PROFESSIONAL MISINTERPRETATION: WHAT IS PARTICIPATIVE DESIGN?

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ABSTRACT
In North America two professional cultures, organizational development and computing, each encompass participative design subcultures. Theory and practice for both subcultures are rooted in socio-technical design theory (STS). However, participative design may connote something quite different to each culture, and the distinctions may contribute to an understanding of why the two professions often adopt different methodologies for STS projects. This paper documents the different connotations and adopts an interpretive research methodology to analyze two case studies illustrating the distinctions. The cases are exemplar models selected to accentuate differences. The intention is not to "prove" the extent or strength of the differences, but rather to illustrate how differences may affect socially construed reality and organizational practices.

Keywords
Socio-technical design, participative design, organizational development, interpretive research

INTRODUCTION
Initially, I suspected a difference in meaning about participative design while collaborating on a case study with an OD consultant, Tom DeVane. The following comments are a synopsis of our post-case dialogue. Note the discord between my thoughts (reflecting a participatory Design computing professional PD(CP) understanding) and DeVane's answers (representing a participatory design organizational development professional PD (ODP) perspective). The text illustrates how two professionals can "think past each other" when there exists little convergence in comprehension.

Question (Slater): *What is participatory design?*

My thoughts: *I know that participatory design began as an approach to designing information systems in which the lower levels of the organization (e.g. clerical workers) are represented and have a voice in the development of systems which will affect their work. Now the approach applies to all levels of employees.*

Answer (DeVane): *Participatory design (PD) is a forum for rapid redesign of work processes where the people who are involved in the work process are also the designers of the new process. Often, self-managed work teams are an outcome.*

Question (Slater): *Is PD associated with socio-technical design?*

My thoughts: *I know that PD is a derivative of socio-technical design and that PD originated in Scandinavia where systems designers worked with trade unions to champion the participation and decision-making rights for the lowest level workers.*

Answer: (DeVane): *PD is not socio-technical design. Socio-technical systems methodology advocates that representatives of workers be involved in design activities. In PD we try to involve everyone in the redesign of their own work.*

Question (Slater): *Who founded PD?*

My thoughts: *The PD I know evolved from STS which is based on the work of the Tavistock Institute in London. Founding fathers were Eric Trist and Fred Emery.*

Answer (DeVane): *PD is based on the work of Fred (now deceased) and Merrlyn Emery in Australia. The Emery's developed the Search Conference as a large-scale, critical mass event to get everyone involved in determining a common vision and making action plans to achieve that vision. The PD workshops are a second step for smaller-scale workgroups to redesign their work based on the common vision established through the Search Conference.*

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Question (Slater): *What is the main objective of PD?*

My thoughts: *The primary objective of PD is to promote workplace democracy in the design of information systems. Of course, this may not apply when more senior management uses PD.*

Answer (DeVane): *The main objective of PD is to accomplish work place democracy by replacing a hierarchical bureaucratic organizational structure (called Design Principle 1) with a flattened, team-driven structure where those responsible for the work have commensurate decision-making authority (called Design Principle 2).*

Question (Slater): *What is the role of information technology in PD?*

My thoughts: *In PD efforts participants try to jointly optimize the social and technical environments. As applied to computer information systems, the technology is information or communications technology.*

Answer (DeVane): *Technology may support the redesigned process, but the process is outlined first. Technology refers to the layout of the work process as much as to the equipment used to support the work.*

We concurred on the idea that participative design had a democratic intent and that the people involved in the work should be involved in the design of new work systems. An important point is that this conversation took place **after** the two of us (along with the head of the Information Systems Department) had collaborated on a case study documenting a series of process redesign workshops within a broad organizational context. How could we have collaborated without similar initial explications of our PD concepts? Because neither of us was aware that PD meant something somewhat different to the other. In addition, the process redesign workshops in the study were termed "organizational prototypes," not "participative design." Much later I realized that PD (ODP) influenced organizational prototyping. The interest in this paper is to understand how CP and ODP differ in their views about PD and how the differences often make a difference in practice and in theory.

