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R. Hirschheim
Templeton College

H. Klein
State University of New York, Binghamton

M. Newman
University of Manchester

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R. Hirschheim
Oxford Institute of Information Management
Templeton College

H. Klein
School of Management
State University of New York, Binghamton

M. Newman
Department of Accounting and Finance
University of Manchester

ABSTRACT

The purpose of this paper is to outline a social action perspective of information systems development (ISD) and provide some evidence for its fruitfulness. Earlier theories have looked upon ISD as a technical engineering process or as a technical process with behavioral consequences. These theories have not proved adequate for understanding the systems development process. The social action perspective as advocated in this paper leads one to realize that ISD is a social process which relies on technology. The paper introduces the following basic building blocks of the social action perspective for ISD: *human interests*, objective and subjective *knowledge* and *meanings, power, conflict, resistance*, and *consensus* formation. It is shown how these social action concepts contribute to our understanding of the systems development process. Evidence for this is presented from case studies. It is concluded that any theory of ISD which does not explicitly deal with the key phenomena of social action is inadequate. In practice, ISD is politics first, engineering second.[1]

1. INTRODUCTION

An area which continues to receive considerable attention in both the popular and academic press is that of information systems development (ISD). Over the years, numerous books and papers have been written on the subject. This is hardly surprising given the vital role information systems are thought to play in the ability of today's organizations to survive. Attention has been focused on the approaches or methodologies for developing information systems and there is a vast number of these (cf. Olle, Sol and Verrijn-Stuart 1982, 1986; Olle, Sol and Tully 1983; Couger, Colter and Knapp 1981; Maddison et al. 1983). Despite the great number of approaches available, and new ones being developed regularly, information systems development continues to be a difficult matter. Writers such as Gladdens (1982), Mowshowitz (1976), and Sibley (1986) all note an unacceptably high number of IS failures.

Many have suggested that part of the problem has been the inadequate recognition that IS development is largely a social process (cf. Lyytinen and Hirschheim 1987). In fact, there is now considerable evidence to suggest that ISD needs to be conceived much more in social terms and much less in terms of technical matters (cf. Newman and Rosenberg 1985; Klein and Hirschheim 1987; Lyytinen and Hirschheim 1987; Hirschheim and Klein 1986).

Interpreting ISD as some form of social action is starting to become popular. For example, Markus (1984) discusses ISD in terms of a form of "interactionism"; Ciborra (1985) applies "transaction cost theory" to it; Boland and Day (1982) relate it to "symbolic interactionism"; Checkland (1981) talks about it in "phenomenological" terms; Giddens (1984) would see it in terms of his "structuration theory"; and Lyytinen (1986) studies it in terms of Habermas' (1984) "Theory of Communicative Rationality."

These, to us, are all variants of a more comprehensive (and fundamental) approach -- one based on a *social action perspective.*

2. THE SOCIAL ACTION PERSPECTIVE

A perspective refers to the basic presuppositions and concepts that influence what an individual considers valid knowledge, which in turn affects his or her perceptions, attitudes and strategies (Hirschheim 1986). We rely on a perspective in conceiving the fundamental nature of ISD. There are many perspectives as noted above. For example, a technical perspective leads us to see IS as machine-like artifacts which can be engineered. This in turn leads us to seek technical rules and "laws" which can be empirically tested. From this technical perspective, ISD is a process of applying technical knowledge in the form of rules and boundary conditions to achieve predefined objectives. The elementary unit of analysis is a specific technical change (an intervention into the objective world) which can be tested ("validated"). An example is the design of databases where design choices frequently focus around physical data models (e.g., indexed versus random organization) and logical data models (e.g., hierarchical, network, and relational). The use of databases is often justified on the grounds of efficiency (e.g., entering data only once) and on grounds of effectiveness (e.g., information resource management). Another example is the adequacy of a data dictionary entry. An entry is only valid if it is consistent with other entries, e.g., the same name must not refer to two different objects; if a subprocess is entered there must be a parent process, and so forth.

In contrast to this, the social action perspective sees systems development as a series of episodes, where each episode is an interaction (encounter) between the analyst and the user,[2] and can be viewed as an opportunity for improving the likelihood of systems success. The social action perspective suggests that the primary unit of analysis is the performance of a social act.

