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**Toward a theory
of
cultural transparency:
elements of a social discourse
of the visible and the invisible**

Etienne Wenger

Technical Report 90-41
December, 1990

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UNIVERSITY OF CALIFORNIA
IRVINE

**Toward a theory of cultural transparency:
elements of a social discourse
of the visible and the invisible**

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Information and Computer Science

by

Etienne Wenger

Dissertation Committee:

Professor Dennis Kibler, Chair

Doctor John S. Brown

Professor Jean C. Lave

Professor Susan Leigh Star

1990

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To Paula,

my spouse,
my companion,
my lover

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Acknowledgments

Perhaps one of the deepest problems of the academic world is its commoditized, centered view of the production of ideas, reflecting in sharp focus broader tendencies in our civilization. This remark is not just a polite introduction to an acknowledgment section, but the expression of a characteristic I find profoundly disturbing. I call it “centered” because it promotes a competitive sense of achievement that pointedly centers the development of understanding on specific individuals. Ideas are mine, ideas are yours: careers are built on the ownership of ideas, whose own careers become looted battlegrounds. The dense fabric of infinite mutual influences, serendipitous connections, and interdependencies among contraries—forever invisible—is molded into the epiphany of heroes, whose stature grows beyond life at the cost of heroism in life. This centered view is at odds with the argument of this thesis as well as with the shared understandings, relations, and hopes that have carried me through its execution.

Therefore I first want to recognize the far-reaching fabric of interconnectedness that unites all those who have contributed in their own ways, knowingly and unknowingly, to shaping this dissertation and my experience of it. Here, because of space and my own short-sightedness, I mention only a few. I might betray the collective character of this enterprise by mentioning individual names; but it might also highlight the fact that this collective character comprises rather than diffuses the unique contributions of individuals.

I want to thank all the people at Alinsu, processors and management, who have made this work possible and whose identity I must keep to myself: in particular, I thank my class mates, the class instructors, and the members of my unit. I will try my best to share this dissertation with them, though I don't quite know how to go about it. The fact, however, that they will probably not read it, and that if they do, they might find it difficult to see how my theoretical development can help

them, will have to remind me of the distance I sometimes felt as I was trying to belong. It brings me sadness because it is never my intention merely to snatch the lives of others to create stories and get my place in the sun. But I think they know that, because they always treated me with such openness. And they understand all too well that I am not a claim processor. I just hope they also understand how much respect there is for them and for their lives and their struggles in my writing. I hope they understand that I, in becoming a Ph.D., am acting in the context of my own little practice, with its own infinite localness. At moments, working on the floor and in our conversations, I did feel like bridges were being built.

Dennis Kibler, my committee chairperson, has been unusually and selflessly supportive of my somewhat unorthodox trajectory through graduate school: from my survey paper, which took the very long time of turning into a book, to this dissertation, which is not in the mainstream of computer science. In a way that defies my earlier critique of the academic world, he went out of his way to make special arrangements and to fend for me. His trust and support were a key to my ability to produce this dissertation.

Among members of my committee, Jean Lave played a special role in acting as my mentor ever since my intellectual inquiry started to crack the traditional boundaries of computer science. She has been such an excellent teacher that it is worth briefly explaining here what she did, both to thank her and because her example could be useful to others. As a teacher, she never really taught me anything; and she always kept her directives and suggestions to a minimum. This was actually quite courageous given the suspicious gaze placed on her by some more traditional members of our community. But what she did was to invite me into a legitimate project of her own in such an open way that it became my project as well. I have learned more from this collaboration than I could have learned from any explicit teaching; and I now have a sense of ownership of that knowledge which I could never have gained otherwise and which is reflected in this dissertation. But how much of her is really there, how can she even know? When I was not qualified by any measure, she treated me like a colleague, and in this way she made me into one. She has the art of making me feel intelligent and capable. With those special eyes of the teacher, she saw a promise in me when it was still invisible. Those who have such eyes and can live up to their insight are the hope of the earth because they are the gardeners of tomorrow.

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naivety, and thus he too gave me a sense of ownership of everything I learned from him. John too has the art of making me feel intelligent and capable whenever we talk, which is not often enough but always inspiring. But his greatest gift during those years was that he helped me believe beyond my own ability to trust that my work was important, and through his incredibly multifarious connections in many worlds he would periodically let me see vicariously that the thinking I was doing could be of some use.

In the short period I have known Leigh Star, we have been finding a bit more each time we meet how much our interests intersect, and I am looking forward to the possibility of engaging in collaborative work. But the connection is deeper than just a matter of common interest; with Leigh too there is this sense of the mutual opening of an intelligence to be shared, which transcends working together to become a friendship anchored in the recognition of our profound connectedness and in the desire to reach, through that very friendship, for new levels of understanding.

Actually I bet Leigh, John, and Jean all think that I am all the time with everyone the way I am with them, not recognizing how much it is their opening their own trust and their own intelligence to our thinking together that allows me to be my best. Two other people, though not on my committee, have played a similarly direct role both in the development of the ideas in this dissertation and in shaping my sense of myself as a researcher and a person. Penny Eckert and Paul Duguid also seem to have that ability to get the best out of me. How grateful I am to have such precious colleagues and friends whose human and intellectual inspiration and example I value more than I know how to tell them.

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To my children, Jad and Sheena, I want to say that their simple and true presence has carried me through, in my hopeless hope that they and all their peers may inherit the world they deserve.

Thanks, or any other words, are simply not adequate for my wife, Paula. To her I dedicate this dissertation as a token of love.

Etienne Wenger

November 1990

***Toward a theory
of
cultural transparency:

elements
of a social discourse
of the visible
and the invisible***

This dissertation develops a number of analytical categories for investigating what people know about the world in which they live. It is an attempt to open up a universe of discourse about learning that does justice to the social character of human life. The argument of the dissertation is developed in the context of an ethnographic study of a claim processing center in a large insurance company.

The basic argument is that knowledge does not exist by itself in the form of information, but that it is part of the practice of specific sociocultural communities, called here "communities of practice." Learning then is a matter of gaining a form of membership in these communities: this is achieved by a process of increasing participation, which is called here "legitimate peripheral participation." Learning thus is tantamount to becoming a certain kind of person.

Visible objects such as artifacts, symbols, language, gestures, also belong to the practice of these communities. Therefore, seeing the cultural significance of these objects, something I call "cultural transparency," requires access to the practices to which they belong. This in turn requires membership in the relevant communities. The relation between artifacts and persons, which one may describe as understanding or not understanding, is therefore never a direct relation between them, but one that is mediated by a person's specific

forms of membership in specific communities and by an object's being part of the social practices of some communities, which may or may not be the same. To the extent that these communities are different, such an object can be called a "boundary object" that mediates the articulation of these communities. This dissertation investigates the nature of one such object and analyzes both the relations that it can mediate and the forms of knowledge and senses of self that can result.

The availability of an analytical discourse such as the one explored here is important because technological advances and the division of labor imply that we deal more and more with objects that do not primarily belong to our communities of practice. This is especially relevant to the design of computer systems.

Introduction:

acting knowing being

I have always found myself reluctant to write introductions. There is a problem with the traditional format whereby you are supposed to tell readers what you are going to tell them, then tell it to them, and then in conclusion tell them what it is you just told them. It seems to me that one is always trying to tell so much more than one is telling. The themes are so much more interrelated; the points connected: only the reader, through personal experience inside and outside of reading, has a chance to make the text meaningful; that chance always lies beyond the text. But I reckon that there is a fine line between trivialization and obscurantism. Since there is no virtue in the latter for my purposes, I am going to abide by the traditional format and provide an introductory chapter in which I try to outline what this thesis is about. I apologize if, by not starting straight with the next chapter, by directing the gaze of the reader on the outset, by centering the reading of the text on what I think are my intentions, I have robbed anyone of an important insight.

Texts and subtexts

As the title indicates, the main purpose of this thesis is not to propose a theory, but to move toward the possibility of a theory by developing analytical categories. These categories constitute the elements of a

universe of discourse, which can provide a framework for developing theories. This discourse explores ways of talking about issues such as knowing, learning, understanding, and intelligence, in terms that do justice to the social character of human life. Thus this discourse is about knowing, but about knowing as done in activity in the world by human beings who engage in practices that are defined in the context of specific sociocultural communities. It is about learning, but about learning as done by human beings who are members of these communities. It is about understanding, but about understanding as done by human beings whose view of the world is mediated by all the artifacts that these communities produce. It is about intelligence, but intelligence as achieved through the constant renegotiation of meaning implied by social existence in the world.

This discourse is also about technology, about objectifying, about encoding, about the sociocultural process that includes into one integral, dialectical phenomenon the transformation of understanding into artifacts and the transformation of artifacts into understanding. Technological advances and the division of labor have created a world in which we rely increasingly on artifacts that we do not understand. I call this phenomenon the "black-box syndrome" by reference to the electronic devices that are often small black boxes, whose internal functioning is often not understood by those who use them. There is therefore a central social concern in this dissertation's attempt to find a way to speak about the world and living in the world that would allow both theorists and designers to get a handle on this issue. The black-box syndrome needs to be understood and the problems that it raises addressed lest it become a serious limitation to our ability live in a democratic society.

There are a number of subtexts that surface here and there. There is a definite concern with pedagogy, with education and schooling, with training, with creating ways of allowing members of social communities to expand the scope of their understanding, of their insights into the possible meanings associated with their activities. There is also a concern with the design of computer systems and of work environments. Finally there is an interest in the philosophy of computation and some of the foundational issues of fields such as artificial intelligence and information-processing theories of the mind.

The gist of the argument

The argument that I am trying to make is that understanding the world is a matter of seeing the cultural significance through what is made visible. This is what I call cultural transparency. But the central point of the dissertation is that the relation between artifacts and persons, which one may describe as "understanding" or "not understanding" is never a direct relation between them, but one that

is mediated by a person's membership in specific sociocultural communities and by an object's being part of the social practices that characterize some communities, which may or may not be the same. To the extent that these communities are different, the object becomes a boundary object at their articulation.

It becomes then essential to explore what are sociocultural communities and how one gains a form of membership by which one can get access to the understanding that underlies the production of the visible. The argument is that this understanding lies in a particular practice and that one becomes a member of the community by starting with a peripheral involvement in such practice, moving progressively toward full participation. But on this view, knowing something is not just a matter of assimilating some information, but becoming a certain kind of person, constructing a certain identity with respect to the sociocultural communities in which some knowledge exists.

Method and evaluation: ethnography and design

This dissertation stands at the crossroad of many fields of research. It started in the context of trying to understand the role that artificial intelligence could play in supporting learning *in situ*. For instance, job aids might integrate learning into working activities by taking advantage of learning opportunities as they present themselves, so that the relevance of what is learned can be understood in context. I became clear fairly early on that the field of artificial intelligence as it was conceived of was too narrow for such an enterprise. We were ready to embark on design projects but we did not have a very good idea of how people learn, and in particular how they learn in the context of activities whose primary goal is not learning. The traditions of information-processing theories and cognitive psychology did address questions about learning but did so in a way that seemed too out of context to be useful. That is when I started to become very interested in social theory. Although its level of analysis appeared to concentrate mainly on the reproduction of social structures, issues of context were central to its concerns and it offered conceptual tools to analyze the world as a place to learn in.

There is a long methodological tradition concerned with the structure of human communities, their practices, their culture, and the forms of membership that can develop there. It was therefore natural that I would turn to ethnography as a method for pursuing my investigation. While ethnography may appear to be an unusual approach for a computer scientist, I believe that this is the case only because computer science mistakingly views itself almost exclusively as a science of representational formalisms. I think that this narrow focus will have to change as we realize more and more that in order to be

successful we need to understand in a deep way the world of which the system we produce become part. As our understanding of intelligence grows to include the social fabric of the phenomenon, our methods for investigate is will also have to expand. And I believe we will then find that computer science is a social science just as much as it is a mathematical science and an engineering discipline. And this applies *a fortiori* to artificial intelligence.

One day I was talking about my research with someone who is in charge of designing information systems, and he asked me: "That's very nice, but I'm interested in change, in design, so where's the beef?" As sympathetic as I am to his question, I had to first try to make clear that this is not just beef; it is more like a cow, a living cow: one can make beef with it, of course, but one can do many other things: one can pull a plow, milk it, breed it, show it in country fairs. What I am trying to develop is not a recipe or a method; it is a discourse, a perspective, a way to look at the world. But it is a discourse that has wide-reaching practical implications, especially for design endeavors. I will actually suggest that it may cause us to reconsider what we mean by design. The validity of such a discourse can in fact be said to reside in its ability to inform a variety of activities. An example of design ideas cast in the terms of this discourse is provided in Appendix.

Another criterion for the validity of such a discourse is its ability to generate specific theories that use its categories. For instance, it can be used to explain the successes and failures of design projects. In many cases, this type of analytical discourse can thus be used to give a theoretical grounding and a more thorough articulation to the deep intuitions or insights that were at the roots of existing experiments or methods. For example, the discourse I am developing could be used to articulate further the principles of participatory design (Ehn, 1989), the notion of "informating systems" (Zuboff, 1988) or a number of organizational methods based on the idea of autonomous work units.

Fieldwork

The theoretical development presented in this dissertation is based on fieldwork I did in a claim processing center run by a large insurance company, which I will call here Alinsu.¹ This processing center, which employs about 200 people, processes health insurance claims for group plans sold to client companies as part of their employment benefit packages. In many cases, client companies

¹ In English, Alinsu could stand for "all insured" which seems appropriate for an insurance company, but in French "à l'insu" means "unknown to" which seems appropriate for a pseudonym.

themselves disburse the money going out as medical benefits (i.e., they provide their own health insurance to their employees), but Alinsu administers their plan and sells them its claim processing as a service. I will call these companies Alinsu's "clients," and I will call "customers" the employees of these clients who submits their medical bills as claims to be reimbursed.

Claims are submitted by mail. They are received by the clerical department, sorted according to clients, sent down to the processing units, processed, and sent back up to the clerical department to be archived on microfilm. For a claim not to be called "delayed" the entire process must take less than 15 days.

The claim processors never actually send benefits to the customers. As they process a claim, they enter all the information into a computer system. This information is then dispatched to a centralized location, from where checks are sent to customers along with a brief explanation of benefits. In some cases, the checks are sent directly to service providers, such as doctor offices or hospitals.

I started my fieldwork by attending two complete training classes (one for each of the two types of insurance handled by the claim processing center and described in Chapter 3). I also took some of the exams for new recruits and was subjected to a mock job interview. After the two training classes, I followed some processors through their day, and then joined a processing unit as an observant-participant: I processed claims at my own desk and I participated in the conversations and the social events of the unit. In addition to my direct involvement, I interviewed a number of trainees and claim processors, some individually and some in small groups.

Whenever possible, I tried to receive all my information from the same channels as the trainees and processors with whom I was working. In this regard, I limited my interactions with management to the process of obtaining permission to participate in activities. In many cases, I even chose to remain ignorant about specific points rather than to obtain information from sources outside the purview of a processor. This intentional restraint was a strategy I adopted for this initial piece of fieldwork in order to understand as authentically as possible the viewpoints and experiences of claim processors

The events and phenomena that I describe are not extraordinary. On the contrary, they are common, under one form or another, to most organizations, in the U.S. and around the world. Thus they will probably sound exceedingly familiar to the reader. Their unremarkable character, however, is itself significant as it obviates the need to weigh out their long- and short-term advantages and disadvantages. In this dissertation I hope to shed a new light on these familiar phenomena by analyzing the ways of knowing enabled by the human communities of which they have become a such "natural" constituent.

Any human lifeworld defies description. It is always more complex, more dynamically structured, more richly diverse than any description of it. And so are the individual experiences of the people living in it, shaped as it is by a nexus of interrelated factors, many of them hidden to the observer. I have tried to capture some of the dimensions that shape the claim processing office as a place in which to work, to be someone, to learn, to know, and to find—or not to find—meaning.

The structure of this dissertation

To set a concrete context for the later argument, I start with a fictional account of one working day in the life of a claim processor. I call this account fictional not because it is the fruit of my imagination but because that specific claim processor is not an actual person and that specific day never happened. Ariel is a character I have composed by conflating partial descriptions of the personalities and lives of many claim processors I got to know during my fieldwork, and that Thursday is a collection of events I have personally observed or heard described by actual participants. Thus the fictional character of this account is only a rhetoric device used to present some of my observations in a concise, concrete, and I hope compelling manner. The reader should be warned that quotation marks in this initial chapter are used to indicate talk, but do not necessarily imply a literal transcript of sentences I heard.

In Chapter 3, I paint a portrait of the working life at the claim processing center in terms of the institutional structures that organize it. I argue that within that structure, workers form their own communities with their own practice in order to get the job done and to create a place in which they can develop a sense of themselves. In the course of this preliminary analysis, I introduce many of the categories discussed later in order to provide a context for these later theoretical discussions.

In Chapter 4, I analyze the case of one specific event of use of one specific artifact. This case illustrates the type of problems that can arise when workers are asked to perform procedural activities without being given a good understanding of what the activity is about. I argue that the artifact that was used in this case is best understood as a boundary object between two communities that obviated the need for a shared understanding.

In Chapter 5, I introduce the concept of cultural transparency with its dual nature consisting of both visibility and invisibility and I engage in some philosophical discussions about the nature of meaning, knowledge, and understanding.

In Chapter 6, I discuss learning. I argue that learning a form of practice implies becoming a member of the community of which the practice is part. I introduce the concept of legitimate peripheral participation as a descriptor of learning that implies increasing membership. I describe the learning that takes place in the claim processing center in those terms. Toward the end of the chapter, I expand the scope of the concept to see it as a descriptor of engagement in social practice that implies learning as an integral part of that practice.

In Chapter 7, I explore the concept of community of practice. I argue that it is a fundamental analytical category for describing the social world as a context for achieving cultural transparency and I distinguish communities of practice from other categories such as culture or institution. I try to show why the two components of the term are essential to its analytical leverage. I also address the issue of how communities of practice reproduce themselves over time.

As a conclusion, in Chapter 8, I explore some implications of this view of the social world for more global issues concerning the notion of expertise, such as professionalization, the relations between experts and other members of society, the definition of basic sociocultural categories such as health or justice by those who have developed technical means of dealing with them. I also try to look at the notion of intelligence in a new way.

In Appendix, I have included an informal report written for people at Alinsu about some observations I made during my fieldwork there, and some of the implications the perspective developed in this thesis might have for the issues I bring up. This will give a flavor of the design implications of this theoretical framework.

It is important to me that this dissertation be useful. To illustrate this point, and perhaps also as a warning to the reader, I would like to report a small incident, which I experienced as a heartening encouragement. A management consultant with a sincere concern for the state of our world had participated in a day of discussion in which I had presented the framework for talking about the social world that this thesis develops. He told me afterwards in his evocative language: "You know, I will never look at the world in the same way. I don't know what to do about it yet. But I've lost my innocence; I am no longer a virgin."

Prologue:

**to be
just a
processor**

Ariel grabs her purse, turns off the television, and checks the fridge. The problem with her boyfriend is that he eats too much. Guys can really gobble up mounds of food. This is costing a lot of money and is becoming a serious drain on their finances, especially considering that she is making payments on four credit cards as well. Not to speak of her new car. She doesn't know why she bought it; it's costing her a quarter of her income in monthly payments. But the old one was starting to fall apart and she could not keep paying for repairs.

She has been living with her boyfriend for two and a half years now, and they are planning to get married next year. They found a nice church, just the right place. She will get three extra days of paid vacation, but they have not decided where they are going to go on honeymoon because of the expenses. Yet these three days are precious to her somehow, a special luxury afforded to her by her work situation, and whenever she feels like quitting, she remembers that she needs to stay on her job at least long enough to take these three days.

She runs down the stairs. She has to be at work at 8:00, and she will need a lot of luck with traffic to make it. She should really stop using the snooze button. The fact is, she would rather go to work earlier and come home earlier, like people with more seniority who get to choose their hours first: they can have the 7:00 to 3:00 schedule. She did that for a while. It's a bit hard in the morning, but when you get off at 3:00, it's like, you still have the day in front of you. Staying there until 4:00 makes a big difference, but the office needed some people to answer the phones between 3:00 and 4:00, so now junior processors have to

stay later. Although she has been working in the claim office for well over a year now, Ariel is still considered a junior processor. She has recently been promoted to what they call a level 6.

Predictably, it's congested between Ridgewell and Lincoln. As her car comes to a halt, Ariel grabs the rearview mirror to check her make-up. She is a young woman of 25. Her brown hair is not very thick, but it falls on her shoulders in gentle waves ending with a half curl, a natural tendency she likes and encourages regularly with the help of a curler. She brushes her hair from her forehead and checks her eyelashes. She does not consider herself stunningly beautiful, but her only serious concern is being slightly overweight. She has to be careful, and spending her whole day mostly sitting of course does not help. She has to find a way to exercise more, and today she will skip her morning snack.

Overall, she takes good care of herself. She makes up, but discreetly, and dresses cleanly but not aggressively. Fortunately, the office is rather informal about appearance. You could spend a fortune otherwise. Of course, she could not go to work in shorts, this management barred explicitly, but even jeans are OK as long as they are not torn. Altogether, there are not too many rules about dress, although it has been clearly intimated on a few occasions that it is better to look somewhat professional and that appearance as well as behavior will influence promotional reviews. Besides, it makes her feel better about her work to come in with proper clothes. Today she made a special effort because some visitors are expected in the office: she is wearing her new woolen skirt and matching high heels.

The signal at the left turn is always red when she is in a rush. Come on, move. She turns into the parking lot. In a few minutes, she will be on the second floor of the building on the left. The two slick buildings of the office complex are two layered cakes of grey concrete and black windows with a thin red line for special effect; they are not just square, but of a more sophisticated shape, with the top floors tapering slightly. Very modern. In the courtyard that separates them, a large fountain was built around a tall piece of modern art, some kind of sculpture. Of course, at this time, she has to park by the trees on the perimeter of the parking lot by Emerson Avenue. That's another advantage of coming in early, you get the best parking spaces, right by the entrance. For some reason, this short walk is a burden: it is not the kind of exercise she means to get. And besides, it is already five past. She starts to run.

Judith and Eleanor are already waiting for the elevator. "Hi, how are you?" She glances at the indicator: "L" for lobby and the steel doors slide open. The three coworkers step in hastily. The elevator has the soft rose carpeting that covers the floors inside the building and its walls are made of smoked mirrors so you don't feel encased in a small box. The inside is at once dark and well-lit: two rows of indirect

spotlights, built deep into the ceiling, shine softly onto people's heads. Like the lobby, with its large glass entrance, its peach walls, and its marble floor, the elevator seems made for business suits and attaché cases, rather than for the jean jacket of Eleanor, with her lunch bag and her thermos hanging—whatever it is she drinks in the morning—or for the bright sneakers of Judith, who still looks so much like a highschool girl. The numbers flip above the door. "Second floor," says the synthesized voice of the friendly elevator in the same old tone; that voice saying "second floor," Ariel can hear it in her head whenever she wants. Just close her eyes: "second floor."

The office occupies the entire second floor of the building—plus a large part of the third floor, where the clerical unit, the training class, and the employees' lounge are located. The second floor consists of one large room, with no walls, except for the two management offices in the corners. But even these offices have two large windows so that visually they are almost part of the main room. One's view of the office is only obstructed by two square structures in the middle of the area, one of them being the elevator shaft with the entry hall and the bathrooms. The two bathrooms on this floor are women's. There was no need to reserve a whole bathroom for the few guys who work here; they can just go upstairs.

At first sight, the office seems to be furnished with rows after rows of desks. Closer inspection reveals small clusters of four to six individual desks, which are formed by two facing rows of two or three. A partition about shoulder high runs between the facing rows so that processors at opposite desks do not see each other, but there is no partition between neighbors. An even closer look reveals that these clusters are themselves clustered: five or six of them are arranged in a square U-shaped configuration around the desk of a supervisor. This is called a "unit." Ariel's unit has been named the "Lakefield" unit, after a local town. She thinks it is kind of a dumb name, but the unit chose it before her time.

The first thing Ariel does is to walk toward her supervisor's desk to sign in. Since she is ten minutes late, she promises to make up for the time this very day: she will stay until ten past four. Before going to her desk, Ariel checks her bin: only one referral and nine pieces of mail. She usually receives a lot of mail addressed specifically to her; Gayle told her that it is because she always gives her name on the phone. It seems like the right thing to do, but she came to realize that many processors try to avoid doing so.

Ariel's desk is on the inner side of the U-shape, in the middle of a row of three desks. The supervisor's desk is just behind her, and of course, so are the supervisor's eyes: she has to make sure that she does not chat too much. In fact, she suspects that it's the reason she was told to sit there. Before, she was sitting beside Eric, and he kept talking to her. Now she does not have much privacy, but that's good too. It helps

her concentrate. She knows herself, and if she wants to make production and get her promotions, it's better she can't fool around. Also, in this position, she is closer to the center of the unit and she always knows what is happening. On her left sits Joan. She is a level 8, who works very hard and is very dedicated. Level 8 is the highest level for processors; beyond that, one is no longer a processor. On Ariel's right sits Annette, a level 5 who is having some difficulty and has been placed on warning for a while. Level 5 is the first level at which one is no longer a trainee. Ariel thinks that Annette will most likely get fired soon because she was placed on warning: her warning has already been extended and she is still having trouble.

Until Ariel was asked to move recently, this desk was occupied by Corey, a new trainee, who quit three or four weeks after transferring from the training class to the floor. Really, this job is not for everyone; some people just don't get it. Right out of training is the hardest time. Ariel herself almost quit at that time. Like just about everyone here: those who did not quit at least thought of it. Eight weeks of class, and then you are thrown in the middle of things. Of course, there is a back-up trainer who is there to help and answer questions, but she can't help you with every claim and there are so many things you don't know. In the beginning, most of the claims have one problem or another. What it took for Ariel, really, was to stop caring, to just do her best and not care: just get the quality right as much as possible, and not care about production quotas. "If it's not good enough, fire me." Every day when she was coming home, her boyfriend used to tell her "Listen, just quit, it's not worth it." In fact, she had started looking for another job, and she just didn't care. That's how she made it through. Now at least she does not go home with a headache, and she does not think about claim processing when she is out of the office.

But Corey, she looked like she was going to make it without much of a problem; she looked like she was going to be very good. In the training class, she had been very successful, and the trainer thought highly of her. She had taken a substantial cut in pay from her former job to be here; she wanted to make use of the medical knowledge she had gained working in a doctor's office; she liked the idea of working for a large company with possibilities for advancement; and she seemed the kind of person who was going to hang on. Then she started to feel like she was falling behind. There were too many questions. Her claims kept getting "voided" by quality review; she was worried. Then she was absent a few times. During the probation period, you can't be absent, that's deadly. Then one day, she was gone. "She is no longer with us," said the supervisor. She had been fired.

Except for supervisors' desks, whose gray and burgundy tones match the rose carpet, every desk in this office has the same imitation-wood desktop and mustard-color steel body. And like every desk around, Ariel's is cluttered with the paraphernalia of claim processors. She has

organized her small space into an efficient place for doing her work, but she has been careful to leave some room for a few personal objects.

Hanging above her desk in the right corner are a series of slanted paper trays. The first two are for claims that she has already processed: one, labeled "Q's," is for claims that will be picked up by someone from the quality review team and the other, labeled "D's," for claims that will be picked by someone from the clerical department to be archived on microfiches. In the third tray, she keeps her current work, that is, the stack of claims she still needs to process. Three more trays contain forms that she needs on a regular basis: the "batch forms" which she must fill out and attach as a cover sheet to each claim she processes, forms to report on phone calls, and blank sheets of papers on which she must glue undersized bills submitted by customers, in order to make handling and microfilming easier.

On an adjacent hanging tray, she has her reference books. These include a medical dictionary; the physician's desk reference, a thick book containing detailed descriptions of drugs; a ringfolder describing the fee schedules of special contracts that some doctors and hospitals have with Alinsu; and a smaller ringfolder containing the most recent memos that were distributed to her unit whenever attention had to be drawn to a change, a common difficulty, a misunderstanding, etc. Under this tray, on her desk, stands a row of thick ringfolders. One is her training manual, and another contains old memos. The two on the right contain the descriptions of the various health plans that dictate the way in which claims from different companies have to be paid. Ariel pays claims from as many as eighty different plans; it would be easier to be in the County College unit, which only takes care of one big plan. Hanging from the tray are a photo of her old car and a card Ruth gave her for her engagement.

The wall of the partition serves as a private bulletin board: a motley of notes and lists, yellow "stickies" that remind her of calls to make and errors to watch for, a caricature of herself purchased for her by her boyfriend at a fair, a list of colleagues' extensions, and a tiny calendar. Underneath, on her desk, leaning against the partition is an oblong piece of cardboard with a summary of codes and abbreviations for diseases, medical specialties, patient statuses, etc. On the right, she has two stacked paper trays. In one of them, she keeps her notes, some of them still from her training class; and in the other, she keeps a few small folders containing miscellaneous lists. For instance, one lists the numeric codes and contents of hundreds of prewritten paragraphs which she can request the computer system to insert into the explanation of benefits sent to customers. By these trays, she has a box of kleenexes and a bottle of hand cream. In front of them is her calculator.

On her far left stands a box of layered paper trays in which she keeps track of things to do, such as phone calls on which she needs to follow up, claims delayed by requests for further information, and current work she has "prescreened" already, that is, claims for which she has performed some preliminary checks. On top of this tray, she keeps a small plant and a picture frame with photos of her boyfriend, her little niece, and her dog. Below the desk on the left handside, she has two drawers. In the top drawer, she keeps her personal stock of office supplies mixed with some personal items and some snacks. In the hanging files of the bottom drawer, she keeps all the forms that she uses less often: for referring claims to the technical unit; for requesting file maintenance, that is, modifications to the database which she is not authorized to perform; for requesting the generation of form letters to customers; for performing certain complex calculations, etc. All in all she has close to 30 different forms in that drawer.

On the front edge of the desk, slightly to the left, lies her keyboard. On the right of it is the space where she places the paperwork while she is processing a claim. Behind the keyboard, on a plastic organizer, she keeps office supplies she uses all the time: her staple remover for unstapling claims and the accompanying documentation, her glue stick, roll of scotch tape, and scissors for gluing receipts on standard-size paper, pens and white-out for filling out forms, and a small bucket of paper clips for reassembling the paperwork of processed claims without having to use staples. Behind her keyboard is also the area where she keeps her desk calendar and her mug. Then in the back, from a recess in the left half of the partition, the grey square face of her computer terminal blankly stares, awaiting Ariel's first keystroke to light up.

Presently, Ariel is walking toward her desk. Her gaze ignores the two phone messages that stand on her keyboard, held up by the keys between which they have been slid; it also ignores the pile of claims that someone has placed beside her keyboard for her to work through. What she immediately notes are two claims covered with pink batch sheets: two "voids." Shit! Two more voids with only two days left this week. "Here goes my quality!" she exclaims. It will take a lot of luck if she is to make up for them and maintain the weekly percentage of correct claims she needs. She hates voids; they are frustrating and humiliating. Not only do they mean lower quality rating for the week in which they occur, but they also mean more work since they have to be processed again.

She takes a look at the first void. She reimbursed lab charges at the regular rate of 85%, but the quality reviewer claims that these charges were related to an out-patient surgery, which the plan reimburses at 100% and should therefore have been reimbursed at 100% as well. She must check this up. She sits down, pushes papers aside, and

starts logging into the system. "What a way to start the day!" she complains to Annette.

She enters her operator number and her password to access the main network and then enters them again to log into ALINSYS, the actual system she is using. There are strict rules about safety and no one is allowed to do anything under anyone else's account. You are even supposed to logout if you are away from your desk and can't see your terminal even for a short time, but everyone is rather loose on this one. Ariel has heard through the grapevine that there have been some cases of embezzlement in the past, that some people have been fired, but she does not know the details. Finally, the initial working screen comes up. She enters the control number of the employer contract and the social security number of the employee and inspects the patient's claim history. The QR person was right, the current lab charges were related to a surgery that had been the object of a previous claim. She should have caught that: there is no way out. She quickly reprocesses the claim.

Then she takes a look at the second void. What? But the patient was seen for headaches. And neurological exams for headaches are considered medical, even if there is a secondary psychological diagnosis. Therefore the "psych" maximum does not apply. She had actually discussed this case with Nancy, the back-up trainer, who had agreed with her opinion. She goes over to show her the void, gets some comforting grumbling about the quality review people, comes back to her desk, pulls out a dispute form from her drawer, and starts filling it out, explaining in detail how she came to her decision and stating emphatically that the back-up trainer had confirmed her determination. Then she goes to her supervisor who must sign a dispute form before it is submitted to quality review for appraisal. The supervisor shakes her head in solidarity. Ariel is now quite confident that she will be able to resolve this one in her favor. What a relief!

Now that she has taken care of her voids, Ariel reads her phone messages, and puts them in a tray on her left. She will take care of that in the afternoon. Then she starts looking through the other claims that were sitting on her desk. These are mostly "junk claims" that will require much work. They were referred to the technical units by other units, mainly the second shift; part-timers are not prepared to process complex claims. From the technical unit, these junk claims go to more experienced people for final processing. "What is the oldest 'maintenance' you have?" she asks Joan, trying to get an idea of the general backlog in maintenance requests.

Ariel is well organized. "You have to be, in this job," she always says. What she tries to do is to process easy claims fast during the morning and early afternoon, and get her "production" out of the way. Once she has reached her daily quota, she uses the last few hours of the day to take care of "junk" claims and to make phone calls. Quickly, she flips

through her piles of claims and separates the ones she will process this morning. Of course, you never really know just by looking at the claim how involved it is going to be, because there can be surprises when you open the customer's file on the system. But after a while you have a pretty good idea at first sight about how difficult a claim is likely to be. Usually, Ariel does this sorting before leaving so that her pile is ready for the next day, but yesterday, she was held up by a lady who had gotten divorced and who wanted to know why her claims were no longer being paid. That lady was pretty upset because Ariel was supposed to protect the privacy of Alinsu's customer and thus could not disclose the reason for which her claims were being denied. She could only tell her that she had to talk about this with her ex-husband. Ariel ended up transferring the call to her supervisor because the conversation was degrading fast. Yesterday had been a terrible day, anyway. There was just one obnoxious phone call after another, and then the computer went down for almost an hour. Everyone was screaming. That's always the same thing: just before the hour is over, the system comes up again. Processors do not get to write time off for the first hour of computer "down time" because they are supposed to do other things like taking care of paper work. Not only did she not make production, but she got these voids.

Ariel starts on her first claim. There is an office visit, a series of tests, and some drug bills. Nothing too complicated. She removes the staples and glues the drug bills on blanks. Next she goes into the database, using the company's contract number and the insured person's social security number. She checks that the employee is on file and that the dates of service on the bills fall after the employee's "effective date"—and before termination if there is any termination date. There are a number of codes to look for: the branch in the client company, the status code of the employee to make sure that the dependents are covered, and some other codes that, if present, would make this claim complicated. But everything checks out fine: she can start processing.

First, she has to enter the social security number and the name again to select the file for processing. Because a claim has to be paid under the plan governing the period during which the charges were incurred, the computer displays the dates of successive plan changes. She chooses the most recent plan change, since this claim is recent. On the next screen, she has to enter the year the claim is for and the date the claim was received, which was stamped in red on the claim by the clerical employee who opened the mail. It is easy to forget to do that because the system enters by default the date of the last claim processed. She ignores a number of caution messages, which appear in bright white characters, but come up with almost every claim anyway at this stage. She moves on to the next screen where she checks the address. It is important to make sure the address is correct so the check will reach its destination properly. You will definitely get a void if the address is wrong, even the ZIP code. Next, she selects the customer's son as the patient from a list of dependents. It is easy to

choose the wrong dependent; she got voided for this last month. She makes sure the son is under the age of 19. He is not, but there is a note on his file that he is a full-time student, a fact that was investigated last month so that she does not need to confirm it. Oh, no! Not again. She does not want to listen once more to Annette's plans to go to Richland Hot Springs this weekend. What's the big deal with that mud bath? Is she afraid, or what?

She now comes to the "paylines," the screen on which she will enter information about the charges so that benefits can be calculated. These lines are located on the upper part of the screen and will stay displayed until the claim is done. She starts with the office visit. She enters first the type of service, then the name of the service provider, which leads her into the providers file: there she makes sure she checks that the provider's address is correct since the insured has "assigned" the benefits to be disbursed directly to the doctor. Then she enters the date of service and the charges. In this case, she must also enter a deduction because the provider happens to have a special contract with Alinsu. She uses a calculation sheet to figure out what the deduction is, looking up in a ringfolder what the standard charge for this type of office visit is in the provider's area, entering the amount on her calculator to compute a reduction of 15%, choosing the larger amount of the two. It has occurred to her that it would be more advantageous for Alinsu to take the smaller one, but the procedure says to take the larger one.

Since the patients went to such a "preferred" doctor, Ariel must remember to increase the rate of reimbursement from 80% to 85%. But this means that she will have to split the claim in two since the other charges are to be reimbursed at 80% and cannot be included in this payment. She likes the idea of having this claim generate two "batches" that will count toward her production: after spending all this time on that silly void, she can use a bit of luck. But she quickly checks in the providers' file that the lab where the tests were performed does not have a similar contract. You will get in trouble for splitting claims unnecessarily.

The rest of the claim goes fairly fast: enter the code for the diagnosis, for the contract type, skip the coordination section, indicate the assignment of benefits. Remember to include the pattern paragraphs for the special deduction and for the deductible, which the system has automatically taken into account. Ariel types and writes impressively fast. Her eyes scan computer screens quickly, knowing what to look for. Check everything on this last screen and press enter. Then Ariel gets a new claim for the lab charges and for the drug bills. She has to check that a drug she does not remember having seen before is an acceptable prescription drug; Joan says that it's OK with any circulatory condition. But the vitamins, of course, have to be denied. All standard stuff. She collects the papers for the two claims, attaches

them with paper clips, places them in her outgoing bin, and circles two numbers on the sheet on which she keeps track of her work.

At half past eight, the supervisor comes around to distribute paychecks: sprinkle of sealed white envelopes—from hand to hand—consecrated wafers swallowed into expectant rows of purses. She also reminds everyone of the unit meeting to be held at 9:00, and asks who is going to do overtime this Saturday. Ariel will certainly be there, in the morning at least. She can use the money, and on Saturdays, there are no phones: one can catch up on production.

Presently Ariel's phone is ringing: once, twice. Reluctantly she grabs the handset. While she talks, however, she does not interrupt her work immediately, but holds the phone with her shoulder and keeps processing the current claim.

- Thanks for calling Alinsu Insurance Company. Can I help ...
- Yes, I would like to know what's happening with my claim.
- When did you submit it?
- I sent it more than a month ago.

Now Ariel realizes that she will need to access information to answer the person's question and that she will not be able to finish the claim she is currently processing before having to do so. She will have to "clear" out of this claim and thus to lose all the information she has already entered. She resigns herself, clears out, and starts typing the access information as her interlocutor gives it to her.

- What is the company the insured works for?
- ZollePro.
- Do you have the control number?
- I don't know. What does it look like?
- It's a five-digit number starting with a 2.
- I can't see it.
- I can look it up for you.

Ariel muffles the phone and turns to Annette. "What's the control number of ZollePro?" she asks. "I don't know." "It's 21131," replies Pat who happened to be walking by. Ariel enters the control number of the company.

- I got it. What's the social?
- 123121234.
- Your name?
- Jerry Hotchaud.
- Is this the social security of the insured?

- No, it's mine.
- I need the employee's number.
- 098090987.
- OK. So, what can I help you with?
- I have not heard from you ever since I sent my claim in.
- When did you send it in?
- In early December.
- What was the date of service?
- November 15, or something like that, with Dr. Monoeil.
- I don't show any claim for services around that date. I have a claim for an office visit on October 13, but nothing in December.
- Oh my God! What happened?
- We always have some delay around the Holidays, it may still be in our backlog.
- But have you received it?
- I have no way to tell you that because we have piles of claims right now, and I can't search through that.
- What? But I sent it in, it must have been ... it must have been ... December 8 or something.
- Well, Sir, all I can tell you is that I don't show anything on the system for that date of service. If you really sent it on the 8th, we should have processed it by now.
- Yes, I sent it early because of the Holidays, you know, to get the money.
- I understand Sir, but it probably came in late and is still in our backlog. You could resubmit it, but if I were you, I'd give it a couple of weeks, and call again.

The conversation continues for a while, sometimes testing Ariel's patience. There is backlog, what can she do about it? And it's not her fault if there is no way that clerical can log the receipt of submitted claims into the system. Finally, the caller hangs up. "That guy, he just wouldn't let me go," Ariel complains to Annette. "I know," Annette replies, "as if we had nothing better to do."

At 9:00, the claim processors converge toward the supervisor's desk for a unit meeting. They roll their chairs, or push themselves on their chairs with their feet, and sit in a semi-circle around her desk. Postures vary, ranging from straight backs to leaning over a desk nearby. Most examiners sit cross-legged with their notebooks on their lap. There is a mixture of local chat with interjections across the semi-

circle. The atmosphere is generally relaxed and the talking as well as the configuration convey a sense of familiar conviviality. These meetings are a regular occurrence in the office; they take place at least once a month, but usually at shorter intervals whenever there is business to discuss. Harriet, the supervisor, checks that everyone is there. Esther is still on the phone, we'll wait for her. There she comes on her chairs: after some shuffling and scooting, everyone is ready.

First Harriet reminds everyone of the visit of some important clients and asks processors to clean their desks and to make sure they do not fool around while the visitors are present. Then she announces that she has the vacation list and that she wants people to fill it out. "This list is for vacation weeks only. If someone wants to take a day off, come see me." The list is ordered by seniority. Harriet is at the top, and she has already filled her slot out. The list will go around the office in the order in which it is printed, and nobody can be skipped. If someone is sick or otherwise absent, the list will have to sit on her desk until she comes back. The rule for choosing vacation weeks is that there cannot be more than two people out on any given week. The list should be completed by the end of the month, so people should not hold on to it for long, and no one should take the list home. "Just go home and think about the days you want. Then come back and fill it out. If you want to change your vacation week later, and this week is already taken, too bad. So think about it and plan your vacation carefully." After June, examiners who are "on good standing" can take their entire vacation for the rest of the year. Before June, they can only take vacation as they have earned it. For instance, by April, Harriet explains, they should have earned between 5 and 6 days, but they can only take what they have earned minus what they have already taken. "If you want to know how many days you have taken, come see me." There are certain periods of times during which management has decided that nobody should take vacation. If someone wants a vacation during these times, it is necessary to fill out special request forms, which are attached to the vacation list. The rule that up to June employees can only take the vacation they have already earned is flexible: "If someone really needs to take vacation earlier, come see me, and if I know that you are going to be here for a long time, and you are not on status, I will usually say OK."

Harriet goes on to communicate a problem concerning the 800 number that Alinsu customers can call to get information. Management has a suspicion that this number was given out by some processors to their acquaintances as a way of calling them free of charge. From now on, all phone calls exceeding 15 minutes will be marked. Harriet senses the tension that her remark has brought into the meeting and is quick to clarify that the marking of these phone calls does not in itself constitute an accusation. It is only if patterns develop that an investigation will result. Still the subject seems delicate, and there is some grumbling and a few defensive remarks.

Then Harriet discusses the idea of creating a phone unit within the unit. The gist is that at all times only a few processors would take all incoming phone calls and that people would take turns handling the phones. They have not yet figured out how to do that. Harriet asks for suggestions and requests that processors think about how they would want to go about implementing such an idea. She recalls one suggestion that a quarter of the processors in the unit would be on the phone each week; they would not have to meet production on that week, but would have to make up in the following three weeks by reaching their four-week production level. Ariel is not even quite sure that she wants a phone unit at all. She is rather ambivalent about phone calls; she sees them as interruptions, either welcome or unwelcome depending on circumstances. She certainly perceives them as obstacles to production; sometimes she spends as much as half her time on the phone. They disturb her peace, and can be a real pain when customers are nasty. But they also break the routine. And having to answer the phone allows her to receive private calls without drawing attention to herself.

The next item on Harriet's agenda is a memo that modifies the codes that processors are supposed to use to indicate the types of service rendered by provider. Two old service types have just been reactivated, in order to generate better data about psychiatric care, as differentiated from medical care. And the existing code for office visits has been modified to cover medical care exclusively. Harriet goes through the memo with the processors, paraphrasing each item and letting them ask questions. The change is substantial because these codes are used very frequently, but it is received rather casually by everyone: just another change, another improvement that will complicate their work only very slightly. The change will take effect on Monday, after the new version of the system has been installed.

Harriet then asks the processors if they have any items of business to bring up. The assistant-supervisor complains that there have been too many overpayments lately. She blames it on the fact that processors do not check "eligibility" carefully enough. Nancy reminds everyone that they cannot keep paying for physical therapy for a long time, even with a new prescription from a doctor. They must have a progress report. She gives an example of a prescription that had been used for continuation: the doctor had merely crossed out the old date on the old prescription and replaced it with a new one. And if physical therapy goes on for more than a year, it has to be referred to the technical unit. Finally, Beliza says: "Well, for me, it's just this deductible." Everyone understands what she is talking about: certain plans stipulate a complicated way of determining when a family deductible is satisfied. An animated discussion ensues with everyone contributing examples and partial explanations until Beliza seems satisfied: "It's easy to explain here, but it's a pain to explain it on the phone," she says. Many processors shake their heads.

Last Sunday was the birthday of Sara, the assistant-supervisor. A half-sheet birthday cake is placed on Harriet's desk, along with a small present from the unit. Sara blows the candle and starts cutting the cake, and the whole unit applauds and cheers. She and Trish distribute pieces. These cakes are a nice break from the daily routine, but the frosting is always much too thick: Ariel got a corner piece with close to a half-inch coat of white sugary fat on three sides. Before Ariel can complete her eating duties, however, the supervisor says: "Well, it was nice seeing all your faces again." Ariel complies with this invitation to return to processing, taking her piece of cake with her.