The remainder of the paper is organized as follows. A brief digest of the case study provides the context for the retrospective equivocality evident in the above interview.[1] Next, to equip the reader with a common background, the literature section delineates themes from PD (CP) and PD (ODP). At that point the reasoning for interpretive research analysis and explanation of the specific methodology precede a hermeneutic evaluation of contrasting texts. One text is a segment from the original case study dealing with human issues, and the other is a short case study illustrating contrasting PD (CP) views. The conclusion examines the implications of the hermeneutic analysis for theory and practice.

THE ORIGINAL CASE

"Organizational Prototyping: Embarking on Organizational Transformation" is a single-site case study and the result of collaboration between the head of Information Systems at the site, an organizational development consultant (DeVane), and myself. We chronicled a series of process redesign workshops termed organizational prototypes (OP). An OP is a targeted, small-scale, participative process intervention simultaneously addressing process workflows, organizational behavior and culture. An OP differs from traditional prototyping which simulates a desired *outcome* (e.g. an information system or a work process) to be tested and modified (Earl 1978, 1994; Clement & Van den Besselaar 1993). The difference lies in prototyping *process* skills (group-process and problem-solving) in addition to outcome alternatives. Participants practiced the process skills in conjunction with determining as-is processes and drafting new operations. Ideally, concepts learned in the OP would transfer both to on-the-job team work and to new OP scenarios.

What originally interested me in the case was that information systems personnel served as OP facilitators. Performing a new role, information systems personnel practiced, taught, and transferred process redesign skills to other team members as the team redesigned their own work processes. Interestingly, few of the OPs directly involved IT changes. However, the leadership effort demonstrated by the facilitation was a large factor in a separate, successful information systems push to secure funding for new business systems and a new client-server architecture. Following the literature review, this paper extracts text from this case study for the purpose of understanding the cultural interests in PD (ODP).

LITERATURE REVIEW

To my knowledge, no previous literature compares the two variants of PD subcultures nor even acknowledges that two exist. Writings in PD (ODP) refer to the prophets of STS, Eric Trist and Fred Emery, and to the original work done through the Tavistock Institute. However, more recent OD literature on participative design references Fred and Merrelyn Emerys' contemporary work in Australia (e.g. Emery & Emery 1993; Emery & Emery 1994; Emery & Purser 1996). The objective of this work is to elucidate Design Principle 2, or theory and practice behind self-managing teams.

A thorough discussion comparing the dual literatures is outside the scope of this paper. However, a bulleted summary of findings and documentation of the historical

[1] The complete case study is available through the Web at . The original case study was submitted to the 1994 SIM International paper contest where it won second place.

infrequency of STS cooperation between CP and ODP (the final subsection) are necessary to give the reader a common background for the interpretive analysis. Comparison of PD (ODP) and PD (CP) highlights definition and scope, attitudes toward bureaucracy and participation, methodology, time frame, obstacles, and STS heritage.

Definition and scope

- PD (ODP) is "...a method for involving people in restructuring their own workplace to be self managing (Emery & Emery 1994)." Emery (1995, p. 6) elucidates the motivation for PD: "The original objective of our work in socio-technical systems (STS) was to achieve a shift in organizations from a bureaucratic structure to a democratic structure. The original process for redesign of organizations that my colleagues and I developed...was not entirely adequate to accomplish this shift. My focus since then has been to simplify the process of redesigning organizations so anyone can understand it, use it, and re-use it."

- PD (CP) has "... its roots in the Scandinavian tradition of systems design, that has historically focused on the active involvement of a largely unionised [*sic*] workforce in the development of the computer systems they will use in their work...This tradition, in turn, is linked to preceding socio-technical commitments to increasing workplace democracy and participative practices of job design, whether or not computer technology was involved (Robertson 1996, p. 35)." Lately the focus has shifted from trade unions to organizational settings centering on users, systems analysts, and managers (Clement & Van den Besselaar 1993).

Bureaucracy

- Bureaucracy is anathema to PD (ODP). Bureaucracy is any situation incorporating Design Principle 1 where "...decisions about coordination and control of work [are] made at least one level above the people who do the work (Emery 1995, p. 6)." The primary purpose of PD (ODP) is to map an environment based on Design Principle 2 where the people involved in the work process are responsible for both the coordination and relevant decisions pursuant to their work and work outcomes (Emery & Purser 1996).

