assertion are always relative to a background, and the background does not form part of the semantic content of the sentence as such (Searle 1979). And the same problems that have plagued philosophers of language as a matter of principle are now practical problems for cognitive science. As I pointed out in chapter 3, the view that mutual intelligibility rests on a stock of shared knowledge has been taken over by researchers in cognitive science, in the hope that an enumeration of the knowledge assumed by particular words or actions could be implemented as data structures in the machine, which would then “understand” those words and actions. Actual attempts to include the background assumptions of a statement as part of its semantic content, however, run up against the fact that there is no fixed set of assumptions that underlies a given statement. As a consequence, the elaboration of background assumptions is fundamentally *ad hoc* and arbitrary, and each elaboration of assumptions in principle introduces further assumptions to be elaborated, *ad infinitum*.

The problem of communicating instructions for action, in particular certain of its seemingly intractable difficulties, becomes clearer with this view of language in mind. The relation of efficient linguistic formulations to particular situations parallels the relation of instructions to situated action. As linguistic expressions, instructions are subject to the constraint that:

However extensive or explicit what a speaker says may be, it does not by its extensiveness or explicitness pose a task of deciding the correspondence between what he says and what he means that is resolved by citing his talk verbatim. (Garfinkel and Sacks 1970, pp. 342–4)

This indexicality of instructions means that an instruction's significance with respect to action does not inhere in the instruction, but must be found by the instruction follower with reference to the situation of its use. Far from replacing the *ad hoc* methods used to

establish the significance of everyday talk and action, therefore, the interpretation of instructions is thoroughly reliant on those same methods:

To treat instructions as though *ad hoc* features in their use was a nuisance, or to treat their presence as grounds for complaining about the incompleteness of instructions, is very much like complaining that if the walls of a building were gotten out of the way, one could see better what was keeping the roof up. (Garfinkel 1967, p. 22)

Like all action descriptions, instructions necessarily rely upon an implicit *et cetera* clause in order to be called complete. The project of instruction-writing is ill conceived, therefore, if its goal is the production of exhaustive action descriptions that can guarantee a particular interpretation. What "keeps the roof up" in the case of instructions for action is not only the instructions as such, but their interpretation in use. And the latter has all of the *ad hoc* and uncertain properties that characterize every occasion of the situated use of language.

4.5 *The mutual intelligibility of action*

By "index," Peirce meant not only that the sign relies for its significance on the event or object that it indicates, but also that the sign is actually a constituent of the referent. So situated language more generally is not only anchored in, but in large measure constitutes, the situation of its use. Ethnomethodology generalizes this constitutive function of language still further to action, in the proposition that the purposefulness of action is recognizable in virtue of the methodic, skillful, and therefore taken-for-granted practices whereby we establish the rational properties of actions in a particular context. It is those practices that provide for the "analyzability of actions-in-context given that not only does no concept of context-in-general exist, but every use of 'context' without exception is itself essentially indexical" (Garfinkel 1967, p. 10).

In positing the reflexivity of purposeful action and the methods by which we convey and construe action's purposes, ethnomethodology does not intend to reduce meaningful action to method. The intent is rather to identify the mutual intelligibility of action as *the* problem for sociology. To account for the foundations of mutual intelligibility and social order, traditional social science posits a system of known-in-common social conventions or behavioral norms. What we share, on this view, is agreement on the appropriate relation of actions to situations. We walk into a situation, identify its features, and match our actions to it. This implies that, on any given occasion, the concrete situation must be recognizable as an instance of a class of typical situations, and the behavior of the actor must be recognizable as an instance of a class of appropriate actions. And with respect to communication, as Wilson (1970) points out:

the different participants must define situations and actions in essentially the same way, since otherwise rules could not operate to produce coherent interaction over time. Within the normative paradigm, this cognitive agreement is provided by the assumption that the actors share a system of culturally established symbols and meanings. Disparate definitions of situations and actions do occur, of course, but these are handled as conflicting subcultural traditions or idiosyncratic deviations from the culturally established cognitive consensus. (p. 699)

In contrast with this normative paradigm, Garfinkel proposes that the stability of the social world is not the consequence of a "cognitive consensus," or stable body of shared meanings, but of our tacit use of the documentary method of interpretation to find the coherence of situations and actions. As a general process, the documentary method describes a search for uniformities that underlie unique appearances. Applied to the social world, it describes the process whereby actions are taken as evidence, or "documents," of underlying plans or intent, which in turn fill in the sense of the

actions (1967, ch. 3). The documentary method describes an ability – the ascription of intent on the basis of evidence, and the interpretation of evidence on the basis of ascribed intent – that is as identifying of rationality as the ability to act rationally itself. At the same time, the documentary method is not reducible to the application of any necessary and sufficient conditions, either behavioral or contextual, for the identification of intent. There are no logical formulae for recognizing the intent of some behavior independent of context, and there are no recognition algorithms for joining contextual particulars to behavioral descriptions so that forms of intent can be precisely defined over a set of necessary and sufficient observational data (see Coulter 1983, pp. 162–3).