The meeting and the cake cutting ceremony have lasted for 45 minutes and Joan wonders whether the cake cutting part of the meeting must be considered morning break. There is some discreet talk about the issue, but the question is never posed directly to the supervisor. Along with everyone, Ariel decides to assume that this did not count as a break and to see what happens. At a quarter past ten, she leaves for the lounge with Joan, where they spend most of their ten minutes discussing with Trish her use of her sister's driver's license to get into a bar last Saturday and her fright when there was a check-up. As they come down the spiral stair to return to their desks, Ariel reminisces about her own escapades. At her desk, she logs back into the system and starts processing. After a while she adds, without actually turning to Joan: "One good thing about being over 21 is you don't have to deal with this anymore." Two easy claims, two circles in quick succession. Joan has been thinking about Ariel's remark on being over 21, and says: "But, you know, there are so many other things to worry about."

A few minutes before 11:00, Beliza comes by Ariel's desk and asks what she wants for lunch because she is getting ready to call the deli. It's a bit cheaper and there is less waiting when one orders in advance; and since they have only a half hour for lunch, they do not have much time to spare. Still, thinks Ariel, it's better to have a short lunch break and get out earlier. "A ham sandwich with everything on it."

Now there is no TIN (taxpayer information number) for this doctor. Why can't they just fill out these forms completely? Ariel has to send a letter requesting the information: this means clearing out of the claim, and putting it on the paper tray where she keeps claims awaiting further information. Five or six years ago, they could simply call the doctor's office, but now it is necessary to have all this in writing. She pulls out a form from her drawer and fills out a request to send a form letter. Annette wants to know if she can assume that the date of emergency room treatment is the date of the accident when the patient did not enter the accident date. Ariel is not sure: accident dates are important because of temporary supplemental benefits for

accidents on certain plans. Joan says that she always assumes that and that she's never been voided on it.

Ariel is processing a claim for which there is a suspicion of a pre-existing condition. On the computer, she flips through the claim history to get an idea of how this has been handled so far. Her plan has a \$2,000 waiver limit on expenses for pre-existing conditions, and the expenses related to this condition only amount to \$384 so far, so that she need not investigate it. An investigation is only started when the related expenses approach the limit. Good. Investigating a "pre-exist" can become quite involved, with numerous letters and phone calls. In this case, she pays the claim and enters a claim note stating how much has been paid out of the limit so far. In this office, some people are good about notes and some are not. At any rate, Ariel only trusts her own notes. She is quite diligent with notes in general. For instance, every time she changes an address, something she has already done three times today, she enters a dependent note to that effect, with the date and the source of the new address, so that if another processor later receives an old claim dating before the change, that processor will not put the old address back in.

It is 12:00. Beliza goes around to gather the lunch group. Ariel looks at her circle sheet to see how many claims she has processed so far. She counts 22, not including the void she re-entered since these do not count as production. She is on schedule, but she might have to skip her afternoon break. Ariel, Beliza, Sandra, Eric, and Leonora take the elevator down to the deli on the ground floor. Sandra is worried about her quality, which has been in the eighties lately. The deli's modest outfit is in sharp contrast with the style of the building. The first time Ariel left the lush decor of the lobby through a small door in the corner to the right of the elevator shaft, she remembers being surprised: she had expected a nice café with a full array of delicatessen refinements. Instead she had found herself in a small, poorly-lit room, with a few homely, dark brown tables and chairs and a TV on in a corner. The counter offered a simple menu of cafeteria food and the walls were covered with shelves of food items in truck-stop style. But on reflection she likes it that way because at least it is affordable. She just smiles at the thought that this deli, cooped in a corner of a building whose style reflected the tastes of cosmopolitan executives and the means of her mammoth employer, is very much like her.

After getting their orders, they all sit around a table. Beliza reassures Sandra that her quality won't affect her pay until she is put on warning. When Sandra expresses her surprise that this has not happened yet, Ariel asks her: "Do you want us to tell them to put you on warning?" They all laugh.

Suddenly Eric leans back: there is a caterpillar on his plate, furiously looking for a safe place to continue its caterpillar life, away from the hot baked potato placed on the leave of lettuce where it had made its

home. Screams and sighs around the table: it is terrible, it is unbelievable! The man at the counter is very apologetic and takes the plate away. Eric tells him that he need not bring anything else. The deli employee comes back a bit later, explaining that he talked to the manager, and that they are only going to charge Eric for his salad, that is, \$2.45. Given that the combination was \$3.60, the discount is minimal. At first, Eric does not argue. He does not seem ready to put up a fight for a few dollars and seems resigned. Still he looks dejected when he comes back and quietly explains to his companions at the table what happened. Everyone complains that it is unfair; they commiserate with Eric and exhorts him to stand for his rights. Sandra even mentions that she has a friend who would have made such a fuss that the whole room would have eaten for free! By the nervous motions on Eric's face, it is not clear that he enjoys this loud compassion. Whatever his original feelings may have been, however, he is now undoubtedly compelled to take some action. He raises from the table to go and talk to the manager. He walks away swinging his shoulders under his black leather jacket. After a while, he comes back beaming: the manager has agreed to waive the entire bill. Justice has been served.

The conversation resumes. Quality is a problem with the whole unit. That's why the idea of a phone unit has been raised. With all these phone interruptions, it is easy to make careless mistakes. Eric does not know whether he would like to be just on phones for a whole week. And what would they do when there are too many calls at the same time? And now they are going to monitor long calls! Everyone knows that there are business calls that are long. Beliza reminds everyone of that 45-minute phone call that drove her crazy. Surely "they" will recognize that this is unfair.

The conversation turns to the storm that is expected for tonight. Suddenly, Beliza starts telling a story about her adventure during that terrible flood a few years back. Her husband was sure that the road was safe and that the water was shallow, and he drove on. But suddenly the car started to sink and water started to ooze in from every crack. They had to get out through the windows and climb on the roof. Her husband had to jump into the water and wade through it to get some help. The AAA officer was teasing her husband with mocking skepticism until he saw the car and realized that he was going to have to dive into this water to hook the car up and get it out. Mind you, the car started before the incredulous eyes of all onlookers. Beliza always comes up with these incredible stories. But it is time to go back.

As the group reaches the office, they see a gorgeous flower arrangement on Harriet's desk. Since she is out to lunch, they get the story from Trish that her husband had forgotten their anniversary yesterday and was really sorry about it. To send all these flowers like that, he must have been. Ariel notices that Joan's desk is all clean. She remembers the visitors and gets her desk in some order. In her mail

bin she has found a response to an inquiry she had sent to technical. "This guy's gonna yell at me." Joan asks her who that is and she reminds her of the case.

Ariel: "His wife's deductible is not transferable from one employer to another."

Joan: "Make sure you tell him about the three-month carry over. That will make him feel better."

Ariel: "Good idea."

Joan: "This guy's a kid,"

Ariel: "He's 23."

Joan: "He can't get too mad."

Ariel: "He works in the warehouse or something."

There is no answer. Ariel will have to try later. Gayle has rushed over to Annette with her walkman in her hand: "Quick, tune to KROK! What a great song!" She would not do that if Harriet was here. Annette complies and starts dancing on her seat, still processing: "Oh yeah!" Ariel asks to listen and Annette hands her her headphones. Ariel likes the song, but she can't work with music; she gets too distracted.

When Harriet comes back from lunch, she hands Ariel the response from Quality Review on her void dispute: her judgment has been accepted as valid. Good! In spite of her weight concern and the morning cake, Ariel allows herself to take a piece of chocolate from the jar on Harriet's desk. It's hard to resist when that jar is always there, tempting you. Back to work. On an ambulance claim, Ariel does not have a diagnosis, but finds one that would do in claim history. Since she is a bit hesitant, "just to be sure," she goes over to Nancy to ask whether it is still necessary to assess the medical necessity of the ambulatory transport now that she has found a diagnosis. Of course not.

Now this claim looks like a duplicate, but Ariel can't tell from the claim history on line; she needs to check the original bill to see if the services covered are really the same. She goes to the microfilm reader, but the claim was recent and the film has not yet come back from the lab. So Ariel has to fill out a request for clerical to get a copy of the original bill on paper. She clears out of the claim and puts it aside. Here is a claim for a routine lab test which, according to her search through history, seems to have been performed in the context of a larger exam for a specific diagnosis. She turns to Joan, starting with: "Joan, this is a stupid question, ...". After she has received an answer, she feels that she should have known, but that it is always better to ask someone else. She could also have referred the claim to the technical unit, but people there would think: "Doesn't this girl know?"

The four visitors announced in the morning have arrived, and they come towards Ariel's unit. Kathryn, the assistant-manager, and Roger, from technical, are giving them a tour. These are important customers, who represent a large case with over 20,000 "lives." The office looks pretty good. Ariel can't hear what the touring group is talking about, and she does not try. She is, for a moment, struck by the way they walk, slowly, with assurance and enduring smiles. She notices their sweeping gazes and their wide gestures as they ambulate around the office, discussing, pointing, laughing, nodding. There is a managerial elegance about the way they look at the landscape of her working world. She thinks fleetingly of long distances, of airports and carphones, of meeting rooms and signatures, of statistics and charts. The visitors and their guides pass by Ariel's desk, ethereal beings, angels gliding by in the aisles. Ariel stoops over her work, her knuckles busy with their staccato on her keyboard, her gaze intently scanning characters on her screen, her spirit huddled over the partitioned field of her desk space. Suddenly, the gliding is interrupted. One of the visitors, the benefit representative, has just recognized Beliza's nameplate. They have talked on the phone quite often, but have never met face to face. Beliza stands up politely: nice to meet you. They shake hands and exchange a few giggling words; they are colleagues. Then Beliza sits down, and the group glides on.

It's only quarter to two. The afternoon seems to drag on for Ariel. She is a bit tired and wants to go home. Five more easy claims and she will start processing difficult claims and taking care of other business until it's time for her to leave. This week, she has not done enough junk, but today she must do some. The supervisors have threatened to resume desk searches: making sure that junk claims are not accumulating on processors' desks. Gayle comes over: "Can you take a look at my screen?" "What did I do?" asks Ariel. "I can't understand your note." Ariel goes over to Gayle's desk and explains her what she had done.

"I already made production," Ariel says triumphantly as she draws her 37th circle. She quickly opens her mail and makes a few phone calls, including one to her boyfriend. "See you tomorrow." Joan gets to leave at three. The first junk claim Ariel has been processing turns out to be a "Q," that is, a claim that will have to go through the review process. When a claim is done, the system gives the processor a batch number that will become the reference number for that claim. This number can end with a "Q" for "Quality Review" or a "D" for "Disbursement." Ariel does not know the exact system that allocates Q's. She believes that Q's are allocated on a somewhat random basis, but that certain plans have a higher percentage of them. She does not know exactly to what degree the appearance of a Q is determined by the type of claim that she is processing or by the way that she is processing it, but she heard that her supervisor can manipulate the system function that allocates Q's in order to send specific claims to quality review. Ariel

has been getting a greater number of Q's than usual. As she gets this one, she complains aloud: "What? Another Q? That's terrible! I just spent 25 minutes on this claim!" She does not like to get Q's even though she does realize that having a large number of claims reviewed diminishes the importance of errors since they will then constitute a smaller percentage of correct checked work. Still, you never like to have your work checked, especially after spending so much time on it. Of course, D's too can be incorrect, and be sent back for a recalculations if there is a complaint. But processors do not get penalized for recalcs.

It is ten to four; Ariel will be leaving in 20 minutes. She decides to stop dealing with her junk and to prepare her work for tomorrow. She goes to Sara, the assistant-supervisor, to ask her for some work. When claims arrive at Alinsu, they are opened by the clerical unit and sorted by plans. Large plans result in homogeneous piles and small plans are gathered in mixed piles. Ariel pleads for an easy pile, reminding Sara of the difficult work she did in the beginning of the week. Sara gives her a pile from from the City Hall. That's an easy plan. Ariel thanks her: tomorrow she will be able to make production early and then to catch up on her junk. She returns to her desk and prepares the pile for the morning: only few foreseeable problems.

Five past four: it is time to leave. Ariel has processed 41 claims, 17 of which were completely routine, 20 of which she perceived as involving some difficulty or complication, and 4 of which were junk. She answered 26 phone calls, 7 of which were unpleasant. She initiated 9 calls, 5 of which required follow-up and 2 of which meant having to deal with an uncooperative interlocutor. She fills out her production report: "How much time can we write off for the meeting today?" "Forty-five minutes." She quickly clears her desk, grabs her purse and her coat. "Don't forget that on-hand reports are due today," Annette reminds her. Oh, right, she had almost forgotten. She sits down and starts counting the numbers of unprocessed claims she has in various piles on her desk and writes an entry on the form for each "receive dates." They need to know how old the claims are. It's already twenty past four when she is done. Poor Annette, she will still be here for a while, struggling to make production. Why doesn't she quit? Ariel guesses that it's hard to accept that you can't do something. She rushes to Harriet's desk to sign off.

What a crowd waiting for the elevator at this late hour! Ariel starts talking with Lisa. Is her brother still going out with Shirley? She had heard they broke up. Oh, they are still together. Good for them. The elevator reaches the lobby and the contained crowd gushes out. Did she know that Norma Wong was quitting after ten years? Really? Yes, she had found a new job with Casus Casualties. They had asked her how much she was making. She lied and they offered her more. Not bad! In the lobby, some processors become quiet and some of them

talk till they reach the door. But as they spread through the parking lot, they fall silent on their eager ways home.

The freeway is already a bit slow. Hanging over the hills toward the city, Ariel looks at the grey haze of smog: the sky looks like it has dragged the hem of its gown in the dust. It only seems to be getting worse. Pollution really worries her. What about cancer? There was that old lady whose husband was dying of lung cancer and who called her three times to ask the same question about hospital deductibles. What is going to happen? She would even pay a bit more for gas if she knew it would help. But it would probably go into someone's pocket. As she turns on the radio and starts tapping the beat on her steering wheel, she thinks of the computer system she uses, of the new one to be installed soon that is supposed to do so much more, of the elevator that talks to you: "Well, I'm sure they will figure out something."

***The world
of claim processing:***

***institutions
communities
and participation***

Like any large office, the claim processing center is a small world of its own, with its structure, its customs, its lore, its allegiances, its antagonisms, its routines, its problems, its dramas, its comedies, its rituals, its rhythms. It has its heroes and it has its untouchables; it has its glorious stories and it has its petty gossips. Obviously, the details of the unfolding of this small world become, for better or for worse, an important part of the lives of the people who spend a large part of their waking hours working there.

In this chapter, I try to capture some of the dimensions that make this office a place where one can develop a specific understanding of the world. I make a distinction between the institutional setting that the company provides in its official function of employer and the communal setting that the claim processors construct for themselves to go about doing what they are expected to. I am especially concerned with issues of participation in meaning, that is, of engagement with the possible meanings of activities that is afforded by this articulation of social structures and human beings. In the course of this description, I introduce, informally at this point and sometimes just in passing, most of the analytical categories that will be discussed in the rest of this dissertation.

The claim processing office: people and structure

Claim processors do not live in the limelight; their station is humble. Their job is not considered prestigious, neither inside the company nor in society at large (as seems to be the fate of many feminized jobs). Claim processing has a low status even though it is at the core of the organization of work in the office. Other functions—less prestigious clerical services, and more prestigious technical and managerial functions—are there to make processing possible, to facilitate it or to ensure that it is done correctly or at the required speed. The meagerness of the processors' salaries is commensurate with the reputation of their function: "I could get a job anywhere for what this pays," one of them was telling me.

Claim processors

One of the first things that strikes the visitor entering the claim processing office is that it is almost entirely populated by women. A closer look reveals a few males here and there, but most of the people sitting at the rows of desks are females. This disproportionate majority is not limited to the rank and file. Those occupying isolated desks, obviously in supervisory positions, are also mostly women; and the office manager in her corner office is a woman. Needless to say that the proportions change drastically as soon as one considers upper-management beyond the local office; but the local doing, supporting, and supervision of claim processing is mostly a woman's job.

There is among the employees a candid self-consciousness about this gender-specificity. To my surprise, it caused me on a few occasions in my conversations to witness spontaneous instances of the most common gender stereotypes endorsed by their very victims. The young woman who commented about pettiness in the quote above, and who happened to be studying psychology at a local college after work, simply attributed the amount of gossip in the office to the fact that employees are mostly women. When she sensed my surprise, she quickly changed her explanation to "being close together." But opinions can be more enduring. One oldtimer, a woman in her fifties, asserted with full confidence that being among women was the chief reason they have so many problems in the office. It was at a lunch gathering of twelve people and no one offered any objection or corrective despite my bewilderment, which I was admittedly trying to keep to myself. I went on to ask why they thought mainly women take these jobs, and I could not get any hypotheses beyond statements that men just were not interested in this type of work.

Another striking feature of the group of claim processors is that they are mostly either teenagers or in their twenties. For many of them, this is their first or second full-time job out of high school. A few claim processors are middle-aged, or even elderly, but they are clearly exceptions. Though the supervisors are usually slightly older than the average claim processor, most of them are very young women. I was surprised to learn that the instructor of one of the classes I attended, who had become a claim processor after graduating from high school, was under twenty-one years of age at the time she was in charge of the class. The overall impression of the claim processing center is thus one of a pool of young people. There seems to be some interest in hiring older employees. A middle-aged woman who had recently joined the office told me that she was asked during her very first job interview whether she was interested in being a supervisor, a question she attributed to her age. (She was interested then, but had changed her mind now that she had had a chance to see what the job of a supervisor is like.) It will become clear that there are structural reasons claim processors are usually young at Alinsu, such as the recruiting strategy of not requiring prior experience, and the linking of all wage increases to performance, which provides little reward for seniority. Given management's complaints about high turnover, one wonders why the company does not do more to retain its employees. My incomprehension in this regard was shared by all the processors I talked with, and even the office manager agreed but told me that she had her hands tied as far as that level of policy was concerned.

Most of the employees are white, with a few African- and Asian-Americans. I have neither witnessed nor heard about any racial tensions, but processors with similar ethnic backgrounds do tend to congregate into distinct cliques. This is in contrast to males, who remain isolated and never constitute an explicit group (except for a small group of Asian-American males).

There is a range of socioeconomic backgrounds with a concentration on the lower middle class. Very few employees have a college education, but a good number of them are working there while attending college or some other school. The claim processing job itself clearly belongs to the lower middle class: low wages but a clean, comfortable environment; low status and production quota, but a white-collar occupation centered on the processing of information rather than manufacture; fairly limited career prospects in practice, but in theory at least some possibility of upward mobility based on individual achievements; an impersonal pool of workers, but a sanctioned respect for private life and individual rights; no union and little sense of solidarity, but a shared sense of respectability, a pervading canon of politeness and friendliness; no class struggle, but a hopeful, if unromantic and even begrudging at times, acceptance of the game, an overall claim of "fair treatment" shared—with numerous

reservations and complaints on both sides, but nevertheless shared—by employer and employees.

Units

The office is divided into “units.” A unit consists of a supervisor, an assistant-supervisor, and a group of employees varying between 10 and 30. These units specialize in the type of insurance they handle. The claim processing center handles two types of insurance. The traditional health plan pays benefits as “indemnity”: the subscriber receives services from a doctor or provider of his or her choice and the plan reimburses medical bills at a given percentage, usually 80%. More recently, Alinsu has developed a new type of “managed medical” plan under which subscribers have to go to a restricted number of “preferred providers” if they want to receive the maximum benefits available to them (usually full coverage with only a nominal fee per office visit). Hoping to attract more patients, these preferred providers have signed contracts with Alinsu, which set their fees for eligible services below the usual levels. There are different training classes for these two types of insurance, and most claim processors have only learned to handle one type or the other.

There are between 5 and 7 units doing actual claim processing. Within their own type of insurance, units also specialize in a number of “plans,” that is, they handle the claims submitted by the employees of specific client companies. The number of plans assigned to a given unit can range from one, for a very large client, to over a hundred. With some exceptions, individual members do not specialize in the various plans assigned to their unit.

In addition to these claim processing units, there are four support units. One unit provides clerical support, such as mail handling, sorting incoming claims, etc. Three provide technical support: one does the ongoing quality review and the other two, one for each type of insurance, provide assistance to claim processors with difficult questions and resolve special problems requiring investigation.

Units used to be in different offices, but now, because of the open layout of the space, they are no longer isolated. Familiarity, ties of friendship and rivalries, news and gossips, conversations about work as well as other subjects, and a sense of common existence are not confined by unit boundaries. Given the specialization of each unit, questions and discussion about specific claim processing problems usually remain within one’s unit.

As I was doing my fieldwork, the number of units doing claim processing was changing because Alinsu, in hope of decreasing turnover, had opened a new office in a small town eighty miles away, where the labor market was perceived as more favorable for tedious, low-paying jobs. Many employees were in the process of moving there.

In fact, the unit I joined for a while was the consolidation of three dwindling units; the merging created some transitional problems as client files were being transferred to the new office. These unusual difficulties made the unit somewhat less representative of the office as a whole, but at the same more typical as existing issues were exacerbated. After my departure, even this unit dissolved and processors were assigned to different units.

Officially, the move was only to be partial: traditional indemnity claims were to be processed in the small town, and the new type of managed medical claims were to remain in the metropolitan office. As became clear from the conversations I heard or participated in, however, a good number of claim processors suspected on the basis of recent cases in other parts of the country--and I personally have no evidence one way or another--that Alinsu planned eventually to close down the metropolitan office completely and to move the entire operation.

Organization, management, and local allegiances

When I started my fieldwork, there were three assistant-managers (two women and one man), each in charge of a specific group of two or three units. The office was managed by a team of two women of equal rank within the company. During my stay in the office, one manager and one assistant-manager moved away to take charge of the new claim processing center.

Administratively, the office is under the jurisdiction of a regional office, located in another distant city, which itself reports to the national headquarters. In addition to organizational supervision, the regional office provides high-level claim consulting for cases the local technical staff cannot handle. The regional office also handles other related functions such as pre-authorization and underwriting. I will not need to speak much about the broader organization.

The claim processors do not have many occasions to be in contact with the regional office. Occasionally, they are requested to dress well and to keep their workspace clean because of a visit by some manager, whose name they may or may not have heard. They can also read about managerial feats, plans, transfers, and promotions in the internal publications they receive. Except for supervisors, whose function and status straddle management and unit membership, claim processors do not feel much connection with even the local management.

“For one thing, I don’t really know [them]. Sure I say hi to them, but they don’t really make themselves, you know, known to us. Like we just know their names, we don’t know what kind of a person they are, we don’t, we don’t know anything, they just, they’re just there. We don’t really know what they do, we don’t really know anything about them.”

What happens beyond the confines of the local office, then, is extremely distant and vague in their minds, and mostly irrelevant to their sense of their existence in the office. For instance, while I was there, an important change in top management took place, with significant consequences in terms of policies and overall direction for the division to which the office belongs. But the only reason I knew about this high-level shuffle was that it was mentioned in an internal publication I read (and which was distributed to all employees). At that time, I did not understand the corporate significance of the change, which I understood much later while talking with an upper-management officer. To my knowledge, the corporate shuffle never even once became a topic of conversation among claim processors.

Authority and discipline: "It's like an all-girl school"

The atmosphere of the office is an interesting mixture of undisputed authority and self-conscious attempt at liberalism, of strictness and friendliness, of cold regulation and individualized concern. A number of processors have used the image of a school to describe the relations of authority and discipline of their workplace. One of them grew up in an all-girl private school:

"It's like an all-girl school, with all the little rules, etc. Six months ago you could have anything you wanted on your desk. You should have seen some of those desks with stuffed animals all over. Then management came and said they could not have these stuffed animals. They thought it looked unprofessional. ... Like you can't come in with shorts. They take disciplinary actions for this or that."

The image is indeed quite appropriate to capture both the structure of authority and the response to it, not only for the training classes, but "on the floor" as well. During her lunch break, a claim processor went to see a friend of hers who was working in the clerical support unit. They talked for about twenty minutes while her friend kept on working.

"[Her supervisor] timed us and came down to tell [my supervisor]. [My supervisor] didn't care, so I didn't get into trouble. But she had timed us. That kind of thing goes on here all the time."

There is something definitely infantilizing to the overall structure of authority and discipline. During a unit meeting, a senior technical person in her fifties was explaining a technical issue. She called the processors' attention by starting with: "Girls, ... and boys, huh..., guys."

kids, ...". This theme of infantilization will be reinforced in the coming sections when I describe the incentives used to motivate the processors and the perception of their skills.

Although it is possible to make too much of the school image, the roles and forms of authority of managers, assistant-managers and unit supervisors are in many ways akin to those of principals, headmasters, and class teachers. There is a collegial atmosphere of knowing adulthood among the people who hold these functions. I heard stories of processors being summoned to the manager's office for misbehaving, for instance, for harassing a colleague who they thought had been unjustly favored. Units have some freedom to organize their own work: who handles which claims, who answers the phone when, etc. They have their own ways of doing things, their own styles, but according to processors, this depends mainly on the supervisor. Though units hold meetings in which they discuss their problems, decisions are not taken communally. In spite of the mostly friendly relation maintained within their units, supervisors set the atmosphere and clearly represent the company's authority. Yet, and like many a high school teacher, the supervisor is not really perceived as owning her authority:

"She is just a glorified processor; she does not have any power, can't hire and fire or take any serious decision without the consent of the home office."

But the supervisor is a figure of authority nevertheless:

"And then you can see who is like, friends with their supervisor too. ... And you don't want to get too involved with those people because they are going to talk on you."

Most claim processors were somewhat ambivalent when I asked them whether they considered their supervisors to be their friends. One claim processor, who had been in the office for only two years, but could be called ambitious and definitely had a career-oriented view of her own position, was explaining to me that friendliness can only come once respect has been established. She thought that it was dangerous to mix up friendship and business. The mother of one of her close friends, for instance, occupied a managerial position at Alinsu, but she was emphatic that she never talked about business with her. She thought it improper for a supervisor to go to lunch with her subordinates below her assistant, mainly because of the need to appear impartial. She claimed that, even though there was no official policy about lunch arrangements, there was a tacit understanding that supervisors don't go to lunch with their subordinates, and indeed I have never seen it happen, except on officially organized events.

Above all, the school image captures the discreet but pervasive need to inculcate discipline. This is done by a confluence of explicit rules of

conduct with a diffuse appeal to a tacit morality, which is clearly thought to originate beyond the walls of the office but of which management is the guardian. For instance, an oldtimer told me that management had asked her to "be good, because others look up to [her]." There is a maternal care at the same time as there is an intransigent insistence that one has to submit to the duress of the claim processing destiny. I remember on a few occasions classes I attended and diatribes I heard bringing to my mind images of certain women's communities in which the obliteration of the clitoris is a ceremony imposed on newcomers by the very persons who had to endure it. These were fleeting images, overly dramatic and not to be taken literally, of course. But there exists a form of maternalism which at once reproduces conditions of oppression and creates ties of solidarity across hierarchical and generational boundaries through a sense of shared destiny and moral continuity.

Some processors, mainly those with substantial work experience, resent the infantilizing character of the way they are treated. For instance, one of them had to make up time on rare days when she was late in spite of the fact that she often comes in early. She insists on the stiffness of the rules, which she thinks is in part cause for what she sees as the irresponsible attitude around the office.

"I'm sorry. I am a responsible adult. I feel like a kindergartner when they do that. And I don't like that. That irritates me. Especially in view of the fact that I do come in early. I never take my afternoon break. And there is no give-and-take still."

But for the most part, processors, many of whom are just out of school, accept this treatment as a natural and necessary part of their work lives. Most of them even accept the need for external structures of discipline as a protection against their own weaknesses. They claim that they need this type of "support" in order to do what they have to. When some of them were telling me the story of a processor who got fired right there and then because she had complained about Alinsu as an employer on a radio show the weekend before, they endorsed the company's action. When I asked them whether they would like to work at home with an electronic connection to the office, many of them commented that they would never be able to muster the discipline necessary to meet production quotas. I also remember trainees saying that they had requested to be placed in positions where they would have to concentrate.

Melissa:	"I asked for a specific desk. Because I want to have my own desk, my own section by myself. Cause when I'm with people, then I start talking and I don't do my work. And when I just, like, focus on my work and do my work, then I'm fine."
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Judy:	"Right. That's why I picked a place right by the supervisor too, so, huh, I wouldn't talk. I'm right next door, this should be ..."
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Processing claims: procedures and processes

At Alinsu, claim processing is considered a routine job by upper management. When I was requesting permission to do my study, some managers at the corporate office had deemed it necessary to warn me about the factory-like nature of the claim processing centers. They described claim processing as an assembly line and came close to calling it mindless. Yet when I tried to process claims myself, I found the job to be far from routinized (something that is probably also true of most assembly-line jobs in their actual practice as opposed to their descriptions; and I will argue in a little while that even whatever mindlessness the job may be said to have is very mindfully made part of survival strategies). The processors show some awareness that the sophistication of their job is not fully recognized.

"There is a lot involved, a lot involved, right? And I think they think it is just like that, like a little candy line where you pinch the candy as it goes by to keep the shape, and that's all you do."

In fact, the job is quite complicated: it requires a high level of concentration, accuracy, and organization; and achieving proficiency takes time and assiduity. Claim processing in practice continually involves making decisions and resolving problems as a large portion of the claims present one irregularity or another, ranging from an unusual name given for a procedure, to a seemingly excessive charge for a personal item such as paper napkins during an hospital stay, to a disputed resolution about a complicated bill for multiple surgeries requiring a preliminary second opinion by another surgeon. The job is also continually changing as procedures and policies keep being modified, and medical practice keeps evolving. Dealing with customers on the phone calls for both tactful grace and solid nerves. And combined with these demands, production and quality requirements can make life seriously stressful and necessitate the use of strategies and shortcuts to meet quotas.

Proceduralization and localization

While I found claim processing to be a complex activity, I also found that its organization makes it very localized. Procedures and rules are effective within the process itself, and claim processors can do a reasonable job with a minimal understanding of the worlds in which

their work functions. Claim processing as it is understood in the office does not require, for instance, a knowledge of the underwriting principles that ensure that contracts being implemented are profitable. Nor does it require any deep understanding of the medical practices that the claims are about since claim processing rarely involves direct judgments about medical practice.

During the classes I attended, we very rarely talked about these related practices; the focus was almost exclusively on applying the procedures of claim processing. We went through examples of claims; we were told how to interpret the information on claims of the type under study; we were given a few definitions of terms; we were shown the different cases that can present themselves; and we were instructed about encoding schemes. Early on, this had the advantage that trainees could be involved in actual processing after only a few days, but as the classes went on and after the classes were over, this exclusive focus on procedures made for a narrow horizon.

Being proficient at claim processing consists in being able quickly to determine the benefits that should be paid according to the plan as it was on the date on which medical services were rendered. The goal is to apply the rules and the procedures in order to pay any benefits due in accordance with the contract with the minimum of complication. In this respect, health claim processing differs from casualty claim adjusting (such as auto and homeowner insurance) where claims must be scrutinized very carefully and are often contested. Health claim processors usually do not judge the reasonableness of medical practice and very rarely question or contest a doctor's decision.² When a claim seems to present a problem, the claim is referred to the technical unit where a technician takes the case over. Production quota prevent processors from being substantially involved in the resolution of these difficult cases and to understand in some detail how these more difficult decisions are taken. Usually, the technician merely returns instructions about appropriate actions to the processor who completes the administrative part of the processing.

“But for us, that's sufficient, because they read the operative report, and they can tell, by reading that, that it was necessary ... We can read the operative report, but it does not mean anything to us because we don't have two thousands in back to reference.”

² When I asked a claim technician why doctors' decisions, such as the need for repeated office visits, were never questioned, she told me: “Question the medical profession? You must be kidding!” This is the way the situation is perceived on the processing floor, in spite of the fact that Alinsu seems to have a reputation for being very stringent and competent in its attitude toward the medical establishment (from private conversations with a management consultant who has done work for the insurance industry).

Some processors complain about this narrow focus, claiming that it prevents them from doing as good a job as they could if they had a better understanding of the context of their work.

“Also, if they can't follow up, they're gonna make mistakes. If they are just a little cog, you make mistakes. Because you're doing what you do, this is what I do, but you don't know where it's going from there, what's gonna happen to it. And eventually, if people don't have that feedback, they're not gonna do it. You know, when it comes up, and they get this, they're gonna say 'Oh, I don't know what to do with this.' Toss it.”

But for the most part, claim processors go along with the institutional conditions under which they are instructed to work. They accept the primacy of production and the claim that production requires a narrow focus. One processor reacted with the following explanation to my impression about visitors being from another world (see preceding chapter):

“If you turned around and asked every time somebody was, you know, behind you or something, you would not get your production done. If they'd stop, and then I can..., they want us to produce, that's that, we're here to produce. If they stopped every time a visitor came by and introduced us or something, you know, then, it's five minutes here and five minutes there. You think, 'oh it does not add up' but it does, you know, on production. I mean, they are not going to let you take the time off, which is, I mean, but it all adds up, you know, if you stopped every time someone came in.”

There is therefore on the part of management a confusion between a structurally localized function and a routine one (a confusion the processors sometimes share in their own self-image). This confusion is in itself interesting because it reveals both the distance that separates the two worlds and a sort of mind/body view of the corporation, which makes it difficult to attribute intelligence to the fingers.

Formats to process claims

Currently different computer systems are used to process claims under the two types of insurance: indemnity and managed medical, but Alinsys-2, the new system that Alinsu has just designed will eventually handle both types of insurance. Claim processing is not mechanized at this stage, even though Alinsu has plans increasingly to automate the process. The current computer system is not very sophisticated and only very moderately complex to use. It is basically a form-filling

system with some content checking in the form of caution messages and calculation capabilities; the form-filling system is supplemented with a database that provides on-line access to a series of files containing information about insured individuals, claim histories, providers of medical services, procedure codes, etc. This system implements an idealized, linear view of the job, moving processors from screen to screen, prompting for information, until benefits are calculated.

Knowing how to use the computer system is an important part of knowing how to process claims. The fact, for instance, that there are two different systems for the two types of insurance has resulted in two different training classes, even though there is much overlap between the two insurance types, both in the concepts that must be mastered and in the processes that must be learned. Indeed, the systems have even become normative frames for thinking and talking about the job. Processors often describe their work in terms of the functions of the system they use. They say: "Now you can PRCL," instead of "Now you can process the claim, or "I will need to learn PROSYS," instead of "I will need to learn managed medical," or "PF4 did not give you anything?" instead of "The claim history did not contain the information?"

Along with the computer system, a number of documents support claim processing, including calculation sheets that facilitate specific operations and memos that inform processors of changes in policies and procedures. There are also thick training manuals, but the instructor of the first class I took reassured the trainees who seemed worried when they saw the size of these manuals:

"Don't worry, we are not going to use them much in practice. We don't usually use them, but Corporate wants all claim processors to have these training manuals."

In contrast, when she distributed a small binder containing memos about specific procedures and encoding schemes, she said:

"This is going to be your bible."

The memo shown in Figure 3.1, illustrates both the complexity of the procedures to be followed to determine the eligibility and benefits of certain claims and the way this complexity is handle by decomposition into local steps.³ (Note that this memo was distributed throughout the office only one month before it was used in the class.)

³ In this figure, as in most of the figures in this thesis, some details had to be blacked out to preserve anonymity.

MEMORANDUM FOR:

[REDACTED] GROUP
CLAIM COMPLEX

June 12, 1989

SUBJECT: MRI's - Initial Determination

FROM: [REDACTED] (Claim Approver)

When evaluating MRI claims you will need to obtain all or part of the following information:

1. Determine if the the Manufacturer of the MRI equipment is eligible. (see attachment A)
2. Determine if there is an eligible diagnosis that would warrant the MRI (see attachment B).
3. Determine if the charge is for a global fee, professional component, or technical component.
4. Determine the number of sequences taken.
5. Determine unit value (see attachment C)
6. Determine correct conversion factor (see Fee Schedule Summary - [REDACTED] Conversion Factors in the [REDACTED] Specifics manual).
7. Determine the allowable charge.
 - a. NON PARTICIPATING PROVIDERS: refer to attachment D.
 - b. PARTICIPATING PROVIDERS: unit value x correct conversion factor.

If the manufacturer of the MRI equipment is not eligible, or if body part undergoing the MRI exam is either ineligible or conditionally eligible, the claim must be referred to the technical service unit.

However, if the manufacturer of the MRI equipment is eligible, and the MRI exam is of an eligible body part, the claim can be paid. The allowable charge will be input manually through the override function.

Figure 3.1. The cover sheet of a memo used in a training class.

Claim processors do not work directly with the “contracts,” the legal documents that spell out the liabilities of Alinsu in its relations with client companies. They work with summaries of covered benefits prepared locally by a claim technician who specializes in producing these plan descriptions for use by the processors handling individual plans. An extract from one of these plan descriptions, which are known as “MAT,” is shown in Figure 3.2.

██████████ Corp.

POLICY: ██████████

SCCC: A
MAT REVISED: 11-17-89
COB: Modified
B-day Rule 1-1-89

ELIGIBILITY: On Line
TERMINATION: End of the Month
PRE-EXIST: Yes- Standard 90 Days
CLAIM OFFICE: ██████████

CHECK SERIES: ██████████
CASE TYPE: ██████████
PLAN TYPE: Spec. Basic
CONTRACT STATE ██████████
DENTAL ██████████ Yes

** ██████████ Eff. 12-15-86 - All hrs. except 50 **
██████████ Employees ONLY
** ██████████ added to ██████████ eff. 6-1-88 **

BASIC

(7) E/D SAB: \$300.00 / 30 Days

MAJOR MEDICAL

\$150.00 ded / \$450.00 Family / 80% (85% if ppo) to \$4250.00 or \$3750.00 if 1 hosp. ded. has been taken or \$3250.00 if 2 hosp. ded. (Actually \$1000.00 Out-Of-Pocket including MM & any Hospital deductible(s)) Does NOT include outpatient psych / bal @ 100% for remainder cal yr./ 3 Month Ded. Carry Over / NO MM Carry Over / \$1,000,000.00 MM Maximum / ***** The \$4.00 co-payment (\$2.00 for generic drugs) for prescriptions purchased through ██████████ Healthcare's mail service prescription program is not eligible - eligible drugs NOT purchased through ██████████ Healthcare remain payable under the plan

(7) E/D Hospital: SSPPR & Misc @ 100% / Unlimited Days / \$100.00 per confinement deductible**Deductible does NOT apply to ██████████ Hospitals eff. 12-15-86 ***NOTE an additional ded is not required if re-admitted within 30 days / ██████████ 20% non-compliance reduction (Eff. 7-15-85) / Includes Pre-Admit Testing within 7 days, facility fees for outpatient surgery at the hospital, or an eligible surgical center, Ambulance fees for local travel, and Anesthesia Fees / 1st 7 days well newborn (hosp) payable under Mother's file

*** UGP BASED ON 90TH PERCENTILE / SEMI-ANNUAL UPDATES ***

(7) E/D Surgery: UGP payable @ 80% (85% if ppo)

(7) E/D Assist: Same as Surgeon

Psych: UGP payable @ 50% / Annual maximum \$1500.00 / Lifetime Max \$50,000.00 (Eff. 6-1-85)

*****MSW IS NOT AN ELIGIBLE PROVIDER OF SERVICE*****

Alcohol & Sub. Abuse: ** Inpatient confinements are eligible **
Inpatient- 20 Days per cal. year (Eff. 6-1-85)
Outpatient- \$1500.00 **
Both- 10,000.00 Lifetime Max **

Medicare: Active EEs & Dep. - Benefit Reduction / Entitlement Basis

(OVER)

Figure 3.2. Extract from a MAT.

Processors are aware that they are working with a simplified version of the real binding document, and the legal contracts as well as the explanation booklets published for insured employees are available for them to consult. Processors express some ambivalence about working with a simplified document, which is symbolic of the ambivalence they feel about the position and organization of their function in relation with its content. On the one hand, they like the freedom that simplification seems to afford them, but on the other hand, they feel somewhat deprived.

Maureen:	<p>“[We] don’t really go into the contracts. I have a friend who works for [another insurance company], and when you work there, OK, let’s say you handle X company and B company, you have their contract right there at your desk. These are the only contracts you handle, those two, and you have the contracts there, so somebody calls up and you have a dispute, you can look at the contract and just say ‘well, your contract says this.’ Well, all we have is a plan description, you know, it’s not..., so you are not really dealing with the real intricacies of this, you know what I mean. Where we just have the plan, well, they have the contract and it spells everything out. So we have a real problem with that.”</p>
Etienne:	<p>“Are the contracts difficult to understand. Are they written in legalistic language that ...”</p>
Maureen:	<p>“I don’t understand’m, you know what I mean. I don’t have to deal with them that often, so to go look at them, it’s all like, you know, the Arks, it’s all like Greek, you know. Why don’t they just say we’ll pay this, we’ll pay that, you know. It’s all the legal stuff, you know, herewithto, and towithhere, and ... you know, instead of just saying pay this, you know. But I mean, I think that gives you a better understanding of the plan, and you know all the ins and outs, where it’s ... we just have like a simplified form, you know, and it does not put all the information you really need to know on there. So if you got a call in, well, you’d have to go check the plan, the plan description to see what there..., where it’s really saying.”</p>

Professional discourse

The localizing effects of the formats that organize claim processing are felt most clearly in the professional discourse that is sustained in the office. With regard to claim processing, it concerns almost exclusively the local definitions of terms, the procedures, and the encoding process. There is essentially no public discourse about the nature of the job and its place in the context of both the business of the company and the debate about healthcare. On occasions, a person will come to a meeting to speak about a more global business issue. For instance, an assistant-manager came to one meeting I was attending to give a report about her trip to a large client's annual benefit open enrollment session. She described the competition the Alinsu plan was receiving from a local HMO and her estimate that Alinsu would probably lose about 10 percent of the employees. She mentioned that the main reasons these employees changed their benefit plans was that Alinsu does not have preventive coverage. Nobody in the meeting asked the question why Alinsu's indemnity plans mostly do not cover preventive care, what kind of calculation or philosophy give rise to this attitude, and how much business the company will have to lose before it changes direction.

The assistant-manager reported that the chief complaints she had received from enrolled employees were about phone calls that did not go well. Everyone is aware of that problem.

“Oh people are so, oh, it's so bad now the phones. I'm embarrassed the way some people answer the phone [laughs]. I'm embarrassed the way they tell the poor insured. It's terrible, it's terrible. Phones are really bad. Alinsu does not realize that, but they are creating a lot of animosity with these insureds by the way the phones are being answered. It, it makes them mad.”

Answering the phone is a substantial part of the responsibilities of claim processors, not only in terms of the time they spend, which on bad days can approach 50 percent, but more importantly in terms of the energy they invest. When I asked some of them if they would like to work at home, their first reaction was positive on the assumption that there would be no phones. They feel that they are the target of expressions of a dissatisfaction whose causes are beyond their purview and that they do not have the information or the time to convey a clear understanding to dissatisfied callers.

“After four months, they put you on the phone. I was scared to death.”

I will illustrate in the next chapter how the localized nature of the professional discourse can become an important factor in making

phone answering unsuccessful and frustrating. The company started a campaign to promote the theme of "customer service." They organized some phone awareness training sessions in which they showed and discussed video clips of people who are treated rudely by service providers, at the bank, at the store, at the gas station, and who decide not to come back. These sessions did not have very much effect on the processors I asked. In the Appendix, I will argue that broadening the professional discourse would have more substantial long-term effects.

Control and incentives: production and quality

Claim processors are obviously there to earn a living. They all complain about their wages, but even though they know that there are companies that pay better than Alinsu for similar positions, it is not the case that most of them are actively looking for another job (though a good number are). In general, they do not talk much about more global structural disparities in income. Of course, when they see what doctors charge, they do note the income difference, but they express this with a kind of unassertive bitterness.

"God, whatever happened to the Hippocratic oath?
Whatever happened to serving mankind? Granted they should make their profit. They went to school for 12 years, they have to pay back their school loans. But do they have to pay it back the first month?"

Altogether, there is very little public political concern among them and they do not see a need for unions or collective bargaining. When they complain, it is mostly from the local point of view of their own achievement within the reward system of their office.

That money is the main connection giving meaning to their presence and involvement is acknowledged by everyone, employees and management. Practically, this is instituted in a number of incentive schemes. Not all incentives are financial, of course. As in most workplaces, there are incentives that provide personal recognition rather than financial rewards. There are common forms of recognition, including the "employee of the month" certificate, which comes with a small gift such as a pen with one's name inscribed on it; a bulletin board displaying cardboard stars with at their center the pictures of employees who worked a whole year with "perfect attendance" (attendance is actually considered very important by management and close monitoring of attendance especially in the first few months is the reason many new employees are fired); frames displaying letters of thanks sent to employees by satisfied customers; and various internal company publications featuring articles about

employees' feats and listing promotions. The most prestigious personal recognition is the "400 club," which one joins by processing 400 or more claims in one week. My short experience as a claim processor suggests to me that this is quite a feat indeed. The knowledge and ability of some people was in fact described to me in terms of the number of times they "made the 400 Club." One employee in particular is famous all over the office for making the 400 Club quite regularly. The names of the members of the 400 Club are inscribed on a brass plate with one star for each week they reached the 400 threshold. These personal incentives, however, are not taken very seriously, unless they are backed by a financial reward or the prospect of one. This has led to an elaborate system of reward structures, which instills the financial incentives into the daily rhythm of work in a very pervasive way, even though it is only partially related to the processors' own sense of a good job.

Measurements: production and quality

When claim processors talk about work, the topic that comes up again and again, almost obsessively, is that of "production and quality." These are the two ratings by which their work is evaluated, according to which promotions, or "levels," are awarded, and which, if they fall consistently below expectations, will cause them to be put "on warning" and eventually to be fired.