An act is interpreted as a purposeful performance which is either aimed at another person or some plurality of persons, or directed at a non-human object as noted above in the technical perspective (cf. Weber 1947). From a social action perspective the orientation towards people is paramount in that ISD consists of interlocked sequences of purposive

performances by different actors to achieve meaningful responses from each other. The meaningfulness of each response has to be judged in the context of the total social situation[3] in which the acts are performed. Intended responses can range from obtaining complete agreement (*consensus*), to disagreement (*resistance* and *conflict*), to evoking reasons for dissent (based on *knowledge, subjective meanings* and *human interests*), to forcing compliance (as by the use of *power*). We view these seven elements as the key to understanding the series of episodes which make up the systems development process.

From such a perspective, in the second example above, the entry in a data dictionary has rather different meanings depending on whether it simply formalizes prior agreement, proposes a change open to debate, or is a unilateral act by which one group forces its view of reality upon another.

For commercial underwriters at Omega (described below), the systems group imposed a centralized database upon them. Intentionally or otherwise, this broke the existing patterns of access to underwriting data whereby the commercial underwriters strictly controlled the flow of information to the head office and had ample opportunities to interpret data to explain any irregularities:

SC1:   Every business has its own sneaky ways it gets round things. The home office used to monitor our loss ratios....So you had your own ways of embellishing one way or the other.

Interviewer: Or making yourself look a bit better.

SC1:   Exactly. Or not even that. Making yourself look a bit worse. If you knew they didn't want high growth, you could slow your growth down....But you could always explain something in a report. Now what was happening was that they were pulling this stuff up on the computer with no explanation.

From a social action perspective, ISD consists of coordinated sequences of human actions. Several groups interact during system development: analysts, primary users, management, technical specialists, etc. Their interactions are not random, but are governed by human intentions. For example, the analyst goes to the users in order to elicit requirements. The users may perceive this as an illicit

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intrusion and respond evasively in order to protect their "territory" (Sheil 1983). Both start talking to each other with the idea of negotiating a common ground. If this fails, the analyst may complain to management in order to get the users to comply; the users may counter in various ways (cf. Keen 1981) and so forth. Each of these dyadic inter-actions defines an episode of social action. An episode consists of a proposed claim and a response which honors or challenges it. The unfolding sequence of social actions in which claims and counter-claims are proposed, honored or challenged determines the outcomes of any system development project. A project fails or succeeds by the accumu-lated quality of these episodes.

Unfortunately, most current systems development methodologies pay only passing attention to the intricacies of social action. In contrast, the social action view suggests that understanding the conditions and the quality of social interaction, not the quality of technology, is the key to system success. System development methodologies need to focus on social interaction. They need to build on a more realistic and complete understanding of the typical behaviors of the various stakeholder groups in ISD. They should give guidelines on how to organize the interactions to make them socially effective, e.g., non-manipulative, free dissemination of information, participation in and open access to discussions, and the like. In this way, the systems development process becomes more transparent to the stakeholder groups.

To summarize, ISD is seen as an example of social action. The key elements as noted above are subjective meanings and knowledge; conflict, consensus and human interests; and power and resistance. In the next section, we illustrate these elements by means of empirical examples.[4] We feel the examples provided below are sufficient to illustrate these elements. However, the issue of knowledge needs further elaboration. Different types of knowledge and meanings need to be distinguished in analyzing social actions (see Figure 1).

If shared or private knowledge can be explicitly and exhaustively described then it is called articulable. If not, it is called non-articulable. The larger the non-articulable part of knowledge, the more difficult is it to change or understand it because it cannot easily be made the subject of discussion. Hence we expect groups that share important non-articulable knowledge to show more resistance to change,

because the meanings which they deem significant cannot easily be described in objective requirements. Systems are less likely to meet their needs and this group would exhibit more resistance than groups whose knowledge is more easily described.