- Bureaucracy is also anathema to PD (CP). Bureaucracy is apparent in "barriers between [the] technical specialist and people using computer applications [which] need to be broken down in order to build effective communication during the design process (Greenbaum 1993, p. 27)." In Greenbaum's opinion, systems designers are too often controlled by management objectives and user participation may be rhetoric or a control mechanism.

Participation

- Both PD (ODP) and PD (CP) emphasize participation and discern many differences in the meaning of participation. The concept of "degree of autonomy" (Waldman 1994) is useful in describing ideal participation. Degree of autonomy denotes one's ability to influence process and outcome and acts as both a motivator and a measure of discretion.

- Even though both emphasize participation, PD (ODP) requires a broader participative base. PD (CP) accepts user representation (Clement & Van den Besselaar 1993). In contrast, PD (ODP) posits that to get the job done in a workshop, you must have all the people in the room who carry the puzzle pieces in their head -- both the workers and management. Otherwise, the planning and/or implementation will be inadequate (Aughton 1996; Filipczak 1995; Gates & McKinnon 1994). If it is impossible for universal participation, then those participating must have both the knowledge and authority to make decisions without consulting others, or results from successive workshops may be integrated later (Emery & Purser 1996).

Methodology

- Both PD strategies are non-programmatic in that they pragmatically adapt methods and tools to the problem at hand and hold that "...considerable improvisation informed by a holistic understanding of local conditions will always be necessary (Clement & Van den Besselaar 1993, p. 35)."

Time frame

- PD (ODP) has a significantly shorter duration than PD (CP). PD (ODP) has been referred to as "turbo-charged" STS (Pasmore, 1995). The workshops usually last 2-3 days. Workshops are pre-planned but execution is short in order to maintain attendance of participants, not disrupt the focus, and protect the momentum. In contrast, the PD (CP) project may last months.

Obstacles

- Developers of PD (ODP) hope to remedy problems experienced by both traditional STS interventions (Emery 1995) and by PD (CP). Historically, common barriers to STS or to PD (CP) include:

  * a danger that pilot systems will become isolated examples (Argyris 1996; Pasmore 1995; Cabana 1995);

  * inertia, apathy, and passiveness on the part of participants and/or on the part of those who do not participate (Gates & McKinnon 1994; Fairhurst, et al. 1995; Pasmore & Fagans 1992);

  * a stronghold of bureaucratic practices and the preference for order and control over democratic

participation (McCaffrey, et al. 1995).

* political conflicts which stymie action.[2]

Infrequent Cooperation

Given the shared emphasis on participation, attitudes about entrenched bureaucracy, and common historical principles, why do so few examples exist of STS project collaboration between IS and OD? Prior experience with STS interventions does not bode well for cross-disciplinary cooperation. Although there have been appeals for joint STS efforts from both the computing literature (Bostrom & Heinen 1977(a); 1977(b); Mumford 1981) and the OD literature (Klein 1993; Pasmore 1995), little recorded evidence of cooperation exists (Pasmore 1995; Beekun 1989). Further, in a quantitative meta-analysis of past STS interventions, Beekun (1989, p. 890) found "an STS intervention with no change in technology reaped 160% more productivity and 42% less escape behavior [i.e., absenteeism, turnover] than an intervention that included a change in technology." This finding was due to the fact that technological change is often more disruptive to a work process than change efforts without technological elements.

However, technology may lead to more effectiveness and Pasmore (1988, p. 106) calls for more STS education of systems developers because "[i]t seems that the bulk of socio-technical efforts have failed to take advantage of the power technological change can have in changing behaviors and enhancing organizational effectiveness."

Part of the problem may be the "institutionalized splitting" as cogently described by Klein 1993, p. 370). In this case, the engineer is the systems analyst.

> ... the social and technical aspects of technology are split off. This splitting, against which are attempts to work in an integrated way, is deeply institutionalized. It permeates professional institutions and their literature. There are populations whose horizons are dominated by the one and populations whose horizons are dominated by the other. Social scientists read what social scientists have written; engineers read what engineers have written.