The rate of production is officially defined as a number of claims per hour and computed by the company as an average on a weekly basis. But in the experience of processors, production is primarily a daily goal. Daily production quotas range from under 30 claims a day for trainees to over 60 for experienced processors. At each level, processors can be put on either of two quotas depending on whether the "caseload" is considered "normal" or "difficult" with an average difference between the two of about five claims daily. Processors monitor their daily production with the use of "circle sheets." These are lists of numbers printed on a sheet of paper on which they circle the "batch numbers" corresponding to the claims they process. Work is interrupted with quick calculations such as divisions of the number of claims processed so far by the number of hours worked. Expressions such as "I'm making production," or "I didn't make production," or "I need ten more claims to make production," or "Did you make production?" punctuate the activity of the office as well as the breaks like an ongoing litany: they are met with wholehearted sympathy, an immediate recognition of an undisputably shared concern.

Quality is the ratio, expressed as a percentage, of the number of claims in error over the number of "Q's" as the claims checked by quality reviewers are called. After the training period, the quality requirement is 95%. Q's are not generated as a fixed random sample. Instead, they

are selected on the basis of various criteria, which can vary from week to week and which include the type of claim, the amount, the information entered, or the plan under which a claim is paid. Claim processors seem to be able to predict whether a claim is going to be a Q to some degree, but not very accurately. Some errors can be disputed and result in a no-error void (which does not count against quality but still has to be reprocessed without counting toward production anew). Since not all errors result in a void, the quality measure focuses the processors' attention to specific areas.

The computer system produces weekly individual computer printouts that are distributed to each processor. These reports detail one's average production and quality for the last week, four weeks, and thirteen weeks. Maintaining high quality and a production sufficient either to keep their job or to get promoted is the cause of much stress for most processors, especially newcomers.

"They have to have a way to do quality here, because we are working with people's money. And of course, they want high production. But it's very hard to get both, and keep the employees."

The stress caused by the pressure to produce is given as a main cause for the turnover, which is extremely high. For instance, six months after the end of the second training class I attended, only two of the eleven trainees remained. All others had either quit or been fired. While the office manager told me that this case was somewhat unusual, she admitted that turnover was a serious problem. When I expressed my surprise at this state of affair for which there seemed to be simple solutions, she said that she had her "hands tied" as far as measurements, requirements, and salary scales were concerned.

Promotions: levels

One's position in the company, and therefore one's salary, is determined by one's "level." Levels are known as numbers among claim processors, who commonly use statements such as "I am a level 6" to identify themselves. Each level also corresponds to a different position title, but these titles are only used on certain official documents and to sign letters sent to customers. Outside of claim processing, functions are described by titles, such as "clerical," "claim consultant," or "assistant-manager," even though each of these also has a level associated with it.

Moving up one level is considered a very important goal. To qualify for the next level, a candidate must perform at the production and quality requirements of that next level for 13 consecutive weeks. Claim processors start at level 4, which is considered a training level. Trainees can only remain at that level for a year. Past that time, they will be put on warning, and eventually fired if they don't qualify for

promotion to level 5. Once they are "level 5's," they are not required to move to higher levels in order to keep their job. The highest level that one can reach as a claim processor is level 8. Up to that level, promotions are awarded through the computation of production and quality, and there is no direct competition for positions. Positions of level 9 and above are no longer considered "claim processing" and are made by selective appointments when there are openings.

Moving from one level to the next entails an increase in salary ranging between 18 and 25 dollars a week. In addition to the monetary reward, levels are important in determining who gets chosen for open positions and who will perform certain special tasks, such as answering questions, teaching a training class, or taking care of special claims. Any task that frees one from direct production requirement is usually considered desirable. Obviously, there is some status associated with higher levels, though this is not overemphasized. Processors usually know the levels of the people they interact with, such as the members of their own units. When someone moves from one level to another, the person who makes the announcement, usually the assistant-manager, gathers the unit around the supervisor's desk, and everyone cheers and applauds.

Other financial incentives: raises, bonuses, and special deals

Independently of their levels, processors can get yearly raises. These raises are awarded individually on the basis of employee reviews. While reviews are perceived as important, they do not have the pervasive, rhythmic, pressuring characteristic of the production/quality/level system. Reviews take place every six months for the first two years, and annually after that. They consist of a questionnaire, the "performance appraisal guide," filled out by the employee and of an interview with the unit supervisor or the assistant-manager. The interview covers a review of production/quality as well as attitude during the period, a discussion of areas in need of special attention, and the setting of goals for the future. Reviews result in one of three levels of pay raises: low, average, or high. Some processors argue that these reviews are an unfair substitute for regular cost-of-living adjustments since they always tie pay raises to performance and one even suspects that this is "a way of cutting cost: if they give you bad reviews, they can give you small raises." This issue has given rise to some resentment among oldtimers. Indeed the pay raises of continuing employees are always based on their original starting salaries, but Alinsu has had to adjust starting wages to the cost of living in order to keep attracting new recruits. Oldtimers therefore often find their wages insufficiently different from those of newcomers.

Processors can earn quarterly bonuses if they consistently exceed their quotas. The computation currently underlying the award of bonuses (they used to be straight \$1,000 bonuses, an oldtimer

complained, but now their amount is tied to the actual extent of overproduction) is much less clear in the minds of the processors than the computation resulting in moves across levels. Since many processors already perceive the production/quality/level system as taxing, the bonuses are not foremost on their minds, but for a few of them, mainly oldtimers, they are a way to gain some extra income on a fairly regular basis. Bonuses are announced in the same way as level promotions, with the assistant-manager calling the attention of the whole unit: "Please join me in congratulating Bonnie Darwin who just got a bonus of \$350. Congratulations. You are moving right along. We are real proud of you." Everyone applauds. Someone shouts: "Lunch! Lunch!"

Claim processors can work overtime on weekends when the "on-hand" (backlog of claims to be processed) is high, and many of them do. Whenever the load is so high that some overtime work is needed, special events are organized to offer special deals to those who participate. For instance, on one occasion, the deal had been that in the unit from which the most people would show up on a Saturday of overtime, these people would earn half a day off to be taken when they chose. (As it turned out, there had been some miscommunication and the processors had understood that the whole unit would get the half-day off! Only those who came did.)

A few times during the year, the load gets so high that management has to organize a "push weeks." During such a week, everyone processes claims, sometimes even supervisors, and special incentives are put into place. I witnessed one of these push weeks, when the backlog went up to 11,000 claims just for our unit. There were two incentives for that week: first everyone was invited to work overtime, each day and over the weekend; second, claims over 20 percent over production would count twice (but in order to keep quality high, each void would count as three). I had expected to find the office very tense that week, but most processors in our unit had given up on the bonus and were just working for the overtime. Figure 3.3 shows the sheet that was distributed to claim processors to calculate their performance during push week.

Doing well: satisfying measured requirements

The system of automatic promotions based on unambiguously explicit measures of individual achievement ranks high on the reasons processors give for taking the job initially. In spite of the unattractive starting salary, they like the fact that there is a well-defined path to advancement and that they can feel they have control over it since advancement is perceived as depending only on one's effort. One newcomer processor had held a previous position as a salesperson in a department store where she felt that her efforts there were not being recognized. By contrast, she liked the fact that at her job at Alinsu there is a constant feedback on how well she was doing:

"They give you incentive to keep going. If you do good they tell you. That keeps you working harder, and to know that you have a goal."

But more experienced processors do not share her enthusiasm as they start to see mismatches between the measures used for evaluation and actual work.

"A lot of things are done through a little incentive here and there. ... Production is the all important thing. Actually, those things, Alinsu makes it that way, because your quality and production is where you get your levels."

They complain that the official production/quality measures only very partially reflect their involvement with the job and the quality of their work as a service to the customers.

One important event that took place toward the end of my fieldwork was the announcement that quality review managers were in the process of redesigning the quality measure, about which there had been too many complaints. For one thing, and most importantly for claim processors, the measure was unpopular because it was considered unfair. Since the Q's were not a constant random sample, but a selection of specific claims, the number of Q's one received during a given week was very variable depending on the types of claims one had to process. One single void could therefore turn out to be excessively significant on a week during which one had got only very few Q's.

From the standpoint of management, there were many areas in the processing of claims that the quality measure did not cover. For instance, information about diagnostics had become more critical as the client companies had placed more importance on the collection of statistical information. Generally, claim processors were glad that

some effort was made to improve the quality measure, which they all agree was badly designed; but they were not overjoyed. Their sense of their own station is a mixture of resignation and suspicion, which prevents them from being very assertive or very hopeful. In fact, many of them were openly skeptical about the possibility that the new measures would change their lives substantially.⁴

Mismatches between measures and work create serious conflicts, which are in fact one of the main reasons the job is considered stressful. For example, processors constantly have to curtail their commitments to customers who call on the phone because phone answering is not an explicit part of their production or quality measures. They are torn between their own sense of what would satisfy a customer and the requirement to fulfill their quotas. (Management recognizes this issue. When following the merger of three units, the number of phone calls became unmanageable in my unit, processors were allowed to write off 5 minutes per additional phone call beyond 75 calls per week. Note how the resolution is always in quantitative terms, however.)

These local conflicts are reflections of more global conflicts, having to do with market competition, with the needs of client employers, and with perception of customer expectations. But there is no recognition that these are global conflicting demands, and claim processors are not invited to participate in the resolutions of these more global conflicts: they just inherit these contradictions in disguised forms and become their unwitting battleground. Thus there, to say the least, some irony in this distorted reproduction of global contradictions through local evaluation structures since the perceived purpose of these evaluation structures is precisely to shield the local work from a need to be involved in the actual resolution of global conflicting requirements.

Identities of non-participation: normative structures

I have described three dimensions of the institutional setting that structures the world of claim processors. I have talked about structures of behavior with their explicit and implicit rules of conduct; I have talked about structures of processes, with their rules of procedures; and I have talked about structures of evaluation, with their rules of control.

⁴ When I was there, the new measure was only being tried as a pilot test in one unit. I have not yet gone back to ask the processors what difference if any it has made for them.

Normative structures

Even though these dimensions concern very different issues, there is something common about all three. In each case, the connection that claim processors have with their participation in the social world is mediated by external normative structures, in the construction of which they play very little part, and over which they have no sense of ownership. The fact that advancement is calculated on the basis of their individual achievement makes them feel that they have control over their participation in the fruit of their labor, yet this control is only localized to the ways of belonging defined by these overarching normative structures.

These structures are everywhere. Think of national standardized tests or of the lists of criteria of consumer reports: they become definitional. The prevalence of these normative structures in modern capitalism has been the subject of numerous studies. Weber claims that they constitute a form of rationalization which is at the core of the bureaucratic institutions he sees as characteristic of modern social systems (Weber, 1922, cited in Giddens, 1971). In a different vein, but along similar lines, Foucault (1975) shows how since the era of Enlightenment, structures of power have metamorphosed. Analyzing correctional institutions, he contrasts the confrontation between the "body" of the monarch and the body of the accused with the more recent depersonalized application of legalistic measures. The solemn need to punish then gives way to a more pervasive yet less conspicuous need to reform: brutal conquest is replaced by morally enforced enlistment. At the heart of this transfiguration of power relations is the creation of overarching normative structures that mediate and define these relations.

Lukacs (1922) and Latour (1986) insist on the computational purposes behind these reified structures as they enable rationality to become a calculus based on "superimposable" representations. Latour describes the development of capitalism as the development of centers of calculation where these representations are manipulated, affording power over the limitations of time and space. Latour also insists on the ability of these "immutable mobiles" to travel across contexts while retaining something of a constant meaning. But this mobility requires the erasure of the practice out of which the representation has arisen (Star, 1983). Therefore it is in the nature of such reified structures to distort what they are about in order to make it transportable to another world in which it can become part of the calculus of an alien rationality. These are contradictions inherent in reified control mechanisms.

These normative structures interlock across hierarchical organizational levels. To borrow Latour's elegant phrase, they form

"cascades of structures." In corporations, all the way upstream to bottomline considerations, managers receive their own directives with attendant measurements of a similar nature, and these are reflected in the way they design the context in which their subordinates understand their functions and their performance. Similar processes are in place in public education where control structures for teachers, for schools, and for districts are, in a succession of interlocked loops, based on overarching normative structures for determining curricula and controlling student performance (see McNeil, 1986).

Identities of non-participation

The organization of the setting in terms of these overarching normative structures gives a sense of a disconnected community, which does not participate in serious ways in the meanings of what its occupation is about beyond its local set of activities. For the claim processors, these normative structures have a double effect. On the one hand, they impose an external definition of correct behavior, of the content of activities, and of the quality of work that supersedes, or even displaces altogether, the processors' own sense of these issues. On the other hand, they are quite opaque since they gain their effectiveness from localizing the need for action. Their opaque character then limits the processors' access to resources for an understanding of situations that would enable them to develop their own sense of what their job is about, within the corporation and within the broader health care system.

Participating as a full member in the practice of such a community gives rise to a sense of self as only marginally involved, something I will call an "identity of non-participation." Even though processors complain about their lot in its details, they basically accept the system as it is in its general form. For instance, they take the measures of production and quality quite seriously and apply them to their need to feel that they are knowledgeable and capable. Meeting production requirements is not only a financial concern: it becomes a yardstick of one's individual capacities. As the unit I had joined was going through changes and the rate of phone calls was unusually high, one processor, like many of her colleagues, was having difficulty maintaining her production and quality at the required level:

"Right now, I am more frustrated than bored. It's so hard to feel yourself go down. I don't think of myself as a dysfunctional person, but I sure feel like one."

In calling the phenomenon I observed *identities* of non-participation rather than just *experiences* of non-participation, I want to draw attention to the far-reaching ramifications of this sort of syndrome when it is endemic as in the situation of the claim processors. An identity is an enduring definitional construction of the self, which is

deeper and longer-lasting than fleeting situations. Non-participation does not seem to be a mere situation, but it becomes part of one's life, a way of life, an essential ingredient of a worldview in which processors find their place and define themselves as social agents in the context of their work communities. As one is involved in the details of claim processing, and in the social organization of these details in the life of a specific community, it becomes difficult to think of different ways of participating and of belonging. Admittedly, at this point in my fieldwork, this choice of term is based on an intuition which needs to be documented further. Not only are identities of this sort not something that one can expect the persons involved to be very articulate about, but identities of non-participation are obviously not just localized in the claim processing center: they did not just arise there, but are something that processors bring with them in one form or another from their schooling experience (Eckert, 1989) and their previous jobs; it merely gets reinforced in various ways by their experience in the claim processing center. Further ethnographical study will be required to explore the degree to which these identities of non-participation extend to other parts of their lives and how they are articulated with other circumstances, such as their membership in other communities.

This notion of identity of non-participation is very close to what Marxist theorists call alienation. In Marx (1844), alienation is a relation of objectification between individual workers and the product of their work, which is determined by the ownership—or non-ownership—of the means of production. It is certainly not my purpose here to deny, or even to downplay in any way the importance of economic relations and of relations of ownership, which are no doubt crucial, and all too obviously a source of disparity in reward and as a consequence of disengagement. But I prefer to use my own term. On the one hand, the term alienation is a bit too loaded historically and theoretically for me to feel comfortable using it at this point, and on the other I want to situate the problem in the local construction of identity. By proposing the term identity of non-participation, I am trying to avoid the two extremes of individual relations between workers and the product of their work, on the one hand, and of class-wide relations of non-ownership on the other. As I proceed, I will attempt to give embodied force to the concept of identity of non-participation in the context of forms of membership in localized communities in which ways of belonging are constructed in day-to-day practice and in situated relations with other communities and their own practice. Indeed, claim processing is the practice of specific communities to which being a claim processor implies that one belongs. Out of the communal construction of the world that such communities are inherently involved in, there arises a localizing coherence to being one among claim processors.

Meanings of meaninglessness

The relation of non-participation in the global meanings of one's activities is not necessarily uncomfortable or undesirable. In the claim processing office the "meaninglessness" that derives from the mediation of normative structures does not cause the existential malaise one might expect after reading the preceding sections. For the most part, claim processors are neither rebellious nor cynical; in fact, most of them—and I would even venture to say all of them—care about doing a good job in ways that I found quite surprising considering the status of their position and the reward structures they live by. But that willingness does not become overtly conflictual as it operates within the confine of a circumscribed definition of their commitment. It does certainly become internally problematic at a deeper level as most processors experience boredom (in the middle of their relentless and stressful business), depression, and brittle self-esteem.

Vivian:	"I don't bring it home, but it's like, while I'm here, I you know, I get depressed."
Judy:	"Oh, yeah, while I'm here, I get so depressed."

The processors' basic willingness to get involved and their fits of depression are crucial points to keep in mind here, in case my discussion of the issue of meaninglessness was to confirm prejudices commonly held about people occupying low-status positions by giving the impression that these workers are careless, lazy, unintelligent: "the kind of people who *want* a mindless job." In the complex, mutually constitutive relations between individual qualities and structuring circumstances, my emphasis is definitely on the latter, in their wide-spreading, deep-reaching, yet never simply causal ramifications.

Meaninglessness as freedom: leaving one's job behind

Meaninglessness, when identities of non-participation are viewed as a licence to non-involvement, can be a source of freedom. For most processors, the fact that they can leave their job behind as soon as they walk out of the office is an aspect of their relation to their work which they value highly. "I don't want it to be, like, my life is my job," one of them said to me. "I'm off. That's it!" said another. They have nothing to carry with them, nothing to think about when they go home. There, they can find themselves: they can lead their own lives, do their own things. What they describe as the worst possible situation is when the stress of work becomes such—as it sometimes does—that it spills over into their private time and they start thinking about claim

processing when away from the office. Indeed for them, the sense of themselves they gain through a definite separation between work and themselves is a precious island of meaningfulness, which they are very clear about wanting to preserve. "It's not worth it," they say. They care for it in such a way that the meaninglessness of the job does not invade their sense of identity to a threatening level.⁵ Many processors explained to me that they are not interested in moving on to supervisory positions precisely because they are concerned that the stress would erode this freedom. This cultivation of meaninglessness as preservation of self is not something they talk much about, but it's in the air, a tacitly shared understanding. It manifests in the instantaneous legitimacy obtained by remarks about looking forward to the weekend or wishing it was four; it manifests in the way they inject into their working relations spontaneous conversations about their private lives, their hobbies, their favorite TV shows, their relationships; it manifests in the way they walk out and say good bye at the end of the day, in the way they hurry toward the parking lot, and scatter toward their cars, becoming at once silent and animated as they go their separate ways. Not many of them sustain tight bonds of friendship with colleagues outside of the office.

Interestingly there is a reciprocal understanding on the part of management. The manager of the office one day called me into her office to talk to me about my presence in the office. Her main concern was that she did not want me to intrude in the employees' breaks: "It's *their* time," she declared. Whether someone had complained or whether the manager had just seen me carrying a notebook when going to break with my classmates, I will never know. What is striking is the complementarity of the attitudes of the employees and of management with regard to their respective involvement into each other's purpose. An unexpected balance seems to have been achieved between the respective needs and interests of employers and employees as they currently perceive them: you give me your time and I'll give you money; you don't need to be interested in me and I don't need to be interested in you. Identities of non-participation are an essential ingredient of this *compromise of meaninglessness*.

Meaninglessness as resistance: managing one's learning

We often think of the absence of learning as resulting from lack of intelligence, lack of perseverance, lack of interest, or plain minimalist laziness. The trainees in the classes I took, especially the first group,

⁵ In fact, they enjoy a freedom that I sometimes envied in my position as a graduate student, whose work is never finished and whose thesis hangs overhead like a constant threat both to one's future and to one's sense of self. Conversely, when the processors saw me come and go, making my own schedule, they thought that I was lucky to enjoy such freedom. But of course, little did they know...

which was composed of part-timers, seemed to me to be very good at managing their own learning. They were very concerned about sorting out what they needed to know and what they did not. My first reaction was to conclude that they wanted to invest the minimal effort for the money they were going to receive, and I was admiring how hard they worked at that and how well they succeeded in maintaining their vigilance. But I have also observed them when they were talking about other more personal subjects, their cars, their weekends, bars, drinking age, and their inquisitiveness did not show the same restraint, the same control. Thus I have become persuaded that in managing their learning in the class, they were not just being cognitive minimalists, but that they were managing the construction of an identity they could live with. It was important, not only to be as comfortable as possible, that is, to minimize their "effort," but also to maintain a distance, not to invest oneself, not to *become* a claim processor. Ironically, making sure that they were learning just how to do the job as defined for them and strictly how to satisfy the requirements was in itself an art that required much effort.

A small but symbolic incident will illustrate my point. I had asked the trainees if I could bring my taperecorder during break and record some of their conversations or ask them some questions. They all balked quite violently, agreeing unanimously: "No way! We don't talk about work during break." I was very shocked by the directness and strength of their reaction, but it was communicating interesting information in itself.⁶ I have in fact observed that they do talk about work quite often during their breaks. They just do not want to think of their breaks in those terms. Admitting that they talk about work on their own time would be admitting that they have identified themselves with work, that the clear separation they work hard to maintain is threatened.

I mainly observed this active management of learning during the first class I attended. The trainees were part-timers who had other careers and ambitions outside of Alinsu and who knew each other because they had been working with clerical support for a few months before joining this class as a group. The instructor was always ready to volunteer information beyond the purely procedural process to be performed and the trainees were therefore the ones who organized their degree of involvement. In the second training class, the instructor was much more in control of the curriculum and kept the focus on the procedural aspects of the job. There was thus little negotiation about what needed to be learned. The trainees were also a different group: they were new employees who did not know each

⁶ And this was admittedly a blow to my fledgling identity as an ethnographer, both because they did not want to talk to me and because they associated me with work, something I had worked hard to avoid. My intention was not to talk about work but to get to know them better.

other previously and were trying to become full-time employees. The confluence of the authority of the instructor and their own position of dependence meant that they were much more docile. As the class proceeded, the same phenomenon of managed learning became apparent, but at the level of the newly formed friendship groups and almost exclusively outside of the class.

Meaninglessness as a relation of disconnectedness

While I have in this piece of research concentrated on the world of claim processors and tried to adopt their perspectives as much as possible, I have had enough contact with management to note that identities of non-participation are a reciprocal phenomenon in the corporation. I have mentioned earlier the fact that claim processors see management as something very distant and mostly irrelevant to their lives. But of course management does not participate in the world of claim processors any more than the processors participate in the world of management. In fact, I suspect from my conversations that they have only the vaguest idea of what is going on there. This was confirmed to me one day when I was talking about my research with a retired high-level executive who had had a long career in the insurance industry. As I was relating some of my observations to him, I apologized for describing things that I reckoned he surely knew much better than I. Candidly, he corrected me:

“Now look, if you’ve spent several months with those people sharing their life and doing what they do, you know something I have no idea about.”

Indeed, so much of the local work that makes the place function is simply invisible to anyone who has never been involved in the daily practice of claim processing: the little tricks and improvised solutions people invent to cope with shifting situations, the bending of the rules that exceptions commonly require, the relations between people that make it possible to communicate rapidly and effectively, among processors as well as with individuals outside of the office, such as benefit representatives at client companies or bookkeepers at doctors’ offices.

I was talking about the problems of phone answering with one claim processor and she expressed her own puzzlement at this distance between management and workers:

“See, you can see it, and all these little people can see it. Why don’t the bosses see it?”

This profound and reciprocal disconnectedness is something very striking to the newcomer to the corporate world, though it seems to be largely unremarkable to most actors in the workplace. Neither the suggestion box, which nobody uses, nor the company’s internal

publications, to which little attention is paid, do much to bridge this chasm. There are obvious asymmetries—of prestige, of power, of income—which translate into different degrees of allegiance to the corporate structure. These asymmetries are anchored in the distinction that management is supposed to take care of global issues while the workers are supposed to take care of local ones. But one finds at the level of management the same phenomenon of social localization. In each world, that of the broad glance and that of the focused hand, there is the same sense of locality. It is not in what people do that the essential differences lie: in both cases, they solve problems, negotiate the meanings of situations, create useful relations with others, etc. The essential difference seems to lie in the fact that they live and work in such different worlds.

Normative structures such as the ones I have described play an essential role with respect to this reciprocal disconnectedness. I have discussed the effects of the mediating role of evaluation schemes, procedural calculation sheets, and other devices in the construction of identities of non-participation among claim processors. Conversely, data gathering techniques and evaluation schemes play a similar role in translating work into figures that represent productivity and quality. The figures they produce become the material of calculational activities. But to fulfill that purpose, the practice out of which they arise must be erased (Latour, 1986). This process of erasure, from which they gain power in calculations, is also their weakness because it limits their ability to represent how well the actual business is taken care of. Normative structures act as a specific type of “boundary objects” (Star, 1989; Star and Griesemer, 1989) between the communities of workers and the communities of management. They can carry information across while obviating participation in a common practice. They articulate without connecting. They make it possible to globalize the local while at the same time localizing the global.⁷

Meaninglessness as content

Meaninglessness, as the content of identities of non-participation, can take many forms beyond the ones illustrated here. It is often at the core of asymmetric expert/client relations (Schön, 1983). Through the generalized use of normative structures, it can also be said to underlie many of the bureaucratic measures we have devised in order to avoid direct confrontational power relations. More broadly, it is the foundation of the process of commoditization, used by Marx as the

⁷ The term “boundary object” was coined by Leigh Star in the context of her study of professionals and amateurs cooperating in the collecting of museum specimens. The concept will become a pivotal category in the argument of this thesis and will be treated more analytically in the next chapter and in Chapter 7.

pivot of his analysis of capitalist production (Marx, 1867) and generalized as a process of cultural alienation in subsequent literature on the subject (Lukacs, 1922; Hart, 1982). In a service industry dealing with painful situations such as diseases and death, meaninglessness can also be a protection of one's sensitivity. Most processors reckon that, if they mess up a claim, it will become a problem for someone who may be sick or in financial troubles, and they claim to care about that.

“And it's going to affect other people. And it's going to affect the poor person, who's, they are not going to get their money, or it's gonna be cut.”

A few trainees even reported feeling proud of the importance of their function.

“I don't know, it makes me feel important, you know. I'm taking care of someone's money, paying someone's bills.”

While still for the most part trying to do a good job, senior processors are less candid. After having had to deal again and again with devastating stories of customers and their saga in both the medical and the administrative aspects of the healthcare system, they have learned to consider people as cases:

“It's kind of screwy, but you should not think of the person. You have to think of the company.”

This gave rise to a fundamental contradiction in the compromise of meaninglessness in the service industry. I remember, for instance, the time when an assistant-manager came to a unit meeting after visiting the enrollment day at a client company where she had received feedback on Alinsu's performance. Complaints concerned mainly phone answering (see next chapter and appendix for further discussion of this problem). She asked the processors to be more careful with people's feelings. She said she knew, having been a claim processor herself, that people are not always very polite and what it is like to be confronted with complaints.

“If you feel that you have done your utmost, offer them to talk to someone else, like your supervisor or your assistant-supervisor. Sometimes, the mood changes dramatically. Just remember that you are talking to someone with flesh and blood, and who has feelings. They have problems and they are trying to solve them.”

She concluded her exhortation by reminding the processors that Alinsu was now pushing “customer service” as the main theme. I remember seeing the processors listening attentively, enjoying—as they get to write such time off production—a moment of respite from the pressures of their daily quotas. No one disagreed. Phones *are* a

problem. And customer service is important. What this visionary corporate directive meant down in the trenches seemed less than clear, however. What kind of gaze had conceived it? What kind of voice had uttered it? How was its inspirational thrust to be shared? Was the politeness of claim processors the key to customer service? Was it the glue that would mend threatening cracks or the veneer that would keep them harmless? Was this their role, was it their only role, in the grand scheme of things? They seemed satisfied not to know. And why should they know? The compromise of meaninglessness had become a business problem.

In investigating these possible “meanings of meaninglessness,” I have not tried to place judgments of value on the situations under scrutiny, even though the term meaninglessness admittedly has negative connotations. The causes and effects of the compromise of meaninglessness are too complex for a simple value judgment. Rather, I have tried to show that meaninglessness becomes a way of life. Indeed, I have tried to argue that it is not just an absence of meaning—a deplorable vacuum as it were—but a constructed constituent of the content of social relations.

Identities of participation: constructing a community

So far, I have mainly described institutional structures. But no one lives in institutions. Institutions are cultural inventions, social objects that cannot connect with life directly. Like languages, they require the formation of human communities, whose shared practice gives them embodied existence in the social world. Claim processing is no exception. The second half of this chapter is about the community that the claim processors have formed in order to realize for themselves, for their employer, and for other interested parties, the multiple, interrelated purposes that bring them together. I argue that this community constitutes itself in part as a living response to the institutional conditions under which it evolves. It generates a practice which makes claim processing work and it constructs a way of life in which identities of participation are possible.

Communal memory: keeping track of information and change

Expecting a routinized job, one is surprised to find the extent to which change is a part of the life of claim processors: change is continual and ubiquitous. As the instructor of one of my classes was bringing to the trainees’ attention a recent modification to a rule they had already learned, I heard her actually warn them in no ambiguous terms:

“If you can’t take change, forget it!”

The policies, contracts, and procedures are always changing; laws are modified; medical practice is evolving, new treatments become available, experimental procedures become standard; and the processors themselves always invent little ways of improving things, some for themselves and some which they share. Thus what makes the job difficult is the enormous amount of details to remember and to watch for: rules about special cases, endless lists of codes and abbreviations. For instance, Figure 3.4 shows a list of non-covered items, one list among the dozens—or hundreds for oldtimers—that processors have seen and that they must remember.

Of course, it is not a matter of memorizing everything, but a matter of remembering the relevant topics when a claim comes up and of being able rapidly to retrieve the precise information. Processors keep cards and file folders in which they collect and organize this information, but they do not rely on themselves only. Crucial to their welfare in the face of this flood of changing details is the tacit understanding that retrieving information is a shared responsibility. And much of the informal talk about work taking place among processors involves exchanges like the following.

Maureen:	"Patty, Transco is end-of-the-month or date of termination?"
Patty:	"I think it's end-of-the-month."

Ken:	"What was that memo about a new law for chiropractors?"
Myriam:	"Yeah, it was about colonics. They can't do them anymore."
Linda:	"It's <i>beyond the scope of their practice.</i> "

Questions of these types are continually addressed from one processor to another or just thrown up in the air for anyone to answer. They rarely require opening statements or introductions, reflecting a state of open, ongoing conversation, with specialized rules for turn-taking (Linde, private communication; Sacks et al., 1978).

SERVICES AND DIAGNOSIS TO WATCH

Mammography, mammogram	Example of payable dx: breast dysplasia, breast mass, watch: if done for routine purposes, ineligible.
ultrasound, B scan, sonogram (when obstetrical)	Example of payable dx: twins (or rule out), placenta previa, bleeding during pregnancy. watch: if done to determine fetal age, ineligible.
services done by D.P.M.	Foot Doctor. Not payable if done for condition not eligible in foot exclusion (pp 188 & 189) corns, callouses, flat feet. If dx for inflamed muscles or tendons are eligible.
vitamins, minerals, food supplements. Flouride.	Example of payable dx: pregnancy (Pre-natal vitamins), potassium ok for heart condition. See memo for eligible conditions for vitamin B 12. Watch poly-vi-sol, tri-vi-flor, etc.
Birth control & other means of prophylactics	Example of payable dx: for birth control pills: endometriosis hormonal imbalance. watch diaphragm & IUD insertion (surgical procedures). IUD removal ok if for inflammation. Ineligible if done for routine purposes.
pap smear	
cosmetic surgery	watch rhinoplasty, rhytidectomy, blepharoplasty, breast enlargement. Anything done solely to improve appearance.
obesity	If provider eligible, refer to technician with patient's height, weight, complete diagnosis & blood pressure readings. See memos for TMJD. If unable to determine eligibility, refer to technician.
TempoMandibular Joint Dysf. (TMJD)	
T B Tine	Eligible if done for respiratory condition or ear condition. watch: t b tine is a test <u>not</u> an immunization. Refer all charges to technician. Do <u>not</u> pre-authorize benefits.
vision therapy, nursing, vitamin therapy, orthomolecular therapy, chelation therapy, rebuttals.	
Biofeedback therapy	If eligible provider, code "M". Determine if psych dx or medical. If psych, must be paid under psych benefit.
Acupuncture	Determine if eligible provider. Diagnosis must be to alleviate pain. Watch: not payable for allergies, etc. Subsequent visits, same dx, from 1st visit
Allergy testing	Watch RAST testing & Cytotoxic testing. Conventional allergy scratch test are ok.
Radial Keratomy, Keratoplasty	Refer to technician. -OR FROM VISIT FROM EXC & WDR
eye exams & tests	Ineligible for refractive errors (Myopia, presbyopia). If charges for testing & you are unsure if eligible, refer to technician. MEMO. (OR TRAINING)
Supplies.	Must be on list of eligible supplies. If on doctor's bill, code "S". If on bill from supply house code "G", explain in claim note. If unsure of eligibility, ask!!

Figure 3.4. Extract of a list of things to watch for.

As processors participate in this ongoing exchange, come up with questions, answer them, overhear conversations, learn from them, intervene in them, correct them, and comment on them, a work unit functions as a communal memory. The free exchange of information is a striking feature of the community of claim processors. Eckert (1989) argues that exchanging rather than hoarding information is characteristic of working-class communities, as opposed to hierarchies such as those existing among the "Jocks" in high school and in corporate life, where trading information offers leverage for positioning oneself. In the case of the processors, an important factor is the absence of direct competition for promotion, which means that there is little perception of advantage in hoarding knowledge. But overwhelming is the realization that the task would be impossible and unbearably stressful if processors could not count on each other.

Because the job can be described in the abstract in individual terms, it is easy to overlook the degree to which it is the social fabric of the community that holds the processors' capability to do their work, as a group and as individuals. This process of communal memory is reflected in a sense of solidarity within the work units. For instance, I heard a supervisor one day talk with a claim technician about a point of contention, and the supervisor ended up saying as an argument against the technician's point: "We got voided on it." What she meant by that statement, to which the emotional content of the allusion to the void gave much strength, is that one processor in her unit had once done what the technician now suggested, but got a void on her claim then. The supervisor's use of the first person plural shows that she was taking the unit as a whole to be the locus of knowledge concerning what was being debated.

Community life and processing practice

One day, as I was processing a claim, I drew an oldtimer's attention to the fact that with the type of service I had encoded (psychiatric care), the code for the place of service I was trying to enter (out-patient hospital) was refused by the system. She looked at my claim briefly, and then just told me to try other location codes until one worked. My face must have betrayed my surprise at this light attitude toward the handling of information, because she exclaimed with a friendly smirk: "Welcome to claim processing!"

Keeping the processing moving is the most important goal, both for individuals whose production is measured in number of claims, and for the company, which calculates its costs in terms of processing cost per claim. So when there is a difficulty, the art of claim processing is to find a legitimate way to get the charges reimbursed to a reasonable extent. For instance, choosing procedure codes for medical treatment can involve trying to find a code that will allow a greater allowance,

requiring one to develop a good sense of how much is reasonable. This juggling of facts and built-in constraint to produce quickly a reasonable story and what makes a story reasonable are not things that are taught during the training class. Even instructors would often acknowledge to us that we had to learn it "the right way" for now but that once we got to the floor, we would get all the short-cuts.

Indeed in order to keep processing moving, the community of processors have devised short-cuts that enable them to satisfy their production requirements. For instance, they are taught during their training classes to fill out certain forms, which contain information about claims they process. These forms serve as cover sheets for microfilmed records, but much of the information they contain is redundant with the claim record attached to them. So experienced processors do not fill out their forms completely; they wait until they have completed the entire claim. When they hit the key that indicates they are done, the computer system gives them a batch number, which if it ends with a Q or a D tells them into which bin to put their processed claim. They complete the forms only if the claim is a "Q." Everyone within the first few weeks after moving to the floor learns that it is not really necessary to fill out these forms completely unless the claim is going to go for review. Processors claim that they would not be able to fill their production quotas if they did not resort to these types of unofficial short-cuts.

Sometimes the short-cuts that are discovered are in direct contradiction with the purpose of the job, even though they comply with normative evaluation structures. For instance, there is a rule that, if a completed claim comes out as a "Q," recalling that claim to make a change to it will count as a void, that is, an error on the processor's quality rating. The rationale for the rule is that processors should pay the same attention to all claims, that is, not pay special attention to a claim that is going to go to quality review, and thus pay less attention to claims that will be paid directly. One unofficial technique that trainees learn—often as early as in their training classes—is that if one notices a mistake on a Q claim after one has completed it, it is better just to let it go, because then there is a chance that the quality reviewer will overlook the error. An error that is discovered outside the internal review process, say, through a complaint by a customer, does not count against the processor. Similarly claims that do not result in any benefits being paid usually do not go through review, even when processed by trainees. I do not know the exact reason for this since I have not talked to management yet, but from my conversation with processors, I can surmise that this is done on the assumption that a non-payment in error will be protested by a customer and that it is always easier to send people additional money than to request a return of disbursed money. As an oldtimer told me:

"I say, an underpayment is always better than an overpayment. Make them happy, send them more money,

you know, it's hard as heck trying to get it back from them, you know."

Many participants are aware of this distinction between canonical and non-canonical practice (Brown and Duguid, 1990), especially those who are both practitioners and teachers. In one of my classes, the instructor was discussing the case of pre-existing conditions. Some plans limit coverage on health conditions that have been diagnosed and for which medical treatment has been received before the employee joins the plan. The instructor both insisted that everyone should understand the concept and the procedures, but hinted that there were many cases for which it was not worth checking this issue in too much detail because Alinsu would usually end up paying anyway. After negotiating at length with the trainees how much exactly they needed to care about this, she turned to me and said privately:

"Well, as a trainer, I can't tell them that nobody does it. It's one of those things, you know, where it's understood that just nobody does it."

The proceduralization I have talked about earlier is therefore very incomplete. And even though the high-level rhetoric is definitely in the direction of a routine view of the job, there is support for the functioning of these unofficial aspects of the practice, or at least little active opposition. There seems to be a tacit recognition of their usefulness. Whereas schools tend to oppose the non-canonical practices of the communities in their midst (Eckert, 1989), the business world cannot thwart them too actively because there is a job that must be done. In this sense, the corporate world is sometimes forced to be wiser than schools by its need to be effective in its stated purpose.

Still business seems merely to have learned to live with these non-canonical practices, even while often maintaining an official line to the contrary. This official insistence on hierarchical control of processes makes it difficult to recognize non-canonical practices and to support their development to their full potential. I think that the highly hierarchical style of management I have observed, typical not only of Alinsu but, I am told, of most corporations in this country, is an enormous problem, given the importance of improvised practice in getting any job done (see Appendix). It is somewhat ironical that in a country that prides itself on defending the effectiveness of free-market mechanisms as opposed to the inefficiencies of bureaucracies in centralized economies, the internal organization of corporations so much resembles that of the sociopolitical systems they are meant to denounce.

The construction of local perspectives

Through these exchanges not only does the community function as a communal memory, but its idiosyncratic practice serves as a context for constructing a view of the world in which local meanings are sustained. Of course, there is the internal jargon typical of the practice of all communities. The following is a completely ordinary sentence heard in the office, which few readers can be expected to understand.

“We get so many recal on out-patient hospitals. Like often we receive the PC visit later and there is a dup or the patient calls and complains about out-of-network benefits.”

But beyond the local jargon, and in part through it, the practice of the community implies a view of the world. Even though claim processing does not require a significant understanding of related practices, such as underwriting or medical care, there is a substantial involvement in the languages of these other practices. Terms such as “pre-authorization,” “cost-containing features,” “third party liability” are part of the local vocabulary. Similarly, claim processors acquire a large repertoire of medical terminology. During their training, they take a course in medical terminology in which they are supposed to learn the meanings of many of the etymological roots out of which medical terms are constructed.

The mechanical mnemonic-associative method used to teach them this terminology is symptomatic of the way in which institutional views of expertise can ignore the rooting of knowledge in the practice of a community. During the terminology class, the students watch a videotape. For instance, for the root “gastr-”—which happens to mean “stomach”—the audionym of a “gas truck” is introduced, because it sounds like “gastr.” The picture of a gas truck appears on the screen, but the truck has a stomach for a tank. The students then are expected to use this association to remember that the root “gastr-” means stomach. At each session they are presented with 25 of these intentionally illogical associations. While some are rather direct, like the gas truck example, some are rather far-fetched. For the root “per-” the audionym “purr” is introduced with a picture of a cat, which “purrs” and “throws out” a family out of a house. “Throw out” is proposed as a reminder that “per-” means “throughout.” In the course of our training, we attended a number of these sessions, but it was very difficult for the trainees to get anything from viewing these tapes, and they were not able, nor willing, to pay much attention.

This pedagogical approach is in absolute contrast to the way in which this terminology gains a local meaning in claim processing. It is typical of many such courses that the instruction only attempts to connect a element of the curriculum to a verbal definition, not to a usage. When our class attended these sessions, there was no practice involved with

the learning of these roots and their definitions, and no attempt to connect the use of these roots to usages the students may already be familiar with. But if trainees did not learn much from these courses, it is certainly the case that an experienced claim processor commands a substantial medical vocabulary, as these terms come up continually in the claims they process, in the memos they read, and in the conversations they take part in or overhear. In these circumstances, however, this vocabulary is grounded in the local practice with its local needs, as in this question heard during a training class:

“Do you know what corneitis is? I just want to know if it has something to do with the jaw.”

The following exchange, overheard as two equally experienced processors were talking from their desks across a partition, also illustrates how medical terms find a local interpretation:

Patty:	Maureen, do you know what is “incompetent cervix”? The insured put this as a justification of ultrasound.
Maureen:	I'm pretty sure that it's eligible, but we should have this from the doctor, not just the insured.

An “incompetent cervix” is no longer an organ with a specific condition; it has become “pretty surely eligible.” In this transformation, terminological usage—medical or other—takes a life of its own as it enters the world of claim processing, borrowed from the practices around which processing is organized. These terms act as “boundary objects” (Star, 1989) between practices, which allow the different perspectives on them to meet for specific purposes. In the world of claim processing, these borrowed terms are not primarily grounded in the practice where they originated, but become grounded in claim processing itself, in all the rules and procedures of claim processing, in what is covered and what is not, in what to watch for, in what to refer to the technical unit, etc.

Community life: identities of participation

When I asked processors what they will remember about this job once they are old and retired, the first answer most of them gave me was that they will “remember the people.” This answer reveals their personal investment in and allegiance to the local community they are forming with their colleagues. Processors feel invested in their community even though they do not always find what is going on there pleasant or desirable; this young woman was complaining about the gossips that she felt were pervading the place:

“People get petty around here. They have nothing better to do. Everybody is here, and it's a matter of interest. You come and you work here 8 hours a day: it's your life. They know everything that's going on. They do it out of boredom.”

This characteristic of the office by which the social life is filling in the void left by the non-involvement in the job is likely to be a factor that makes the processors liken their work experience to their experience in high school.

Meaninglessness—as freedom, resistance, or disconnectedness—has become part of the local culture. The life of the community is articulated around the reality that the processors' job does not involve their sense of self in any profound way. Indeed, I would propose that one important reason the identities of non-participation generated by the institutional structures do not give rise to an existential malaise among claim processors is that these identities are part of an identity of participation in the local community. Faced with the institutional conditions of its existence, the community constitutes and reconstitutes itself as a living response to these conditions, as an entity which can perform its function and in which membership is existentially non-problematic.

Rituals of participation

There are in the office a number of rituals that maintain a sense of participation—rituals of both meaningfulness and meaninglessness in their intertwined reality. These rituals provide material for the construction of an identity as member of the community. The regular unit meetings have a special status in being both working events, during which business is discussed, and communal rituals, which help maintain a certain level of cohesion among the processors. These meetings are usually quite relaxed: there is almost a family atmosphere to them. Even though the topic is almost exclusively business and unit supervisors keep control of the agenda quite tightly, there is room for participants to engage in community building. They are usually allowed to bring up any issues they care to and discussions are rather open. Claim processors get involved in these meetings and seem to enjoy them (though they would probably enjoy anything that would free them even for a short time from the pressures of production quotas).

Units meetings are far from being the main glue that holds the community together. The sense of solidarity that comes from sharing comments about one's work progress is an example of a more diffuse and pervasive ritual. Like the continual crossing of antennas performed by ants as they go scurrying about their infinite business in its silent orchestration, questions and comments about production and quality

are part of the state of open conversation that characterizes the life of the community: the topic obtains automatic legitimacy.

Renee:	"Today's been quite a day. I've hardly got 20 claims done. It can't just be a simple question."
Patty:	"I have to do 20 claims in one hour to meet production."
Renee:	"I took care of my junk today."
Patty:	"I took care of Darlene's junk."
Renee:	"It can't just be a simple question."
Someone: (from behind the partition)	"There is no such thing anymore."
<p><i>A few moments later:</i></p>	
Renee:	"Well, I'll be fired this week, for sure."
Patty:	"You are going to have to wait in line."
Someone: (from behind the partition)	"See, everyone is behind this week."

Along similar lines, a very interesting aspect of the office world is the way in which the processors' private lives are made present in their work experience. Since I have argued that claim processors find themselves primarily outside of work, one way of making this separation clear is to weave their private into their work life. Within reasonable limits—not necessarily set explicitly but clear to everyone and rarely crossed—such intrusions are not only tolerated, but accepted and nurtured as a natural part of the life of the office. As there is admittedly little material for developing a serious sense of identity in the work of the office, there seems to be a recognition that there has to be some allowance for a social texture in terms of private life. This seems to be a modern concession in the compromise of meaningfulness. Thus processors do not bring their personal life into the community with a guilty sense of conflict between personal interests and work, but as an essential part of their being a member of this community.

Rita was trying to get insurance for her family's old pick-up truck but since her husband had a number of speeding violations on his driving record, she was getting quotes over the phone that she could not possibly afford. Her problem was taken on by her claim processing neighborhood, and everyone became involved, suggesting companies, thinking of possible strategies, letting her use their phone while she was waiting for a call to be returned on her own line.

Personal desks are fascinating symbols of this intersection of life trajectories: photos of family, friends, stars, and pets cohabit with notes about new developments to watch for in claims; shopping lists hang side by side with lists of diagnostic codes; sports articles singing the glory of a favorite team are covered with reminders of phone calls to return; postcards from vacations surround work trophies; and quotations from texts, religious, humoristic, artistic, compete with resolute self-exhortations to process a few more claims per day. On a few occasions, I have seen striking flower arrangements sent by a boyfriend or a husband, standing almost defiantly beside the terminal. These occasions always attract numerous conversations and generous explanations as the whole unit always takes a genuine interest in the cause of such public demonstrations of affection.