3. INFORMATION SYSTEMS DEVELOPMENT AS SOCIAL ACTION

The strength of the seven elements of the social action perspective is in their ability to address a range of issues simultaneously which, in the existing literature on systems development, have been dealt with separately. Issues such as power and consen-sus formation were recognized as being important to systems development, but the existing methodologies, or discussions about methodologies, largely concen-trated on only one or two elements rather than on all seven. Moreover, little consideration has been given to the interrelationships between the seven elements. For example, there has been considerable discussion on the importance of power and conflict in the systems development process, (cf. Markus 1983; Pettigrew 1973; Keen 1981; Bjørn-Andersen and Pedersen 1980), but not on its relationship to the other elements of social action. Similarly, methodo-logies such as PORGI (Oppelland and Kolf 1980), ETHICS (Mumford 1983), and Soft Systems Methodo-logy (Checkland 1981) focus only tangentially on consensus formation but not on its relationship to, for example, knowledge or interests.[5] Each element focuses on only one aspect of reality, failing to show the overall picture. It is not sufficient that analysis focuses on one specific aspect such as the roles of power, knowledge, consensus formation, etc., in ISD, because the reality of systems develop-ment is the inseparable interaction of the consti-tuent elements. Focusing on one element provides a distorted picture of reality. If the social action perspective can provide a more balanced view, it would be a major advance over other approaches in that it provides a more realistic foundation for systems development practice.

3.1 The Social Action Perspective in Practice

In order to show that the social action perspective leads to a richer view of the practice of ISD, we provide verbatim fragments from interviews con-cerning systems development which were conducted at six organizations. The subsequent interpretation concentrates on showing how our understanding of the development process is advanced through the application of the social action perspective. While

	PERSONAL KNOWLEDGE (private)	COLLECTIVE KNOWLEDGE (shared)
ARTICULABLE	secret knowledge (SK)	public knowledge (PK) (culturally explicit)
	(example: an individual's career objectives)	(example: financial statement of a public corporation)
NON-ARTICULABLE	tacit private knowledge (TK)	tacit group knowledge (GK) (culturally implicit)
	(example: chess grand master and auto mechanic)	(example: language)

Figure 1. Types of Knowledge in Information Systems Development.

Organization	Alpha	Beta	Gamma	Delta
(No. of subjects interviewed)	(7)	(4)	(4)	(4)
Category	Private, licensed by gorvernment	Public utility	Private wholesale	Private primary resource

Organization	Epsilon	Omega
(No. of subjects interviewed)	(13)	(8)
Category	State university	Private insurance

Figure 2. Types of Organizations

the examples are limited in scope, they are given to illustrate the social action perspective. Case studies were seen as the most appropriate vehicle for accessing the usefulness of the social action perspective. To this end, data was collected from six large organizations (number of employees in excess of 2000). The type of organization and number of subjects interviewed are shown in Figure 2.

Interviews were conducted using a semi-structured technique which allowed some focus on specific questions but allowed subjects to expand on interesting areas. Subjects were encouraged to relate specific episodes that they were experiencing or could recall from recent history. This allowed subjects to anchor their comments on specific examples.

Subjects were tape-recorded in all cases except one, when permission to record was withheld. Transcripts were made of the majority of the interviews. Those who participated were assured of anonymity and could elect to receive a summary of the results.

Because we had no prior expectations concerning ISD phenomena in different organizations, we sought as broad a sample as possible from a variety of industries (see Figure 2) including private, semi-private and not-for-profit entities. We sought contacts in each entity on both the systems side and the management-user side. Where it was possible, we requested management personnel in each organization who were considered sympathetic to ISD and those who were not.

Cross-checking was achieved by interviewing a variety of subjects concerning the same episodes. In this way, an informal social triangulation was aimed for. Where comments from subjects indicated major differences in perceptions, it was possible to probe subjects concerning these differences. Historical, contextual data in the form of memos, minutes of meetings, reports, etc., were also sought and obtained wherever possible, thus allowing for further cross-checking.

Although interviewing and obtaining verbatim transcripts is a lengthy and costly process, it was felt to be an appropriate method in what is a little-researched area. Presenting verbatim reports of subjects' comments is obviously selective, but it does allow the reader to examine the subjects' perceptions of the phenomena directly. While a sample of six organizations is clearly inadequate for drawing broad conclusions, the phenomena in different organizations had sufficient commonalities to be considered interesting as a platform to demonstrate the utility of the social action perspective in describing ISD.

The interviews were conducted on site in the individual's office, or, if this was too noisy, in another office or seminar room. Sessions would last anywhere from 45 to 90 minutes and an atmosphere to support candid remarks was encouraged. For many subjects, particularly the systems personnel, the interviews seemed to be a particularly enjoyable, almost cathartic experience.