Given the lack of universal rules for the interpretation of action, the programme of ethnomethodology is to investigate and describe the use of the documentary method in particular situations. Studies indicate, on the one hand, the generality of the method and, on the other, the extent to which special constraints on its use characterize specialized domains of practical activity, such as natural science, courts of law, and the practice of medicine.³ In a contrived situation that, though designed independently and not with them in mind, closely parallels both the “Turing test” and encounters with Weizenbaum’s ELIZA programs, Garfinkel set out to test the documentary method in the context of counseling. Students were asked to direct questions concerning their personal problems to someone they knew to be a student counselor, seated in another room. They were restricted to questions that could take yes/no answers, and the answers were then given by the counselor on a random basis. For the students, the counselor’s answers were motivated by the questions. That is to say, by taking each answer as evidence for

³ For example, the work of coroners at the Los Angeles Suicide Prevention Center (Garfinkel 1967, pp. 11–18), the deliberations of juries (*ibid.*, ch. 4) and courtroom practices of attorneys (Atkinson and Drew 1979), the work of clinic staff in selecting patients for out-patient psychiatric treatment (Garfinkel 1967, ch. 7), the work of physicians interviewing patients for purposes of diagnosis (Beckman and Frankel 1983), the work of scientists discovering an optical pulsar (Garfinkel, Lynch, and Livingston 1981).

what the counselor “had in mind,” the students were able to find a deliberate pattern in the exchange that explicated the significance and relevance of each new response as an answer to their question. Specifically, the yes/no utterances were found to document advice from the counselor, intended to help in the solution of the student’s problem. So, for example, students assigned to the counselor, as the advice “behind” the answer, the thought formulated in the student’s question:

when a subject asked “Should I come to school every night after supper to do my studying?” and the experimenter said “My answer is no,” the subject in his comments said, “He said I shouldn’t come to school and study.” (Garfinkel 1967, p. 92).

In cases where an answer seemed directly to contradict what had come before, students either attributed the apparent contradiction to a change of mind on the part of the counselor, as the result of having learned more between the two replies, or to some agenda on the part of the counselor that lent the reply a deeper significance than its first, apparently inconsistent, interpretation would suggest. In other cases, the interpretation of previous answers was revised in light of the current one, or an interpretation of the question was found, and attributed to the counselor, that rationalized what would otherwise appear to be an inappropriate answer. Generally:

The underlying pattern was elaborated and compounded over the series of exchanges and was accommodated to each present “answer” so as to maintain the “course of advice,” to elaborate what had “really been advised” previously, and to motivate the new possibilities as emerging features of the problem. (p. 90)

Garfinkel’s results with arbitrary responses make the success of Weizenbaum’s DOCTOR program easier to understand, and lend support to Weizenbaum’s hypothesis that the intelligence of

interactions with the DOCTOR program is due to the work of the human participant – specifically, to methods for interpreting the system's behavior as evidence for some underlying intent. The larger implications of the documentary method, however, touch on the status of an "underlying" reality of psychological and social facts in human interaction, prior to situated action and interpretation:

It is not unusual for professional sociologists to think of their ... procedures as processes of "seeing through" appearances to an underlying reality; of brushing past actual appearances to "grasp the invariant." Where our subjects are concerned, their processes are not appropriately imagined as "seeing through," but consist instead of coming to terms with a situation in which factual knowledge of social structures – factual in the sense of warranted grounds of further inferences and actions – must be assembled and made available for potential use despite the fact that the situations it purports to describe are, in any calculable sense, unknown; in their actual and intended logical structures are essentially vague; and are modified, elaborated, extended, if not indeed created, by the fact and matter of being addressed. (Garfinkel 1967, p. 96)

The stability of the social world, from this standpoint, is not due to an eternal structure, but to situated actions that create and sustain shared understanding on specific occasions of interaction. Social constraints on appropriate action are always identified relative to some unique and unreproducible set of circumstances. Members of the society are treated as being at least potentially aware of the concrete detail of their circumstances, and their actions are interpreted in that light. Rather than actions being *determined by* rules, actors effectively *use* the normative rules of conduct that are available to produce significant actions. So, for example, there is a normative rule for greetings which runs to the effect: do not initiate greetings except with persons who are acquaintances. If we witness

a person greeting another who we know is not an acquaintance, we can either conclude that the greeter broke the rule, or we can infer that, via the use of the rule, he or she was seeking to treat the other as an acquaintance (Heritage 1984, p. 126). Such rules are not taught or encoded, but are learned tacitly through typification over families of similar situations and actions.

Despite the availability of such typifications, no action can fully provide for its own interpretation in any given instance. Instead, every instance of meaningful action must be accounted for separately, with respect to specific, local, contingent determinants of significance. The recommendation for social studies, as a consequence, is that instead of looking for a structure that is invariant across situations, we look for the processes whereby particular, uniquely constituted circumstances are systematically interpreted so as to render meaning shared and action accountably rational. Structure, on this view, is an emergent product of situated action, rather than its foundation. Insofar as the project of ethnomethodology is to redirect social science from its traditional preoccupation with abstract structures to an interest in situated actions, and the cognitive sciences share in that same tradition, the ethnomethodological project has implications for cognitive science as well.