Communal events are another way in which private life is woven into work life. Celebrating birthdays as described in the preceding chapter is a regular and important ritual. I even stayed after work one day to help some processors decorate a colleague's desk for her birthday the next day. The annual halloween celebration was an office-wide event that included contests for the best costumes, the best unit decoration, and the best desk decoration. The costumes and decorations were quite elaborate and occupied everyone's mind for days before the event. Nylon spiderwebs hung from the ceilings and covered the desk areas, along with the traditional orange and black streamers. Signs warned of witches and ghosts. At one unoccupied desk, a plastic inflatable skeleton sat on its swivel chair, stooping lifeless, its white hands taped to the keyboard. On its back, a note read:

"Processor burn-out:
this could happen to you."

Private desk had become haunted cemeteries and goblin playhouses. On Halloween day, the office was taken over by a crowd of unrecognizable characters including a comical old couple and the terrible specter of death itself. There was a parade and a distribution of prizes awarded by a specially selected jury composed of representatives from each unit.

Christmas was of course the occasion of many events, which I will describe in some detail, in their order of significance. The qualitative differences among these events, considered as ways of constructing mutual relations, generated very different responses on the part of the processors.

The official Christmas lunch offered by the office was not considered a major event, except for the fact that it allowed an extra 15 minutes in addition to the regular half-hour lunch break. Indeed, it did not leave much room for the nurturing of interesting identities. At 11:00 we went upstairs to the lounge, to find a buffet table laid out with a make-your-own-sandwich meal. The local managers were standing behind the table as employees came by to get their food. When my unit joined

the line, I started to feel a bit embarrassed at the prospect of having to pass in front of these managers to get my pittance; I was wondering if we were going to have to thank them. But fortunately for me the line was becoming long, and before we reached the table the manager decided that it would be faster to form two lines, one on each side of the table. The management group moved away from the table, watching us from a corner of the room and chatting among themselves. They were not partaking in the meal—at least at that time—they were just feeding us. The distance was awkward. Our unit's assistant-supervisor was in the line with the processors, but our supervisor did not come. I did not quite dare ask her why, but I suspect her ambiguous status would make it difficult for her to choose between going through the line and standing with management.

Of more significance was the Christmas party organized by the claim processors, which was not subsidized by Alinsu and took place in the evening at a local restaurant. Both workers and management attended with their significant others, but the two groups remained largely separated. People spent the party in small groups of four to ten, which were fairly steady through the evening and largely reflected existing ties of friendship. After the meal, we invaded the dancing room, where some entertainers invited members of the audience to come on stage and sing popular songs accompanied by a video version of the music, which provided the lyrics in subtitles. The Alinsu crowd was slow to volunteer at first, but once the idea got rolling, they encouraged each other and really got into the game, though no one from management sang. All who dared participate received warm rounds of applause from their colleagues and some of the performances by Alinsu attendees were actually quite good. The game allowed employees to show a different side of their personality and to relate to each other in a new way, including a tinge of sexuality that does not usually find expression in the office. The following week, the performances were the topic of many conversations.

Among the Christmas events, however, none was on everyone's mind and the topic of every conversation like "kringeling" was. This is a game in which everyone in a unit draws someone else's name and during the week before Christmas gives that person a gift every day, while trying to remain anonymous. The purpose of the game is to guess who your "kringeler" is. The game was played by each unit in the office. Everybody was into it and seemed to enjoy it immensely. Some people went to amazing ends to make sure that their kringelees did not know who they were, like creating fake calls to go see the receptionist, or asking someone else to help them in order actively to mislead their kringelee. "Who is my kringeler?" was the question of the week, supplanting in intensity the regular "Have you made production?" Processors were making lists of possible kringelers in their attempt to guess who theirs was, and the information on these lists was traded in serious bargaining sessions. A processor who was giving me a ride after work found a computer-printed note from her

kringeler on the windshield, wishing her a nice evening. She liked the gesture, but immediately started to eliminate kringeler candidates who in her opinion would not know how to use the system to produce such a note. There was something personally interpersonal as well as communal about this game that made it really quite exciting for everyone.

On the last day of the week, there was a communal finale. In the morning, kringelers surreptitiously left a present for their respective kringelees under the unit's Christmas tree, still without signature. We also each brought some finger food and snacked the whole day (while working, of course). After lunch, the whole unit gathered around the supervisor's desk where the tree was standing. Each person took turn taking one guess at who her or his kringeler was, getting another try only after one round was completed. Once someone had guessed, she could get her present. There was much excitement, laughter, and applause. The game was played so well that almost nobody guessed right the first time. Gifts were quite substantial, not only the last gift, which was supposed to be the finale, but also during the week: bottles of wine, pens, sweaters, gift certificates to restaurants, etc.

Decorating one's desk, organizing celebrations, or bringing snacks are distinctive ways of contributing to making the place comfortable. Food plays a significant role in the life of the office, not only because units frequently organize potlucks, for occasions such as Christmas or Valentine's day, and because processors eat a fairly large amount of snacks, candies, chips, cookies while working (an activity in many cases associated with worries about one's figure), but also because the exchange and distribution of snacks are an integral part of the social life of a unit. In the unit in which I did my processing, there was always a box of candies on the desk of the supervisor, and processors would help themselves liberally as they passed by on their business.

It was mostly replenished by one processor, a Japanese-American woman, who had taken upon herself the function of snack provider. This function had become a central part of her identity in the community of claim processors. She always came to work with bags full of goodies, and there was much traffic to and from her desk (she also supplied aspirine, bandaids, menthols, gum, etc.). I happened to sit beside her for some time, and I personally found this ever renewed supply quite extraordinary, but neither the provider nor the munchers seem to view this situation as worth commenting about. When I remarked about her unusual function, she simply replied that the processors need that to feel happy.

"That's what you have to do when you just about live here. [...] They always need something to eat. They can't process unless they're eating something. They are kids. Lots of kids."

Such communal rituals have often been associated with the presence of women in the workplace. Women have been observed in many studies of the workplace to be the ones who pay attention to personal events such as birthdays and holidays (see for instance Kanter, 1977). I would suspect that in male circles other events or forms of celebration bring people together in ways they find meaningful beyond the confines of the workplace; perhaps sports and beer replace birthdays and cake. At any rate, the few males in the claim processing center did not seem the least adverse to participating in these celebrations and the attendant gustatory gratifications, even though one of them told me that he just went along. Still the question of gender cannot be ignored. While I was there, the wife of a male employee became pregnant and I heard some talk about wanting to give him a baby shower, but not being sure whether this was appropriate or how to go about it (They ended up giving him a baby shower after I had left).

These rituals of participation complement the indigenous practice described in the preceding section, with which the claim processors identify. Combined with the institutional setting and in response to it, they provide the texture in which the claim processors develop their relations to each other and to the systems of production to which they contribute. Such rituals may not seem very rich for developing a sense of self with respect to a community and a society at large, but they are what has arisen. Given the low status, the meager salaries, the level of stress, and the tense relations with callers on the phone, these communal creations are extremely—perhaps surprisingly—benign. A colleague of mine was telling me about her experience working over the summer in a New York bank where similar circumstances had led the tellers to create among themselves a very oppositional culture of resistance (Eckert, personal communication). They had developed a ritual of participation that they called “handling the client.” This meant getting back at nasty customers in even nastier ways, but without being rude or leaving any way for the customer to point to any misbehavior on the part of the teller. A very skilled practice, which provided a rich texture for developing an identity in the community. There is definitely resentment among claim processors. At one point, some processors played on this common sense of antagonism and achieved some success by compiling a list of customers and physicians with funny names. In the exchange below, Renee was holding a photograph of an insured employee she had received in the mail as documentation for an injury:

<i>Renee:</i>	“Don't you like to know what an insured looks like?”
<i>Maureen:</i>	“Yeah, so you see them on the street and kill them.”

But the processors' resentment is merely rampant and much less daring than that of the tellers. In fact, when they have to answer the phone and have to talk with displeased customers, they take it quite personally. Callers who have not received the money they counted on can be rather nasty and, not infrequently, even abusive. I have seen processors get very upset and troubled, sometimes even in tears, because a phone call had turned sour. I remember my neighbor at the office, a well-balanced, usually very poised and serene, middle-aged woman, mother of two adolescents. After a long struggle with a caller who was arguing about a deductible, she put the person on hold, just to take a breath. Her body was shaking, her fists were tight and she was holding back her tears, repeating: "I'm so angry; I'm so angry." There was no support in the local culture for turning against the caller in a defensive move. But though there was compassion and comraderie among her peers and even from her supervisor, there were, as I explain in the appendix, no institutional mechanisms for channeling her care and her effort at understanding back into the corporation in a constructive way.

Sense-making landscapes and communities of practice

In this chapter, I have tried to map the "world of claim processing" with analytical dimensions that start to afford a grasp on the "sense-making landscape" of the claim processors. I have furnished the office as a place of learning by giving it social and epistemological texture: identities of participation and identities of non-participation, normative structures and rituals of participation, institutions and communities. By sense-making landscape I mean the organization of circumstances under which the processors feel concerned or unconcerned by what they are doing and what is happening to them and around them. This landscape of understanding is intended to capture the ways in which they attempt, neglect, or refuse to make sense of their world and to participate in new meanings. I am careful to avoid terms like "horizon" because I do not want to convey the connotation of a linear division of the world. On the contrary, I want to convey a complicated, textured set of interrelated differentiations whose ramifications extend over large areas. I have argued that the sense-making landscapes of the members of a community are constituted by combinations of identities of participation and of non-participation. Once considered in terms of community membership, these two forms of identity are not exclusive opposites, but interwoven dimensions. One can, of course, have an identity of non-participation with respect to one's own community or, perhaps more precisely, to a community in which one aspires to belong. But an identity of participation in one's own community can also imply an identity of non-participation in related communities, as I have claimed it is the

case for the processors. Therefore, in the complex landscape of a set of related communities of practice, an identity of non-participation can be a constituent of an identity of participation.

To further define the notion of sense-making landscape, I have outlined a contrast between institutional structures and the communities that are formed within an institution, and I have discussed two related, general types of functions that a community fulfills in its mediating role between individuals and institutions.

On the one hand, a community constructs a local practice, which, among other things, makes it possible for the demands of the institution to be met: it invents and maintains non-canonical ways of negotiating the canonical with the shifting reality of actual situations; it provides local resolutions to conflicts generated by institutional settings such as the contradiction between measures and work; it supports a communal memory that allows individuals to do their work without bearing the whole burden of what needs to be known over time and allows newcomers to enter the practice through a process of peripheral but increasing participation; and it generates local perspectives that allow the world to be perceived in consonance with what needs to be done and language to be used effectively. The word practice in this context is thus not used in the sense of learning by repetition, as in "practicing scales on the piano," but in the sense of a shared way of doing things, as in "reasonable medical practice."

On the other hand, but in ways that are of course not clearly distinct from its practice, a community provides material for the construction of identities: it defines relations among members by providing ways of participating; it articulates their relations with other communities, for instance by absorbing meaninglessness into constructive cultural frameworks such as individual freedom or resistance or by separating and yet weaving together private identity and work identity; and perhaps most important, it provides "existential coherence" that is, it strives to construct and maintain a local coherence of membership that makes participation existentially nonproblematic.

A consequence of this double function of communities is that the practice and the community cannot be separated. I will therefore use the term "community of practice" to capture this dual unity.⁸ It is thus important to underline that the sense-making landscapes of claim processors are not just defined by their functions as claim processors, but are shaped by their perception of themselves as belonging to this community and being part of what the community is about. The idea is

⁸ This term was originally coined by Jean Lave, and we used it in the development of our theory of learning (see Lave and Wenger, in press). I will refer to the concept of community of practice often in the following chapters and discuss it in more detail as an analytical category in Chapter 7.

that people learn what it takes to belong, not just what it takes to perform certain functions. Among claim processors, it is certainly just as important to know and understand the latest gossip as it is to know and understand the latest memo. Belonging is a requirement for performing the functions supported by a community, just as performing functions is part of belonging.

I have made some observations about the rituals of participation of the community of claim processors being benign, as compared to the world of New York bank tellers, or even as compared to the experiences most of us had in schools, where giving the teacher a hard time is often a more salient part of the social dynamics of the student community than is participation in the official agenda. There is also an almost complete absence of hazing among claim processors. All these observations of course point to deeper questions of why the processors are not more cynical and why they accept the game in these terms. These are questions to which I admittedly do not have answers yet. Investigating them would obviously take us beyond the walls of the office into the articulation of the community of processors with the world at large, not only in relations of service, production, and employment, but with respect to the formation of persons in the context of general issues of gender, culture, and economic class.

Recruitment certainly plays a crucial filtering role in insuring some homogeneity among employees. I went through some of the test and a mock interview that new recruits have to go through. In our later conversation, my interviewer told me that what she is looking for are people who "are going to stick with it." She found it difficult to articulate what criteria she was using to decide on that question. She mentioned looking for stability of character and lifestyle and for a personable demeanor, and watching for over and under qualification as well as other ambitions. But she thought that overall she could usually tell. Still, there are definitely variations of background among claim processors. I suspect that some class differences manifest as different attitudes toward the production/quality game, for instance. There are a few very "successful" processors, who accept the production game, understand it and play with it; many fairly successful who bear with it; and a significant number of processors who just don't make it. Even though I have no evidence that this is in any regular way correlated with class background, I have seen at least one working-class young woman who did not fit in the polite, personable atmosphere of the office and just could not meet production; she was fired.

Answering these broad questions is too large an enterprise for this thesis. I am only proposing the beginning of a theoretical framework to move in that direction. The gist of the argument I will try to make is that this kind of analysis is essential to answering questions about what processors know, what they understand about their work, the social systems in which they participate, and the technology with which they engage.

Interestingly, sense-making landscapes and identities of participation and non-participation are relations between communities and persons, not just characteristics of a person in isolation. Therefore, the pedagogical consequences of seeing characterizations such as ignorance, for instance, as identity of non-participation are different from those of seeing it as a state of mind. The pedagogical consequence is that the company or the schooling institution must take the position that this is what needs to be changed. It is not sufficient to provide more information or change curriculum. Since a person's intentions are directed at becoming a member—a specific kind of member at that—the richer the social landscape, the higher the chances that individual can articulate inspiring forms of membership.

Obviously, issues of authority and control are fundamental given the competing interests and asymmetries of power among involved parties in most communities of practice. In these cases, resistance becomes a lever of identity construction. This suggests two types of attitudes on the part of holders of power and authority. On the one hand, one can impoverish the social landscape to the point where resistance is reduced to its minimal expression. To some extent, I think that this is what has happened with the claim processors, not just in the context of the office, of course, but in the society in which they have grown up. This affords control, but it squelches creativity by diffusing and diluting social energy. On the other hand, one can enrich the social landscape to the point where the productive practices become the material of identity construction. This runs the risk of increased resistance to structures of control, but it gains allegiance by supporting the development of creative senses of self. I will even suggest that modern democracies now face choices of this kind.

The use of the term “social” here and in this thesis in general is perhaps in need of clarification. An ethnographer was trying to investigate a scientific community, and a member of that community told her that it was too bad she had just missed the company picnic that Sunday because there was a lot of social science going on there (Star, 1990). The view of the socialness of human existence that I am adopting is more fundamental than that, even though I spent much time describing birthday parties and Christmas games. The focus on communities of practice is part of an attempt to situate all human activity, knowing, and construction of self in the sociocultural context of the practice of specific communities. So when I speak about a rich social landscape, I do not refer to lots of company picnics—which in fact might even be signals of a limited social landscape to the extent that they are substitutes for actual engagement—but to the possibility of deeper engagement in communal practices that align the dynamics of identity construction and interpersonal relations with the stated purpose of the community.

In the following chapters, I will discuss in more theoretical terms the analytical categories I have merely suggested here and attempt to tie them together into a coherent analytical framework. Each of these chapters will address one central category and its related concepts. I will start this theoretical construction by addressing more directly the issue of the implications for learning of a technologized world. To this end, I will analyze in some detail a simple example of a normative structure that became a serious problem for the claim processors. This will illustrate the epistemological problems that can be associated with boundary objects between communities of practice when they take the form of normative structures.

***The black-box
syndrome:
ownership of meaning
community boundaries
and boundary objects***

In light of the framework I have sketched in the preceding chapter, the social world is organized in locally coherent ways so that limited participation in the field of possible meanings associated with specific activities and related objects is rarely directly perceived as an immediate problem that threatens the success of these activities in a readily documentable fashion. The global inefficiencies and missed opportunities that usually result from such limitation either remain too vague, too diffuse, or too broad to be addressed effectively, or happen to serve—often at multiple levels and in multiple ways—the local interests of powers that prevent, actively or passively, their becoming actual issues. In other words, communities cope, and life goes on.

But there are cases in which the lack of participation in the broader meaning of activities leads to specific breakdowns that call for attention. During my fieldwork, I gathered a strong sense of the pervasiveness of identities of non-participation and a deep intuition of their long-term danger from a global perspective, but in addition I was lucky enough to witness one specific breakdown where the lack of understanding of a procedure that claim processors were asked to follow became an obvious problem in their daily work. I will first describe the incident in some detail and then use my analysis of this example to introduce and explore dimensions of what I call “the black-box syndrome.”

The “C, F, and J thing”

There are circumstances under which a person is covered by more than one health insurance plan. For instance, a patient who is retired and aged 66 is eligible for medicare (which for purposes of coordination is considered as just another insurance coverage). This patient, though retired, may still be on the plan of his former employer, and for the sake of the example, let us assume that he is also on the plan of his spouse, who is 64 and still an active employee somewhere. If each of these three plans paid 80% of medical expenses for a given occurrence, this patient would then receive benefits far in excess of the actual medical bills. To prevent such overpayments, insurance companies that provide group coverage have signed a nation-wide agreement to coordinate the benefits received under multiple coverages. The agreement states that the total of benefits paid should never exceed the total cost of medical care received. Under this agreement, when multiple insurance carriers cover the same person, they are ordered into primary, secondary, tertiary carriers, etc., according to a set of specific rules, which claim processors must learn to apply. The primary carrier pays the full benefits in accordance with its plan as if it provided the only coverage. The secondary carrier then adjusts its benefits so as to make sure that coverage does not exceed 100%. If the benefits still do not fully cover the charges, subsequent carriers take turn coordinating their benefits until 100% coverage is reached. In the most usual cases, the primary carrier pays 80% of the charges, and the secondary carrier covers the remaining 20%. In such cases, additional carriers, if any, would not have to pay anything.

Processing COB claims

The coordination of benefits (COB) with other coverages that an insured person may have is an important task of a claim processor in health insurance. It can become rather complicated and both processors and customers often have difficulties understanding all the intricacies of these coordination clauses. An instructor told us that COB cases can become so complicated, with issues of multiple employers or child custody, that “we end up paying benefits even when we are not primary.”

In order to contain costs and offer less expensive plans to employers, some insurance carriers have devised special plans with restrictive COB clauses that do not provide for 100% coverage in case of coordinated benefits. This is the case of what is officially known at Alinsu as “COB by reduction,” as it applies to a client company’s retired employees who are eligible for Medicare.

The basic idea is that under this COB clause employees who are eligible for Medicare and those who are not yet should receive the same total benefits. This means that whenever Medicare is primary, the secondary coverage provided by Alinsu merely supplements the benefits received by an insured from Medicare so that the total benefits are at least as high as they would be if Alinsu was the only carrier. Take prescription drugs, for instance, which Medicare does not cover. Since Alinsu does cover them, Alinsu as secondary carrier under the COB by reduction clause will reimburse drug bills at the percentage of its own plan, usually 80%. But if both Medicare and Alinsu reimburse a type of service at 80%, say office visits, then there will be no additional benefit under the COB by reduction. It is so called because processors determine Alinsu's liability and then reduce it by the amount of Medicare payments. In sum, under this coordination clause, Alinsu merely covers the difference between the two coverages: additional benefits are paid only when the primary carrier has provided less benefits than Alinsu would have in the same circumstances, had it been the primary carrier.

In the class I took, the instructor spent very little time on this subject because she thought that most of us would not have to process these claims for quite a while after our training. She did want to address the topic anyway because she explained that it was "good to know what it was all about." What she meant by that was entirely procedural, however. Basically, what we did was to go through the worksheet shown in Figure 4.1, which is the worksheet used by claim processors to calculate the benefits payable under these restrictive plans. We performed the operations of the procedure line by line with a few sets of fictitious numbers. Learning how to do that was straightforward enough, but understanding what the procedure is about is less obvious, and the instructor spent no time attempting such an explanation, not even at the level of the basic "fairness" idea.

In fact, a close look at the series of operations reveals that things are a bit more complicated than the description provided above. The entries marked C, F, and J on the very right refer to numbers that are kept in the customer's file after each COB operation and must be retrieved onto the corresponding lines. Why must these three accumulative amounts be kept from claim to claim and updated each time on the customer's file? The reason is that the coordination is not computed on a claim by claim basis, but in an "aggregate" fashion, over a period of an entire year. That is, the two coverages, Alinsu's and Medicare's are compared as aggregate amounts accumulated since the beginning of the year, so that over a given year, a person receives exactly the benefits that Alinsu would have paid as primary carrier

Benefit Reduction Worksheet

A.	Agg Prev Alinsu Benefit	\$ _____	(C Prev. Stmt.)
B.	Al Ben Current Claim	+ _____	
C.	Tot Al Agg Benefit	= _____	
D.	Agg Prev Medicare Benefit	_____	(F Prev. Stmt.)
E.	Medicare Ben Current Claim	+ _____	
F.	Total Medicare Agg Ben	_____	
G.	Al Total liability (C - F)	_____	
H.	Al Prev Payments	- _____	(J Prev. Stmt.)
I.	Ben now due (enter 0 if negative figure results)	= _____	
J.	Total Al Paymnts released (H + I)	\$ _____	

/**C, F, J must be noted in claimant file for future calculations.

Figure 4.1. The COB worksheet

even though for certain services Medicare's coverage may be higher than Alinsu's.

Answering the phone

On the floor, I found out that this type of coordination of benefits was a problem. The processors did not understand at all what the procedure of the COB worksheet was about from the standpoint of the insurance concepts and mechanisms it was implementing. As a consequence,

they reported that they did not like processing these claims at all, and often complained about the fact that they did not know what they were doing. They were surprised by the results they obtained from the procedure:

“It works both ways to where 99% of the time they get no benefit. It’s a lot of work for nothing. ... You see, I am so confused on this, and I have to pay these claims.”

In fact, even though they were more or less able to perform the calculations of the procedure correctly by simply following the instructions on the worksheet, most of them usually asked a more experienced processor for help when they had to do such a calculation. As it turned out, I discovered to my surprise that the person who usually helped them, a very experienced and knowledgeable oldtimer, did not understand the underlying principle either. (To her credit, I should say that I came to suspect that most people in the entire office did not really understand this procedure.) She had only acquired a very general but vague idea of how it worked, but what allowed her to help others was that she had gathered enough confidence in the procedure itself to trust that the numbers she arrived at were correct. In short—and this is probably too crude a way of saying it, but it makes the point—she had learned better than her less experienced peers productively to live in ignorance.

The waste of time and the discomforts generated by the processors’ uncertainties or the fact that they did not like to do things they felt they did not understand was not the main reason the problem actually caused a noticeable breakdown in the process. If all the processors had to do was to calculate blindly the benefits to be paid, their community would probably have recovered from these difficulties and organized itself to cope with yet another activity whose global meaning was outside of their purview; it would have become part of their identity of non-participation. But the most serious problem came from the fact that in addition to processing, processors have to answer the phone and talk to customers who do not understand the benefits they receive. Extreme proceduralization may work as long as a simple form of efficiency only is required; but in the absence of other forms of understanding it does not by itself provide sufficient material for conversations in which the meaning of activities must be negotiated.

To appreciate why dismayed customers were calling—and more generally to appreciate the problems faced by the service industry—let us do an “insurance word problem” of the school type. Indeed because of the aggregate computation, past claims influence the processing of current ones in a way that make the calculation of benefits often appear completely arbitrary to customers—and to claim processors as well! The following story will illustrate what can happen; it is fictitious but if it differs from actual cases, it is on the side of being too simple rather than too complex.

A certain Mr. McGregor is eligible for Medicare, retired from his job, but on the benefit package of his wife whose company contracts with Alinsu with the COB by reduction clause. He has a condition that requires the regular use of expensive prescription drugs. In January, he submits a claim for an office visit for \$50, which is covered at 80% by Medicare. Since Alinsu also offers 80% coverage for such visits, he receives nothing from Alinsu. In February he submits a claim for \$250 worth of prescription drugs, an expense which is not covered by Medicare at all. Alinsu reimburses this bill at its regular rate of 80%, but Mr. McGregor understands that his plan has a yearly deductible of \$150, so he expects to receive \$80, 80% of \$100. Fortunately for him, his office visit of last month, while not reimbursed, did count toward the deductible. He receives \$120: 80% of \$150, which is his bill of \$250 minus \$100 of deductible leftover. In April, he submits another drug bill for \$250 and receives the full 80%, which is \$200. In June, he has to go to the hospital for a surgery and incurs a total bill of \$5,000, which is covered at 100% by Medicare with a hospital deductible of \$500: Medicare pays \$4,500. If Alinsu had been primary, it would have covered this bill at 80%. Since Mr. McGregor's yearly deductible with Alinsu has already been satisfied, Alinsu's benefits would amount to \$4,000. Because this is less than Medicare's payment, Mr. McGregor receives nothing from Alinsu for the claim he submitted. So far, so good. In July, Mr. McGregor submits another claim for \$250 of drug bills, which, to his dismay is denied entirely. And so is his next claim for the same amount of the same drugs in September. Mr. McGregor is upset, but he is not of the aggressive type and not one to doubt the computerized bureaucracies of such large and successful companies as Alinsu. As a consequence, by the time he is ready to submit yet another claim for \$250 dollars of drug bills in November, he assumes that this type of drug is no longer covered. He calls Alinsu's 800 number to inquire and is informed that his drugs are still covered, that his claims were calculated correctly because there are "certain amounts to balance on an aggregate basis," and that he should keep sending his bills in. He complies with skeptical hope, and to his surprise, he receives a check for the amount of \$100, which is less than the full coverage he had hoped for but more than the denial he had come to expect.

To make my point, I should leave it as an exercise for the reader to figure out why Mr. McGregor receives \$100 in November; but sheer cruelty need not belong to an author's rhetoric arsenal (without counting the risk of frustrating beyond recovery readers who have power over my destiny). The tricky implication of comparing liabilities as yearly aggregates is that patients can accumulate what could be called "negative credit." For the June operation, Alinsu's liability would have been \$4,000: this is \$500 less than the Medicare benefits. Not only does Mr. McGregor receive no benefit from Alinsu, but unknown to him, these \$500 constitute negative credit in the sense that the Medicare aggregate has now risen above Alinsu's and

will need to balance out; it will need to be compensated by claims for which Medicare's liability is lower than Alinsu's. So for the next \$500 that Medicare coverage is lower than Alinsu's, the latter will deny any additional benefits. This is what happens with both the July and the September drug bills: the liability for Medicare is still higher than for Alinsu, when both are viewed as aggregates since January. But unknown again to our patient (in both senses), each of these two bills reduces the negative credit by Alinsu's liability, or 80% of \$250, which is \$200, for a total reduction of \$400 out of \$500. Therefore, when the November bill comes in, he receives \$100, that is, 80% of \$250, which is \$200, minus \$100 of negative credit left over. Given that I have carefully chosen the events and numbers for the example to be simple, it is easy to see how in real life a customer would be bewildered by these seemingly unexplainable variations in the treatment of apparently similar claims.

Consequently, there were numerous phone calls. Processors even anticipated them. The following statement was made by a processor who had just processed a claim for which the COB by reduction had resulted in no payment.

"You know this is gonna get you a phone call, you just know it. It never fails."

Furthermore these phone calls were known to be difficult, both because people were usually upset not to receive the benefits they expected and because the processors felt that they were not able to explain what had happened to the callers.

"And anger, lot of anger. I don't blame them for being angry."

In these phone conversations, the proceduralization obviously broke down: you just cannot tell people that you added lines A and B and lines D and E, and then subtracted line F from line C, etc., even if that is in reality what you did. The procedure does not convey the required information.

"I know my car runs, but I could not tell you how. And that's not good enough when people call and want to know about their money! But it's embarrassing when you call and you say 'Well, I don't know how, but that's how much money you got. Sorry.' I mean, it's embarrassing not to have the information."

Alinsu's first solution was to draft a letter of explanation, and to have the processors simply offer upset callers to have this letter sent to them. But everyone, processors and customers alike, found the letter very hard to understand.

The letter, which is shown in Figure 4.2, presented the issue at the very high level of an intention of fairness of treatment between employees with Medicare and employees without. Unfailingly this letter just served to generate yet another phone call, since it usually did not satisfy customers and it ended by offering them to call in if the situation had not been fully clarified.

“And the poor man got the letter, and that even confused him more. So then he had to speak to a processor. ... That letter is terrible!”

There was a lot of tension around this issue. I even read a letter from an outraged man who complained that if the “yardstick” by which claims are evaluated was completely random and could not be shared with customers, then Alinsu had free reins to do whatever it pleased without any possibility of control by outsiders. The customer was so upset that he was threatening to report this to his congressperson. At that point, the case was referred to the technical unit for further action.

Eventually, the problem became such that a special unit meeting had to be called and a person from the technical unit came to act as instructor. This was the first time that I saw a concerted attempt to provide global explanations about the COB procedure. But to my surprise, the explanation was mainly a historical justification for the aggregate nature of the calculation: how the office had at first misunderstood the procedure as described in corporate directives and calculated it on a claim-by-claim basis, and how the error was eventually discovered and corrected. The instructor also announced that they would soon get to include on the explanation of benefit sent to customers along with their check a “memo” (a short pre-written paragraph) showing the three aggregate amounts. But there was no discussion of why the aggregate method was better than a claim-by-claim calculation. Toward the end of the meeting, the unit supervisor reassured the processors that the COB procedure was actually easy if it was done precisely and if the C, F, and J numbers on files were correct and up-to-date. She was aware enough that the difficulty was not with the procedure itself to ask again whether everyone understood that the amounts are aggregate, and everyone signaled that they understood that.

Dear !kName!x:

This will acknowledge your inquiry and provide an explanation to the recent claim consideration for !kPatient's Name!x.

An individual who is eligible for Medicare coverage is covered under a Supplemental Medicare rider to the regular plan of group benefits. This rider is called a Benefit Reduction approach to Medicare. The Benefit Reduction approach provides the same level of benefits for individuals covered under Medicare as are available to employees who are covered under the regular plan of benefits.

It works this way:

1. In determining a claim payment, the first step is to calculate the amount that would be paid if the person had no Medicare coverage.
2. The above amount is reduced by the benefits available under the individual's Medicare coverage.

Depending on the order and manner in which claims are submitted, an employee could receive a better benefit by being covered under the supplemental Medicare rider than would other employees. This might occur when Medicare's benefits are greater than those available under the regular group plan. To try and maintain the same level of benefits for all employees, the Benefit reduction Medicare Rider is calculated on an aggregate basis. That is, prior claims are considered along with the current charges received so that, in total, the level of benefit that the employee receives, between the group plan and Medicare, is the same level of benefit that he or she would normally have received in the absence of Medicare.

Our recent claim handling for this individual reflects adjustments made in keeping with the above calculation of benefits on an aggregate basis.

We hope this has answered any questions you may have had. If we can be of further assistance, please feel free to write us at the above address or give us a call.

Sincerely,

!kName!x
!kTitle!x
!kClaim Unit!x
!kPhone!x

Figure 4.2. The COB letter.

But the processors I asked did not think that such understanding was sufficient to handle phone calls.

Maureen:	"It's just, you know, you can't get them to understand. An aggregate, we're keeping track for the whole year. All they understand is that they didn't get their money."
Sheila:	"Especially on drug bills, because Medicare doesn't even have a, ... shouldn't even account in drug bills. It shouldn't make any difference, you know."

Altogether, they did not find that the meeting had helped them with their fundamental problem of having just the proceduralized understanding.

"Well, it was boring because they gave all the answers, but no clue as to why or how."

The jargon of the office came to reflect the processors' experience of being disconnected from the basic concept and only having access to the surface features of the procedure. Instead of referring to it as "coordination of benefits by reduction," they just called it "the C, F, and J thing."

Proceduralization: relations between communities

The fact that the unofficial name of the process, the "C, F, and J thing," uses parts of the representation to stand for the process is indicative of the nature of proceduralization. On the COB worksheet, the sequence of steps is prescribed only in terms of line numbers and arithmetic operators. The point is that such an extreme case of proceduralization localizes decisions in terms of the available representation to the point where interpreting the representation into an activity does not require an understanding of what the representation is intended to be about. It is true that on this particular worksheet the lines are labeled with meaningful designations, but neither in our training class nor in the unit meeting that was called on the subject did the instructor ever use these labels in order to make the meaning of the procedure clear as the step-by-step implementation of the COB by reduction concept. The labels were basically ignored because they were not necessary to the correct performance.

Admittedly, all this is nothing extraordinary. Most of us have had to fill tax returns or other similar forms, which are composed very much in the same style as the COB worksheet. But there is an important observation to make. Someone somewhere designed that procedure and did so with a certain understanding of what the COB procedure was about. The designer, however, decided that processing would be made simpler if that understanding could be set aside during the process of using the worksheet. The important observation is not whether it was one specific person—it may have been a group of people—but that whoever designed that procedure was *not* one of the claim processors. It was someone outside their community of practice, someone belonging to another community of practice to which the processors have very limited access. As far as I could tell, the locus of understanding of the procedure's intended meaning was indeed very far removed from the processors through a succession of administrative layers.

In this sense, the worksheet was in a very profound way a boundary object between distinct communities. Moreover it was a very special type of boundary object in that it embodied decisions made in one community about the degree of understanding to be involved in activities in another community. The fact that the decision to “simplify” the process with a step-by-step procedure did not arise out of the processors' own practice is more important than the simplification itself. What I am trying to argue is that proceduralization itself is not where the problem lies. It lies in the fact that the process of proceduralization becomes *a relation between two separate communities*. The production of meaninglessness inherent in the production of normative structures, such as the procedural prescription of the COB worksheet, implies specific relations between communities who have different degrees of participation in and access to this process. They constitute then *boundary objects* that obviate the need for a “*boundary practice*.”

Any artifact by its physical nature as an objectification of human labor transcends the process of its production (Marx, 1867; Latour 1986). The process of erasure characteristic of the production of the COB worksheet is inherent in the production of any form of objectification. We must distinguish then between *erasure for consumption inside* a community of practice (anchored or working abstraction, which arises out of, implies, and supports participation) and *erasure for consumption outside* a community of practice (displaced abstraction, which is a substitute for participation). Any practice produces abstractions, both fleeting and enduring, but these abstractions have very different significances inside or outside of the practice in which they are produced. The “traveling” of objects is therefore as essential a feature of their meaning as their structure.

Procedural versus cultural interpretation

Even though a representation is proceduralized, it is not true that the only significance of proceduralized representations is to be interpreted procedurally, or for that matter that, in practice, it is usually interpreted only as a sequence of local steps. In addition to a procedural interpretation it has a cultural interpretation, which is distinct, though no independent. There is a mutually constitutive relation between procedural interpretations and cultural interpretations, which will be explored further in the next chapter. This dialectical duality reflects the fact that representations, like artifacts in general, are both instruments mediating productive activity and symbolic devices mediating the construction of understanding. A representation or an artifact develops a meaning of its own in each community in which it is relevant. Because cultural interpretation is localized within communities of practice, it reflects relations between communities as the object travels. Indeed I have tried to make the case that even the meaninglessness characteristic of the cultural interpretation of proceduralized representations does not usually survive as such, but that it is absorbed into cultural pigeon holes in which it itself finds meaning as a specific relation of non-participation between communities.

Even in attempts to provide a cultural interpretation that gives a broader meaning to a procedure, the distance between the two can be a problem. During the meeting that was convened to clear the confusions surrounding the coordination of benefits by reduction, it was interesting to note that the explanation of the procedure and the explanation of underlying idea were always kept separate. For instance, instructors never went through a year of computations to show how, as the respective aggregate liabilities of the primary and secondary coverages fluctuate independently, payments are sent whenever the primary aggregate coverage of Medicare sinks below the secondary aggregate liability of Alinsu. Thus they never showed step by step how the procedure realizes the concept. As a result, when I asked some processors to tell me what they understood about the procedure, I often got answers that were not incorrect but reflected the distance between a vague conceptual notion and their procedural experience: they would tell me that "there is this amount and that amount; and it has to balance out somehow."

The following exchange, which took place during a group interview, summarizes the whole situation quite well. I should perhaps clarify who the interlocutors are, lest my intentions be misunderstood. The two processors who speak are not novices struggling with the novelty of an unfamiliar situation. They are both considered highly successful and are very respected in the community. One of them is an oldtimer who spends much of her time helping others. The other, though less

experienced, is climbing the promotion ladder very rapidly with an eye to supervisory positions and has already been put in charge of a delicate client; she received official praises and a large bonus while I was there. Nor are these two persons lacking intelligence (whatever that means): I have seen them work and solve difficult problems, I heard them talk on the phone handling very delicate matters with callers, I have received very useful help from them as I was struggling to process my claims, and I have engaged in numerous interesting conversations with them on a variety of topics.

Etienne:	"So what do you understand about it?"
Sheila:	"I understand it, I just don't know how to explain it to a caller. I know how to do it on the computer, everything just fine. And I can do, you know, when it's not 'C, F, and J' ..., I can explain that just fine. But when it comes to 'C, F, and J', it's like you said in the meeting, you can't tell them 'I subtracted this line from this line,' you can't do that. And I don't know what to tell, that's the only thing."
Etienne:	"So you really don't understand the meaning of what Alinsu is trying to do there?"
Sheila:	"Not really."
Etienne:	"Not really? And the meeting that [the unit] had did not help?"
Sheila:	"No, because she did not tell us why we were doing it, she just told us 'this is how you do it.' And I don't really think she told us why."
Maureen:	"She never went into it, just that it was an aggregate thing for the whole year. So I guess that's all you need to know: there is an aggregate."

There is of course the possibility of providing information. What about printing a rationale for the procedural steps with each line of the worksheet? While measures of this type can be useful, they are not likely to be sufficient. The letter talks about the procedure in broad terms of fairness of coverage. But even at that level, I have never heard a processor use the fairness concept to provide a coherent explanation. Even though many of them must have read the letter, the information had found no place to fit. In the next chapter, I will argue that information requires a shared practice to become useful. Once there exists such a shared practice, a procedural representation can be extremely useful in focusing conversations that connect it to a cultural interpretation.

This notion of cultural interpretation as distinct from but related to procedural interpretation is quite important because it places human activities in the context of a complex system of differentiated cultural empowerment. There can be cascades of proceduralized interpretations like there are cascades of normative structures. These cascades would create what Leigh Star calls "layered representations" in the context of her study of processes of delegation (Star, 1990). While each level of procedural interpretation may require special abilities and knowledgeable skill, I suspect that in the end real power usually lies in cultural interpretations.

The black-box syndrome

There were a number of other specific instances involving issues similar to those of the COB worksheet but did not lead to such an acute problem. They had been absorbed into a more diffuse atmosphere of non-participation. In revealing the problems of identities of non-participation, the COB worksheet is a particularly clear example of a general phenomenon, which I will call the "black-box syndrome." In technological jargon, a black box is a device which performs some useful function, but whose internal mechanisms are not available to inspection. Arguably, the world in which we live is increasingly becoming a set of black boxes.

Think of doors. Opening a regular door by pushing it seems understandable enough, at least at the level of what we call common sense. We have physical intuitions that allow us understand the process by which the various moves we make end up opening the door. And even if we wanted to understand more about how the handle performs its function, we could just take it apart, and again call upon our intuitions about physical causality to understand the way in which lowering the handle retracts the latch.⁹

Now think of airports and supermarkets: doors slide open invitingly as soon as you stand in front of them. My son used to love running past these doors to see if they were going to open. But for him, and for most people, all he could see was a small black box on top of the door, somewhat mysteriously pointed toward him. If he observed a bit

⁹ Of course, some physicists may argue that we don't *really* understand how doors function if we don't have a concept of torque that would explain why a door's handle is always on the side opposite to the hinges. But then, as much as I respect physicists and share their curiosity, I would argue that they are talking about a specific kind of understanding, which is based on very specific criteria for what constitute valid explanations. This type of technicalized understanding of the physical world, often driven by issues of measurability and glorified socially by engineering feats, almost exclusively has currency within their community and those in direct contact with it.

better, he would see a red light coming on whenever he was within a certain distance of the black box. How that little black-box relates to the opening of the door, however, is not available to inspection. And even if I was to explain to him what I think is taking place, there would be little in the situation that could be used to mediate his construction of an understanding. Even the small red light carries little information about how the system functions, except in indicating the range of sensitivity of the device. For my explanation, I would have to bring to bear into the conversation a whole lot of material about electricity, infra-red rays, etc., which is not available for inspection in the device itself, but belongs to specific sections of the culture of technology, in which my son is hardly a member yet, and in which I am for the most part only a very peripheral member. Even if we were to take the device apart, there would still be an overwhelming portion of the material necessary for an explanation that would not be physically available in the situation to support our conversation.

Specialization in the division of labor has thus given rise to an interesting paradox typical of technological advances: as our growing understanding allows us to produce increasingly complex artifacts to suit our needs, we also create a world that we find increasingly difficult to understand. Doors open by themselves, cars cruise at a fixed speed with ideal fuel consumption, computers watch the stock market. Everywhere, we make use of convenient "black boxes," whose inner functionings remain a mystery; and for the most part, we enjoy this "simplification" because trying to know and understand everything all the time would get in the way of the main activity we are engaged in. There is a price for the convenience, however. We can call people instantly on the phone, but we have lost easy access to the deep intuitions about how things work that come naturally with simpler systems, for instance, from seeing the courier deliver some message or even from a chance of observing a manual telephone exchange. With these convenient but complex black boxes, it becomes increasingly difficult to develop a deep sense of how the environment functions, or malfunctions, and thus increasingly difficult to participate actively in that environment and deal with breakdowns.

The issue is not just one of humanistic idealism, of knowing for its own sake. Our ability to navigate in our world is at stake. Buying a car, or even selecting a pair of jogging shoes, if one wants to be an informed customer, has become a major endeavor for anyone. Programming a VCR or using a complex copier presents a challenge many of us shy away from. It is not only a matter of this type of technology. Insurance rates are determined by very sophisticated actuarial calculations, and most of us would be really hard-pressed to explain why it is fair to pay \$800 a year in car insurance. And voting with all the cards in hand on a proposition to reform the insurance industry or to protect our environment demands more investment of time and energy than most of us can afford.

The COB worksheet is a very useful example to introduce the notion of black-box syndrome because it is not a sophisticated electronic gadget. It does not even involve the computer system the claim processors work with. In fact, it hardly belongs to the category of what would commonly be called technology. And yet it reveals the deeply socio-epistemological nature of the problem of the generalized production and use of technology broadly defined, of which the gadgets we first think of as primary examples are merely acute—but not necessarily most threatening—manifestations.

Even though I prefer to stay away from definitions at this point, the term “technology” must be clarified. For the purpose of this thesis, I am construing technology very broadly as understanding made instrumental through mediating artifacts—physical or symbolic. These should afford mastery over circumstances with some degree of proceduralization and be externalizable and sharable.¹⁰ This definition is not meant to classify everything unambiguously, because its interpretation may depend on the use that is made of an artifact. But it would include the COB worksheet, the space probe Voyager, my favorite recipe for cheesecake, the wheel, Taylor’s scientific management, compact discs, and weather models. It would not include a beautiful sunset or the concept of justice, and probably not Van Gogh’s sunflowers (even though some technology was definitely used in producing the painting) or the Koran (even though it tells people how to live). Borderline cases would include the general theory of relativity or this thesis.

Identities of non-participation: towards a political economy of meaning

My earlier analysis of the COB worksheet has transformed the issue of a person understanding a form into an issue of relations of participation in meaning among communities of practice. This

¹⁰ In numerous theoretical endeavors concerned with the mediating function of the world in human activity and understanding, such as activity theory (Wertsch, 1981, 1985) and critical psychology (Garner, 1986; Holzkamp, 1983, 1987), there is usually a distinction between tools and symbols. The argument goes like this. A tool has a more direct relation to its use than a symbol. The physical sound of a word, for instance, has a more or less arbitrary relation to its meaning, whereas the shape of a tool does not have an arbitrary relation to its possible use(s). Obviously a tool can be used for other purposes than those intended by the designers. A hammer can be a good paper weight. A tool also has symbolic value beyond its instrumental use. Vygotsky (1934) also claims that a distinctive characteristic of the symbol is that it is reversible and can become an instrument of self-control for its user. I am not sure that the distinction is that crucial, at least for the argument I am developing here. More important is the common mediating function in the situated construction of meaning in practical activity.

transformation is a crucial shift in perspective whose consequences I need to elaborate in the context of the black-box syndrome in general, so as to make clearer its broadly social dimension.

This social analysis of the black-box syndrome is likely to remind the reader familiar with sociological studies of the deskilling issue, which has been a central controversy in the sociology of the workplace. Especially since Braverman's book came out (Braverman, 1974), sociologists have argued back and forth whether or not increased use of technology implies a generalized deskilling of the workforce. The question as I pose it in terms of cultural identities of non-participation is somewhat different: it is not just whether particular jobs require more or less skill. While this can of course be an aspect of the issue, and while there have been clear cases, in the history of the workplace, of specific attempts to deskill certain jobs, the general deskilling question is far from settled (Attewell, 1987a; Barley, 1988). In the case of the claim processors, for instance, it would be very difficult to say in any interesting way whether a claim processor today needs more or less skill than a claim processor working before computers were introduced (see Attewell, 1987a, 1987b for a discussion and some quantitative analysis).