3.2 Examples from the Perspective of Analysts

The analyst at Alpha was working on a large materials management system. The system was going to affect the supply, purchasing, and finance functions, and involved major changes in those areas. Here the analyst gives his perspective on users:

MJ: They were so difficult to deal with. Their manager really does not understand anything about this sort of thing. He can't see any advantages in it, but his manager can. There is a marvellous conflict trying to get through....

... a prime requirement of this type of project is to have a very high level, naturally respected user....You have got to have a lot of weight to fling around, unfortunately, in a lot of these cases, to try things out. You can't just force them on the users. Obviously it has got to be done with agreement but at the same time where you run into these problems you have got to be able to rely on somebody to clear the path.

Interpretation:

Because of the difference in the *knowledge* between analyst and user, the latter attaches a different kind of *meaning* to the proposed project: the analyst sees its value, the user does not. The first manager did not value the change because he preferred the status quo. The analyst, on the other hand, saw the change as beneficial to the organization (and fulfilling his career aspirations). Whereas the direct user takes a more micro view of his

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work, his superior adopts a more macro perspective. The difference in knowledge leads to perceived *conflict*. In response to this, the analyst tries to marshall *legitimate power* by appealing to higher authority (the superior) "to clear the path." The basis is self-motivated *interest*. The interview record does not make clear if the interest is that of the *individual* or that of the organization or the subunit for which he is directly responsible (*collective interest*). In any case, the success of the analyst's plot (strategy) is predicated on another *knowledge* difference, this time between the superior and the direct user. (We do not wish to imply that groups who use knowledge which can be codified to a large extent do not also rely heavily on tacit knowledge for their task performance. Cf. Suchman and Wynn 1984.) If the superior had failed to see the advantages, the analyst would have been hard pressed to obtain the needed higher level support as a *power* resource.

However, the analyst clearly sees that *consensus formation* ("agreement") is preferable; only if it fails does he wish to rely on "somebody to clear the path." This in principle only transfers the consensus formation issue from the analyst-user interaction to the user-superior interaction. Hence we can see how social action sequences become interlinked between different participants.

The following quote from Alpha also makes clear how individual knowledge differences can overcome resistance resulting from stereotypical group meanings (*collective knowledge*). In this system, management sees an advantage from computerization because "they get more information."

MJ: On the other hand you always get resistance...to any system that goes in. The union says we are going to lay people off. It's not true. You are making their time much more effective....

Interviewer: So there are key areas where you have experienced resistance?

MJ: That is one, and the other one is the old timers on the shop floor. I mean, on the shop floor, people who are physically adequate for the job. Those people you get resistance from. One or two exceptions: you get some bright eyed old fellow who comes waltzing along and says, "Yes, that's terrific, I wish we'd have had that in my day." It's not very

often, that's the exception. Those are the two areas we get resistance. The unions are really tricky, they always are, that's nothing new. In the management, it definitely goes with age and what their experiences are and if they have been with other companies.... Every system we get, I think the manager has had to move. They just block progress completely.

Interpretation:

The above quote identifies three communities: unions, old timers on the shop floor, and management. Stereotypical reactions are attributed to these by the analyst, but he has a sharp eye for exceptions. He uses these -- i.e., the bright eyed old fellow -- to change the group reactions to the system. Presumably "bright eyed" is here a synonym for *knowledgeable* or open-minded, knowledge-related individual attribute. Furthermore *experiences* are recognized as making a difference which can be used to guide a system to its success. Those that are completely inflexible are moved out of the way by higher *power*. In other cases very subtle strategies are pursued to overcome resistance by tactics of *consensus formation*. It relies on providing opportunities for unobtrusive system tests and subsequent discussion and demos:

MJ: In areas where we really get resistance you leave the existing (system) when you are doing parallel running, you put a terminal in and just leave it and I guarantee to you a million dollars to a brass farthing that within three or four days someone will look around the store, make sure nobody is looking and sneak up, press a few buttons and the next thing that will happen he will get someone else to come up to you and ask how the thing works. You go down and then show this fellow and then this fellow will come back on the quiet. They love it once they realize you are not trying to upset them. You are not going to upset their life style, in fact you are going to make it a damn sight better.