The black-box question concerns the production of artifacts in general, and its consequences, as it increasingly populates our world, for us who grow up and live in it: for our experience of the world and of ourselves, and for our mutual relations. Increasing technological artificiality implies that the world as we experience it reflects more knowledge, more understanding. This understanding is of a specific sort that can be transformed into technological advances. In this sense, the black-box syndrome does in no way have as its central premise that the world is becoming more mysterious or more incomprehensible in any absolute sense, or that people in the past had better or worse understanding than today, or that living used to require more or less knowledge, or that knowledge was more or less evenly distributed. The significance of this analysis does not lie primarily in a comparison with the past, which had its own forms of the black-box syndrome. It lies in an understanding of the current historical forms of the issue.

Intensifying complexity and division of labor mean that we are increasingly dealing with objects and processes that are not only artificially produced, but originate outside of our own communities of practice. And even the so-called natural world is not only culturally interpreted, but transformed into an object of technical knowledge, so that it has authoritative interpretations whose ownership belongs outside of our own communities of practice. So whatever understanding is embodied in our world, it is not owned by everyone, but it is owned in various degrees by someone. What the view of the black-box syndrome I am trying to develop takes as its central concern is that the mystery of the world in technological societies is clearly

becoming a *reflection of relations between people, between communities of people.*

Ownership of meaning then becomes crucial. I hope that what I have said so far makes it clear that the expression "ownership of meaning" does not imply the existence of a single meaning attached to a given procedure or artifact, but multiple meanings shaped by relations among and within the communities involved. The communities of practice in which meaning takes form are themselves shaped by specific interests and specific power structures. With the division of labor in a commoditized market, technological complexity inevitably implies differences in power relations. Complexity thus becomes a medium for the playing out of power relations.

***Glass boxes
and
cultural transparency:

information
participation
and negotiation***

This chapter discusses the notion of cultural transparency as an analytical category that places knowing as an activity in the social organization of the world. At this point in my research, this discussion is more philosophical and speculative than those of the preceding chapters. This short essay is intended to give a sense of some foundational issues associated with a theory of understanding viewed as cultural transparency and to lay down some of the basic ideas that will provide a framework for further exploration.

Glass boxes and integrated learning

My interest in the topics of this thesis was originally motivated by a simple question: can black boxes become glass boxes? Is it possible to reverse the trend toward a black-box society and to use the very artifacts that populate the black-box nightmare to realize the glass-box dream, to make our world more intelligible, to open new windows of understanding, and thus to integrate learning back into the activities that are the purpose for which one wants to learn?

The glass-box dream was based on the observation that information-processing technology presents new opportunities, not only for automating processes, but also for conveying new information about these processes. On the one hand, the duality of procedural and cultural interpretations of representation implies that the very process

of encoding and automating provides what Zuboff calls opportunities for "informating," that is, for offering a "textualization" of processes, which can play a crucial role in the social organization where it is located (Zuboff, 1988). On the other hand, research in fields such as intelligent tutoring systems, user interfaces, intelligent databases, and computer graphics, are exploring the possibility of using computer technology for communicating information in ways that more traditional media could not afford: new modes of presentation of content as well as new ways of integrating communicative interventions in the activities involving the use of information-processing tools (Wenger, 1987, 1988b).

Cultural transparency: fields of meanings

The term "glass box" implies a notion of visibility, of access to perception. One thinks of exhibits of transparent dishwashers or of stylish plexiglass telephones and loudspeakers. As useful as it may be in conveying the general idea, the metaphor of a glass box can be misleading in suggesting that all that is required is merely to bring internal mechanisms to view. The cultural significance of artifacts is much broader than their own structure and even the simplest artifact gives rise to a vast and complex *field of meanings*. For all its physical translucency, the empty Coca-Cola bottle dropped by an airplane and found by the African Bushman of the movie "The Gods must be crazy" told him little of the melting furnaces and the molding process, or of the careful promotional design and the popularity of soft drinks, the Coca-Cola Company and Wall Street quotes, the classic formula and the caffeine controversy, the vending machines and the red and white trucks, in short, the "real thing."

These fields of meanings are multilayered and are composed of multiple interrelated viewpoints as objects enter in different ways into the practices of multiple, interrelated communities, each of which allows multiple forms of membership. They are textured further by the differences in legitimacy and universality claimed for the perspectives of various communities. Fields of meanings also open, as new meanings are created in each new situation: they are not something that exists "out there" but relations that situate knowing persons and artifacts in the world as constituted by the combined production of multiple practices.

The degree to which fields of meanings in specific circumstances become realized as understanding, I will call "cultural transparency." The term is meant to emphasize the relational, culturally defined, locational, perspectival character of knowing in practice. The term transparency is also useful in providing a handle on the culturally mediated character of our existence. There is indeed an interesting duality inherent in the concept: transparency combines at once the

two characteristics of *visibility* and *invisibility*. This is not a simple polar opposition since these two crucial characteristics compose transparency by a complex interplay, their relation being one of both mutual exclusion and mutual implication. A window's invisibility is what makes it a window, that is, an object through which the world outside becomes visible. The very fact, however, that so many things can be seen through it makes the window itself highly visible, that is, very salient in a room, when compared to, say, a solid wall.

In parallel with the notion of cultural transparency, there is also a notion of "procedural transparency," by which procedures become invisible as such. A pianist can hardly concentrate on interpreting the music as long as fingering comes in the way. Some claim processors called the COB worksheet "self-explanatory," so long as one did not have to explain it to someone outside. They see a great importance in being able to process the claims.

Etienne:	"How do you think you gained that understanding? Was it from the training class?"
Sheila:	"Actually from doing the claims, I think. Actually the processing itself."
Mary:	"Yeah, more repetition, more times you do it."
Maureen:	"In training they give you the, whatever, just a feel for it. And then you go down there, and the more you do it, kind of, the more you understand. They don't actually tell us the contracts."
Etienne:	"Is it from doing it or from conversations with people?"
Sheila:	"Doing it, and then if you don't understand, you talk to somebody about it and they can explain it to you. And then you do it and you say 'Oh yeah, that worked, you know, I get it now,' or something."

There is a deep wisdom in the processors' assessment: being able to get on with activities is an essential condition for grounding understanding. There is thus an interplay of conflict and synergy between visibility and invisibility in procedural and cultural transparency that creates subtle pedagogical dilemma for creating glass boxes in practice. Invisibility of mediating devices is necessary for allowing focus on, and thus supporting visibility of, the subject matter. For instance, it is a well-known principle of interface design that individual commands should correspond as closely as possible to units of action in the human perception of the activity. In other words, representational artifacts must become invisible for the learning to be fully integrated in some ongoing activity. The invisibility of a perfect

proceduralized fit to the activity as perceived, however, may bring back all the black-box problems associated with proceduralization. Visibility required for cultural transparency may then imply interfering to some extent with the intended processes of ongoing activities. It was the phone problem that revealed the opaque nature of the COB worksheet. In return, the visibility onto the content and context of the mediated activity can help make the device invisible by making its relation to action more transparent. For instance, understanding how a computer system functions internally—extended visibility—can make it easier for a user to tailor the use of the system directly to specific actions—increased invisibility. The relation between procedural and cultural forms of transparency is at the crux of the glass-box question. Their epistemological and social articulations and the forms of power and empowerment respectively associated with them are issues that underlie much of the discussion of this thesis.

The unified character of the duality of visibility and invisibility must be underscored, as it would be easy to attribute transparency to one or the other of these two characteristics. For instance, critical psychologists distinguish between immediacy and mediation in one's understanding of the world (Garner, 1986), a pair of concepts very similar to the pair formed by invisibility and visibility. But critical psychologists view these two aspects of understanding as two distinct ways of relating to the world; one even gets the impression that they hold the belief that mediatedness is a better, more evolved way of perceiving the world. But like visibility and invisibility in transparency, mediation and immediacy are not mere opposite; neither are they two distinct ways of being in relation with the world. The two are always essential to each other. There cannot be immediacy without the differentiation produced by activity and there cannot be mediation without the "being there" that grounds it in a field of meanings. What critical psychologists refer to in their distinction is important, but it has, I surmise, more to do with relations of localness and globalness, which are not in their essence characteristic of individuals but of communities of practice.

The argument of this chapter is that fields of meanings are composed of both fields of visibility and fields of invisibility, and that cultural transparency is a result of the interaction of the two in practice. The problem of access to resources for understanding and learning has thus two distinct but related aspects. One aspect concerns how the information that constitutes visibility is managed, stored, appropriated, distributed. This aspect has to do with the material and political organization of communities of practice, with the degree to which they have created artifacts that mediate their practice, with the degree to which these artifacts encode information about this practice, with the degree to which these artifacts are available, to whom, and under what conditions. The other aspect concerns how the information available becomes meaningful, how it becomes action-enabling knowledge in specific ways, for specific persons. I will claim

that this has to do with the trajectories of participation and the forms of membership that serve as material for the construction of identities in the communities of practice through which a person comes in contact with artifacts.

Information: fields of visibility

Creating fields of visibility by making information accessible in a suitable fashion is a difficult task that occupies much of our collective energy, from our daily conversations to flashy advertisements, from the evening news to the compilation of textbooks or esoteric technical reports, from political speeches to the yellow pages. In a somewhat narrow but real sense, claim processing is an information-processing function: what processors do is to take some information submitted about medical services and transform it, using other available information, into information about payments due for the printing of checks, which are physically issued somewhere else. The thrust of much of what is happening in the office is to make accessible the information necessary to perform this transformation. There are manuals of all kinds, thick ringbinders, lists, reference books, medical dictionaries; and the computer system, which contains large data bases. Hospital and medical offices keep records that are only a phone call away. Beyond this careful management of information to be processed, there are less structured forms of visibility: the open configuration of the office means that claim processors can hear each other's conversation and observe each other's activities; even the manager's office, while walled from the rest of the open area, has two large windows that allow the claim processors to see what she is doing (and vice versa, of course, but this is a different story).

Whether or not their primary purpose is to organize information to make something visible, all the objects we create have long stories to tell, which, as objects come into view, go far beyond their stated purposes. But these stories mostly dwell hidden in the frozen silence of their crafted souls. As artifacts are produced, more or less substantial portions of their stories can be encoded explicitly in their structure, taking advantage of the duality of procedural and cultural interpretations. Since information-processing systems appear to be particularly well-suited for this purpose, let us use them as tokens and dream for a little while of information-processing glass boxes and their potential for integrating learning in activities.

At one level, systems could be made to reveal how they function, how and why they were designed in a particular way, what they can and cannot do. In addition to being generally instructive, such learning helps the users of a system take full advantage of the system's capabilities, develop a better sense of its limitations, and decide what to do when it breaks down or does not perform according to

expectations. Think, for instance, of an expert system for claim processing designed to reveal or demonstrate its inference processes, or explain them in terms of the constraints and assumptions that gave them their current form. A system's transparency onto itself could even provide access to assumptions and mechanisms that are meant to give it its glass-box nature. Its inspectability could extend to decision procedures of a "pedagogical" nature, including internally generated models of users and histories of interactions that are maintained for supporting learning adaptively.

At another level, because systems are designed to be useful for specific activities, they reflect knowledge about these activities. Imagine a car diagnostic system that explains its reasoning by reference to an animated graphic simulation of the car under consideration, thus helping mechanics refine their understanding of a new but mysterious information-processing device. The conceptual structure of the subject matter can also be made visible as a user is able to interact with a system directly in terms of the concepts one would use to think about the activities at hand. A graphic simulation of a car, for instance, could present mechanisms in terms of concepts like signals, torque, pressure, or rate of change, which could be made visually concrete on the screen. An automated claim processing system could introduce medical or actuarial terms and concepts, and help make them concrete through repeated use. When I came up with the concept of "negative credit" to explain to some processors what I had understood about COB by reduction, they usually found it very useful, because negative credit has an existence through time that allowed them to connect the concept of aggregate calculation to the variations in treatments of claims that they observed when using the worksheet. The concept of negative credit could be made concrete with a graphical simulation of the relative variations of primary and secondary coverages over a year, which could be presented whenever a processor was surprised by the results yielded by the worksheet.

In accord with the visibility/invisibility duality, one can distinguish two directions in which this conceptual transparency functions. On the one hand, the models of the world that artifacts present can make use of concepts in order to be transparent: via the use of models, one can interact with processes directly in terms of the concepts a community already uses to reason about a problem. On the other hand, models of processes can be used to make concepts transparent: via the use of models in activities, one can grasp the meaning of concepts with respect to the processes they capture. These concepts thus can be understood and remembered in terms of situations, now enriched by representational devices that can reify the conceptual structures underlying ongoing activities.

At yet another level, systems always exist in contexts of production and use that make them part of the social world.¹¹ These processes of production and use could be made inspectable through explicit representational devices. In this sense, using a system reflects back into the world, and the glass box actually becomes an articulate mirror of the environment. For instance, the need for certain security measures typical of many computer systems clearly reflects relations between groups of people. Similarly, the structure of filing or accounting systems could make clearer the structure and functioning of the organization. For instance, the system used by claim processors always records who processed a particular claim: this information is used regularly by processors who handle later claims and need to ask some questions about the earlier ones. Insofar as the system offers a "textualization" (Zuboff, 1988) of the process of its use by a collectivity, it provides a tool for communal reflection (and, of course, for control at the same time: this is a thorny issue). Certain computer systems, for instance, allow users to see who is on the system or what others are doing, information available precisely because the system is embedded in a social context. Through facilities for communication and collaboration, the design and use of a system reify assumptions about the nature and functioning of the social organization of a user community, which can provide a reification of changing patterns of usage and of learning processes within the community.

This last possibility is interesting because information-processing systems are often at the articulation of communities of practice with the institutions in which they exist. There is a sense in which institutions are artificial objects like any other, and present the same issues of transparency. Eckert (1989) describes the way in which school as an institution becomes a black box for the disenfranchised students, who then form distinct communities of practice that center on marginalization. Interestingly some of these students then become claim processors and carry their experience of marginalization into the workplace where they are more than ready to develop identities of non-participation. For the claim processor also, Alinsu is largely a mystery, in spite of the slick introductory video they have seen on their first day, of the company periodicals they receive, or the phone lists they keep. Yet, this mystery is one that they do not see it in their power to unveil. Power is not exactly the word; power is not like a definite substance, which they are just missing in a definite quantity in order to change their lives. Power plays a pivotal role, but it is a diffused one. It is rather that they do not see this unveiling in their trajectories, in their destinies; in their selves, as it were.

¹¹ I am careful to use the word "part of" and not "member of" to emphasize a distinction which I think is crucial with respect to the ability to create meaning. More on that at the end of the chapter.

Participation: fields of invisibility

From a perspective centered on cultural transparency, any form of objectification—no matter how instrumental—is also a representation. In this regard, our civilization seems like an explosion of visibility: new objects are produced and pop into view at an amazing pace: new commodities, new contraptions, new concepts, new expressions, new techniques, new reports, new institutions, new theories, new styles. There is more to see, more to hear, more to taste, more to pay attention to, more to choose from, more to absorb. A paradox of the black-box syndrome is that the explosion of visibility we are witnessing is not necessarily empowering by making us feel like we know more. Visibility and invisibility follow each other like light and shadow: objects—etymologically “thrown in front”—seem to hide as much as they reveal.

Objectification is always a congealing of activity; by being transformed into its product, activity must be erased at the same time as it becomes represented. Therefore, the production of visibility through representation is by its very nature a process of freezing practice out of itself, of decontextualization. But objects cannot carry their own meaning; meaning must be attributed to them through human activity in practice. Therefore representation is always, as it were, a loss of meaning. As a consequence, to remain meaningful, representations require a proportional amount of non-representation. Using some of the terms introduced so far and anticipating a bit, we could express this idea in the form of a conjecture for a law of conservation of meaningfulness:

$$\frac{\text{visible}}{\text{invisible}} = \frac{\text{mediation}}{\text{immediacy}} = \frac{\text{information}}{\text{participation}} = \text{constant}$$

The idea is that the more one represents, the more one must presuppose a non-represented context; the more one says, the more one leaves unsaid. This process of desituating and resituating makes communication on the one hand difficult, in continual need of repair, and always potentially misleading; and on the other hand, always open-ended, unpredictable, and generative of new meanings. The two results are not even mutually exclusive. What the conjecture suggests is that it is not the degree of articulation, but the forms and successful continuation of coparticipation in practice that make the difference between the two potential results.

Note that the conjecture as stated, if valid, must be valid even if one assumes—most optimistically—that representations are fully well-intentioned, that is, that they are intended to further understanding, to increase transparency, or at least that they are not intended to

obscure or to cover. (The distinction between the two may not always be clear, especially since the representational results of one's activities are not always—or even usually—intentional). In practice, it is certainly not the case that representations in general are intended to increase transparency. But if they are not, the conjecture holds *a fortiori*.

As a corollary, if the need for assumed context always has to be proportional to the level of decontextualization of representation, increasing abstraction will imply increasing participation in the practice out of which the abstraction arises. We would then expect to find that highly desituated, decontextualized abstraction always has the property of being localized, of existing in local niches of intense participation. This means that a proportionally specialized community of practice is necessary to support such cultural forms, something corroborated by the localized, tightly cohesive nature of esoteric scientific communities. This says something interesting about understanding: to become global in a meaningful way, understanding cannot be abstracted, disconnected. It would be the mark of true understanding that it be both global and connected, that is, participatory while expansive. In terms of social communities, global understanding necessarily would imply the difficult task of straddling multiple forms of membership, and therefore of accepting possibly incoherent forms of membership.

To cope with the increasing representational character of the world we live in, Zuboff (1988) speaks about the need to develop “intellective” skills in order to shift from “action-oriented” to information-based knowledge: she describes workers in a paper mill who have to interpret data on a computer screen instead of being able to dip their hands in the vats to determine the quality of the paper mixture, and managers who have to decipher computer print-outs instead of counting on their interactional skills. She defines intellective skills as the ability to give meaning to symbols outside of the context of direct, action-oriented perception. Her observations and conclusions are important, but their usefulness is limited by the largely individualistic tendency of her focus. She speaks about participating in conversations, but mainly as an interpretation process takes place in front of the screen. For her participating in conversations is seen as an aspect of what she calls intellective skills, and her interpretation still seems to assume that conversations are not crucial to other forms of mastery and that becoming part of a new discourse is only a matter of acquiring new skills. By viewing intellective skills as individual abilities, she overlooks the social organization of the perspectives that abilities reflect and thus ignores the importance of membership as a vehicle for mastery. Whether abilities consist in putting one's hand in vats and interpreting what one feels or looking at a computer screen and interpreting what one sees, they are anchored in a discourse that sustains the practice of a community. Like the COB worksheet for the claim processors, the

computer system of the paper mill workers described by Zuboff was designed outside their community of practice. Their difficulties thus had to do in a very central way with straddling forms of membership, with conforming procedurally to a view of their practice which they had not constructed.

Situating human knowing and learning in the world in order to give it meaning thus implies not just a view from somewhere, as Smith (1988) cleverly suggests, even if somewhere is construed broadly to be a specific activity rather than just a physical location. Activities take place in the context of specific practices, where a practice is a set of shared ways of going about doing things, including communicating. These practices shape the meanings of activities and thus give meaning to the representational information they involve, as Wittgenstein (1953) argues convincingly. But Wittgenstein's practice, what he calls a "form of life," is that of a philosopher, still strangely unpopulated, or if assumed theoretically to be populated as a matter of course, only populated anonymously. Social practice is organized in an articulation of communities of practice in which members not only give meaning to symbols, but construct their sense of themselves as agents: social practices and social communities of actual persons are inseparable.

Situating human knowing and learning in the world thus implies a view from *someone*: someone in some activities in the context of some practice in the context of some communities of practice in which the someone holds various forms of membership. Meaning is not just a matter of correspondence—another of Smith's terms—between representation and the world; it doesn't just require a location in time and space, which anchors consciousness in the world and from which denotation can be achieved. Meaning is always relative to a sense-making landscape; it is the dynamic product of a trajectory of participation, of a crossroads of interrelated forms of membership, with a history and a future. Specific situations and specific activities are part of this node of participatory membership which anchors consciousness in cultural interpretation frameworks; and it is in the nexus of such frameworks that objectivity and subjectivity interact to produce meaning.

The relation of information to learning is therefore a complex one: while important, issues of quantity and presentation of information are only one side of the question. I would claim that the paradox of the black-box syndrome is due to the fact that information by itself does not generate identities of participation, even when access to information is not a problem; it is in fact just as likely to generate identities of non-participation. The open structure of the claim processing office is an important characteristic in making conversations available for everyone in the direct neighborhood to overhear. But this is not just a matter of information flying around; for the claim processors, it also implies participation in their community

of practice. So it has a very different effect on their lives than the large windows of the manager's office or the internal publications distributed by Alinsu's management. Even the suggestion box in the office is not the means of sharing information that it is meant to be, but a symbol of identities of non-participation.

Sheila:	"They have a suggestion box, but nobody uses it."
Maureen:	"But even if we went with a great suggestion, maybe how to speed things up or whatever, and I told [my supervisor], if it had to do with the computer or something, then it all, or ... even seating arrangements, I mean, it's a big thing, I mean, [management], they all have to get together to change, to change [the name of something], you know what I mean. They can't just, it seems to me, they make simple things, things that should be simple and clearcut, I mean, they make them into projects that go on forever."

Negotiation of meaning

Because of the need constantly to produce and recontextualize representational objects in the fields of meanings, living meaningfully in a culturally constituted world implies a continuous process of negotiation of meaning. The use of the word "negotiation" here requires some clarifications, since negotiation for the present purpose is not defined as "striving toward an *explicit* agreement between parties." However, the term is convenient because it does convey essential aspects of the idea I am trying to propound: it gives a flavor of continuous interaction and of gradual give and take, and suggests that some shared entity extending beyond the individual spheres of participants is created in the process. Characteristics of negotiation in this context include:

- | | |
|--------------------------------|---|
| • it is a process | meaning extends through time and space; meaning is dynamic, it requires existence in motion through fields of meanings; |
| • it is an active process | meaning arises out of active participation in practice; |
| • it is an interactive process | meaning implies differentiated resistance in an objectified world; |

<ul style="list-style-type: none"> • it is a creative process 	<p>meaning does not preexist, it is produced constructively in practice; for negotiation of meaning to be possible in practice, ambiguity must be inherent in any representation;</p>
<ul style="list-style-type: none"> • it is a process of change for all involved 	<p>meaning is continuously productive of new meanings;</p>
<ul style="list-style-type: none"> • its result extends beyond the individual spheres of participants 	<p>meaning is a relation that can never be completely internalized or externalized;</p>
<ul style="list-style-type: none"> • its result is not explicit 	<p>meaning itself cannot be represented as it always arises out of a confluence of representational information and participation;</p>
<ul style="list-style-type: none"> • the viewpoints involved need not be shared 	<p>meaning itself is not communicable; and need not be. Misunderstandings are sources of new meanings as much as sources of problems. They need to be resolved only when they become dysfunctional for a given practice.</p>

Because the negotiation of meaning always takes place as an activity, it is not just a contemplative process, but one that changes the world, and thus one that resolves dilemmas and achieves goals. There is an important idea about reasoning processes here, which I will only mention in passing and which I have explored a bit further elsewhere (Wenger, 1988a). The idea is that meaning, not representation, is the basic medium of what is often called "reasoning" or "problem-solving." This presents a profound difference with rule-based theories of incremental knowledgeable actions because negotiation of meaning, while reflecting the contingency of behavior, does not make a fundamental distinction between condition and action. Situations and knowing are not discrete entities in which the latter applies to the former, but are both constructed at the same time in the fields of meanings. The person is part of the situation to be resolved and the process is one of constructing within the situation a vantage point that transforms it into its resolution. Conditionality, which is a form of reification, is different from contingency. In this context, the use of calculus on representations typical of information-processing theories is viewed as a very specialized cultural form of reasoning, which requires the availability of proceduralized representations, with both their power in achieving well-specified behaviors and their risks in ignoring meaning.

There is something hermeneutic to the relational view of meaning outlined in the table above, to this constant process of negotiation, of desituating and resituating; yet, placed in the context of membership in communities of practice, it is not solipsistic, because negotiation of meaning takes place as part of the practice of a community in which shared activities and artifacts are constructed and in which the individual self is defined with respect to trajectories of participation through the social structure. Thus neither the location of meaning nor the individual as an entity are taken as naturally given. Both are socially constituted. What is being negotiated is a constant becoming, through the continuity of activities in practice and at the same time through the forms of membership in which these activities belong and make sense. Cultural transparency in the socially constituted world then implies the negotiation of an identity with respect to a system of differentiated ways of belonging, differentiated ways of being. An important point to keep in mind is that this negotiation of identities of participation is not just an individual process but mutually constitutive relations between individuals and communities.

Two crucial ideas are emerging from this discussion. First, information is always objectified in specific communities of practice; and second the negotiation of meaning implies the construction of identities of participation in shared practice as a vehicle for cultural transparency. These two considerations taken together have important ramifications for understanding and supporting learning processes. They suggest two dimensions for analyzing the quality of what is learned in specific circumstances, which could be called "cultural distance" and "negotiatedness." Cultural distance is a relation among communities of practice that would capture issues such as common practices, common members, shared boundary objects, etc. Negotiatedness would capture the degree to which the negotiated construction of identities of participation is allowed to enter in the transformation of information into cultural transparency. The construction of identity inherent to the negotiation and renegotiation of meaning provides a vehicle between learning and knowing so that the degree of negotiatedness is a feature of a learning process that carries over as a feature of the knowledge that results. Neither dimension by itself is sufficient to characterize learning.

Learning about the claim processing office was an interesting experience in this regard, because there was a definite cultural distance to be bridged at many levels of mutual identities of non-participation, and yet my presence there and my direct involvement in the local practice for an extended period of time allowed me to engage in negotiation of meaning and anchor my understanding in participation. Thus I can use it in a fluid way that is not possible for the reader of this thesis. It is not merely a matter of being on location: I could have taken a guided tour and still in a sense know "less" than by having some conversations in a café with people who work there. It

is not merely a matter of quantity of information either, even though it is true that I have acquired much more information than I can convey in this writing. But there is something about being there that got absorbed into my being and that gives life to the information I have: to some extent, and with all sorts of limitations, I have gained an identity of participation that gives fluidity to my understanding.

The point I am trying to make is that knowing more or less is not just a quantitative issue, but a qualitative one of negotiatedness as well. This may define a continuum of participation in meaning that would contrast literalness to negotiatedness of knowledge with respect to the communities of practice where information is rooted. One would usually expect identities of participation to result in knowledge with a high degree of negotiatedness and identities of non-participation to result in literal knowledge, that is, knowledge that is highly dependent on the representational form of information.

The problems of the COB worksheet then can be understood both in terms of the cultural distance between communities of practice involved and in terms of the literalness promoted by the proceduralized encoding of the representation. The claim processors had no opportunity to negotiate a form of participation that included a meaning of the COB procedure that would support successful conversations with customers on the phone. Explanations, when there were any, could not become connected to the processors' own practice because they were handed down through intermediaries as representational labels such as "aggregate" without involving the collective construction of a shared practice in which the meaning of these representational labels could be negotiated. And it did not work: literalness propagated itself, amplified as it went through new layers, all the way to unsuccessful phone calls. The importance of the negotiatedness of understanding becomes manifest when one has to renegotiate it in a conversation with a new person who has a different perspective on the problem. Then it really matters that understanding possesses a degree of negotiatedness that frees it from representational labels. My argument is that such communicative fluidity requires an identity of participation in a community in which an ongoing discourse supports the negotiation of cultural transparency as part of the practice.

Cultural distance and negotiatedness as characteristics of cultural transparency redefine the terms in which to think about issues of "knowledge transfer" by focusing attention on the social circumstances under which learning is taking place. They bring to the fore questions about the degree to which learning takes place within a community of practice or requires moving across community boundaries as well as the degree to which identities of participation provide a malleable medium for the renegotiation of meaning. For instance, authority and control are likely to engender literal knowledge, insofar as they distort negotiation by requiring conformity

to the visible (e.g., the articulate, the canonical). Literal knowledge on its own is likely to be brittle and narrowly applicable because the dependence on the literal representation makes it difficult to renegotiate the meaning of what has been learned in situations in which it could be useful. In contrast, negotiated knowledge is already part of an ongoing transformation of the self with respect to the cultural world. Thus the widely-held belief that decontextualized knowledge transfers better is probably wrong. In fact, it seems likely to be just the opposite. I suspect that negotiatedness is a more salient characteristic for issues of transfer than traditional notions such as generality, abstractness, concreteness, or articulateness. In contrast to these structural features of information, negotiatedness is a dynamic concept, which reflects continuous construction and renewed involvement. The important point here is that this negotiation must involve the negotiation of forms of membership and of identities of participation. In this regard, this framework goes beyond the traditional constructionist view, because what is constructed is not just a set of cognitive structures, but a way of belonging. Unlike the view of the person as cognitive entity typical of constructionist theories, my notion of negotiatedness centrally takes membership and social identity into account.

Difficulties of didactic classroom teaching can then be understood at two levels. The wide cultural distance between the school context and the communities where what is taught in classrooms is "live practice" is problematic enough, and a discussion of it could take a whole thesis. One thinks of the difference between school problems in various subjects and the practice of professionals who deal with these subjects. Similarly one thinks of the distance between the world and the classroom for young Americans, who can keep track of complicated bowling scores (Herndon, 1971), or young Brazilians, who can perform complex price calculations during street sales (Carragher et al., 1985), but cannot solve structurally identical problems in their classrooms. Here questions of transfer clearly have little to do with the structure of the problem itself, but reflect the distance between distinct social practices. Viewing different practices as different ways of being in the world and analyzing them in terms of their internal coherence is more likely to afford the required breadth in analytical leverage than viewing problem-solving rationality in strictly information-processing terms as a universal, disembodied phenomenon which is hampered by "human factors" classified as "deviations" (Lave, 1988a).

But in addition to cultural distance, the *ex cathedra* nature of the communication processes typical of classroom teaching further inhibits actual negotiation of meaning in practice. This is not only a question of verbal versus hands-on teaching, of discovery versus guidance, of group lecturing versus one-on-one tutoring. It is also, and perhaps primarily, an issue of the social landscape that would allow interesting communities of practice to be formed around subject

matters. In addition to its isolation from authentic practice, the traditional classroom is a terrible place to learn because there is little texture to negotiate knowing identities. Think of a classroom with a teacher sticking out and a flat landscape of thirty students all learning the same thing at the same time. Knowing means pleasing the teacher, raising your hand first, getting good grades. It is no surprise that by the time students are adolescents and their requirements for a coherent, well-structured identity of participation in their communities of practice becomes crucial, schooling does not offer them the material to do so and they have to create communities of practice of their own. These are at odds in various ways with the institution in which—and, according to the official agenda, from which—they are supposed learn. Either they set themselves in direct opposition to the school, viewed then as an alienating institution, or they use the school qua institution as a stage for becoming someone through its social activities and hierarchies (Eckert, 1989).

The two dimensions of cultural distance and negotiatedness can shed a constructive as well as a critical light on the issue of specialized pedagogical settings. As my own experience in the claim processing office testifies, these two dimensions are interestingly related in that they may possibly compensate for each other. For instance, under a benevolently domineering master who seems to allow no give-and-take, an apprentice may develop an identity of participation in highly negotiated forms of cultural transparency insofar as direct involvement in communal practice offers such a rich context to negotiate meaning that the rigidity of authority can do little harm. Conversely, there may be the possibility of having learning across cultural distances remain effective to the extent that the negotiatory process in the development of cultural transparency is preserved. If the degree to which communication can convey meaning is determined by the degree to which it involves negotiation, this would suggest the principle that the farther one is from the locus of the subject matter, the more one has to allow for, and in fact actively support, negotiation in communication processes. In other words, teachers, not so much by the specific content of their communication actions, as by their status as members whose own relation to the target practice is based on the negotiation of an identity of participation, have to “represent” the community of practice as partners for the negotiation of meaning. This experience of “nonrepresentational representation,” which in small but crucial ways is fairly common in our daily conversations, is not one that is emphasized in our schools. Identities of participation in a community of practice involved in such negotiation of meaning would in itself be an authentic experience of developing cultural transparency.¹²

¹² This suggests that being an active practitioner might be one of the most deeply essential requirements for teaching; it might even be in itself considered a pedagogical “method,” so to speak.

Cultural transparency and design

In sum, as a definition of understanding in practice, cultural transparency does not just refer to a quantity of information, to a horizon that delimits the surface of an area of visibility. It implies a form of membership in a socially textured cultural world, which provides access to information and gives it meaning through the negotiation of identities of participation. It thus emphasizes the qualitative character of knowing so that one could know "less" by knowing "more." Negotiatedness, that is, the degree to which participation and information interact in the process of the negotiation of meaning becomes a feature of what is known. If cultural distance, disconnectedness, rigidity, or scarcity of resources prevent negotiation and generate identities of non-participation, the resulting knowledge is limited by a literal dependence on the representational character of information. By contrast, negotiatedness is a dynamic quality of participation in meaning that carries with it the creation of new meanings. These concepts have provided a characterization of pedagogical relations in terms of their effects on knowledge and its potential use.

If information and participation are intrinsically dual aspects of the negotiation of meaning, membership cannot be separated as a "strictly motivational" issue, as it is if we think of knowledge as information. An identity of participation provides a way of becoming in which negotiating the meaning of information makes sense. In this respect, it plays an interpretive role. As the sense of self that one constructs in becoming a knower is an interpretive relation to a practice, this thesis could be viewed as an initial step toward exploring the "indexical" function that social membership fulfills through the process of coherence of identity in the context of shared social practice. Unlike investigations of this type at a broad cultural level, the definition of cultural transparency in terms of relations between local communities of practice provides a framework for understanding the embodied details of the process.

Looking at the situation from these different perspectives is not of mere analytical interest, but leads to very different attitudes toward communicating, teaching, designing and organizing change in institutions. In particular, designing glass boxes turns out to be a broader enterprise than anticipated, since knowledge is socially organized and significant changes in knowledge will imply changes in the social organization of human communities. Bringing information into view, as difficult a task as it may be and in spite of all good intentions, may have the contrary effect by confirming identities of non-participation. Then supporting learning means organizing information and participation in ways that make sense to specific

locations in the social landscape and can make a difference in the forms of membership of those who live there. It means opening the possibility of becoming someone with respect to what is being learned. Such a view of learning is different from a view based on individual skills and has correspondingly different implications for what it may mean to "teach," if teaching is construed broadly as supporting learning. For instance, instead of teaching individuals new skills to cope with new computer systems being installed, one would create design processes that include existing communities of practice and take advantage of their abilities as a way to transform them into their own future (see Ehn, 1989).

The emphasis on identity construction in the development of cultural transparency as discussed here may give the impression of a largely adolescent perspective. Adults are supposed to have constructed an identity so they can proceed with the business of living. There are two points to make in this regard. First, the belief that identity construction, which is so critical a part of adolescence, is not part of adulthood is largely a myth: it is merely not experienced as a crisis. Second, to the degree that this belief is not a myth, it may reveal a problem. Learning may be easy in youth precisely because the person is still in construction. The most important aspect of learning may lie in the temporary acceptance of a non-coherent form of membership. That learning in nontrivial ways requires a transitional incoherence of identity may then be its most problematic and most difficult aspect. What this suggests with respect to the glass-box dream of a learning society is that our culture may need to develop new forms of adulthood, which quell the painful crises of adolescence without killing the dynamism of the sense of self that makes it such an open and creatively generative learning period in life.

Computation and intelligence: the black-box mirror

I would like to conclude this chapter with a few important remarks on the subject of artificial intelligence (AI), which is my field of study. Not only are AI techniques holding the most challenging technological promises for the design of glass boxes, but considering some foundational questions about artificial intelligence will help clarify some of the points made in this chapter. Furthermore, questions about intelligence are the topic of a subtextual inquiry underlying this entire thesis.

As any programmer could readily tell, it would be very easy to program the COB worksheet discussed in the last chapter, because the data structure used by the claim processors is already one on which one operates procedurally. In a sense, the worksheet is already a computer program, precisely because it obviates participation in meaning. The

fact that there is a profound similarity between programming a computer and designing procedural forms is to be expected of what both normative structures and AI are about and what they reveal about the definition of social agents. To anticipate my point, computer programming can be viewed as creating only fields of visibility without corresponding participation: therefore computer programs cannot renegotiate the meanings of their own terms.

I would claim that AI, as a cultural and technological phenomenon, is the epitome of the black-box syndrome. Insofar as AI programs are meant to perform some of the functions culturally associated with human intelligence, they can be considered the ultimate technological artifacts. And producing proceduralized representations in order to automate is in final analysis what AI is about. Even though we may claim that our programs do search and perform inferences, this is only a "level of description." Eventually our systems have to come down to extreme instances of the type of proceduralized interpretations I have been talking about. Such total dependence on the proceduralized representation of information is characteristic of what I have called literal knowledge, which I have claimed suffers from "brittleness" with respect to new situations. The "knowledge" of AI programs—or rather their information—can only apply to situations by matching features in classification schemes defined in advance. This process of classificatory feature matching is a one-sided, nonconstructive process, by which conditions for applicability are determined in terms of a fixed set of features. It is antithetical to negotiation, which is an interactive, relational process, by which both knowing and the situation are constructed together.¹³

In the terms of earlier discussions, one could say that in its purpose of producing representations whose intended interpretation into behavior does not depend on participation in meaning at the time of interpretation, AI, as the end-product of a long tradition of logical rationalism in Western thought, could be described as the science of "the production of meaninglessness." Put in those terms, this statement is of course somewhat gratuitously iconoclastic, and is meant to be facetious rather than offensive. But it does hit on the point that our own intuitions about intelligence are in fact contrary to this demystifying perspective on AI. We tend intuitively to associate intelligence, not with the procedural interpretation of representations, but with the production of new meanings. Maybe this explains a curious phenomenon about the AI community: its subject eludes it. Indeed as soon as a problem looks like it is solved in AI

¹³ AI-like intelligence may therefore be the epitome of what we do not want learning to produce. But this interpretation of AI suggests a crisp characterization of one of the core issues to be addressed by the AI subfield of intelligent tutoring systems (in the context of which the inquiry of this thesis originated): exploring the communicative characteristics of proceduralized representations when interpreted culturally.

terms, it tends no longer to be considered an AI issue because it no longer seems to involve intelligence.

This view of programming as the production of meaninglessness is in keeping with my argument in preceding chapters that meaninglessness is a relation between the practice of a community and the outside of that community, a relation which articulates the two without a shared practice. Even though, as an artifact, a computer always exists as part of the practice of communities, there is no community of practice in which it can reasonably be said to find a form of membership, and I have argued that participation in meaning implies membership in a community of practice. The computer then is not to be viewed as a metaphor for human cognition in general, as it is in many current information-processing approaches to the study of cognition. Rather it is to be viewed as one extreme on a continuum of participation: the extreme that represents as absolute an absence of participation in meaning as an "enactor" can have.¹⁴

In producing impressively appropriate behavior in machines, AI programming is therefore not an epistemological surprise. We already know that it is possible to proceduralize our understanding for interpretation outside our practice: we do it among ourselves, as I have described. To say that AI programming is not an epistemological surprise is not to say that it is useless or easy: sophisticated programming is an intellectual achievement and proceduralization does have its place in productive life. From this standpoint, as long as AI programs are useful, my remarks might mean little beyond philosophical niceties. At best, they may help clarify and resolve some problems these programs may encounter in fitting within broader human decision and communication processes, of which they are made part. But AI has an epistemological heritage and epistemological ambitions beyond the production of useful artifacts: in the computational metaphor for the mind.

Of course, this metaphor finds its legitimation in the parallel that mental activity has to correspond to physical transformations in the brain, just like executing our AI programs has to correspond to physical transformations in electronic circuits. And the brain is but an object. That the brain has a crucial function for intelligence is not to be denied, but recognizing that fact does not imply, as a particular version of the mind/body problem would have it, that intelligence has to be located in the brain. The brain is the brain of a body and the body is the body of a person, and the person is, needless to say, a member of one or more communities of practice. From the perspective I have

¹⁴ Or whatever one might want to call this social function: I was trying to avoid the term agent. Note that there may be very restricted areas in which the computer can be said to have some form of participation, for instance in its own physical existence through a primitively cyclic notion of time, via its internal clock (Smith, 1987).

developed in this chapter, the brain is information, just like the world is. Actions result in changes in the brain just like they result in changes in the world. What is inside is like what is outside: the grey chemistry of a synapse like the wild strawberry, which I just picked and is now being placed, deliciously red, between your carefully rounded lips. If intelligence has anything to do with meaning, then the locus of individual intelligence has to be in the dynamic relation of living in a cultural world, which gives rise to fields of meanings as a medium for intelligence and which I have described as the negotiation of meaning. The person exists in that moving stillness between the past and the future; shaped through changing fields of meanings by history in the making. What distinguishes a person from a machine then is not information, or information processing, to which they both have rightful claims; it is personhood through membership, which subsumes, but in our present culture clearly includes, the question of having a body. Membership as an indexical therefore resolves the dichotomy of the mind-body problem.¹⁵

Because of the complete absence of identity of participation in meaning, the behavior of a computer is not terribly informative about intelligence as owned by members of communities of practice. When it comes to understanding intelligence, the production of behavior through proceduralized representations is not only epistemologically unsurprising; it may be deeply misleading in relegating issues of meaning. For one thing, it may suggest pedagogical ramifications that are profoundly counter-productive, even while seemingly bound to achieve desired effects: emphasizing proceduralization on a large social scale because it seems to produce expected behavior may well be like killing the goose with the golden eggs. What we don't

¹⁵ A few remarks are in order. First, one might be tempted to say 'Let us give our computer a form of membership then.' It is important to realize that membership is a mutual relation between a community of practice and a person that cannot be decreed in the abstract but arises out of participation in a shared practice, as anyone who tried with good will to get a group of children deep in play to include a weeping outcast knows well. It would therefore not be sufficient to decide that a computer is a member of a community or even to make discrete efforts to treat it as such; the community would have to develop a practice such that the computer's membership becomes a reality. Such a profound transformation of our culture is not very likely in the foreseeable future (and questionably desirable). Second, given differences in body and "culture" the issue of intelligence in other species is much more similar than those who feel a need to build clear separations would have us believe. Lastly, in addressing epistemological issues of personhood, this philosophical argument could easily be construed as addressing metaphysical issues of soul, which it is not. Construing it as such reflects, in my opinion, collective confusions we have developed on this subtle topic by investigating the issue of the existence of soul—with an attendant mythology of paralyzing proportions—as a philosophical question before trying to comprehend existentially what soul might be, what existing in the perception of self, time, and space might mean with respect to the existence of the universe and our presence in it. These profound issues require investigation tools which we as a culture have not even started to develop.

understand well about intelligence is how negotiation and creation of meaning are anchored in membership in communities of practice.

***Learning
the practice
of communities:***

***legitimate
peripheral
participation***

Cultural transparency has to be attained; a theory of cultural transparency is therefore in need of a theory of learning. Given the argument of the preceding chapter, a theory of learning that centers exclusively on the acquisition of information or skills by individuals viewed as cognitive entities is clearly inadequate, and probably misleading. This chapter describes an attempt to develop an alternative framework for theories of learning, one that takes relations of membership as an analytical foundation.

Identities of participation cannot be invented, decreed, or conferred; they have to grow out of engagement in the practice of a community of which one is becoming a member. This engagement in practice has to be such that the initial relation of membership can transform itself through time into a fully established form of membership: the newcomer has to have access to both fields of visibility and fields of invisibility. So the participation of the newcomer has to find a legitimate place in the practice of the community and this place has to be such that it allows the newcomer to be peripherally involved in activities of interest in order gradually to become a full participant. This process of increasing involvement, we have called "legitimate peripheral participation" (Lave and Wenger, in press).¹⁶

¹⁶ Like the related term community of practice, this term was originally coined by Jean Lave, who used it in the context of her ethnographic study of craft apprenticeship

Learning as legitimate peripheral participation: an analytical perspective

The concept of legitimate peripheral participation has become the cornerstone of our theory of learning, whose purpose is to lay down a theoretical framework for understanding what people know and what they don't, what they can and cannot know, what they should or need not know and who decides, what they want to know and what they don't care to, and what form what they know takes in the context of their experience of their lives.

The concept of legitimate peripheral participation

Before moving on, it might be helpful to clarify briefly the choice of the term legitimate peripheral participation and of its components. Legitimacy and peripherality are relations to a practice: they are primarily characteristics of the form that learning takes, rather than characteristics of the person who is learning. The two obviously tend to become indistinguishable as, on the one hand, identities of participation and non-participation form, and on the other, legitimacy and peripherality become part of the content of learning.

The three components of the term legitimate peripheral participation each contribute essential aspects of the total concept, but they are to be viewed as a whole. Indeed, there could be a temptation to consider each one separately as one pole of a pair of binary opposites: legitimate versus illegitimate, peripheral versus central, participation versus non-participation. For instance, it may not be very useful to try to understand our term by wondering what an "*illegitimate* peripheral participant" would be—a spy, an investigative journalist, or a reckless ethnographer perhaps. More to the point would be to ponder how the form that the legitimacy of participation takes is crucial in shaping both what can be learned and the form and significance that learning and knowing then take both for the learner and for the community. Similarly, it may not be very useful to wonder what a "legitimate

among tailors in West Africa (Lave, in preparation). While many of the ideas explored in this thesis arose, directly or indirectly, out of my own intellectual apprenticeship with her, the development of the concept of legitimate peripheral participation into the foundation of a theory of learning were the fruit of our direct collaboration on this topic. Our research resulted in a monograph to be published as a short book, referenced in the text. When I use the first person plural in this chapter, I am referring to our working partnership. Here, I will only summarize briefly parts of the contents of the monograph to allow the reader to follow the inclusion of the concept of legitimate peripheral participation into the argument of this thesis. For a more detailed account of the development of the theory of learning itself the reader is referred to the monograph.

central participant” is—a maypole image of social practice. More to the point would be to explore the multiple, differentiated, more or less committing ways in which a practice provides opportunities for participation and which locate participants in a landscape of forms of membership. To make this distinction very clear, we do not use the term “central participation” as the endpoint of legitimate peripheral participation, but the term “full participation,” where “full” is not used in the sense of complete, which would suggest a closed domain, but in the sense of “totally qualified, accepted, or empowered, [as in] a *full member*.”¹⁷ In this sense, full participation does not imply one position at the top of a hierarchy, nor even success in a process of competitive selection.