Interpretation:

This quote clearly shows how system development can provide opportunities for self-motivated learning, hence *knowledge* is not fixed: the successful analyst knows how to initiate change in

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personal knowledge such that it leads to a *consensus* where before there was none ("they love it once they realize").

Even when the analyst can get near enough to users to allow them to participate in the design, the temptation to manipulate is sometimes irresistible. Here an analyst at Gamma is describing his view of *consensus formation*. First, he acknowledges the users' importance:

OH: The best designed system in the world will bomb completely if they don't want it and even with these "little people," and that is not meant derogatively....

Oh yes, I had one person, one female, who had been with the company ten years at that time, and she was the top person. Boy, did she resist! Took a long time to win her over.

Interviewer: What kind of things did you do to win her over?

OH: I kept asking her advice. I'd say, "So-and-so, I can't quite figure this out. Now, you have more experience than anyone else, what would you do? We want to be able to put into the computer such-and-such piece of information and we are going to use it to produce other reports, and so on, but what is the best way of getting it to the computer?" And let her work out the problem. I had already figured it out but I wanted her to do it, and just being friendly, never ignoring her presence. When I walked in, always spoke to her first and tell her why I was there. There was no reason for me to tell her but I would say, "I'm going over and talk to June about (something) and I won't be very long," and so on, as if she really was somebody. She was, in her own mind, because she had been there longer than anyone else. But as far as her manager was concerned, she was just one of the girls. Mind you, she was given more responsibility but there was no title to it. The pay was because she had been there longer. But you have to work on these people, butter them up, let them help you. I have even taken some of her stuff, drawn it up and used it on tests and come back and said, "There seems to be a bit of a problem here. If we do it this way, this happens. Now

what would you think if we changed this, ya, that might work...." You are actually sometimes designing it yourself but let them think they did it. But you will pick these out in every department. There will be at least one and you have got to just aim at that person, acknowledge their presence at all times, ask their advice, use their advice even if you don't know it's going to work and bring the results back and say, "Well, gee whiz, that didn't work. I wonder what else we can do?"

Interpretation:

The extract reveals how a commonly-advocated ISD technique for *consensus* formation can easily dissolve into manipulation. Although the analyst views the users at this level as stereotypical and homogeneous ("little people...just one of the girls"), he skillfully identifies one user as key to the success of the project. He then uses his knowledge advantage to push through the design while giving the key user the impression that she is contributing to the project ("you are actually designing it...but let them think they did it.") A similar, "Trojan horse," approach was identified at Alpha. He clearly saw her task as structured and apparent (*public knowledge, PK*) while giving the impression that he believed her work was craft-like (*tacit group knowledge, GK*). Note that when she resisted, it was apparent she was unwilling to share her *secret knowledge* (SK). Based on the recent evidence of Suchman and Wynn (1984), Preston (1986), and Gerson and Star (1986), it seems quite clear that clerical work is not necessarily the structured, rational series of tasks which are consistent with *public knowledge* (PK) as believed by the systems analyst. Rather, it has strong similarities with craft-like work which embodies *tacit private knowledge* (TK) and *tacit group knowledge* (GK).

In summary, the analyst assumes that what the worker does is PK. However, to flatter the user and to encourage her to cooperate, he describes her work as being within the context of GK. If the user resists, and the information requirements are difficult to obtain, the analyst adopts the stance that her knowledge is SK. In fact, research portrays the work as largely being within the domain of TK. The design consequences of such a stance are well known in the IS failures literature (cf. Lyytinen and Hirschheim 1987).

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3.3 Examples from the Perspective of the Users

From the user perspective, analysts at times rely on *power* to force the use of a system which lacks functional capabilities that the users enjoyed under the old system. The following shows the social sequence which results from the ensuing struggle at Omega. There the system was already working successfully for personal lines insurance underwriting. This was viewed as a structured, rule-based task (i.e., *public knowledge*). When it came time for the commercial underwriters to begin using their system, the result was far less successful, with many of the commercial underwriters either not using it or using it minimally for documentation. The work of the commercial lines underwriter appears to be far more judgemental and craft-like than in personal lines work (i.e., *tacit group knowledge*):

SC2: A lot of things were getting jammed and that's where some of the unresolved frictions emerged. And now you are not only being controlled by the home office...you've got administration controlling you, because they are shipping out the policies for you without you requesting them.

Interviewer: So you certainly had good reasons why you did not use the system, because it really did not match your needs.

SC2: We used to try every chance we could not to put it on the computer. We would say "Sorry, this can't go on the computer...." And you became good at circumventing them. Because it gets to be a political ball game. You really can't undermine what the computer department is trying to do, yet you know that you are in for short term, long term strategies -- you've got to survive....

And you can't really be subversive to their efforts, because it comes back to haunt you anyway, but you have to do what you have to do to get your work out. You can't complain. It's one of these things you do quietly. Everybody found different ways. Maybe they won't find it. Maybe they won't ever see it.

Furthermore, the following shows that management may become a silent colluding party in circumventing the power of the computer department:

Interviewer: Was (manager BD) a kind of silent, or even reluctant party to all that was going on?

SC2: You know it was one of those situations where you really could not bring it up in your department meeting that you were having these problems....I really think (manager BD) must have known that we were not using it to its capabilities. I mean he had to have known. Politically he could not come out in the meeting and say "Yeah, I support you." I think he more or less let it go, and then if a problem arose he would deal with it. Again all crisis management.

Interviewer: Muddling through?

SC2: A lot of coping, crisis management, to get the job done, because our basic philosophy at the branch office was that the customers and the agents were first and foremost.

Interpretation:

In this situation there are obviously problems with the system that could be technically resolved but are not. The users cope with the situation by relying on *knowledge* of their work which is only accessible to them (*secret knowledge*; "everybody found different ways..., maybe they won't ever see it..."). The manager protects the secrecy.

The fundamental social action issue that emerges from this is distorted communication due to *power*. The users feel that they would lose an open power struggle ("it comes back to haunt you"), hence the intimacy of the knowledge of their work strategy becomes the resource by which they protect the *collective interest* of their craft ("the basic philosophy...was that the customers and agent were first and foremost"). By holding back on what they knew, a complex covert sequence of social actions between users, colluding branch managers, home office, administration and computer department (which can't be "undermined") ensues. The communications become so biased and distorted that the users never even consider addressing the issues openly by *consensus formation*. This clearly shows a methodology failure due to lack of consideration of the social action issues of ISD.

In other cases, the users do not accept the system as given and are prepared to enlist higher authority

to resolve the problem. In the University setting (Epsilon), the undergraduate admissions personnel were being asked to accept a set of eight to ten generalized data entry screens designed for several groups:

WF: So we have screens that are just loaded with data, but only three or four of them are yours, and three of them may be mine, and six of them may be someone else's....We wanted one screen where we could enter the data on one screen, that will link itself into the system and go to all the various places in the system where the data is required.

The system was also unresponsive:

WF: We would sit for over sixty seconds and wait for the screen to change, and we were hysterical. We were hysterical because... multiply this by eight screens by two thousand applications and we would be dead in the water.

Interpretation:

The systems people viewed the task of data entry as simple (i.e., *public knowledge*) but they could not appreciate the volume of applications (15,000 per annum). Their reaction was a rather weak attempt at *consensus formation*:

WF: Oh, it's going to go like this. It's going to go really quickly once you get used to it but you are just nervous about it.

The users finally achieved satisfaction by referring the problem to their director:

WF: I think basically it came down to an ultimatum between our director and our systems people: that they create for us one screen, where we can enter data on one screen that will link itself into the system and go to all the various different places in the system where the data is required. Originally, it was, "No, no, we can't do that." Then all of a sudden that was possible and they've done a wonderful job.

Interpretation:

In the above incident, we see the designers attempted to snowball the users into accepting the original generalized design mainly for the convenience of the designers. Normally, most users would not be in a position to judge the assertion made by the designers that "it's going to go like this." The designers here were trying to meet tight project deadlines and attempted to use their experience and *tacit group knowledge* to keep the project progressing (*self interest*). All would have been acceptable except for the critical nature of data entry in this case. The users knew that the new system would never handle the volume of work within the time frame because of their daily contact with admissions' data (*tacit private knowledge*). However, on their own, the users were not *powerful* enough to achieve their goal of a single screen (and the designers could not change it even if they wanted to), so the problem was pushed up to the management level and resolved there by an ultimatum (*power*). The log jam was then freed for both sides to proceed to an acceptable solution.