Legitimacy and peripherality are used here to give a dynamic texture to the notion of participation. “Legitimate peripheral *non-participation*” would make more sense than the opposition suggested earlier, and I have used a contrast of this sort in my argument so far. Again, however, this opposition should not be viewed as a simple polar dichotomy but as a textured variety of ways—some subtle and some flagrant—in which one can be included or excluded, or indeed both at the same. In this respect, there is a profound ambiguity in the notion of legitimate peripherality, in that peripherality may be a position from which one is in the process of gaining legitimate entrance into a practice, but it may also be a position in which one is maintained and thus legitimately kept from moving further inward. Peripherality as we use the term is thus a dynamic concept, which suggests movement, or opposition to movement. The ambiguity of the term is analytically useful because it reflects precisely the position of all newcomers in their ambitions to become participants in the practice of communities or in their reluctance to it: knowledge can be guarded just as it can be made available; it can be imposed just as it can be offered; a community of practice can be a fortress just as it can be an open door.

A general analytical category for learning

Learning in the context of an apprenticeship was the original example of a historical realization of the concept that we used to explore our ideas. Apprenticeship has the clear characteristic of legitimate increasing involvement in the practice of a usually well-defined community: it starts with peripheral responsibilities of a useful sort, and leads, often through well-defined steps that imply changing viewpoints on and relations to the practice and the community, to full participation and a recognized identity of mastery. Although apprenticeship is often associated with craft and manual work, institutionalized as well as less formalized forms of it actually cover a

¹⁷ The American Heritage Dictionary, Second College Edition.

very wide spectrum of practices in which highly skilled performance is expected, ranging from craft work to very abstract or intellectual specialties, such as post-graduate academic training or medical internship. This is an important point because we have found that our ideas are often met with the belief that they are only valid for a limited range of down-to earth, informal, narrowly contextualized capabilities. We claim that they are in fact very general.

In spite of the useful parallel between apprenticeship and legitimate peripheral participation, it would be wrong to mistake our theory for a generalized or distilled version of apprenticeship. Apprenticeship is an educational institution with its own specific historical realizations, which present a wide variety of both successful and unsuccessful social and pedagogical systems. Legitimate peripheral participation thus takes place *under* apprenticeship as it does under other educational institutions. As a matter of fact, looking at apprenticeship from the perspective of legitimate peripheral participation has led us to reconsider some common beliefs about apprenticeship, such as its work-driven nature and the role of masters (see Lave and Wenger, in press). Legitimate peripheral participation is neither a specific educational form as opposed to another, nor a pedagogical method; it is a theoretical viewpoint, a *general analytical category*, which describes learning as a mode of engagement in practice, and which as such, cannot be said to be successful or unsuccessful. It is a descriptor of learning, whether or not it takes place in the context of an educational institution.

Of course, there may be crucial differences in alignment between the trajectories of legitimate peripheral participation that take place in a particular context and the official agenda of an institution, an authority, or a pedagogical structure that attempt to define that context, and thus to define success and failure. And finding an alignment may be an important task for success so defined. That is a very different issue; and it is one to the analysis of which the perspective of legitimate peripheral participation is essential because it clearly decouples learning from pedagogical structures and intentions. This decoupling does not imply that these structures and intentions are irrelevant to the analysis of learning or that no learning takes place where there is teaching. This is obviously not the case. But the decoupling suggests that what gets learned is not defined in any simple or direct way by what gets taught, or even by a subset of it or deviations from it. This relation is always mediated by the practices of communities that arise as a response to the pedagogical context. Therefore, no analysis of the pedagogical context by itself, its defining intentions and organizing structure, can render less analytically problematic the nature of what gets learned.

In some sense, the perspective of legitimate peripheral participation turns the problem around. Instead of seeing learning as an independent activity that results in communities of practice among

people who have what they have learned in common—an alumni view of community formation—this perspective will attempt to identify the communities of practice that exist as a way to see what is being learned. These communities may be interstitial and their practice may be very different from the official agenda. Given a specific situation in which learning is of interest, does or does not take place according to some official version of what the situation is about, the analyst will try to understand what the landscape of legitimate peripheral participation is like. That will mean trying to find out what the relevant communities of practice are, how they are related and articulated, and how their respective membership is reproduced over time. In order to clarify this issue on the outset, it might be useful to look briefly at some other examples of learning situation, before turning to the claim processing office to explore further aspects of the concept as it relates the argument of this thesis.

Analyzing learning as legitimate peripheral participation

The socialization of children is clearly another prime example of a context in which one can observe legitimate peripheral participation, given the position of children in its changing relations to the adult world. Looking at learning from this perspective would move the primary focus away from the child as a cognitive entity and place the emphasis on the possibilities for and organization of legitimate peripheral participation in the communities of practice of adults and older peers. Issues of fields of visibility and identities of participation would come to the fore. Viewing the process as legitimate peripheral participation also reveals the integrative character of this analytical perspective. Indeed it integrates, and thus includes in intricately connected and mutually constitutive ways, numerous aspects of socialization that are often reified as separate phenomena for theorizing purposes. The formation of personhood is not a separate process from increasing participation in the practice of a child's adoptive communities; nor is language acquisition. The formation of personhood is not just a matter of interpersonal relations, but the construction of an identity of participation through mutual engagement in practice, where the coherence of identities is defined. Learning a language is not primarily learning a grammar and a lexicon from isolatable examples; neither is it primarily learning meanings and denotations, or even pragmatics from isolatable events; but it is primarily engaging in new shared ways of participating in practice, of which the use of language is an integral part. Utterances, semantic usage,¹⁸ and speech acts are reified emerging properties of this

¹⁸ I have avoided the word "meaning" here, since the integration of the acquisition of first linguistic capabilities in increasing participation in the broader practice of a community speaks against the notion that words have well-definable meanings. The term "usage" is Wittgenstein's, whose views on language would I think imply the

broader process: becoming a co-talker is becoming a co-person, as it is becoming a co-practitioner, as it is becoming a co-member: all are integral aspects of becoming a participant in the total practice of a community.

The two cases of apprenticeship and the socialization of children may seem selectively chosen to illustrate the concept of legitimate peripheral participation, but even schooling provides a compelling illustration. Even in the modern school, the last place where one would expect learning to take the form of legitimate peripheral participation; even there, in the home of the individual learner who acquires general knowledge and skills in a specialized, decontextualized setting; even there, in the center of a tightly intensified curricular process of knowledge transmission that makes the very concept of legitimate peripheral participation seem like the antiquated epitome of inefficiency; even there, in the shrine of an ideology of universality that makes the very notion of community of practice seem so profoundly, so absurdly, so dangerously parochial; even in the modern school, like dandelions through cracks in the concrete, local communities of practice sprout everywhere; and viewing the learning that takes place in school as legitimate peripheral participation is insightful at two levels.

At one level, the official classroom itself, confronted with the reality of its human task and of its isolation from society at large, abandons its universalistic ambitions and sets up a localized practice with its own idiosyncratic dilemmas, forms of discourse, and views of the world (Mehan, n.d.). And within that context, students form their own communities of practice, in the classroom as well as on the playground, to deal with the agenda of the imposing institution and the unsettling mysteries of youth.¹⁹ Processes of legitimate peripheral participation in actual classroom practices and in those of interstitial peer communities is likely to provide a more informative picture about what becomes substantial for the students' life trajectories, what they really learn, than thinking of school learning in terms of teachers implementing curricular prescriptions to impart general knowledge to cognitive entities who process it for their own future good.

At another level, seeing the global position of schools in the context of society as a manifestation of the forms of legitimate peripheral participation that it offers to its newcomers with respect to its own social and cultural structures offers an understanding of what kinds of

integration of language learning and socialization outlined here. The term "usage" is his way of conveying the idea that native speakers are unable to clearly articulate the meanings of their lexicon entries not because they do not have access to their own cognitive structures, but simply because such isolable, articulable meanings do not exist.

¹⁹ Not to talk about teachers who have to deal with school bureaucracies.

individuals our schools are producing and of the forms of identities of participation they enable in society at large. It was the great accomplishment of ethnographers of schooling such as Paul Willis and Penny Eckert to tie these two levels together: they studied the local, unofficial communities of practice that are formed within schools and analyzed how these relate to the social structure to the community at large in order to understand the production, in the same institutions, of such different persons as Willis' "lads" and "earholes" and Eckert's "jocks" and "burnouts" (see Willis, 1977; and Eckert, 1989).

The example of schooling also illustrates an important point about peripherality: its multi-layered character. The sequestration of the classroom from "real world" practices (the school is, of course, also a real world practice, but a separate one) is a form of legitimate peripherality into which students are induced by increasing participation in the school's local practices. Furthermore, students form interstitial communities of practice whose unofficial character makes them peripheral even to the school's own peripherality. And these communities have their own mutual articulations of peripherality, insiders and outsiders, newcomers and oldtimers. This entire system constitutes a very complex nexus of forms of membership in which identities of participation and and identities of non-participation are nested within one another.

All the cases of legitimate peripheral participation I have described in this section have an important characteristic in common: involvement in actual practice along with more advanced peers as well as full practitioners brings to some extent their activities and attitudes into view. Legitimate peripheral participation thus implies some awareness of the paradigmatic trajectories and of the possibilities of full—or at least fuller—participation in a community of practice. This awareness is crucial to focusing exposure to the overwhelming richness, diversity, and vastness of the fields of visibility, available from the periphery of any practice, on the process of a coherent and dynamic transformation of the person. Therefore, having a sense of paradigmatic or possible trajectories of participation is an essential aspect of learning as a transformative process.

This window of visibility is usually fairly local, or in any case localized through the practice of the immediate community, as it is in school through grade levels and status within peer groups. Thus this awareness of possible trajectories does not in itself imply a form of what Willis (1977) calls "penetration" or what one might want to call "true consciousness" or in-depth understanding on the part of newcomers (or of oldtimers for that matter). The fact that one can witness the lives of actual practitioners does not translate into a claim here that legitimate peripheral participation is necessarily a positive or elevating process for the learner. Hazing, for instance, is often a mechanism for forcing specific trajectories of participation onto newcomers. This can be found in many cases of apprenticeship, which

has often been used as a source of cheap labor in circumstances of exploitative labor relations.²⁰ Hazing the neophyte can be seen as a way of reproducing conditions of oppression among peers and across generational waves. Similarly, the fact that socialization takes place in co-participation with older siblings, friends, and adults does not in any way mean that growing up gives one a "true" or even accurate perspective on life in any global sense. Analysis in terms of legitimate peripheral participation locates the determining factors of such outcomes not in the learning process but in the structure and articulation of communities of practice. The point I am trying to make here is that this analytical perspective draws attention to the importance of the awareness of paradigmatic trajectories in determining what in the fields of visibility becomes substantial in forming the person.

Legitimate peripheral participation: becoming a claim processor

On the morning of their first day at work, Alinsu's new recruits attend an introductory session in a conference room where they sit around a large conference table. During this session they are introduced to their choices in benefits packages, diligently sign forms about security breaches and display proofs of their eligibility for employment in the U.S., and watch a few videos that acquaint them in very general terms with the company, its businesses, and its official philosophy. The presentation of the session I attended was quite informative, though its style, while not unfriendly, was rather overbearing at times. It was made amply clear that the job was no joke and that failure to satisfy the requirements would result in firing. The imposing character of this magisterial introduction was met with a collusive demureness by the eleven new recruits.

The training class: practicing peripherally

In mid-morning, after our first ten-minute break, we moved into our classroom, where we were to take an 8-week training class before moving to our respective desks "on the floor." We met our instructors, who introduced themselves. Instructors are not specialized in this function, but are oltimers who take time off their regular functions to run these classes (and with very limited initial training on how to do this). After the friendly introductions, our class also started on a

²⁰ This common characteristic of apprenticeship has given it a poor reputation as an educational institution in some politically concerned circles. For a discussion of this issue, see our monograph (Lave and Wenger, in press) or some of the papers we refer to (Becker, 1972; Grosshans, 1989).

disciplinary tone reminiscent of the introduction. It took on a more congenial atmosphere as time went by, however, though still with occasional outbursts of stern digressions on discipline. And the demureness of my classmates relaxed progressively into a still submissive but less muted comraderie.

During the first week, trainees are given definitions of terms and preliminary exercises that familiarize them with the use of the computer system. Toward the end of the week, they look at claims and process a few collectively. After that, the majority of the class is spent in processing claims, with one to three lectures per week. The lecture format is used to introduce new topics, such as surgery, coordination of benefits, chiropractic care, etc. A lecture typically lasts for about two hours. The trainees sit around the instructor who is either sitting with the training manual, which the group reads together, or standing at the blackboard giving explanations and writing down examples of encodings. After some introductory definitions, the lecture, both the instruction and the questions of the trainees, very quickly concentrates on how to handle a claim of the type under consideration.

The claims processed by the trainees are not mere exercises, but real, "live" claims. For the first six weeks, all the claims to be processed in the class are selected by the instructors prior to distribution to the trainees so that their work is within the scope of what has been covered in the class so far. During the last two weeks of class, trainees get the same range of claims as they will on the floor. The only difference between the claims processed by the trainees and the claims processed by other processors is that the former's claims that result in payments of benefits are all sent to "quality review" before any disbursement is made. As processors move to the floor and become more experienced, this spending limit will be increased, so that only a small portion of the work of established processors goes through quality review (though there are also other reasons than amount of benefits that claims are routed to quality review, such as special payees different from the insured or the service provider).

From practice to practice: making it on the floor

After the class is over, trainees physically join their unit, but they remain "trainees" until they reach their "level 5." For the first few weeks after the class, their production quotas are very low, going up progressively to their level 4, called "training level." Furthermore, they do not have to answer the phone for quite a while. Reaching level 5 can take up to...but must take less than—one year. During that time, trainees still receive special help from their "back-up trainer," an oldtimer, usually a "level 8," who will answer their questions and will on occasions sit with them at their desk to see them through the processing of a difficult claim. The situation, therefore, resembles

closely that of the class, except that the back-up trainer is less readily available than the class instructor. Still, trainees usually find the transition very difficult.

"It used to be 6 weeks, and they ... 6 weeks just wasn't enough. I mean, here, and then it was 8 weeks. So I don't know if they expanded it. ... Cause the 8 weeks, it gives you the basic feel of things, but I mean, you're learning things everyday, new things everyday. ... So they are just giving you, like, the bare essentials in training, you know, and then every day, for, even after 11 years, there is, you still see things new, because medical things are always changing. Ten years ago, an MRI, nobody knew what it was, you know, and people did not have AIDS, and you did not have all these experimental drugs and stuff, so it's always a learning process."

In fact most people held the opinion that the classes were too short:

"That's probably why a lot of trainees leave, because they think 'Oh, now I'm done, pow! I know how to process, and they come down here, and they, these claims that they can't readily ask the back-up trainer anything, you know, they don't have a person right there for them, you know. Whoever they have to ask, they have responsibilities just as well. They are not, you know, to be with them the whole time. So then, they come down, they have to start making decisions for themselves, or something. And then, here they think they knew it all, and they don't, and that's just too hard for them. But you have to stick with it cause like, if you stick with it, you catch on with a lot of things, I think."

But the perspective of legitimate peripheral participation might well shed a different light on the problem by focusing attention on the structure of participation. From that perspective, the class might even be too long. Indeed, one important reason that trainees find the transition to the unit difficult is that they leave most of the contacts they had established with other trainees during the class, and have to establish a new network for obtaining information quickly. Admittedly, trainees often do not join their unit alone, but in groups of two or three. The ones I followed, however, had not been given desks that were adjacent or even close enough for very rapid informal exchanges. The difficulty to form such a network quickly after joining the unit is due in large part to the production pressure on other processors and the absence of recognition of the general need for and work involved in helping newcomers (beyond the back-up trainer). I suspect that this is a major reason many newcomers quit in the first few weeks of being transferred to the floor. Correcting the situation by providing support

for the formation of networks is likely to be more effective than extending the class for a few weeks.

To be a processor: a learning community of practice

Learning among claim processors is not just a matter of training, but an integral part of the daily practice in the claim office. Memos, such as the one shown in Figure 6.1, keep coming in at a regular pace. And there are the voids, too, which constitute a threatening learning device so upsetting to all processors that they rarely forget something substantial for which they got "voided." Then there are all the reference material they consult, and the claims themselves, which often contain information about medical issues. And most important, processors learn through the constant flow of questions and comments they exchange in the course of their informal conversations and through what they sometimes refer to as "the grapevine." The importance of learning is officially recognized by the function of the back-up trainer who does not only answer questions from the trainees, but from everybody. And back-up trainers also ask other processors questions at times. While a back-up trainer holds her position for a substantial period of time, in some units, a role similar to that of the back-up trainer is fulfilled by the unit's level-8's who take turn to be the week's "question person." Oldtimers do not take advantage of this service very often, but this is not just because they have less questions: they also have their own networks for obtaining information.

Though processors have used the word "learning" at times, (mainly while talking to me, it seems) to refer to their learning outside of training, they do not usually think of their work in this way. One day, at a meeting during which the unit supervisor had agreed that I could spend a few minutes explaining to everyone what I was trying to do there, I told the processors that I was interested in understanding how people learn, what they learn, and why, and that I was impressed by the amount of learning that was taking place day in and day out in the office. They were all surprised that I would choose this location for studying learning and to hear that they were learning so much. Yet when I gave them the concrete examples of the memos they receive, of the questions they ask each other, of the discussions they engage in, they all agreed that this was an integral part of their daily practice, and that they were in fact learning continually.

MEMORANDUM FOR: [REDACTED] Processors
[REDACTED] Group Claim Complex

February 5, 1990

SUBJECT: Anesthesia Modifiers

FROM: [REDACTED]

There has been a recent trend in anesthesia referrals where modifiers have been overlooked that made the referral unnecessary. So to refresh everyone's memory, I have included copies of the following:

- non-obstetrical time
- ASA modifiers
- 1974 modifiers
- 1969-1964 modifiers

Some things to remember are:

If anesthesia time is OVER 4 hours...units are calculated on 10 minute intervals instead of 15 minutes.

If the provider uses a modifier which is NOT on any of these lists, call and obtain description. In some instances, the provider will use -99 or -49....these denote MULTIPLE modifiers and we need a description to allow correct unit values.

Lately, there has been more use of the ASA modifiers..these are usually indicated by the use of "Physical Status Letters"...such as P1 or P3 and the use of 5 digit CPT codes...such as 99112 or 99140.

I hope this is helpful to all of you and if you have any questions, please see me. Thanks.

Figure 6.1. A memo to help the processors in their learning.

When processors refer to what I call their constant need for learning, they tend to speak about change: changes in policies, in insurance plans, in medical practice, as well as changes in internal organization and practices. The constant need to adapt to change, which gives the lie to the label of routine even the claim processors sometimes put on their work, is perceived both as challenging and as frustrating; there seem to be a slight, gentle contradiction in their calling non-routine challenging claims "junk" and their complaining that the job can be boring; of course, the coexistence of both can be understood by considering the production pressures that make any extraneous effort a threat to fulfilling quotas.

Learning as such is primarily associated in the mind of claim processors with the training classes and with occasional courses that are offered on specific topics. There are officially two types of learning taking place in the office; and the introduction of newcomers to the practice of claim processing and to the world of oldtimers can indeed be viewed as distinct from the ongoing learning of the community. Yet the actual processes involved in these two types of learning viewed as legitimate peripheral participation are amazingly similar. In a very real sense, even oldtimers are peripheral participants in the future practice of their community, as that future is continually constructed through a multiplicity of interacting processes involving people close and far.

To be a processor: learning the practice of a community

Because of the emphasis on actual processing, training classes are very similar to work in a real unit. Even the characteristic of constant change is something that trainees are exposed to very early on, as the practice they are just learning often changes from under their new knowledge. Moreover, being a trainee, both in the class and on the floor, is a legitimate and marked category of membership within the community of claim processors. Even while attending the initial training class, trainees have with very close connection with the life of the office. As soon as they are hired, they officially belong to the unit in which they are going to work and which they have in fact already joined. The seating arrangement in the classes was determined by the instructors and indicated on the first day with name tags on each desk in the classroom and groups the trainees according to their units. Administratively, they are under the supervision of their future/current unit supervisor, and not of the class instructor. They participate in unit meetings, missing class during that time, and use, as their practice curriculum, the plans and claims of their unit.

This does not mean that the trainees' allegiance is completely with their unit. The local practice shared by the trainees is distinct from that of other workers. Friendships formed during the class, and some

processors were concerned that when the class was over and they joined their respective units, they would lose contact with each other. Thus the class also has a cohesion as a temporary community, which is recognized by the community at large. At Halloween time, for instance, there was a competition among all units in the office for the best decoration. Our class was asked whether we wanted to enter the competition for the best decoration with our respective units or as a unit of our own, and the trainees voted overwhelmingly to have our own decoration effort. (As it turned out, we actually won the competition, and as a result, received a loud and cheering "round of applause for the trainees," along with a large box of M&M's.) Except for the presence of only one oldtimer (or often two) instead of a range of levels, the class is just like a unit. But this scarcity of exposure to a variety of full participants in the class is partially compensated by the fact that, while the trainees work in a separate room, they are in the same office as their more advanced colleagues, take breaks in the same lounge, ride the same elevators, and use the same bathrooms. They quickly become part of the scene.

Thus from the very start, the trainees I was with in my classes were not just learning to process claims, they were becoming claim processors. The job skills they were acquiring were part of this becoming, but only a part of what they were learning. A lot had to do with how to be, how to become successful in that world, what to watch for, how the managers behaved, what consequences certain actions had, where useful information was to be found, who was who. And in the office as well as in the class, it is fascinating to observe how skillfully learners manage their learning with respect to the form of membership they are getting into. They learn how to engage and disengage, accept and resist, keep a sense of themselves in spite of the low prestige of their occupation. They learn to weave together their work and their private lives. They learn how to find little joys and how to be depressed. They learn how much they are to make sense of things they do or encounter. Trying or not to make sense, I observed earlier, is not just laziness or a matter of minimalizing the effort, but the formation of a coherent identity with respect to what they perceive as their opportunities. Thus they also learn how not to learn and how to live with their ignorance. They learn to keep their shoulders bent and their fingers busy.

Yet it is not the case that one can easily reify individually the skills they learn and categorize them individually as useful or harmful, as functional or dysfunctional. They become claim processors. The individual skills they learn only make sense within this total picture, which subsumes them and gives them life. This is not to say that no improvements are possible, that no changes to what they understand and to the sense of themselves they develop can be brought about. But it is to say that there is a coherence to the identity they construct, to the sense-making landscape they sculpt; a coherence that one must understand before dismissing any of its elements as limiting or

irrational, or as false consciousness. Any consequential changes will have to take such coherence into account and grow from inside it. Changing what they know in substantial ways will imply changing their condition in substantial ways: identities of participation do not lend themselves well to plastic surgery—an operation, claim processors would immediately think, most plans do not cover except as repair of accidental injuries.

Legitimate peripheral participation: modes of engagement in social practice and forms of membership

The fact that claim processors don't usually think of their adaptation to change as "Learning" is typical of the usual subsumption of learning under a person's engagement in practice. This points to an important aspect of the framework of legitimate peripheral participation: it does not take learning, viewed as the adaptation of behavior or informational changes in the brain, to be in itself problematic, to be the issue to reify. Learning is going on as a matter of routine. Moreover, learning as a trajectory of participation is not usually localizable in discrete events in time, nor informationally quantifiable. What is important to what one becomes, and thus to the degree of cultural transparency that one attains, is the landscape of forms of membership, fields of visibility and identities of participation, that are made possible by an individual's trajectory through the social landscape.

This changes, for instance, the definition of what is traditionally described as a failure to learn. Acquiring an identity of non-participation can involve just as much work, as much learning, as acquiring an identity of participation: it is simply learning something else than what is expected by the official agenda of the institutional setting. This was what I observed when I commented that some of the trainees in the classes I attended were managing their learning carefully in order to keep a distance from their job. But it can take much more dramatic dimensions, for instance, in the learning of marginalization through an identity of failure in schools, or through an identity of outsider in cases of sex or ethnic discrimination. And in institutional settings, learning this something else is often a process of developing an identity of participation in the practice of a marginalized community: failure to learn is learning somewhere else.

To say that learning is subsumed under engagement in practice is not merely saying that it is situated in the activities of a practice, located there as an independently reifiable phenomenon. It is a claim that learning is above all an integral part of social practice, taken as a

generative process in which persons are engaged in the context of their life in a world in constant flux. Legitimate peripheral participation thus a way to talk about engagement in practice that subsumes learning as a central aspect. What is important to make clear is that it describes this engagement not just in terms of discrete activities but as a trajectory of participation.

This does not imply that there are institutionalized forms of membership toward which one is moving; just that the progression makes sense as the construction of a coherent identity. While processing, claims processors don't just learn how to process claims, or even how to be a member of the claim processing community in a narrow sense. Their job also brings them into contact with other realms of life, where their functions give them privileged access to fields of visibility.

Maureen:	"It's a good thing they don't have a lot of reports, so we don't read. I suppose some claims tend to have, you know, that kind of insight into the person. Like sometimes, especially for psych, they'll send in these big long reports 'God, he tried to kill his wife!' 'Look what he did to his daughter!' ... But most of the claims, you know, I can't read this. I got production.
Sheila:	"I know. Exactly. You're sitting there, and you know you're wasting about 10 minutes out of your production, cause you just, you get so ..."
Maureen:	"But we don't get that many reports."
Sheila:	"No, we don't get that many."
Mary:	"Or the accidents. And the little part that says, you know, 'Was this because of an accident?' Sometimes those are so funny. Oh, you just get some people that, ... Did you do that?"
Maureen:	"They tell you every little thing, you know, every little thing. I fell, I cracked two toes on my right foot, and I twisted the ankle on my left, and you know, I mean, every little thing. Then I took this pill and it gave me diarrhea. Things that you don't ..."

Such windows of visibility take on temporary importance in bringing some amusing sparks into the pressured work lives of claim processors and may even cumulatively expand their horizon to some degree. But while these events certainly enter their brains and occasion informational changes there, they do not constitute substantive changes in their person. Other encounters do. For

instance, processors have a fairly intensive peripheral contact with the medical profession, which differs substantially from that of casual patients, and thus changes their own positions as patients. This consequence of their work was not part of their daily discourse, but many of them could describe this effect when asked, though they always kept a low profile about it. An oldtimer, who was also the mother of a young child, told me that knowing all the terms and having read many reports gave her critical insights into the work of the medical professionals she deals with. Yet, with a unarticulated awareness of her need to cooperate in maintaining a traditional doctor/patient relation, she confided that she usually tries not to show her own knowledge and not to ask too many technical questions. Some processors don't even admit that their relation to medical professional has changed, even though they talk openly about their own medical knowledge and awareness.

Etienne:	"Does that make a difference for you now, when you go see a doctor. Do you feel different?"
Maureen:	"No."
Sheila:	"Well, you know more about what they are talking about. I think it's... when I went to the dentist yesterday, he told me that this joint and everything is kind of weak. And I knew exactly it was TMJ. I knew exactly. The way he was wording it."
Maureen:	"You're sort of, self-diagnosing yourself."
Sheila:	"Yeah, exactly. I think I pay more attention going to the doctor. Look at all these people who get sick, you know, maybe I should go. Maybe, I don't know if... I haven't gone to the doctor in a long time, so."
Maureen:	"You read an operative report. 'Oh, I think I got this,' you know."
Sheila:	"Or I think I get to be a hypochondriac. Oh that sounds like me, better go to the doctor; oh, that sounds like me, better go to the doctor."

The processors' peripherality to the medical profession does build up to a new form of membership for them, even if it is still rather peripheral and does not result in a confidence to modify the service relation by displaying one's own resources, let alone challenging the performance of a professional in specific circumstances. This form of membership is admittedly not institutionalized or even explicitly marked in the culture in general. Yet one would not want an analysis in terms of legitimate peripheral participation to require that it move toward a predefined and marked form of membership or that it always end all the way in "full membership" in a well delineated community.

The fact that there exist actual communities of practice, with which one enters into peripheral contact, is crucial, as I will argue further, because it gives some structure to the potentialities of peripherality; but this does not mean defining fixed paths. Such an analytical requirement would create far too static a picture of the social world. At the same time, one would not want every encounter with a piece of information to be considered legitimate peripheral participation; the concept would lose its ability to capture the transformative character of learning.

The solution to this dilemma is that one has to ask about a given setting both what forms of legitimate peripheral participation are potentially open and what kinds of trajectory they align with. Analyzing learning, then, can be done not just in terms of information, not even just in terms of activities, but in terms of the opportunities for legitimate peripheral participation present in specific circumstances for specific persons on specific trajectories of participation. Thus it is not just the activity itself, but most of all the trajectories and forms of membership involved that determine the form of peripherality that any event actually carries. The encounters of claim processor with the medical establishment as well as the more common service encounters we experience daily—going to the doctor, interacting with a salesperson in a store, hiring a contractor to do some construction—are typical examples of the complex relations between trajectories of participation that constitute engagement in practice. This view of the social world defines it more clearly and concretely as a textured space of different potentials—both derivative and constitutive—for cultural transparency.

Indeed what I have tried to show with the case of the claim processors is that not all events *actually* are on a trajectory into a form of membership, even though all events *potentially* are. The reader may recall my remark at the end of the first section of this chapter about the importance of paradigmatic trajectories of participation in determining what becomes substantial learning. This observation can be generalized when one views legitimate peripheral participation as a descriptor of engagement in practice: the analytical perspective of legitimate peripheral participation captures as one both the potentially dynamic and the actually transformative aspect of engagement in practice by aligning the great variety of peripheral experiences that living in the world provides along trajectories of becoming that are guided towards coherent—but not necessarily marked or even predictable—forms of membership. The indexicality of identities of participation constitutes and is constituted by these trajectories, which are relations that involve an intricate dynamics between the past and future of individuals and the past and future of communities.

The existence of corporeal, inhabited and socially organized, communities of practice, extant but in the process of their own transformation, with a shared practice that represents a heritage but

is also in the process of its becoming, thus creates a varied—multiply structured but not rigidly so, open but not without limitations, unpredictable but not random—field of possibilities for becoming a knower. Understanding legitimate peripheral participation in specific circumstances will thus require an analysis of the configuration and articulation of communities of practice involved in specific situations. For a job like claim processing, which is considered to be relatively narrow, the configuration is actually rather complex, involving among others claim technicians, the medical establishment, underwriters, benefit representatives, accounting clerks, system designers, the legal profession, and their own managerial structure. Of course, newcomers to the claim processing community are peripheral to the community's own peripherality to these related practices. As in the example of schools discussed earlier, peripherality is multi-layered. Furthermore, the way in which identities of non-participation can be acquired in the process of acquiring identities of participation, and vice versa, in marginalized communities of practice further illustrates the complex nature of legitimate peripherality as the articulation of multiple forms of membership.

In this regard, the unremarkable fact that trainees have a transitional, but very real, and here officially marked, form of membership points to a general but subtle aspect of the principle of legitimate peripheral participation. Saying that learning implies a trajectory to a form of membership does not mean merely that new forms of membership are the consequences of learning: going to school, passing exams, getting a degree, and then being a bona fide member. It means that learning must itself be understood as a transitional form of membership. This can be seen very clearly in traditional forms of apprenticeship by the fact that the apprentice's provisional membership must be legitimized by the master. As it turns out, this is often the master's main function, taking even precedence over instructional ones, as learning usually occurs in large part through interactions with peers or near peers, and through exposure to the practice. But even though such reified institutional markers of legitimacy are not usually found, it is still the case that the availability of the practice of any community is part of the organization of that community in its articulation with the broader community in which its practice has a place. Thus the legitimacy of the access that claim processors have to medical records as a matter of routine is a constitutive aspect of the organization of peripherality in the medical community. Opportunities for legitimate peripheral participation then become a defining characteristic of communities of practices, which describes the social organization of their practices in terms of the modes of legitimate peripheral participation they allow or provide, and discourage or prevent.

To sum, the concept of legitimate peripheral participation has provided a perspective on learning that is not only consonant with the development of the concept of cultural transparency in earlier chapter but can be viewed as merely another angle of the same perspective. Its

expansion into a general descriptor of engagement in practice, which includes but is not limited to intentionally organized learning, has provided a handle on the potential and actual transformative character of such engagement through the concept of trajectories of participation. As a further dimension in this analytical discourse, legitimate peripheral participation has also given additional texture to the notion of communities of practice by defining around any practice a landscape of differentiated forms of participation and thus differentiated forms of membership. The picture of the importance of the notion of community of practice for a theory of cultural transparency comes out both refined and enriched. This has prepared the way for the next chapter, which further discusses the role of this notion as an analytical category.

**Communities
of practice:**

***the social
fabric of
cultural transparency***

After some initial definitional remarks at the end of Chapter 3, I have used the term community of practice often but somewhat loosely, as its intuitive connotations have served my purpose, but it is now time to deal with the concept more directly. The purpose of this chapter is not, however, to provide *the* definitive definition of the concept of community of practice in the abstract, to provide for the reader a proceduralized method for determining, given any social configuration, whether it is or is not a bona fide community of practice. Such an operationalized definition would be at odds with the thrust of the argument I have tried to make earlier about the fluidity of negotiated meaning. Furthermore, pursuing such an elusive goal would require spending much time discussing borderline cases. Should a couple of lovers who see each other once a week be considered a community of practice? What about the English-speaking world? What about Asians? What about the commuters on a transit system or the theater-going crowd in New York? What about a tribe of Mountain Gorillas? To what degree is one processing unit in the claim processing office itself a community of practice? A part of a community of practice? A set of communities of practice? All of these? Such an exercise would certainly not be fruitless as an activity in itself, but it would be of limited use here at this initial stage. Let the concept for now be an opening, not a closing.

Therefore, the purpose of this chapter is first to outline the concept as an analytical category in broad lines and then to explore the notion

in some more depth as it can be used, to see how it is connected to the rest of the argument of this thesis, and to understand what threads it contributes to the analytical tapestry of the social world I am trying to weave. If in this expansive, exploratory process, the concept also becomes more sharply characterized for the reader, I will have accomplished the double purpose of making the concept more precise and of demonstrating that an explicit and concise definition in the form of a proceduralized and contrastively exclusionary delineation is not the only—or even the most useful—way of doing so.

The category of community of practice: an analytical level

Communities of practice, I will try to argue, are a central organizing principle of the world as human societies constitute it. They are the primary setting of activities, the seat of the organization of knowledge, mastery, and understanding, and the social building blocks providing stage and material for the definition of the individual. As such, they always mediate and articulate the relation between individual agents and broader organizing principles of human societies, such as culture, institutions, social classes, and other structural properties. The latter structures are emerging properties of the social world as organized into communities of practice, which give them their social body. Viewing the social world as constituted through relations—even mutually constitutive—between a configuration of cultural, social, or institutional structures on the one hand, and individual agents and perhaps family units on the other, is therefore missing an essential unit of analysis.

Let us illustrate this claim with an example that will show the analytical role that such a level of analysis can play. Pierre Bourdieu (1977, 1980) has developed the closely related concept of the habitus, a set of cultural principles that generate in a coherent fashion the modes of activities, the life style and tastes, and the interests of a group, usually a social class. It is for him the determinant factor in the way people shape their sense-making. I find the habitus to be a very useful concept. But the habitus differs from the notion of community of practice in being one of these broad structural principles, an emerging property of the social world. As such, it tends to overlook the social forms that we construct locally as we engage in practice and in reflection on practice. It overlooks the day-to-day mechanisms of co-participation in practice, of construction of the self in perceptible communities that give it local coherence through shared practice; these give rise through practical co-engagement to what can be observed as a habitus. This broadly structural nature of the habitus makes it difficult to account for its reproduction and evolution time. For Bourdieu, this seems to be mostly located in the family, which becomes a privileged unit of reproduction through a dichotomy

between public and private life: the habitus is acquired in early childhood and becomes an inescapable, closed lifeworld. In short, the habitus has a social realm, but it does not have a social body. This is where the concretely inhabited character of communities of practice provides an important mediating level of analysis in structuring co-participation in practice both within communities of practice and in the articulation among them.

To clarify the use of the term community of practice, let me for a very short time, commit the crime of taking it apart, but only in order better to grasp how it stands as a unit by seeing what its components contribute.²¹

The practice: giving it unity

Communities of practice are born, go through transformations, and dissolve as of their own accord. They are not defined by their size—compare a couple running a small business with a professional community such as the medical establishment; nor by the length of their existence—compare violin-making with the short-lived but tightly connected teams of volunteers that formed in response to the San Francisco earthquake; nor by the co-presence of their members—compare a family with the users of a distributed computer system.

The claim processors I observed form a ill-defined group of people brought together by employment ads in the classified sections of newspapers. What makes their group a community of practice is neither the fact that they spend time in the same physical location, nor the fact that they know each other. It is neither the fact that they speak the same language nor the fact that they belong to the same culture—even if these conditions were considered to be realized in spite of the fact that they come from different ethnic backgrounds. It is neither the actual fact that they are all employed by the same company nor the possibility that they share demographic characteristics that might give them a natural sense of fellowship.

The critical point that makes them a community of practice is that they share a way of “going about *doing* some things” and that they share it because they have come *in contact* with each other, either directly or indirectly, through physical copresence or through some other way. In other words, they share a practice: this includes activities

²¹ It is important to keep the term as a unit because it is not the case that anything commonly called a community is a community of practice nor that anything commonly called a practice is that of a community of practice in the specific sense given the term here. To avoid cumbersome repetitions in the text I will sometimes talk about “the practice of a community” without repeating the word practice, but that must be understood as an ellipsis.

they all engage in, specific ways of communicating about these activities they share, and as a result some perspectives and interests (in both senses) they have in common. This concrete aspect of sharing a practice is crucial in making the concept of community of practice analytically robust: because it is defined by this shared practice, which takes place in the lived-in world, the concept of community of practice does not presuppose any of the structural features that it can be used to explain.

Because of this articulation around a shared practice, communities of practice are the the locus of "real work." The practice of a community is where the official meets the non-official, where the visible rests on the invisible, where the canonical is negotiated with the non-canonical. Thus communities of practice are the locus of mastery, the site of the social negotiation of understanding, the seat of knowledge. When I say that knowledge exists within a community of practice, I do not mean that it is "already existing" there in a fixed form or state; rather I mean that knowledge cannot be meaningfully considered apart of the community to which it belongs because it "lives" there, as it were, that it is constructed, supported, communicated, hidden, distributed, guarded, transformed, extended, reconsidered within and by the community to the practice where it belongs. Thus mastery is not primarily viewed as a collection of reified information that is brought to bear whenever applicable; it fundamentally consists in participation in the practices of communities, which are defined by the social organization of such practices in their day-to-day realization.

Now it so happened that the claim processors I was with were all employees of Alinsu, all worked in the same claim processing center, and had more or less similar economic status. Whether or not the boundaries of communities of practice follow institutional boundaries, however, is purely incidental. There were many interstitial communities of practice within the office and with people outside the office, at client companies and at service providers, that did not follow reified institutional lines. Ethnographers of the workplace have often noted the importance of these spontaneous, non-official communities of practice in getting things done in spite of bureaucratic obstacles (Kanter, 1977; Newman, 1989; Orr, in press, 1990). Similarly the communities of practice observed by Willis and Eckert in schools are certainly not defined by the institution or its divisional lines; some of them even find part of their identity in engaging in a practice that expands defiantly beyond institutional boundaries.

From an analytical standpoint, it is thus crucial to make a clear distinction between institutions and communities of practice. Indeed, institutions—corporations, schools, nations, marriage, democracy—may in some cases look like communities of practice because they can claim a membership in the sense that a definable group of people may be considered or declare themselves to be their members because of a sense or a display of allegiance; but this does not in itself imply a

shared practice defined in this precise context. It is true that practices may develop in the process of giving existence to an institution or of coping with it, and thus communities of practice may arise as a result; but that is very different from conflating them with the institution.

In the terms used in this thesis, institutions are representational objects, which codify possibilities for participation into reified normative or paradigmatic structures. As desituated constructions, they actually require communities of practice to be given shape and to be given meaning through a social embodiment. So the existence of institutions implies the existence of communities of practice; but without any implication of congruence. On the contrary, the fact that institutions reify the potentials of practice into representational objects whereas communities of practice renegotiate a situated embodiment of these codified structures in practice means that there is an inherent tension between the two.

An important consequence of this tension is that communities of practice cannot be legislated into existence: they are naturally-occurring social phenomena. To the degree that design reifies the future, it is a representational decontextualization. Because of the negotiation of meaning involved in recontextualization in the social world, the formation of communities of practice always constitutes a *response* to design and thus cannot be the *result* of design: they cannot *be* designed. Through their roots in practice they inherit the living characteristics of their practitioners. Their formation, structure, evolution, and dissolution are shaped by the need for and contingencies of actual practice. And this practice is the practice of human agents in the world. While practice structures activities, engagement in it can thus never be considered the mere automated implementation of structures, like the execution of a computer program, but the situated negotiation of meaning through embodied activity. And its social and negotiated nature constantly implies moments of reflection *in* these activities and *on* their relation to the practice (see Giddens, 1979). Practitioners thus garner their own understanding of what their practice is about, anchored in their very involvement in it. These practitioners act on their understanding in constituting and reconstituting their practice together, and thus their communities. This understanding need not be called true in any objective sense for this fact to confer to communities of practice a life of their own.

The community: giving it life

While I have argued that it is the practice that defines a community of practice, it is clearly not the practice that makes it exist. I have commented about Wittgenstein's forms of life being similar to a

practice, perhaps writ large, but seeming Platonically unpopulated. A community of practice exists through the activities of its members. And this co-participation in practice creates mutual relations among them, which manifest as relations of power and of dependence, of amassment and of deprivation, of mastery and of neophyte, of alliance and of competition, of trust and of suspicion, of friendship and of hatred... the whole shazzam: it is a full-blown social formation.

These relations, as developed through engagement in the practice, become the raw material for the development of identities of participation. These identities of participation do not require that members conceive of themselves as members of the particular community or that they be able to articulate their form of participation. This does not mean that these processes are subconscious. Engagement in shared practice is the vehicle of this progressive construction of a set of relations, which constitute such identities. And engagement in co-participation in the socially constituted practice of communities is a form of consciousness in that it implies the construction of a form of individuality through the negotiation of membership that it inherently entails. More discursive modes of articulation can then arise as processes of communicative reification of these practice-induced relations.

Because communities of practice are organized around a practice, they have to organize themselves in such a way that their members can proceed with that practice, and proceeding with the practice both requires and results in an existentially coherent form of membership. Involvement in a practice is not something that paralyzes completely, that tears apart individualities—unless this happens to be the purpose of the practice as in some forms of therapy. This is not to say that there is peace, happiness, or harmony inside of a community of practice; conflict and misery can be its core characteristic. This is only to say that the shared practice stabilizes the forms of individualities it supports through identities of participation. This is not to say either that there is uniformity of individuality within a community of practice; even the most simple practice creates all sorts of ways of belonging through participation. This is only to say that the forms of individuality are constructed in the same practice, which gives them a coherence, both an internal existential coherence and a co-existential coherence among them.

So far, my discussion has only looked at one community of practice and has assumed that the identities it gives rise to are all identities of full participation. But it is neither the case that a community of practice can be looked at in isolation nor that full participation—even in differentiated forms—is the only type of relation it sustains. Discussing the concept of legitimate peripheral participation has revealed that the forms of membership of a community of practice are multiple in terms of engagement, that is, related to the practice and thus among themselves in multiple ways. Peripheries have been shown

to be locations with complex textures so that a community of practice must always be understood as an open system within a broader system. In this sense, it includes forms of membership ranging from core membership to absolute non-membership. I am calling non-membership a form of membership because identities of non-participation—no matter how deeply rooted—still imply a relation to a community of practice. Non-membership is thus different from complete disconnectedness, which is yet another category that implies a total absence of relations whatsoever—even of extreme peripherality—with the community of practice of interest. This suggests a landscape with three inflexion lines: membership, non-membership, and disconnectedness, each of which potentially taking multiple forms.

This is a crucial observation since I have argued that constructing identities of participation through these forms of membership shapes the individual. But the practice of communities can give rise to identities of non-participation, which will also shape the individual. Indeed, individuals define themselves and are defined as much by what they are not or by what they could be as they do by what they are: non-membership is as definitional as membership. In these terms, only disconnectedness is non-definitional. The community of players of a game I don't know about, who meet in a bar in Rio de Janeiro of which I know nothing is not definitional to me. I am, however, defined in a small but not insignificant way by my relation to the legal profession, of which I am not a fully participating member, but with which I have had to deal on occasions. I know enough about it not only to see myself as a non-participant in a specific mode of peripheral engagement, but to have a sense of what it is I am not, of what it is I do not know with respect to this practice.

The idea here is that individuals define themselves with respect to the range of participation possibilities of the most encompassing community of which they can be said to be members. In carving a landscape of forms of membership and possibilities for participation, a community of practice is a condensation of membership through identities of participation in a practice, the ripples of which potentially resonate through the entire community at large in which it exists. As a result, the medium in which the self is constructed is a rich landscape of various forms of peripherality and legitimacy of participation through which membership is negotiated. The identity of agent is thus neither fully centered, because it arises out of relations sustained by these forms of membership; nor fully decentered, because the nexus of these relations is an actual location where the

self is always in the process of construction and reproduction through engagement in practice.²²

Reproduction: giving it time

The existence of communities of practice over time is driven by the persistence of the need fulfilled by the practice, as perceived by its practitioners. This persistence over time implies processes of reproduction at two levels in communities of practice. On the one hand, the world being in constant flux requires that their practice be produced in new circumstances. On the other hand, the finite nature of the trajectories of participation of their members makes it necessary to produce new members. While these two forms of reproduction, that of the practice and that of the membership, are clearly distinct, and will be discussed separately, I will argue that there are important interactions between the two.

The word "reproduction" has unfortunate connotations of cloning. I was therefore careful to say that both the practice and the membership are *produced* anew over time. Indeed, the process of reproduction as discussed here always implies the possibility of transformation. Throughout the discussion, the term reproduction must be construed as *re*-production.

Beyond the two types of reproduction I have distinguished, Giddens (1979) suggests that there is a third aspect of social reproduction: the reproduction of institutions. I will not be concerned with this third aspect here, because I claim that it belongs to another realm, to another level of analysis. Indeed, I consider institutions to be reified objects, whose persistence through time has to do with their objectification in an essential way. Their existence through time as institutions—that is, their reproduction—is parasitic because it requires continual renegotiation into meaningfulness. This must be realized through the practice of "living" communities of practice, which are in the process of their own reproduction. Furthermore, because of the reified nature of institutions, this sustained production

²² The quest for a decentered view of the individual, as opposed to the traditional centered view, which takes the individual as the fundamental, given unit of analysis, is central to both post-structuralism and feminism, but in very different ways. Post-structuralists decenter the individual by giving primacy to historically constituted forms of discourse or semiotic structures, of which the "presence" of the individual is an epiphenomenon (Derrida, 1972; Foucault, 1977; but see Giddens, 1979 for a constructive criticism). More along the line of the argument of this thesis, feminists decenter the individual by deconstructing classical dichotomies as historically constituted instruments of domination: public/private life and production/reproduction (Fraser, 1984) or visible/invisible work (Daniels, 1987; Star, in press). The argument is that these dichotomies reify social production into centered roles traditionally attributed to male individuality.

of significance can be imposed prescriptively by external perceptions of needs on the communities of practice in which it becomes realized.

A community of practice is fundamentally different. First its practice is not itself reified, even if it produces or "reproduces" reified objects; therefore its persistence must derive directly from its own reproduction. Second I have argued that communities of practice cannot be designed or legislated, which means for the present argument that they are self-reproducing in response to the perception of need of their practitioners (old or new). Of course, the persistent perception of need that causes the reproduction of the practice can itself be due, through recursive processes, to all sorts of complicated reasons, including the existence of reified structures such as institutions; and I have clearly stated that the practitioners' understanding need not be "true" in any objective sense for my argument to hold. But that does not change the fact that communities of practice are involved in a more fundamental process of reproduction than institutions and thus are to be considered the primary locus of social reproduction.

The practice: producing the world through renegotiation

Change is an inherent characteristic of the practice of a community, no matter how routine it is supposed to be. I have insisted on the constant flow of change that characterizes life in the claim processing office. At the same time, the community organizes itself to be stable in the midst of all this change by creating ways to deal with change and by reconstituting its practice under new circumstances. Change—and therefore improvisation—is so much a part of our day-to-day engagement in practice that it mostly goes unnoticed. Reproduction understood as production anew thus implies at the same time change and stability. The dynamic coexistence of the two in the same process is what sustains a flexible ability to survive.

This interaction of stability and change can be found all the way deep in the microscopic structure of everyday activities, in the sequences of small improvisations required for the stability of every activity to be completed, every claim to be processed, every conversation to be handled. Structures in the world, including social and cultural forms, do not determine behavior; they are resources as well as constraints (Lave, 1988a). This dynamic aspect of everyday life has been at the core of detailed studies of the constructive nature of day-to-day interactions by ethnomethodologists (Garfinkel, 1967; Heritage, 1984), and more specifically of conversations (Sacks et al., 1978). Conversation rules provide a good example of how structures are a medium for the negotiation of meaning, rather than a set of constraints determining behavior. Indeed, not following a turn-taking rule in a conversation, say, one that stipulates that a question is followed by an answer, is as constructive a communicative move as

following the same rule. More generally, each action, no matter how routine or insignificant, is viewed not as the automatic execution of a programmed sequence of operations, but as a situated, improvised construction, whether it is fully assembled on the fly (de la Rocha, 1986), the adaptation of under-determined plans (Suchman, 1987), or the re-enactment anew of interactional "dynamics" or personalized routines (Agre, 1988).

Stability is all too often explained in terms of memory. But activities are not just contingent, they have effects; they change the position of the self and they change the world: they mold it, they structure it, they make it home. The need for improvisation in such a "dialogue with a situation" implies what Schön (1983) calls "reflection in action." This notion of reflection in action in the context of a discursive cultural medium is crucial for analyzing the relation of human agents to the world. Continual moments of reflection in action are the device that Giddens (1979) uses to attribute to agents a form of knowledge of the social structures their activities reproduce. Furthermore, for both Schön and Giddens, reflection takes place in action, it is an integral part of action. This also is crucial because of a common problem with the notion of reflection when it enters into more mechanistic types of explanations of actions, which view agents as self-contained individuals: reflection is often thought to be caused exclusively by difficulties or breakdowns in the course of otherwise nonreflective activities (e.g., even in the Heideggerian perspective of Winograd and Flores, 1986). But the organization of individualized actions thus analyzed cannot describe the organization of the meaning they take. The notion of membership as a pivot in the negotiation of meaning, and the notion of trajectories of participation in communities of practice add another dimension to reflection in action by placing it in the context of the construction of meaning, which is itself in the context of the construction of the self in practice, which is itself in the context of the construction of communities.

Not viewing practice as belonging to a community causes theories to overlook the evolving configuration of the entire community as a locus of both change and stability. The practice of a community is reproduced as a *configuration*. Because of the mutually constitutive relations that bind individuals and communities, this configuration cannot be analyzed merely as the total of individual participations or even of partial processes of interaction or collaboration. So when I say that activities have effects, that they change the world, this molding of the world as a context for practice has to be understood as a configuration by which communities of practice mold the world into a place for their activities, for their purposes. The practice is reproduced in and with the world by a community as a total configuration.

So far, I have argued that practice changes even while reproducing the old, that reproduction consists of both change and stability, that the

reflective negotiation of meaning in trajectories of participation involves agents in the constitution of change and stability, and that change and stability of practice take place as configurations. My last point will now expand on the distinction I made earlier between the reproduction of institutions and that of communities of practice. It is important to differentiate between invisibility and visibility each as providing sources of both change and stability: using the terms I have introduced, I want to distinguish between configurations of participation (or invisibility) and configurations of reification (or visibility) as two aspects of reproduction.

In the table below I have attempted to summarize how the visibility/invisibility duality crosses with the stability/change duality. The four paragraphs following the table repeat the same points in textual form.

	<i>stability</i>	<i>change</i>
<i>invisibility:</i> configurations of participation	confluence of continuous trajectories of participation and coherence of membership	fluidity of renegotiation and emergent restructuration
<i>visibility:</i> configurations of reification	physical rigidity of representational objectification and localization through proceduralization	reflection of practice and dislocation through perspectival reinterpretation, realignment and redesign

Configurations of participation are sources of stability by renewal of the awareness that gave rise to the community of practice to start with; this reproductive process is located in the continuity of trajectories of participation and in the coherence of membership that characterize a community.

Configurations of participation are sources of change by the fluidity that is inherent in the direct engagement in the renegotiation of meaning and by the restructuration that emerges from the configuration of this fluidity.

Configurations of reification are sources of stability through the rigidity of the physical world, including the memory of forms, and through the localization of interpretation around rigid representational forms that proceduralization enforces.

Configurations of reification are sources of change by the fact that reified reflection of practice always needs reinterpretation in practice, but that this need for reinterpretation can dislocate practice or force realignment of perspectives; such dislocation can be made intentional through design.

This distinction is crucial not just analytically but in its practical implications as well. Indeed stability and change through reification are often the mode of control that institutions—conservative or progressive—almost exclusively strive for in order to enlist the cooperation or compliance of communities of practice in the production of the future. They use this mode of control in order to assure predictable stability without having to rely on communities of practice as a reproduction mechanism; and in order to promote change, without having to engage communities of practice in its participatory construction.

In discussing normative structures, I have already exposed the problems of erasure and prescription inherent in reification when it is a substitute for rather than an integral part of co-participation. First, because of the process of erasure inherent in the production of reification, the invisible nature of participation makes it easy to ignore essential aspects of how a community of practice functions. There are countless reports of design efforts—especially designs of technological improvements—that failed because they overlooked some essential but hardly visible aspect of the practice they were supposed to improve. Just one small example from the claim office: making a separate unit with claim technicians was intended to improve the technical support, but it overlooked the extent to which claim processors were learning by having these technicians among them. The move had to be reversed. Second, prescriptions of practice give rise to a new practice, that of satisfying—or giving the appearance of satisfying—the prescription, which is often at odds in fundamental ways with the intents of the prescription. Think of the treatment of erroneous Q's by claim processors or of students learning the practice of test taking instead of learning the subject matter.

The principle here is not that reification is harmful, but that its very power makes its use a delicate process; that successful use of reification as an instrument of stability or change requires participation. There is a subtle wisdom in the invisibility of participation because its fluidity is essentially connected to the practice, which is the way it is and which transforms itself for reasons that cannot be dismissed lightly. Reification gains its transformative and its stabilizing powers from disconnectedness, but the identities of non-participation that it can sustain may backfire; they may take very variable forms, including mistakingly seductive or exhilarating ones; one can be very dazzled by what one does not understand or by the sheer elegance of a formal model precisely because one is

disconnected from the practice. This disconnectedness and this power to dislocate reinterpretation is a characteristic that new ideas share with old relics: the absorption of either into practice is never unproblematic.

An injunction to tend to communities of practice does not imply that they are in any essential way an emancipatory force, a locus of resistance to coercion, a liberating platform for the individual, a haven for the seeker. Communities of practice are of essential importance in being the locus of social reproduction—and thus the necessary stage of its transformative potential. But they are not privileged in terms of social functions or effects. The invisibility of configurations of participation is a strength and it is a weakness; it is what can make communities of practice the locus of true resistance to oppression but it is also what can make them the locus of the reproduction of its conditions. It is what can make them the unlimited cradle of the self but it is also what can make them the unfathomable prison of the soul. Saying that communities of practice have a life of their own is not saying that they cannot be influenced, manipulated, intimidated, debilitated, decimated, or coerced into submission; nor is it saying that they cannot be inspired, helped, supported, transfigured, unshackled, or empowered into creativity. But it is saying that the power—benevolent or malevolent—that institutions or outsiders have over a community of practice is always mediated through its practice, over which external forces have no direct power, because it is not reified; because it is invisibly in the process of being re-produced, as a configuration, *by its practitioners*. This is what I meant earlier when I said that communities of practice are a response to—but never the result of—external design.

The community: producing persons across generations

Among claim processors at Alinsu, there is a very substantial turnover. (Turnover is both the subject of bitter complaints by management and the direct result of the way claim processors are treated; this to me was a striking paradox, which I have not resolved to this day.) But whatever the cause of the turnover, the company spends a significant amount of official energy recruiting new generations of workers, selecting them, and training them. And concomitantly, established processors spend much non-official energy—both intentionally and casually—inducing these newcomers into the practice of the community. Whether a sense of responsibility or mere decency in human relations makes up for the lack of official rewards, helping struggling newcomers is accepted as a fact of life, limited in attention and time only by production pressures: it does not seem to be in the interest of anyone to have around workers who are not full participants in the communal process.

In the preceding chapter, I have already described in some detail how reproduction takes place in the claim processing office, but I have done so under the rubric of learning as legitimate peripheral participation. Saying that learning implies the negotiation of new forms of membership, however, implies that both the learner and the community of practice must find ways of accommodating each other. It is a reciprocal relation. The individualistic focus of cognitive theories of learning tends to obscure the fact that learning is reproducing the world, that the production of knowledgeable persons is part of the process of community reproduction. In this regard, the concept of legitimate peripheral participation is an analytical bridge that connects and unifies two levels of analysis: looked at from the point of view of persons, it is learning; but looked at from the point of view of a communities, it is social reproduction. These are not different processes, but different viewpoints: persons and communities are part of the same transformative process.

In the claim processing office, the reproduction of the community is a very intentional process, since the company is self-consciously involved in the maintenance of a workforce. In many cases, however, the process of reproduction of membership is much more diffuse with less or no official organization or sanction, or even without cultural markers; yet it is no less integral to the life of communities of practice. Self-conscious attempts to reproduce communities of practice, including professional training, institutionalized apprenticeship, and initiation rites in proselytic associations, are interesting analytically because the visibility of the process can indicate what to look for in cases in which it is culturally less articulated.

I have suggested earlier, for instance, that viewing schooling as a process of reproduction as well as a process of learning draws attention to the forms of membership made possible by school life, and to the access that these forms of membership provide to resources for the construction of identities of full participation. Not that anybody would deny that social reproduction is what schooling is about or even find this analytical perspective surprising. Yet it is not the case that our folklore articulates it in such terms. Because the cultural emphasis is on the individual learner as a cognitive entity we view as natural the selection processes that our schools perform in generating a range of abilities and accept as unremarkable the disconnectedness of schooling from the life of our communities. In the claim processing office, by contrast, it is very clear that new recruits are prepared for different functions and that being a trainee is a form of membership in the community, which must give newcomers peripheral but increasing and legitimate access to the resources of full participation.

Understanding learning then implies understanding how forms of legitimate peripherality are organized as a definitional characteristic of a community of practice: the patterns of recruitment and selection, the communal rituals that mark the passage to new forms of membership, and the degree to which different forms of membership in reproduction cycles become articulated constituencies with prescribed roles and a sense of common interest. At Alinsu I have described how new recruits are carefully selected by a process of tests and interviews and how the goal of finding employees who will stay with the job results in some degree of social homogeneity (see also Kanter, 1977). "Getting your level" is celebrated with a small ritual of sincere rejoicing and marked by a different name, but does not imply a form of membership in a new constituency, even the change from trainee to processor. Other important events like being "put on the phone" or getting yelled at for the first time are not marked at all. All this reflects a rather egalitarian community in which learning for the most part does not pit members against one another. Not that there are no jealousies, of course. One instructor told me that her being chosen for teaching classes turned many of her colleagues against her, a fact that she accepted as part of the process in her ambition to move up the corporate ladder. In this respect, she was already playing a different game: the corporate gamble of trading off friendship and career opportunities.

Understanding learning also means understanding how learning is determined by existing opportunities that also tend to reproduce forms of membership. This includes seeing how the various generational forms of membership are themselves reproduced in the cycles of community reproduction, for instance how hazing and other types of initiatory mechanisms serve to reproduce forms of membership. Among claim processors, there is no overt hazing that I have seen. Perhaps in this case, this is just due to the fact that many new recruits are already overwhelmed and do not last very long anyway. But the form of maternalism I have described as prevalent rather than hazing is certainly also a matter of gender in addition to reflecting the fact that there is no active awareness of conflictual relation with the institution. In general, the treatment of newcomers is analytically crucial: it reveals the structural opportunities and contradictions that a community of practice lives by and the forms of individuality that it sustains.

As newcomers are induced into communities of practice, their reproduction implies a notion of "generation," which is a generalization of the common biological notion. What is considered a generation depends on the reproduction cycle of the community of practice under study. Among claim processors, a complete reproduction cycle covers two to four years from the time one is a trainee to the time one becomes a level-8 and can be an instructor or a back-up trainer. But the generational spread is actually slightly broader

because it can take six to ten years before one can move up from processing to a technical or managerial position: although there is hardly any difference of status among level-8's, seniority will still influence selection for special functions. Generations constitute a significant organizational principle of the landscape of forms of membership, even when they are not formalized with official status.

With respect to generations, apprenticeship as an institutionalized system for the reproduction of a community of practice illustrates another issue in learning that individualistic perspectives tend to ignore. There is a contradiction in the role of masters since by taking on apprentices, they are building their own competition: the continuity of the practice entails the displacement of the master. It would be wrong to conclude from the example of apprenticeship that these conflicts of continuity versus displacement only take the form of competition in the marketplace. The continuity/displacement contradiction is much more fundamental to learning understood as an aspect of social reproduction (Lave and Wenger, in press).²³ Often it concerns the development of identities, as in relations between parents and adolescents.

Among claim processors, there is little observable continuity/displacement conflict. I would say that this is because identities of mastery are not significantly commoditized; they are not commoditized as identities among peers because knowledge is something to be shared, not something to use to create differentiation; and they are not commoditized as abilities to reap coveted rewards or compete for scarce resources since advancement is not selective up to level eight. In contrast, these conflicts are prevalent at the management level where identities are commoditized as instruments of power. In her fascinating analysis of the corporate world, Rosabeth Moss Kanter (1977) documents the way in which corporate climbers manage their learning in terms of their opportunities to gain control over resources. Careers in the corporate ladder are built on the continuity/displacement contradiction because the ability to distinguish oneself by breaking the continuity in taking over a new function is a key to advancement, and according to her, one of the most salient factors influencing managerial decisions. Similarly, the continuity/displacement conflicts can be very extreme in the arts or in the academia, where identities are highly commoditized qua identities: one's ideas are the material of one's identity, not just as contributions to the development of the practice, but as unique, personalized breakthroughs. A linguist friend of mine once told me facetiously that academics reach their maturity when they can no

²³ The continuity/displacement contradiction is another concept originally set forth by Jean Lave, which we explored and developed further in our monograph on legitimate peripheral participation.

longer ask their advisor for letters of recommendation; but there is truth in his joke. How can we understand learning in graduate schools or in the arts unless we analyze learning as reproduction in the light of such built-in generational conflicts, not only as they influence learning, but as they form constitutive elements of its content?

To the extent that different generational forms of membership imply having a stake in different moments in the evolution of a practice, the continuity/displacement contradiction ties individual learning directly into transformations of the practice. The community of which one is becoming a member does not exist yet. The formation of identity becomes part of the dual process of stability and change as it requires finding a place in relation to the past and investing oneself in the future.

Such transformations involve power struggles, which are reflected in continuity/displacement conflicts. But as power relations become mediated by normative structures, so are continuity/displacement conflicts. Normative structures can play an important role in the process of commoditization of identities, as a community of practice formalizes its recruitment and selections patterns. Tests and degrees become objects that mediate the continuity/displacement conflict, and thus the power struggles associated with it; but they can also mean that newcomers *find their initial identity outside of practice*, a fact that can make a crucial difference in the way the practice itself is organized.

For instance, I have noted the disconnectedness between workers and management. It is likely that the existence of business schools plays a central role in this formidable distance and in the difference between the social games the two groups are involved in. Indeed degrees do not only stand for the acquisition of knowledge that may or may not be applicable in practice, they allow managers to land with a prefabricated identity, which they have learned to construct outside of practice, and which is marked on the outset by a substantial difference in income. Upholding such identity may often require being set apart in a cloud of mystique and may thus make mutual involvement with workers difficult, because of the worry that its specialness might not survive a sustained, naked confrontation in a common practice. In this regard, the office manager is in a very different position than visitors from the home office because she started as a claim processor. But even though there seem to be no official limits as to how high she can climb the corporate ladder at Alinsu, she would be fighting an uphill battle. In practice trajectories of legitimate peripheral participation only very rarely provide a bridge between the bottom and the top of corporate hierarchies.

More generally, schools are, on this view, institutionalizations of the continuity/displacement contradiction. They replace the confrontational conflict fundamental to social reproduction with

prescriptive instruction and normative selection. Masters are not surrounded by apprentices who participate legitimately but peripherally in their practice; the task of initiating newcomers is entrusted to specialized institutions, which both channel the energy of the newcomers toward preparatory theories and exercises and subjugate this energy by using evaluations on these same tasks as selective obstacles. Apprentices and masters do not challenge each other in a common practice, in which their different stakes can be played out. The young are neither subjected to the evaluation processes inherent in engagement in practice, nor do they threaten the old by their increasing involvement. They are busy earning degrees, acquiring positions with respect to normative structures that will confer them rights. And the old are left alone.

There are of course good reasons one might want to shelter newcomers from the power struggles of full participation in a conflictual society. I would not dispute that, but awareness of the trade-off involved remains crucial because of its ramifications for the forms of individualities that the system is producing. The price is that youth then becomes a time during which one is actively engaged in establishing one's identity with respect to normative structures that do not constitute actual opportunities to be a participant, of a peripheral but legitimate sort, in the social world at large. Broader social identities are not established by direct contributions to ongoing practice, but by locating one's self on normative scales of values, whose relations to practice are indirect at best.

Interestingly enough, adolescent cultures have found ways to transcend school and to enter in open continuity/displacement conflicts at the level at which adolescence has a legitimate place in social practice, for instance, in the consumer market, in expressions of sexuality, or in the world of entertainment. Nevertheless, the decontextualized, normative version of the conflict remains of central importance, as school is still considered the official meeting place of society and its newcomers. Even though some confrontational unfolding of the continuity/displacement conflict is taking place elsewhere in ways that may be experienced more personally by those involved, school is still perceived as the locus of social reproduction both by those who are subjected to it and by those who confer it its authority.

Sequestration makes adolescent cultures painfully marginal, because the search for and construction of an identity—mediated by normative structures and staged in isolated communities of practice—becomes a purpose of its own, outside of the main stream of societal transformation. Adolescence in school becomes a separate world, whose self-contained structure both reproduces the conditions for social identification by replaying the social structure of the adult world (Eckert, 1989) and prevents the process of identification from interacting directly with society at large. Youths are not presented

with and engaged in issues of direct significance in the broader world in which they live, and they are not invited to participate in the solution of real problems by assuming peripheral but legitimate responsibilities. Because the continuity/displacement conflict is tied to transformation of the practice, the sequestration is doubly costly. Not only are school students having to invent identities of participation, but the community deprives itself of the contributions of the most dynamic, if inexperienced, segment of its population. I would argue that this institutional sublimation of the continuity/displacement contradiction, which goes largely unrecognized, makes schooling on the one hand a conservative force with respect to social change and on the other the likely locus of erratic transformations.

Peripherality and boundaries: relations, people, and things

The social discourse of the visible and the invisible that I have tried to develop in this dissertation does not take individual agents and objects as given primitives. Through this discourse, the world as a place to do knowing in has become a landscape of communities of practice with interlocking peripherality and overlapping membership. These communities of practice construct and sustain their own configurations of participation and configurations of reification: thus they produce and define ways of becoming individuals through engagement in their practice and produce and define objects that enter into their practice. But communities of practice are not taken as given primitives either since they only exist and are reproduced through the practice that their members engage in out of their own perception of the need to do so and their own interpretation of the objects that are reified through this practice. It should therefore be clear that this discourse does not strive toward a causally reductionist theory of cultural transparency but toward a relational, dialectical view in which relations of dependence are mutually constitutive.

Identities: nexus of membership and trajectories of participation

I have argued that the move from a notion of the individual as a universal unit of analysis to a notion of individual as a member is neither a fully centered nor a fully decentered view of the individual, but a relational one. It implies a time dimension because membership is defined through a trajectory of participation. It also implies a space dimension because of the multiple communities to which each person belongs with various forms of peripherality. Membership in our society is always experienced at least partly in connection with or even through other forms of membership. The constitution of the individual

therefore implies a nexus of forms of membership defined by interacting trajectories of participation.

These forms of membership need not conflict. For instance, in describing the compromise of meaningfulness in Chapter 3, I should not be understood as hoping that work would become the processors' only preoccupation or that it would invade their private lives as with blood-sucking tentacles of expectation of productivity. We all belong to multiple communities of practice, but that does not imply by any measure that we cannot belong fully to each. Therefore there is no good reason that involvement with the communities of practice in which one engages in what is called "work" should be a time of time watching, longing for its own end. Belonging fully to multiple communities of practice need not involve this kind of trade-off.

And yet there is something peculiar about a nexus of membership as a place to exist as an individual if individuality is defined through engagement in the practice of communities. I have argued earlier in this chapter that a community of practice needs to provide an existential coherence to its members, but this requirement no longer applies across communities of practice. When one considers a single community of practice, the mutually constitutive relations between it and its members implies that somehow the trajectories of its members are in a profound sense parallel to that of the community. This is true in spite of all the conflicts that can and do take place in the practice and in reproduction cycles; in fact I have suggested that conflicts can be part of what sustains the coherence. But in a nexus of membership, this fundamental principle of parallelism of trajectories no longer holds; its relevance is indeed inversely proportional to the cultural distance between the various communities to which an individual belongs.

Not only are the trajectories of individuals and communities no longer parallel, they may be in conflict especially when the cultural distance is significant. In such cases, the continuity/displacement contradiction for communities has a dual which works in reverse for individuals. Communities achieve their continuity by the displacement of individuals over generational waves. Individuals achieve their continuity as a multiple trajectory of participation which is reproduced over time by displacing membership in communities of practice. I believe that this provides an explanatory framework that can address some fundamental issues in the development of modern societies, by affording a handle on the formation of the individual. Different configurations of communities of practice will result in very different definitions of self, and the development of systems of education, work, social and political relations will have to be sensitive to these differences and their ramifications. There is no point either in regretting the dissolution of the principle of parallelism or in calling it progress; what we need to understand is how to deal with the trade-

offs between forms of individualization and fragmentation of identity involved in the structure of complex social formations.²⁴

By the process of legitimate peripheral participation toward core membership, one can now lose as well as gain individuality, and that becomes a central issue is the quest for membership. For instance, the management of learning described in Chapter 3 is likely to have roots in conflicts of that sort. Similarly, the poor social landscape of the classroom discussed in Chapter 5 may not be a serious problem when the principle of parallelism of trajectories is more or less active, because individuality is sustained by the broader membership and need not find new material with each form of participation. But when the principle is not active, membership in a poorly textured community of practice such as arises in the classroom can become a discontinuity in the trajectory of the individual that is perceived as an unacceptable loss of identity. This is the more salient if there is a vast cultural distance between the communities of practice that the school represent and those that form the student's own nexus of membership.

The notion of coherence of membership—or rather coherence of identity now—becomes extremely problematic, but extremely intriguing, in the context of nexus of forms of membership in a broadly diversified society; this is especially true when one includes the possibility of combined identities of participation and non-participation. I have not had time to push this concept of coherence as far as I would like, but my intuition is that it is a central one. Exploring this notion of coherence of identity in nexus of membership could well lead to the possibility of historicizing some psychodynamic concepts and thus be a step toward bridging the gap between two traditionally incompatible explanatory frameworks for the construction of the individual: socio-historical theories of the social order and the production of the person on the one hand, and psychodynamic theories of subjective and interpersonal experience on the other.

Nexus of membership and trajectories of participation are the meeting point of knowing, power, and identity, where they are not separate but

²⁴ Perhaps this is the issue that Emile Durkheim was trying to address when he claimed that modern societies need to develop a "cult of the individual," a term he did not use negatively. For him it referred to a social system that would sustain a new form of individuality while keeping society from falling apart, something he thought would happen if it was composed of the type of individual utilitarianism takes as its primitive building block. His distinction between mechanical and organic solidarity stemmed from a functionalist view, but could be restated in the terms proposed here. In mechanical solidarity, the development of the community and the development of the individual go in parallel, their trajectories are almost coextensive. In organic solidarity, the development of the individual supposes a trajectory through an evolving nexus of forms of membership so that the trajectories of individuals and the trajectories of communities are no longer in a single relation.

one in the experience of social agents. The related issue of power must undergo a projection onto the landscape of communities of practice similar to that undergone by the issue of identity through forms of membership and knowing in practice through cultural transparency. A landscape of communities of practice gives rise to two basic sources of power and powerlessness, which interact but do not necessarily work in parallel and can work in opposite directions. On the one hand are the forms of membership inside a community of practice, the control they provide over resources and the opportunities they open to members in various relations of legitimacy and peripherality. On the other hand are power relations among communities of practice, which are inherited in various ways by their members as they come in contact with other communities. There are of course also reified forms of institutionalized power, but these belong to another level of analysis, although they must still be realized through the practices of living communities.

Maintaining or modifying power relations are central issues in processes of reproduction, which do not just involve power relations inside communities of practice but also power relations among them. This includes asymmetries in claiming ownership of meaning and determining modes of legitimate peripheral participation, which shape the possibilities for developing cultural transparency.

These relations of power focus attention on the interacting peripherality of related communities of practice. There is much to learn in the peripheries; they become at least as important as the core in the definition of communities of practice, as soon as communities of practice are viewed as interlocking systems and trajectories of participation are viewed as involving nexus of membership. This is especially true if one is interested in mechanisms of change. There is effective power at the core of communities of practice, but there is also much potential power in the peripheries. In the context of her study of communities of practice of adolescents in high school, Penny Eckert (1989) has coined the term of "knowledge broker" to describe members who, by their position somewhat at the periphery of their peer communities as well as their membership in other communities, were able to introduce new styles and ideas into their peer groups. She noted that these knowledge brokers were able to fulfill functions as agents of change that group leaders could not by virtue of their core positions.

This concept of knowledge broker is actually a crucial one because it allows configurations of participation to be vehicles of dislocating transformations in the practice. This implies a process of core displacement, which is a dual of legitimate peripheral participation: just as peripheral members can be empowered to move toward full participation, the practice can move toward its periphery as individuals become agents of change by bridging across communities of practice. Empowering knowledge brokers in interlocking

peripheries can then become an important mode of promoting change, of doing “design” without relying exclusively on reification from without, of doing “design from within.”

Boundary objects: objects as boundaries and boundaries as objects

In analyzing the processors’s COB worksheet in Chapter 4, I have claimed that it is designed to be a boundary object between communities of practice, which articulates their respective practices without the need for a common practice.²⁵ The analysis thus revealed the issue of a relation between processors and the COB procedure to be an issue of a relation between communities of practice. In that context, I made an important distinction between abstractions for consumption inside and for consumption outside a community of practice and I discussed the use of proceduralization as a method for crossing community boundaries. As an effort to direct interpretation in a localized way, proceduralization is an attempt to minimize ambiguity. But ambiguity is central to signification because it allows renegotiation of meaning through engagement in common practice. Literality then is a meaningless meaning that is likely to give rise to identities of non-participation.

The distinction between consumption inside and consumption outside is still crucial in terms of the way in which reified abstractions are produced and the forms they take, but the issue can now be taken a step further. Artifacts, even when symbolic, are objects. They have a form, which implies a physical existence. “ $E=mc^2$,” or a Christmas tree, or a computer system are objects whose materiality gives them physical autonomy: it allows them to move across communities. Any objectification can travel, regardless of the intentions of those who produced it, because of the physicality of its form. Thus any object is potentially a boundary object. The notion of boundariness then is not a dichotomic distinction that classifies objects into two categories, but a characteristic of any object to the extent that it travels through the landscape of communities of practice.

Boundariness becomes a characteristic of objects, which can take different forms, proceduralization being one of them. In this shift of perspective, the concept of boundary object does not lose its meaning,

²⁵ Of course, by common practice here I mean “with respect to this specific topic.” Sharing any artifact as an articulation of practices requires a common practice at some level. Here the two communities have a large area of practice in common, such as dealing with health insurance issues or using the same computer system. This is without mentioning broader contextual areas of commonality that are crucial for the activity to proceed, such as understanding English or knowing about arithmetic operations.

but is given a different significance as a basic category for a theory of cultural transparency. What the concept now says is that there is never a direct relation between an object and a person, which one could qualify as understanding, or meaningfulness, or meaninglessness; both the person and the object belong in communities practice—usually a number of them each—and the relation of cultural transparency is always mediated by the relations among these communities and the relations of the object and the person to these communities. Objects are not objects; they are reflections of boundaries, of relations of peripherality, of articulations among forms of membership.²⁶

This shift in perspective has consequences for what one would do about supporting the development of cultural transparency. For instance, I have mentioned that the COB worksheet as a proceduralized representation could be very useful in focusing conversations about the concept that it implements if a form of co-practice could be achieved. It may thus not be necessary to change the COB worksheet itself at all. The very artifact that disconnects can become the artifact that connects. It is not a matter of the form of the artifact, it is a matter of co-practice. Not that the form of the artifact is irrelevant; it can play a crucial role. But it is relevant only as support for shared practice. Extending meaningfulness, therefore, will not primarily mean designing different artifacts, different systems, but designing openings for shared practice, creating opportunities for legitimate peripheral participation in and across communities, empowering knowledge brokers.

In a dual of the view of objects as boundaries, boundaries become objects as the practice produces a configuration of reification that reflects its configuration of participation. In this process, the existence of the community of practice is reified, both for inside, for itself, and for the outside. Notwithstanding all the gradations of peripherality, the significance of this reification is fundamentally different inside and outside.

For the community itself, this reification becomes part of a self-image, if its ideology, as it were. This ideology can of course be very different from “actual” practice, especially when there are institutional pressures to have things a certain way or a need to manufacture an image of practice for outside consumption. This is as true of scientific practice in the laboratory (Latour and Woolgar, 1979) as it is of the practice of third graders, who, during some math classes observed by ethnographers, learned almost exclusively from each other or invented their own ways around problems, but when asked, answered without

²⁶ In a parallel with the notion of commodity fetishism (Marx, 1867), we could then talk about a kind of “artifact fetishism” when we say that claim processors do not understand the COB worksheet. The illusion here is to assume that there is a direct relation of non-understanding between the artifact and the processors.

hesitation that they had learned from the teacher (Lave, personal communication; Hass, n.d.).

It is, however, very delicate to claim from the outside that one knows better than a community of practice what it is about. This is a dilemma that I faced constantly when I was with the claim processors, trying to articulate an understanding of what was going on. Claim processors know so well just how to be claim processors; yet that does not mean that they have a full understanding of the conditions of their existence. So for one thing, it is always trivially true that communities of practice do not know what they are about; from the outside one can indeed always come up with a viewpoint that the inside does not have access to. It is completely unrealistic to expect anyone to search for meaningfulness beyond the boundaries of communities of practice to which one has reasons to belong. Our intellectual culture has produced a myth that a rational being can and should be ready to understand anything anywhere anytime. But even leisurely curiosity is a luxury that is part of specific practices, like "reading the *Scientific American*" among the intellectual middle class. Reifying the image of a practice from the outside is always reframing it in a new frame; this becomes a relation between communities of practice.²⁷

One also has to be very careful about statements concerning the differences between the self-image of a community of practice and its actual practice because the ideology can hardly be distinguished from the practice. Indeed, since reflection is inherent in practice, there is no practice without an image of itself; and more importantly, that image is *part* of the practice. It does not stand outside of it, as a decorative label, but for better or for worse, it functions inside of it. The ideology of scientific rationality is as important in structuring scientific practice as are all tricks of the trade that make its day-to-day construction possible. The belief that the teacher teaches is not just a fancy but has its own crucial function in structuring both the practice and interpersonal relations and thus is at one level a reality. Coming in from the outside—with the best intentions—to try to break this "illusion" could have disastrous results. Reifying an image of a community of practice from the outside only becomes useful inside if it can result in a co-practice, in a process of mutual legitimate peripheral participation that extends cultural transparency through expanded identities of participation.

The self-image of a community of practice need not be reified to perform its function; but to the extent that it is, it can always be renegotiated through the practice and made meaningful. There may be times of internal conflict for ownership of meaning when reification

²⁷ Therefore the researcher, or the activist, or the manager have to be very cautious about any claim of privileged perspective before dismissing the lore of a community of practice as "mere" ideology.

can create dislocations in the self-image that result in identities of non-participation, but these are likely either to be temporary or to lead to splits into different communities of practice (even with an ideology of unity). In a deep sense, therefore, communities of practice can be said to know very well what it is they are doing: the configuration of reification and the configuration of participation function in mutually constitutive ways.

Things are very different on the outside. Completely on the outside only the configuration of reification, or part of it, is visible. And the disconnecting effect of the phenomenon is socially amplified because it is generally the case that the more power and prestige a community of practice has, the more visible its configuration of reification is; it is hard to ignore. The difference between the visibility of reification on the inside and the outside is like the difference between negotiated and literal knowledge: the latter's excessive dependence on the form of the representation is a source of meaninglessness. From the outside boundaries become purely representational objects that delineate identities of non-participation because the negotiation of meaning is not supported by engagement in shared practice. Meaninglessness then is a boundary become object, whose meaning is non-membership.

Dispelling meaninglessness implies connecting, opening the practice. But how can one become a member without being one to start with? In the mutually constitutive relations between individuals and practice, between configurations of participation and configurations of reification lies a paradox of learning. If one has to understand objects in order to participate and to participate in order to understand objects, if one has to engage in practice in order to gain membership and to have membership in order to engage in practice, how is learning possible at all? How can cultural transparency even begin? There just seems to be no way to start. That is in the last analysis the profound paradox that legitimate peripheral participation is about. In its power lies the miracle of motherhood, the magic of apprenticeship, the wonder of social reproduction in communities of practice; a frail bridge across the abyss, a slight breach of the law, a small gift of undeserved trust, it's almost a theorem of love, that community members can invite newcomers into their own identities of participation, let them be what they are not, and thus start what cannot be started.

**Conclusion
and
discussion:**

**toward
a practice of
cultural transparency**

As my weaving of a tapestry of the social world comes to an end, it is time to take a last look at my live model. But the threads of my depiction have grown beyond the loom and are working their way into the world they are supposed to portray. The claim processing center does not look the same. Where I used to see employees sitting in front of their terminals, processing claims and answering phone calls, I now see communities sharing a practice at the crossing boundaries of many other communities, reaching out through nexus of membership and trajectories of participation across the social landscape; I see newcomers finding their way in by legitimate peripheral participation; I see the construction of identities of participation and non-participation. There are peripheries that create variously textured regions through the office and that open countless windows onto the world outside. Configurations of reification include various types of objects: the computer system and the reference books the processors use are nodes at which the boundaries of communities of practice near and far meet; the forms they use have become normative structures that enclose their world around local decisions.

This new vision brings with it new questions to ask and new transformative steps to take. For instance, it becomes essential to see how legitimate peripheral participation is enabled for newcomers and for established members; what the recruiting patterns are; how access

to resources is organized; how commoditized information and identities are in the context of hierarchical relations; how localness is connected to globalness; how the self-image of communities of practice functions inside and outside; how permeable the boundaries are where objects articulate communities of practice and how much co-practice supports their boundary roles; the degree to which stability and change rely on configurations of reification or configurations of participation; who are the knowledge brokers and what power they have as agents of change.

The power that institutions and outsiders have over these communities of practice is mediated through their practice. Therefore alignment rather than design is likely to be successful. Aligning the institutional context so that practices can fulfill the goals of the institution allows design from within rather than design from without. This may involve supporting change by empowering peripheries, interstitial communities of practice, or knowledge brokers. All this implies creating bridges for new forms of shared practice that become essential to expanding cultural transparency.

The Appendix contains a number of specific observations about problems and suggestions for improvements in the claim processing office along the lines of this dissertation. Here, rather than expanding on a conclusion, I would like to use the rest of this chapter for an opening discussion. With a set of speculative questions, I will briefly explore the picture that the framework of this dissertation might offer for a practice of cultural transparency in the organization of society at large and in a quest for individual and societal intelligence.

Operationalization and ownership of meaning

By creating configurations of reification that reproduce their practice, communities of practice codify and proceduralize the understanding and the mastery around which they organize themselves. The creation of normative structures and other kinds of representations that decontextualize practice is always potentially an attempt to claim ownership of the meaning of some activities, just as the COB worksheet is an attempt to control the meaning of the procedure through literal interpretation. Once the bid for ownership of meaning has succeeded, outsiders become dependent for these activities on the service of experts because knowledge of procedures becomes more important than participation in meaning. So for instance, the complexity of encoding of social relations into laws means that dealing with the justice system has more to do with local knowledge of how the system works than with understanding the concept of justice. This is why we need specialists, who know about all these obscure procedures, rather than consultants who can help us understand for

ourselves what our own relations are with the issues we are trying to deal with. Operationalization is therefore similar to the process of commoditization in that it gives to knowing and understanding forms that make them ownable and thus marketable.

The process of ownership of meaning through operationalization transforms agents who have to deal with a problem into consumers who receive a service. These service relations can be characterized by the same black-box syndrome as any relation with a community of practice to which one does not belong, whether or not this relation is mediated by a physical artifact. Assumptions of patients who cannot or don't need to understand, of computer users who don't want or don't need to know, of constituencies who are not interested in real debates, can be self-fulfilling prophecies. If so they have serious long-term consequences for a social formation, which we don't understand very well. Nor do we understand the characteristics of and the structural conditions for an empowering public discourse that would be a key to cultural transparency. The problem is much more rampant than one of education in the classical sense. If claim processors are parents, will they teach their children to get by filling out COB worksheets? If a society is organized around assumptions of limited intelligence and limited engagement and interest in the issues that its members face, is there any hope that schools, training, and other similar institutions can perform the unlikely miracle of turning around the social formation in which they function and which they can but reflect?

If Foucault (1975) is right that power relations have evolved from confrontational relations to relations mediated by normative structures, then ownership of meaning implies owning the ability to set the mediating structures of power relations. In this regard, professionalism is a crucial development. The notion of ownership of the means of production as the key to understanding societal formations must then be supplemented with the notion of ownership of meaning. Though the two are tightly interrelated, it does not seem that one can be reduced to the other. But to the extent that cultural transparency is a form of what Bourdieu calls symbolic capital, an increasing black-box syndrome in service relations is similar in nature to the impoverishment of the proletariat, which Marx (1967) thought placed a theoretical limit on the development of capitalism. Of course, the impoverishment of the proletariat did not come about, but neither did the type of raw capitalism he was analyzing. Are there theoretical limits to the cultural distance across which service relations can be carried out meaningfully? Is the ability of consumers to understand the artifacts they use the ultimate limit on the complexity of the technology we can produce? Could the concentration of ownership of meaning in specialized communities of practice place in-principle limits to the development of democracy? I will obviously not provide final answers to these questions, but I will extend the discourse I have

been building in this dissertation with a few more concepts that I think would be useful in starting to address these issues.

Essential cultural forms

First I want to distinguish between what I call “essential cultural forms” and “technicized cultural forms.” Essential cultural forms are issues that are shared in one way or another by everyone in a culture, whereas technicized cultural forms are aspects of the culture that have been appropriated by specific communities of practice through a process of operationalization. The two often go in pairs or clusters. Health is an essential cultural form, but medicine is one of its technicized counterpart. Justice is an essential cultural form, but law is its technicized counterpart. I might even say that intelligence is an essential cultural form, and that academic intellectualism and artificial intelligence are two of its technicized counterparts.

There are many serious problems with the concept of essential cultural form. How many are there? Are they static? If they evolve, to what degree are they influenced by their technicized counterparts? Are they shared by the entire population of a social formation? Do they represent forms of cultural hegemony? One would hope that one could delineate a number of essential cultural forms, which may be influenced by their technicized realization, yet evolve of their own right; which cut across broad divisions such as class or gender within one social formation even if they take somewhat different shape in different segments, possibly with relations of domination (e.g., rationalistic over intuitive realizations of intelligence, or high culture over popular realizations of entertainment). I will assume that the concept is a coherent analytical category for now, even if it needs to be refined later.

The reason I need this analytical category is to have something that remains public property even though it has technicized realizations appropriated by specific communities of practice. It is a bit like the rule that one can patent implementations, but not ideas. In our culture, things like intelligence, justice, health, power, wealth, sanity, democracy, pleasure, etc., belong to everyone and pervade our thoughts in unarticulable ways. As such they are ever elusive—objects of an unending quest, grails of our cultural journey—even though their meaningfulness is deeply rooted in our day-to-day lives. Essential cultural form seemed like a good term for them. I was careful not to call them concepts because I do not want to reify them out of their diffuse, participative embodiment. Nor do I want to intellectualize them: the negotiation of meaning involved in participation in essential cultural forms is not in its basic nature an intellectual process. Intellectualizing essential cultural forms is itself a bid for setting the public discourse about them in ways that foster exclusionary social

dichotomies of the type expert versus layperson or mental versus manual. I want to use the category of essential cultural forms as an argument against such dichotomies and toward a definition of expert practice that would create a relation of mutual dependence between membership and non-membership.

Membership and non-membership

When communities of practice such as professions technicize cultural forms, they can proceed with their practice even though they may have lost touch in serious ways with the essential cultural forms that are the counterparts of their areas of specialization. A lawyer with whom I was talking recently told me that he not only did not believe in justice, but thought that the concept was and had always been useless and meaningless. The problem is not limited to lawyers by any means. One thinks of doctors whose technical view of health prevents them from letting old patients die their own death, of fast food restaurants whose technical marketing of taste makes them poison the population, of financiers whose technical analyses of financial opportunities make them dismantle entire industries, of politicians whose technical surveys of reelection chances paralyze them into complete non-commitment. The question is not whether my lawyer friend is right or wrong, which is itself a meaningless question. Rather one would like to understand what such an attitude does to a society when it is widely transformed into what Schön in his analysis of professions call technical rationality; this technicization disconnects the practice of a community from the essential cultural form it proceduralizes but allows the community to claim ownership of its realization for other members of society for whom it is elusively yet profoundly meaningful.

We are talking here about the domination of some forms of intelligence by others in a political economy of meaning. Its market is what Habermas (1961) calls the "public sphere," where reifying articulation and proceduralized representation are the exchange value of commodities. To wedge the discourse of cultural transparency in this context with its essential interaction of visibility and invisibility, means to talk then about what Foucault (1980) calls "the resurgence of subjugated knowledges."

The reader may recall that in the preceding chapter, I have described communities of practice as condensations of membership in a landscape of peripheralities that are definitional of identities all the way to non-membership. In this context, the notion of essential cultural form is crucial in allowing me to claim at some level a legitimate ownership of meaning across the entire spectrum of forms of membership.

Of course there are all sorts of conflicts of interest that have raised barriers and caused non-members to be made to feel like outsiders. But I am arguing that non-members can be as essential to the life of a practice as core members. While there is power and insight at the core of communities of practice, there is also a tendency to become blind to the limitations of the practice. This phenomenon of core blindness is central to the problems of professionals described above. Legitimate peripheral participation always involves trade-offs between gaining and losing sight. Thus there is value for a community in finding a truly negotiatory shared practice with non-members or peripheral members as a counter-weight to the blindness inherent in core membership. For instance, non-members are likely to have more untainted relations with essential cultural forms than professionals. This is not just glorifying naivete, but trying to come up with a notion of expertise that would be more resistant to the fossilization of core membership while at the same time enable forms of peripherality that would be more permeable in order to support cultural transparency.