4. CONCLUSIONS

This paper has presented interview records from several large companies extending over a period of eight years. The interpretation of this evidence has made it clear that system success is not primarily a technical issue. Successful systems development depends on the orientations and actions of the various groups that interact in organizational life. The same technology or approach can meet with failure in one organization and success in the other depending on what social conditions exist and how they are managed throughout the process. It is clear from studying the opinions as expressed in the interviews that the technical quality of systems is only one of several aspects that affect system success and is by no means the most important one. This, of course, has also been found by others (Lucas 1975; Markus 1983).

In light of this it is rather surprising and unfortunate that most methodologies concentrate on the technical aspects. They make one believe that analysts should be primarily responsible for getting systems technically right and should avoid "politics." In contrast, the evidence presented in this paper suggests that politics and technical design are inseparable. One might say that system development in practice *is* politics.

To the extent that current methodologies of ISD neglect the politics of system development, they fail to address the issue of IS failure. Engineering the

technical side of systems is simply not addressing the issue of system failures unless the technical side is seen in the context of social action inter-dependencies. From this emerges the conclusion that methodologies must be built upon a clear understanding of system development as social action. A complete specification, or a better user interface, becomes relevant for systems success if it affects a social action sequence by changing the attitudes, perceptions or feelings of some party concerned. Current methodologies do not tell their user how to effectively embed their efforts in ongoing chains of social action. This defect should be corrected by a change in research priorities with consequent new strategies for developing better ISD methodologies.

A simple example illustrates this. One key issue pinpointed in the discussion of social action concepts was distorted communication as a power strategy to deal with resistance. One would therefore expect that each methodology would help users, developers and managers to diagnose the presence of distorted communication and to analyze how it may affect system success. In addition, one would expect some advice on how to deal with distorted communication at various stages of the life cycle. To the best of our knowledge, nothing of that sort can be found in the literature. Newman and Rosenberg (1985) found instead that analysts tend to form a power coalition with management. This might help to overcome resistance, but is unlikely to remove it. Widespread alienation can be predicted from this which will eventually produce significant system failures. Similar observations are reported in Kling and Iacono (1984), Pettigrew (1973), Bjørn-Andersen and Eason (1980).

For further research we propose to evaluate different theories of social action with regard to their potential fruitfulness in providing the concep-tual skeleton for methodologies. A core issue is to find a good classification of social actions so that it becomes possible to study them in a real world setting. Based on a better understanding of what happens in real world projects, we might then propose improved methodologies. Again with some exceptions, there is currently very little evidence of this kind of approach.

There is also a clear need for more empirical work at the micro, episodic level of ISD. A design project's success is predicated upon technically

excellent designs -- but that is not enough. Designers must, in a real sense, consider each encounter with users as an opportunity for improv-ing the overall design success. Belittling the importance of social interaction and failing to meet the genuine aspirations of the user community will almost certainly be met with resistance and, in some cases, outright rejection. The social action perspective gives us a solid foundation for under-standing the purpose and intention of these social interactions, and should give the designer a greater awareness of their importance in information systems development. Ignoring them will mean that design teams will continue to answer questions the users are not asking.

ENDNOTES

[1] This research was partly funded by the Economic and Social Research Council, United Kingdom. The authors acknowledge the comments and suggestions of the anonymous reviewers.

[2] Interactions also occur between participants within user groups, not just between users and analysts. This type of interaction may dramatically affect the context of ISD.

[3] The total social situation is defined by all that has been the subject of communication in the actions prior to the episode in question: references to the objective world, to shared values, norms and policies, statements which reveal something about the participants' inner world, i.e., how they feel and think. In addition, it comprises everything that is unconsciously taken for granted by the participants, i.e., that enters the horizon of background assump-tions of any human exchange. Schutz and Luckmann (1979) discuss this under the concept of "lifeworld."

[4] These elements are discussed in detail in Hirsch-heim, Klein and Newman (1987).

[5] It should be noted that some IS methodologies have perhaps attempted to base themselves on more than one element of social action, but have done so largely without any grounding in social theory. That is, there is no underlying "theory" behind their choice of what they take account of and what they do not.

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