Expertise redefined in terms of such a client relation is not the characteristic of a person by contrast to another, but a co-construction, a mutual exchange between members and non-members. This creates a new sense of what an expert is and of the training an expert should receive. Instead of placing all the emphasis on the professional discourse, the new training will emphasize the ability to free oneself from the professional discourse by using the client relation in order to reconnect with essential cultural forms and rediscover the professional discourse along with the non-member.

Similarly, this creates a new sense of what a professional community of practice is, in particular with respect to reproduction processes: these must be viewed as covering the entire spectrum of forms of membership, including non-membership. It is symptomatic of our current definition of expertise that the category of non-membership is a non-category, shadowed by our culture, and only defined by contrast. Non-membership, however, is an extremely important category because it is a state in which we find ourselves much of the time in our daily interactions with the world as a landscape of communities of practice. Yet our education does not teach us how to be non-members, that is, how to co-construct expertise in the member/non-member relation. In school we learn to become pseudo-experts and pseudo-members, but never to become non-members. We always meet "experts" whose exclusive purpose is to teach us and who, at least ideally, have nothing to gain from the interaction, have no other agenda. The reality of the division of labor and of the expert/client relation in the market place is quite different, of course, but it is something we are not prepared to deal with; it is a situation we are not prepared to contribute to or to learn from.

Intelligence and belonging

In the age of the computer, we have embarked on a quest to a mechanical account of intelligence, but we have hardly achieved a humanistic account of it. My quest in this dissertation has largely been one for intelligence. I have mostly insisted on cultural transparency because the need for procedural transparency seems to be fairly well understood. Indeed, if we ignore the failure of formal definitions, our culture in practice has largely taken intelligence to be the ability to move toward the core membership of communities of practice as demonstrated by the ability to deal with configurations of reification. My association of proceduralization with the notion of black box early in the development should not give the impression that procedural transparency is something negative: it is an essential ingredient of intelligence by which irrelevant aspects of activities can be pushed out of sight so the relevant aspects can be attended to.

But procedural transparency by itself turned out to be brittle and to give rise to a sense of meaninglessness. Cultural transparency on the other hand turned out to be insightful, though by itself ineffective. And I found that I needed both. Visibility was overwhelming and invisibility left my thirst unquenched. Again I found I needed both. I then explored the texture that communities of practice give the world and I engaged in legitimate peripheral participation. I visited peripheries and found that I wanted to participate more fully in order to gain a deeper understanding. I visited core membership and reached full mastery, but found a core blindness there. And my actions and my thoughts, which reflect my trajectories of participation, and thus my forms of membership, became both distractedly insightful and blindly focused, cleverly dreamy and stupidly real. And intelligence, as much as I could find it, I found in navigating between the two.

Now membership and non-membership chase each other in a constant circular race, and it is impossible to know which pursues and which flees. When membership charges blindly or cracks a joke at the cost of non-membership, it is swept out of sight. When non-membership loses its sense of self, membership comes to the rescue. When the local becomes too narrow and too disconnected, the global pulls it apart; and when the global becomes a disconnected, local game of its own, the local roots it back.

The picture that comes to life is not a simple one, but it is one that has dynamism and connectedness. It is also one in which we desperately need each other: to come together and to pull apart.

In the age of Enlightenment, we thought that we had caught the elusive treasure. We had tamed raw power; we had abolished the confrontations of domination; we had become civilized at last. But old

forms of power turned out to be like the phoenix; new ones were born from their ashes, more formidable perhaps than the old ones in their very civility: contracts for honesty, laws for justice, morality for love, surveillance for punishment, expertise for wisdom, rules for intelligence. Power had become technicized, domination normative. We had colonized the planet; soon the vision of power and powerlessness of the information society was upon us. But civilization had eluded us.

If intelligence was not made out of rules, then what was it made out of? If intelligence was not centered on the individual, if it had to do with trajectories of belonging, with straddling boundaries between defining structures, with—constantly and at once—constructing and deconstructing cultural objects that congeal and mediate our shared practices, with negotiating and renegotiating the self in a fluid dance among forms of participation, then how could we achieve it, as individuals and as human communities, which is the same thing? We seemed like Orpheus, walking out of Hades with our treasure behind us, knowing that turning around to check if we really had it was the surest way to lose it.

It was necessary, against all odds, to find new ways of belonging—with each other and on our planet: to connect to essential cultural forms; to participate together in the significance of the techniques some of us owned; to engage in new modes of shared practice where to trade our forms of membership and non-membership; to find the social fabric of intelligence.

Trajectories
and meeting places

One thought, one word
and thousand faces

Timeless the wind
on waning traces

Catch, catch the wind
to more embraces²⁸

²⁸ To leave the reader with an opening onto further realms of thought, I decided to conclude with this short poem, which I wrote a little over two years ago, and which at the time I entitled "Friendships" but which turns out to be surprisingly relevant to the themes in this dissertation.

**Reflections on
work
and design:

an informal
report**

The following report was written for the benefits of people at Alinsu. It lists a number of personal observations I made during my fieldwork at the claim processing center along with some design recommendations in line with the argument of the thesis.

The personal observations listed here are not a summary of my doctoral dissertation; they are not meant to provide a complete analysis but to bring up a number of points of interest. I thought it might be useful to collect them in a document for the benefit of the people at Alinsu. In this informal report, I have tried to be candid because I believe it is the best way to be helpful given my unusual status of external observer/participant.

At a more general level, all my observations, while targeted specifically to the claim processing center, reflect important issues typical of emerging service industries. Cast in terms of the service that the claim processors are offering, these general issues include the following trends:

- the field of health care is undergoing deep and rapid transformations;
- the increasing complexity, allowed in part by new technologies, is becoming overwhelming, to service providers as well as clients;

- and the mechanical aspects of claim processing are increasingly being automated.

I started my fieldwork by attending two complete training classes, one for each of the two types of health insurance handled by the claim processing center (the traditional indemnity system, which reimburses patients for their expenses, and the more recently developed managed medical system, which is based on contractual relations between service providers and Alinsu). I also took some of the exams for new recruits and was subjected to a mock job interview. After the two training classes, I followed some processors through their day, and then joined a processing unit as an observant-participant: I processed claims at my own desk and I participated in the conversations and the social events of the unit. In addition to my direct involvement, I interviewed a number of trainees and claim processors, some individually and some in small groups.

Whenever possible, I tried to receive all my information from the same channels as the trainees and processors with whom I was working. In this regard, I limited my interactions with management to the process of obtaining permission to participate in activities. In many cases, I even chose to remain ignorant about specific points rather than to obtain information from sources outside the purview of a processor. This intentional restraint was a strategy I adopted for this initial piece of fieldwork in order to understand as authentically as possible the viewpoints and experiences of claim processors.

For concision and ease of perusing I present most of my observations in a list consisting of pairs of issues/possible directions. The list is organized under topical rubrics, which cover three broad areas of concern.

The first two sections deal with the internal organization of the job and of the communities involved. First I present a general framework for understanding the problems I address and I consider the possibility of a global redesign in the light of this framework. Second, I discuss individual problems I have observed; these provide additional details about issues and possible solutions which ground the general framework and may offer opportunities for tactical improvements.

In the third section, I present some thoughts about long-term strategies for the functions of claim processors and the services they offer, as issues of internal organization cannot be dealt with independently of a reflection on the nature of the work.

In a fourth and final section, I deal separately with issues concerning the design of adequate supporting computer systems.

1. Redesigning claim processing

While not belonging to a doctoral dissertation, the following remarks are connected to my doctoral work in important ways, and informed by its theoretical framework. The existence of an underlying level of theoretical analysis that gives observations and suggestions coherence is important because the success of change will depend on the degree to which their implementation continues to reflect and be informed by this understanding.

A central argument of my dissertation is that people organize their world by forming what I will call “communities of practice.” The term “community” suggests a social structure with some degree of organization (here, it does not imply co-presence) and the term “practice” suggests a shared way of going about doing things.

With regard to the first term, I argue that these communities of practice provide the context in which people live, engage in activities, communicate, learn, and understand the world and themselves. They provide the context in which the meanings of objects and events are constructed and renegotiated. Communities of practice are crucially distinct from the institutions in the context of which they arise. As a matter of fact, they are often at odds with institutions in important ways.

With regard to the second term, I argue that these communities of practice are the locus of “real work.” The practice of a community is where the official meets the non-official, where the visible rests on the invisible, where the canonical is negotiated with the non-canonical. Because the practice and the community cannot be dissociated, learning must then be understood as becoming a member of a community of practice through increasing participation.

Thus viewing the social world as consisting merely of individuals and institutions in fact misses the key unit of analysis when it comes to making sense of— and providing support for—the activities, experience, knowing, and understanding of a person or of a group of persons.

From this perspective, the isolated remarks I make in the following sections can be understood from a unifying perspective. They can be viewed as stemming from the fact that the institutions that implement business objectives happen to be in certain respects at odds with the ways in which the communities of practice within it function. Specific changes can be made, but they will really make a difference insofar as the institution comes into alignment with the communities of practice.

Thus while my remarks in the following sections can be construed as individual observations with the possibility of incremental improvement, they fit within a broader redesign of the workplace, which subsumes them. To place everything in perspective, I will start by addressing on the outset the possibility of such a thorough redesign understood in terms of communities of practice.

a) Issue: misalignment of institution with communities of practice

Communities of practice are a context for organizing one's engagement in socially meaningful activities, and therefore a context for developing a sense of oneself as an agent in the world, as a social person. In this regard, my impression is that the organization of the work of claim processors in many ways fosters "identities of non-participation," that is, a sense of the self as only marginally involved in the meaning of the activities around which one's community is organized.

Not only is there no participation through shared profits schemes and the like, as is usually the case for such low-status jobs, but there is hardly any participation in the understanding, negotiation, and definition of what the job of claim processing is about and what it entails. For instance, there is a suggestion box in the office, but I have yet to find someone who reported using it. The processors I asked about the suggestion box answered that they did not think their suggestions would be followed anyway. Overall most of them did not feel that they could make a difference they would care about.

Before proceeding, I should clarify one point: there are in the office communities of practice in place already, in which people are engaged and participate actively. It is not that people do not care about what they are doing. In spite of the institutional issues I will discuss, these communities are rather effective at producing what is expected of them. Jobs get done, actions are perceived as meaningful, processors all learn continually, and they learn from each other. They all invent small tricks to deal with their work and with the organization, and the most crucial of these tricks successfully spread through the community. This should not be belittled.

Yet there is institutional misalignment in that membership in these existing communities of practice, while involving engagement in the confine of the communities, generates identities that do not involve concern for the content of work activities. I am not saying that it is possible—or even desirable for that matter—to have a community of practice at the workplace whose preoccupation is exclusively "work": human beings are just not that simple and any institution has to incorporate multiple dimensions of social life. Besides, claim processors report that they enjoy being able to go home and not having to think about work (which may mean among other things that

thinking about work is not something they would find exciting). But there is a problem, I would argue, when the institution and its implementation of business objectives are such that the communities of practice that arise are sustained around a sense of non-participation. This usually occurs because the official version of jobs does not provide enough support, recognition, and reward for the work that communal participation in the meaning of activities would entail.

The ensuing disengagement results both in poor performance and in limited enjoyment. My intuition is that these identities of non-participation not only limit the work experience of claim processors and other employees, but are one of the most serious limits on Alinsu's ability to conduct its business successfully and to expand it.

b) Possible directions: supporting the functioning of communities of practice

Identities of participation arise out of engagement in the construction of one's social world. Communities of practice, as the articulation of this participatory construction of the self, can vary greatly in the kinds of identities they provide material for, depending on the institutional context in which they develop. What follows is a general outline of the directions in which I would encourage change.

I would support the current work units in organize themselves as small communities of practice embedded in larger ones (as opposed to the current attitude of a pool of replaceable workers). Crucially, membership in these human communities and participation in their practice should be allowed to have personality, to have color, to have social texture and dynamism, so that knowing can be part of a rich sense of self.

I would encourage the redefinition of these units around specific tasks, client plans, or problems. These should form logical articulations of the work and constitute areas over which they could gain a high level of mastery, including a broad understanding of the relations involved. I would let these specific responsibilities as well as the goal of cohesiveness determine the sizes of these units (in contrast with the current units which for administrative reasons are uniform in size, and given a load in accordance).

Right now, processors can organize their own personal work strategies. They enjoy that and are very inventive about it. But the hierarchical structure does not give them a sense of ownership over what they can do at the unit level in this regard. I would therefore deemphasize hierarchy, encourage cooperation, and make sure important decisions are achieved communally within units. This will mean that related supervisory functions will need to be rethought seriously.

I would encourage these units—and give them the means and latitude—to become creative in providing the service of figuring out benefits and helping customers with their problems. If there is much dissatisfaction on the phone, for instance, let each unit investigate the problems they encounter on an ongoing basis and come up with solutions in their own purview and proposals for more global issues.

It is in this context that I would hold these units responsible for the performance of their function. This would imply giving them access to the information they need in order to understand for themselves and explain to outsiders how well they are doing or what resources they need in order to improve.

I would officially make continuous training an integral part of the work and make sure that growing expertise is valued. In fact, I might even consider doing away with training classes, partially or altogether, and letting the units select and train their own newcomers into their practice. In any case, I would also foster mutual responsibility by encouraging buddy systems that associate oldtimers with newcomers: the collaboration of such teams benefits both participants and makes clear how valued the exchange and development of expertise is. By the way, this would also take care of the problem that, according to most processors, training is too short and “moving to the floor” is too much of a shock for newcomers, many of whom quit. Their reports suggest that it is primarily the scarceness of community resources that discourages them.

I would support the participation of these units in broader communities of practice. I would create multiple forums for the exchange of ideas and create feedback loops that carry information across community boundaries and allow communication among many levels within the corporation. Given the size of the corporation, I would also facilitate and encourage communication with other units over large regions. This would give rise to new communities of practice, membership in which would enrich the experience of claim processors and thus broaden their understanding.

I would actually consider a more radical way of achieving this result. I would encourage the formation of units that are not just responsible for claim processing, but for the entire range of relations with the client companies of which they take charge. That would mean that one unit would include enough of a variety of people to take care of sales, negotiations, underwriting, open enrollment days, processing, quality review, technical referrals, and phone answering. The members of these units would have simultaneous, lateral forms of membership in broader communities of practice in which their specialized expertise would be sustained, but their primary allegiance would be to these heterogeneous communities of practice, which would combine all aspects of a well-defined task. This would have the result of

broadening the discourse, exposing all involved to the various aspects of the service process in which their own work fits, and provide ways for these communities to be able themselves to evaluate in a realistic, connected fashion how well they are doing. The role of the company at large would then be to provide support for the functioning of these autonomous units.

This whole process would have to be ongoing and self-renewing. Change from within (even when in response to change from without) is one of the most important characteristics of the nature of communities of practice. Indeed, I have talked about redesigning the organization of work, about aligning the institution with the needs of communities of practice that can function, but not about redesigning the communities of practice. There is a subtle, but delicate point about communities of practice, a secret as it were: they are a naturally-occurring social phenomenon. Whether they are official or interstitial with respect to the surrounding institutions, they clearly have a life of their own. Large or small, long-lasting or temporary, involving co-presence or distributed, they arise, develop, change, and disappear: they inherit some of the living, unpredictable characteristics of the human agents who compose them. They can be supported or opposed, but they cannot be decreed nor erased; they can be influenced—with expected or unexpected results—but they cannot be steered. When there is a design effort in surrounding institutions, communities of practice occur or reconstitute themselves as a *response* to design; thus they are not the *result* of design: they cannot themselves *be* designed.

If institutions cannot “design” communities of practice, they have to learn to support their functioning in ways that are likely to foster what the institution is about; or perhaps another way of saying that is that we have to reconsider, to rediscover the meaning of “design”: when we think in social terms, design has to be understood as not just “from without” but primarily “from within,” in the context of a relation of mutual dependency between the two.

2. Specific issues in the claim processing center

2.1 Customer service and customer education

a) Issue: health insurance as financial computations

From the standpoint of the organization of claim processing, providing health insurance is currently viewed primarily as a computational service. Paying claims accurately, however, is not the only service that Alinsu is expected to perform. People want to be helped in dealing

with the services they receive. I have seen personal letters of thanks to employees who had provided personalized help in dealing with a difficult case. Examples of issues about which processors must be able to provide explanations include:

- what the plan says:

Although this is usually considered to be the responsibility of benefit representatives at the client company, individual customers constantly call the insurance company expecting this type of explanation.

- why certain policies of the plan exist and how they function:

These types of question include: what their rationale is; who makes decisions about the plans; and what criteria these decisions are based on. These questions are not always articulated by callers, but they underlie much of the confusion that exists in the former types of question.

- how benefits are calculated:

By themselves, calculation procedures are often meaningless. But they can become interesting when they make concrete what is said in the plan. Explanations then become a matter of connecting the substance of policies with their implementation. Being able to maintain this connection requires both involvement in ongoing practice and access to resources for constructing meaning. (This is at the core of the notion of glass-box system.)

- what is happening to submitted claims and, if they are delayed, why;

- what medical procedures accomplish, what they are good for, and what alternatives are available:

While I have heard reports of questions of this type being asked, I do not know to what extent claim processors are involved in phone conversations requiring this kind of knowledge.

There is much awareness of the issue of communication with customers among claim processors.

"Oh people are so, oh, it's so bad now the phones. I'm embarrassed the way some people answer the phone [laughs]. I'm embarrassed the way they tell the poor insured. It's terrible, it's terrible. Phones are really bad. Alinsu does not realize that, but they are creating a lot of animosity with these insureds by the way the phones are

being answered. It, it makes them mad.”

(A claim processor)

There seems to be increasing awareness of this problem at Alinsu recently; but the broad thematic directives from corporate offices and the short training sessions about phone manners do not generate the kind of atmosphere required for a change in awareness. They fail to spur a serious and broad public discourse and shared reflection on the nature of the service Alinsu is providing and on how to organize the work in order to provide such service.

b) Possible directions: customer service as communication and education

As its services develop, one of the main functions, perhaps even *the* main function, of the successful service corporation of the future will be to educate its customers to help them deal with its own inventiveness and the complexity of its own as well as related industries. In this context I would attempt to personalize the services as much as possible; this would become a high priority for the organization of the units. I would take as a main goal to help Alinsu customers become informed patients/employees/insured, engaged in their own reflections. To this end, I would search for ways to help customers learn about crucial issues of concern to them, by building on their experience with their individual cases.

As with any community of practice, there is a public discourse among claim processors; they do talk about their problems and try to come up with solutions. Phone calls were the topic of many conversations in which I participated. The problem has to do with the level at which these conversations address the issue: time spent on phone rather than production; complaints about nasty calls, and the like. For instance, processors complain that many people think of insurance companies as the bad guys (to the point that patients league up with their doctors to cheat them). And of course, insurance companies have their own interests, but these are also implicated in the contradictions among the interests of employees, of employers, and of the medical establishment: insurance companies—and to some extent the claim processors who represent them—even come to stand for these contradictions in the minds of most people. I have practically never seen the claim processors involved in a discussion of the place of their work in this problematic context, even though they are individually acutely aware of the public images that cause unpleasant phone calls, and when prompted in conversations do express opinions.

When it comes to providing understanding to clients, to “changing a black box into a glass box,” there are no substitutes for a community of concerned service providers who themselves have a “culture of understanding,” that is, have access to and are involved in constructing a comprehensive understanding of what their activities

are about. This is because understanding—or perhaps more precisely given my perspective what I call “cultural transparency”—is not a packageable commodity. Narrowness propagates itself. It is necessary to use intelligence to call upon intelligence.

2.2 Proceduralization, localization, and training

a) Issue: narrow focus on procedures

The focus of the organization of work is on following procedures. Training too is very much focused on procedures. This exclusive focus may be justified for the initial training classes in that it allows newcomers to be involved directly in the actual activities of the community early on. But my overall impression was one of continued emphasis on procedures. Processors are aware of this problem.

“Also, if they can’t follow up, they’re gonna make mistakes. If they are just a little cog, you make mistakes, because you’re doing what you do, this is what I do, but you don’t know where it’s going from there, what’s gonna happen to it, and eventually, if people don’t have that feedback, they’re not gonna do it. You know, when it comes up, and they get this, they’re gonna say ‘Oh, I don’t know what to do with this.’ Toss it.”

(A claim processor)

Transforming social relations into local procedures for people to follow limits the possibilities for understanding. In practice at the claim processing center, this focus on procedures leads to a personal disengagement with the work. It also leads to problems in handling calls in a constructive way.

In addition to the emphasis on procedures, the stress caused by tight production quotas in terms of quantitative claim throughput prevents even the most willing learners from becoming interested in the substantive aspects of their job.

A related factor is that the claim processors have limited contact with the communities where they could obtain a better understanding. For instance, when a claim is referred to a technical unit, the level of involvement of the claim processor in the substance of the technical investigation is minimal, often limited to receiving a recommendation for action.

b) Possible directions: integrate learning in practice and broaden its scope

I would make sure that training engenders the emergence of a culture of understanding in a community of practice engaged in providing and developing a service. Tutorials and seminars, especially with regard to

customer service, only have limited and temporary effects if they are not placed in the context of a shared inquiry to which they provide resources. That is why I would make training a continuous, integral part of the work practices, and place it under the control of the units concerned.

I would place much more emphasis on understanding and explaining. Procedures can be opaque when they are just used as a way to get people to perform actions such as calculations as localized step-by-step processes. But they can also be a resource for cultural transparency; they are tools for conveying understanding when they are used as representations of principles which they implement in a well specified way.

That is why it would be a mistake to create a separate, specialized phone unit to deal with customers, an idea that was being talked about while I was at the claim processing center. This does not constitute a useful articulation of the job. The overlap in knowledge between the two functions of claim processing and telephone answering is a precious asset for performing both. The idea is to support the development of a broad understanding rooted in the practice of providing a service.

With respect to the isolation of claim processors, there was an important change toward the end of my fieldwork. The technicians, who had for some years been working together in a separate office, were sent back into individual units so they would have more contact with the processors. This is certainly a step in the right direction. In general, I would foster a better understanding of other related communities of practice by creating channels through which processors have substantive contacts with panelists, technicians, pre-authorization evaluators, and even possibly underwriters and service providers.

2.3 Evaluation, stress, and infantilization

a) Issue: mismatch between evaluation and work

There is a pervasive and frustrating feeling among claim processors that the measures by which their work is evaluated are not related enough to what they actually do. This creates a constant conflict between doing their job well and achieving high scores on the scales by which they are evaluated. The resulting stress actually makes many people quit, especially in the period following their initial training. In addition many processors complain of not being trusted and of being treated like school children.

Management has recognized that there are problems with the evaluation of what is known as "quality" (whether claims are processed correctly or in error) and is working on a new quality

measure that takes into account the types and seriousness of errors. Processors have shown interest in the proposals though in private many are skeptical that this will make a big difference in their work lives.

But even if the new measures are better than the old "void system," they still leave off many aspects of the work. There is still no official or tangible appreciation for people's work on the phone and for their participation in constructing a functioning community in which knowledge is shared and whose practice is flexible enough to deal with the unexpected and the informal.

b) Possible directions: communal resolutions of inherent contradictions

In proposing as I will resolutions to problems of evaluation that involve the communities of practice directly, I am not necessarily talking against the automatic advancement procedure. In spite of its basis in individual performance, I think that such an advancement program currently helps the sustenance of the community. First, it clearly attracts new recruits. It ranks high on their reasons for choosing the job: they like the fact that there is a clear path to advancement and that they have control over it. Second, the scheme avoids direct competition for promotion. With little advantage in hoarding knowledge, claim processors freely exchange information and foster the functioning of the community as a communal memory. In any changes, I would therefore strive to preserve this sense of control and this local absence of direct competition for promotion.

It is crucial to recognize openly that there are essential contradictions between production and service, between scoring high on quantitative measures and doing a quality job and that these contradictions do not have solutions but only contingent resolutions. Such resolutions require an ongoing reflection on the nature of expertise with a continual process of definition of success and valued contributions. I would make this process a core responsibility of working units.

The processors for the most part have a sense of fairness and are more responsible than management seems to think. In particular, they all accept undisputedly their responsibility as employees to contribute to the business objectives of the company, and they agree to be accountable to this, even though they often resent the current structures of accountability. Of course they would not be doing what they are doing just for fun and without being paid, but they do care about what they are doing more than one would expect under their circumstances.

Evaluation—self-evaluation and evaluation of others—is inherent in the practice of any community as people decide whom to collaborate with, whom to ask questions from, whom to refer issues to. In fact, it is

amazing how accurately processors know who is doing well and who is contributing. But the current evaluation structures not only impose external criteria that supersede their own sense of a good job; they offer them no way of finding out how well they are doing with respect to the broader business objectives of the corporation. Mechanisms of control are often as much a cause of as they are a response to irresponsibility. I would shift the emphasis from structures of control to providing units with the wherewithal to become actively and officially involved in the local and global resolutions of the inherent contradictions of their situation.

2.4 Turnover, experience, and oldtimers

a) Issue: not enough incentive to become oldtimer

Given that oldtimers are much faster, more accurate, and likely to provide better service on the phone than newcomers, I am very surprised to find out that Alinsu does little to keep people around. Actually Alinsu is known, at least by its employees but according to them outside as well, as the training ground of the industry: people come there, get their training, and go on to better paying jobs in other companies that require prior experience.

I do not question the policy of not requiring prior experience and of offering training locally. The idea has a lot of merit both from a business standpoint because it gives Alinsu an opportunity to form people up to its standard and socially because it opens careers to people who may not have such an opportunity otherwise. Furthermore, the initial training is fairly successful. What is surprising is what happens after the initial training as people become oldtimers. I asked many of them what Alinsu was doing to keep them around and none of them could mention a single thing.

For instance, the issue of pay raises has given rise to widespread resentment among oldtimers. These raises are awarded individually on the basis of employee reviews which take into account performance and behavior. Some processors argue that these reviews are an unfair substitute for regular cost-of-living adjustments since they always tie pay raises to performance. One claim processor even suspects that this is "a way of cutting cost: if they give you bad reviews, they can give you small raises." The reasoning behind the resentment of oldtimers is as follows. The pay raises of continuing employees as well as their advancement are always based on their original starting salaries. They have had to "gain" their current level of pay. At the same time, Alinsu has had to adjust starting wages to the cost of living in order to keep attracting new recruits. Oldtimers therefore find their wages insufficiently different from those of newcomers.

The financial issue reflects a lack of appreciation for accumulated expertise. Claim processors definitely keep on learning after their training classes.

“So they are just giving you, like, the bare essentials in training, you know, and then every day, for, even after 11 years, there is, you still see things new, because medical things are always changing. You know, 10 years ago, an MRI, nobody knew what it was, you know, and people did not have AIDS, and you did not have all these experimental drugs and stuff, so it’s always a learning process.”

(A claim processor)

But there is little official recognition and appreciation for the expertise they acquire and for the role it plays. Overall, the job of claim processor seems to be viewed as one that can be filled by people who are hastily trained and whose involvement in the meanings of what they are doing need not grow substantially beyond their initial training.

“There is a lot involved, a lot involved, right? And I think they think it is just like that, like a little candy line where you pinch the candy as it goes by to keep the shape, and that’s all you do.”

(A claim processor)

This official lack of recognition for the need for and existence of high levels of expertise is accompanied by a lack of commitment on both sides. Alinsu seems to view processors as replaceable entities and the processors mostly view their job as either a temporary stopover or as a way merely to exchange their time for a wage without having to care.

Since I have not talked to management much, I do not know what kinds of calculations are involved in Alinsu’s policy of paying low wages, which implies accepting a high turnover, and having a large proportion of inexperienced employees. But my own suspicion is that it is not a good strategy: in the short term it generates recurring training costs; but more importantly in the long term, it conflicts with the increasing need for providing high-quality customer service.

b) Possible directions: encourage and reward seniority, attendant expertise, and new challenges

First, I would question the wisdom of the current strategy concerning salaries and turnover. To the extent that it has not been done, I would engage in broad calculations and evaluations of the short-term and long-term benefits of alternative strategies, taking into account the effects on business of qualitative differences in service.

I would also search for new ways to recognize the high level of expertise reached by oldtimers, encourage and reward the continuous development of their expertise as well as their sharing this expertise toward the development of an effective community of practice. The move toward autonomous units would provide such opportunities at the same time as it would provide opportunities for making the job more exciting, challenging, and diversified. This would happen, for instance, through the transformation of supervisory functions into those of coach, resource, and facilitator of communal processes, and the sharing of these functions among oldtimers through distributed schemes such as the buddy system or special task forces.

2.5 The broader organization: disconnectedness versus mutual involvement

a) Issue: locality, formalisms, and disconnectedness

One really striking point to me as a naive newcomer to the corporate world was the profound degree of disconnectedness between management and employees. The various communities are really black boxes to each other; the disconnectedness is reciprocal. I suspect that, beyond the local inefficiencies I have witnessed, this reciprocal disconnectedness on a large scale must have enormous costs.

On the one hand claim processors do not know what their managers and their managers' bosses do, think, strive for; and they do not care. They do not feel concerned about that, except perhaps to the degree that they wonder for themselves whether it is worth striving to move to a supervisory function.

The drumming of new company-wide directions—directions which must seem like essential visions to those who instigate them—thus becomes mere background noise when it reaches the workers, who feel like it comes from a different world altogether.

On the other hand, so much of the crucial local work is simply invisible to the abstracted eye of management. One claim processor expressed this thought as we were talking about problems with phone answering:

“See, you can see it, and all these little people can see it.
Why don't the bosses see it?”

This invisibility is reflected in the nature of data gathering techniques and evaluation schemes, which translate work into figures representing productivity and quality. These figures are important for calculational purposes, but that very purpose, which implies erasing the practice out of which they arise, casts doubts on their ability to represent how well the actual business is taken care of.

Management is supposed to take care of global issues and workers to take care of local ones. But as work is transformed into figures, the "globalness" of management itself becomes a local, self-contained practice. The respective communities of practice are both equally local as, in their disconnectedness, they form fundamentally different worlds, with different cultures and different currencies.

Facilitating connections between the two, striving toward a "glass-box institution," is not just a matter of information. The technical and organizational issues involved in providing the facilities for the communication of information are only a small part of the problem. Some channels for this type of communication across levels are available right now: there are internal publications, and even a local "open door" policy for talking to managers. But these channels are not used much by claim processors. Information by itself is not a solution as long as it is not accompanied by a sense of participation in the meaning, in the purpose of this information. I have mentioned the difficulties with the suggestion box. I would argue that the very nature of a suggestion box, an enclosed, impersonal object, is in contradiction with its purpose. In fact, the suggestion box, in its lonely and empty silence, stands as an enduring symbol of the very distance it is supposed to bridge.

b) Possible directions: mutual involvement

I have addressed two levels of opposition between substance and formalism, between understanding and calculating:

- at the level at which the business is viewed—financial calculation versus customer service;
- at the level at which it is conducted—quantitative measures versus mutual involvement.

These two levels are not independent; much of this report can in fact be construed as an argument that they are crucially related. A move toward substance at one level will imply a move toward substance at the other. The key term here is "mutual involvement."

I have talked much about supporting communities of practice that are involved in the meaning of their work. So far I have talked mostly about workers, but this is an accidental consequence of my fieldwork strategy. Involvement cannot be a one-way process. I would make sure that the organization of autonomous units includes them in a double feedback loop connecting local information with global decisions as well as global information with local decisions. (The terms "global" and "local" however, are not as straightforward as one would think once interpreted in the context of my observation about the localness of the practice of both communities.)

Connecting communities requires the development of a common practice. That practice can be organized around "boundary objects" (language, in the form of texts and common terms; representations such as pictures or diagrams; artifacts such as computers and programs); but these must be connected to all local practices in a rich enough way that, through the shared practice, they can carry meaningful information as they cross community boundaries. Quantitative formalisms and procedural prescriptions are two examples I have talked about in this report which not only often do not achieve this result, but can even be obstacles.

Connecting communities of practice is a significant part of the project of fostering identities of participation. I would strive to replace the one-way suggestion box with an open, shared culture of understanding and inquiry, and to support the participation of all communities of practice in this culture by a process of mutual involvement.

3. The business of claim processing

So far, I have mainly talked about the internal organization of the service of claim processing. I conclude these personal observations with some remarks about global business strategies for Alinsu because the sense of participation that can be gained from an internal reorganization of the work can only be fully achieved if it includes an involvement in a reflection on the nature of the business.

3.1 Front line: phone answering

a) Issue: telephone answering as local crisis management

It seems that telephone answering is mostly a process of taking care of problems on a day to day basis. Processors have to deal with a lot of anger and dissatisfaction.

"Alinsu envisions itself as being a very ... the picture given to people is not the picture here. I feel, and especially since they merged the unit, I feel, they have this picture of, you know, something solid, that you can count on, it's going to be there. But I feel like behind, it's this cardboard, and behind it, it's just chaos."

(A claim processor)

Overall, dealing with customer problems and complaints on a strictly individual basis gives the impression of a constant patching up of symptoms without an attempt at a cure.

b) Possible directions: telephone answering as feedback loop

A traditional approach to the problem might be to organize a study of phone calls to understand better what problems need addressing. But I view this situation as a symptom of the disconnectedness mentioned earlier. I would therefore suggest a more dynamic strategy, which would make such a study continuous and—crucially—involve directly the communities of practice of processors themselves.

After answering so many phone calls, processors have a great amount of knowledge about the nature of problems that come up. For instance, after working on this job for a while, most claim processors believe that there is a coherence, a local fairness to the way the policies are implemented, in that in their experience rules are genuinely applied independently of the amounts involved. But one of their problems is that they do not see any concerted effort to communicate this kind of information to customers.

Nor do they feel that Alinsu is organized in such a way that their awareness of communication problems can make a difference. Through the process of involving units in thinking about their jobs, I would make sure that phone answering becomes a link in a far-reaching feedback loop designed to improve not only the service they perform, but the broader service of which theirs is a part. This would mean supporting communication channels through multiple levels in the corporation, in the context of a broad reflective process through which the processors' knowledge can contribute to remedying the problems they perceive as well as to redefining their work.

3.2 Charting out the future: collective discourse

a) Issue: no broad reflection on the nature of the business

Responding to perceived needs is not the only challenge. With a broad—and broadly shared—understanding of its business, a service company can take the lead in offering services customers do not even expect. Receiving healthcare is becoming a very complicated affair, involving at once personal, medical, financial, and social policy issues. In spite of the ongoing debate about healthcare in this country, I have never witnessed any local sign among processors that Alinsu as a major player is involved in a reflection on these issues.

Let me illustrate this with a small example from my own uninformed reflections on the subject. I was surprised to learn that "Preferred Provider" contracts were purely financial and did not involve any sort of quality assurance programs that would place the insurance company on the side of the patient while still serving the marketing needs of deserving providers. Many people feel as disempowered by the prestige of the medical profession, as they do by the black-box nature

of insurance issues. There is a contradiction in medical care in that the medical profession is supposed to promote health but makes its profit from diseases. Insofar as it does not just make its profit from cash flow but from actual insurance, the insurance industry does not share this specific contradiction. It might therefore find that it is in its long-term interest to deal with an educated, empowered medical clientele.

b) Possible directions: ongoing public discourse about the future

Obviously this last example is a very complex and delicate issue because of the conflicting interests involved, including thorny questions of liability. My point is not to resolve it here, nor even to propose suggestions, but to highlight the fact that there is much room for new ways of thinking about what one is doing at many interrelated levels, and that exploring these new ways of thinking is at the core of how a service industry progresses. My argument is that doing this systematically requires an ongoing discourse on the substance of one's work, not only among high-level strategists but at all levels within the corporation.

Such a discourse is useful not only in its direct purpose of creating ideas, but also in the identities of participation it fosters, and in the culture of understanding and inquiry, which I have argued will need to be the foundation of an effective customer service.

3.3 Inventing the practice of the claim processors of the future

In conclusion, I have talked about involving the claim processors in a feedback loop to improve the system, in communicating about their business, and in a reflective discourse about possible futures. To gain this sort of critical cutting edge, I would right now think of organizing Alinsu as an environment for the communities of practice of the claim processors of the future. Given the confluence of increasing complexity, increasing automation, and increasing need for service, the claim processor of the future will definitely have to be oriented toward dealing with people and concepts as well as with claims. To fulfill this function, she or he will have to be involved in the kind of ongoing discourse I have talked about as well as in adjudication issues. Thus understanding the nature and supporting the functioning of communities of practice seriously involved with the substantive content of their activities will become the key to success.

4. System design for claim processing

4.1 System design issues for the current view of the job

a) Issue: design for an idealized process

The current system reflects an ideal input/output view of what claim processing is about: check information, enter information, and compute benefits.

In fact, the system has become a normative frame for defining the job. Processors often describe their work in terms of the functions of the system. They say: "Now you can PRCL," instead of "Now you can process the claim, or "I will need to learn PROSYS," instead of "I will need to learn managed medical."

While the current system includes help functions that are useful in supporting the claim processing activity, the system is not systematically designed to support a realistic understanding of what claim processors actually do in their daily work and to enable the expertise that they develop over time within their community. (This is also true of computer-based training systems such as SCHOLAR-TEACH, which trainees find irrelevant and do not enjoy working with at all.)

b) Possible directions: design for actual work activities

It is essential to design for the work that people do rather than for a disembodied, idealized description of the work process. The following suggestions are some simple examples of features that would make the system support observable activities.

Putting cases on hold: right now, a claim cannot be put on hold. If it cannot be completely processed, it has to be abandoned and started all over again. This is a source of much frustration. When it turns out that processors need additional information for processing a claim, it is very rare that they are able to get it right away. It would be useful to have a facility in the system for stacking unfinished claims, including various mechanisms for reaccessing them depending on their status either by browsing lists or by automatic reminders of follow-up.

Work organizing tools: claim processors continually have to request information and services from multiple sources and follow up on these requests. Their desks are covered with notes and piles. Thus in parallel with the case holding facility just mentioned,

there should be facilities for organizing one's work along multiple lines, such as calendars, reminders, note pads, etc.

Phone doc: processors use the phone a lot and are required to fill out forms known as phone doc's. Because people are often difficult to reach, there is much need for follow-up calls and monitoring of returned calls. One could imagine a complete support system that would provide on-line phone doc's with automatic updates, reminders, dialing and redialing, etc.

Memo access: an important aspect of the work of claim processors is to receive memos, read them, file them, and remember them at the right time. A system should have facilities for recalling memos under specific circumstances. Processors should also be allowed to enter comments on these memos for use by themselves and others.

Notebook: a facility similar to memo access could also be used during training. Claim processors keep notes from their training classes which they use long after they have left their classes. A notebook facility, which could be used by trainees and updated easily later on would be very useful, especially if it supported individualized indexing.

An important point about the suggestions above is that such facilities should always leave the control over the organization of their work to individual claim processors. Not only do they have very different styles, but being able to organize their job locally is something they value greatly (They sometimes contrast it to a secretarial job where they are always told what to do next).

4.2 System design for a communal view of the job

a) Issue: design for individual workers

The current system is not designed to support in any systematic way the kind of communal memory that I have observed at work among claim processors.

Admittedly, there are facilities for attaching notes to claims and to database records, but these notes are not used to exchange knowledge. They are mainly used to record information; in many cases the system should handle this information directly but was never updated to be able to. Basically, the system is designed with the view that a claim processor works alone.

b) Possible directions: design for communities of users

Here are some examples of tools that can be provided for the ongoing construction of support for communal memory:

Question referrals: finding someone who knows about an issue is a problem that claim processors encounter frequently. The system should be able to direct them to a person who has worked on similar problems or who is likely to know something about their question. This would require keeping audit trails of work, histories of cases, classifications of issues, and models of interactions patterns.

Communal notes: processors are always learning new facts, tricks, and ways of doing things. They often write notes for themselves. If they had a notepad on the computer, it might be useful to explore the feasibility of an indexing scheme that would give them access to notes written by others.

Any attempts in this direction would require careful experimentation because there are limits to the usefulness of such computer supports for the construction of communal processes. For instance, they should not attempt to replace the ongoing discourse among processors; overhearing questions and exchanges is an important source of information and of connections.

It is also important to allow local communities of users to have control over the development and use of such communal tools. Under situations of external control, the public documents created with the help of these tools can be viewed as threatening and intrusive.

4.3 System design for the job of the future

a) Issue: automation, service, and the black-box syndrome

The claim processing job will face a challenging contradiction typical of service industries. There will be more automation yet there will be more need for personal services. There will be less direct involvement with processing, yet processing and the policies that it implements will become more complex. There will be less opportunity to gain access to the practice of claim processing through successive, increasingly complex, less and less peripheral functions because these intermediate functions will be automated, yet there will be more need for people who really understand what is going on.

The challenge includes two typical glass-box issues: taking care of the needs of customers who call about claims that have been processed automatically and sustaining the expertise necessary to deal with the limitations of the system.

b) Possible directions: automated system as communication artifact

The system of the future will not just be an automated claim processing system whose function it is to calculate benefits. It will

have to be viewed as a communication artifact that will become the focus of collaborative work across multiple communities with different viewpoints and interests, including technical panels and other specialists, system designers, and claim processors. In other words, the system must be viewed as providing a bridge between the various communities of practice involved with it, as a "boundary object" connecting communities with different viewpoints.

For instance, instead of memos on new policies, claim processors will have to understand and remember updates and modifications to the system so they can explain benefits to customers. It is not likely that simply sending descriptions around will work; memos as currently distributed become effective in the context of repeated use in multiple circumstances including processing and conversations that ground them in the practice.

It will be necessary to find ways to involve the claim processors in activities that give meaning to the information they will have to deal with. For instance, it may be necessary to allow people with different levels of expertise to follow the working of the system, to create ways that some claims can be processed in cooperation between a person and the system, and to allow modifications to the system to be proposed by a variety of users.

Such a system might have very sophisticated features such as explanation facilities, distributed updating facilities, user models, etc. But it might also include fairly standard features such as electronic mail, conferencing, and bulletin boards. The level of sophistication is not the main point. What will be critical is the ongoing process of work organization of which the design will be part. Will this process do justice to the invisible work that goes on in local communities? Will it support the participation in social practice necessary for developing understanding? Will it enable the development of identities of participation necessary for engagement in innovative work?

4.4 System design processes

a) Issue: designing for non-existent users

I have deduced the examples of facilities from my own exposure to the current system, my observations of current work practices, and my conversations with claim processors. Many more such improvements could be devised. But without the continuous participation of all constituencies involved, chances are that these improvements will turn out to be counter-productive, misunderstood, or underutilized.

b) Possible directions: participatory design

In order to facilitate such improvements, I would create an ongoing process of "participatory design" which would involve the claim

processors in working directly with system designers in order to produce facilities that build upon their understanding of their own work. Unlike designers, they know what the job is, but they do not know what can be designed. This does not mean, however—and this is an important point since the job is viewed as routine—that they are oriented towards routine; change is a constant characteristic of their work, not only because medical practice, insurance policies, personnel, and the organization of work are constantly changing, but also because they are constantly adjusting and refining their own personal techniques for handling their job and living in the office. The problem is only that they are not accustomed to thinking broadly in terms of different futures because it is not part of the current local culture. A process of participatory design would give global legitimacy to this constant local refinement.

Participation in such design process would be an important source of cohesion and empowerment for autonomous units. If it can become a point of focus for the kind of broad, ongoing public discourse on the nature of the business and on the invention of the future I have talked about, the design of computer systems could play an entirely new role in the organization. The maintenance of such a system would provide a basis for a common language and even a forum for communication by means of distributed improvement facilities, as it spurs the creation of new communities of practice.

In conclusion

I should perhaps make sure that my purpose in writing this report is clear. There are always dangers in presenting one's observations as a series of problems. One of them is giving the impression that problems are all one has seen, which is not my case at all: I have seen many more solutions.

Another danger is taking a one-sided view of problems, simplifying the issues to make one's points. I am somewhat guilty of that. There is no space in such a short report to enter into all the details and subtleties of variations in degrees, which are characteristic of real situations. While I am sensitive to many nuances in the specific circumstances I address, I am convinced that exposing these issues somewhat bluntly is useful in engendering an awareness capable of addressing them.

A third danger is singling out a specific instance of a more general problem. Alinsu is of course not an isolated case; it is part of a much broader context in which widespread identities of non-participation are causing much waste of human potential both in terms of economic productivity and in terms of human experience. But while having company may lessen the blame, it certainly does not lessen the effects of the problem.

A final danger is offending the people involved. My purpose here is to help, not to point the finger. The issues I bring up are structural, not personal. In fact, I want to thank all those who have made my fieldwork possible, who have borne with my intrusive presence, and who have actively helped me by sharing their time, their activities, and their thoughts.

I should add that my fieldwork is not really completed. I have been taking a break in the last few months in order to write my dissertation, which I need to finish soon for administrative reasons. There are still many aspects of the context of claim processing I would like to know more about, many conversations I would like to have, many relations I would like to explore. I am still interested in studying the implementation of ALINSYS II.

Eventually, I would like my involvement to become more active than mere observations. The ideas that I have exposed here and in my thesis can only be explored, refined, proved or disproved in practice, and it is only in practice that they can make a difference. I would be interested in participating in a pilot project based on this preliminary study. In this document, I have taken the liberty to talk about my observations at all levels, but I understand that any pilot project would need to be focused and prioritized.

I have tried to express my ideas in terms that make economic sense and I believe they do. There are other reasons, however, why I think they are important. These reasons have to do with the kind of world we are creating for ourselves and should not be overlooked even though they may at first seem less tangible. In final analysis, a knowledgeable, concerned citizenry benefits everyone in very tangible ways. One common viewpoint on a corporation is that it is a profit-making entity, which serves the interests of its shareholders and at the same time allows its employees to make a living. Another related common viewpoint is that a corporation is a producer of goods or a provider of services. These are the viewpoints I have assumed in this report, but they are only two among many views of a corporation. Another extremely important function is that it provides a context for people to be involved in productive activities, to develop a sense of themselves, of their world, of their ability and desire to understand and have an effect on this world. In this regard, corporations just as much as our schools produce a type of citizenry—and thus a type of parents—and contribute to producing the society of today and tomorrow.

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