Historically, inflexible and complicated technological equipment determined social constraints (Kolodny et al. 1996; Klein 1993). Humans had to work around the equipment. If human interests interfered with design excellence, the design had to be "tweaked," irritating engineers. Technological restraints are less with newer information technology. However, bureaucratic, functional organizational structures still act as a barrier to realizing the technological potential (Kolodny et al. 1996).

In addition to the above reasons, I hypothesized there may be epistemological differences in how to achieve STS values. For example, both approaches espouse workplace democracy and continual learning. But PD (CP) appears to favor political strategies whereas PD (ODP) opts for consensual cooperation. Further, this difference in how humans act to obtain their objectives in a social world may be an important insight in explaining infrequent collaboration. To understand this phenomena, I used a hermeneutic interpretation of respective texts from PD (ODP) and PD (CP) literature.

A Hermeneutic Approach

Hermeneutics may be useful "...to make sense of situations and texts that are difficult to interpret because no established meanings apply (Hirschheim & Klein 1989, p. 1208)." Originally, hermeneutics was used to interpret biblical text by identifying the author's intentions behind the written text and also making the interpreter's intentions and background explicit (Lacity & Janson 1994; Rathswohl 1991). However, hermeneutics has been successful in interpreting contemporary text (Lee 1993; Boland 1991; Newman 1989) and is deemed appropriate if cultures (in this case professional cultures) hamper sensemaking (Lacity & Janson 1994).

The hermeneutic principles guiding this analysis are based on the work of Ricoeur (1981), and Boland (1991) and modified and extended by Lee (1993). Through *distanciation* the interpreter divorces herself from the written text in search for meanings behind the words. Distanciation is the separation of the text from its originating author(s) and culture (Lee 1993). Then, via *autonomisation,* the text may take on a different meaning from that of the author. Autonomisation is followed by *appropriation,* which signifies the meaning of the text to the interpreter. The appropriated significance may or may not be similar to the author's original meaning.

Social construction allows the interpreter to understand how appropriated meaning affects the enactment of a process (in this case, the ODP and CP social process for implementing PD). In other words, what one believes determines both one's actions and one's efforts to make retrospective sense of what has occurred. In this manner, reality is socially construed.

In this paper, the interpretive commentary following the analyzed text is hermeneutic social construction. The methodology emulates a style demonstrated by Hirschheim and Klein (1989). The interpretation borrows their conventions for interpreting and analyzing text. Hirschheim and Klein use generic stories (archetypes) to

[2] PD (ODP) typically acknowledges areas of disagreement by noting irreconcilable discord on a flip chart, and concentrating on areas of mutual agreement.

exhibit differences in paradigms leading to four separate approaches to computer systems development. The differences are interpreted through four themes: key actors, a narrative depicting what happens, the plot characterizing why events occur, and assumptions or beliefs predicating actions. In a like manner, the four themes provide interpretative lenses for text examples of PD (ODP) and PD (CP).

The PD (ODP) case text consists of two sections authored by DeVane from the previously discussed collaborative case study on organizational prototyping. The two sections describe culture change and human-interaction guidelines from a PD (ODP) social perspective. A short case study on a PD (CP) initiative (Emspak 1996) provides case text for comparison.

Hermeneutic Analysis

To match interpretation to case text, the text is split into frames and then the frames are referenced in support of the four themes -- key actors, narrative, plot, and assumptions. For the PD (ODP) text, the two sections reproduced from the organizational prototype case study are (1) Conditions Conducive to Culture Change, and (2) Human-Interaction Guidelines to Organizational Prototyping. Subsections for the former are labeled CC (cultural change) 1-4 and for the latter HIG (human-interaction guidelines) 1-4. Paragraphs in the PD (CP) text are framed according to subject matter and labeled frame 1-5.

PD (ODP) Text and Interpretation

CONDITIONS CONDUCIVE TO CULTURE CHANGE

1. Plan from the top, implement from the bottom [CC-1]

Metrum[3] management had a vision of the key elements of a cultural transformation -- teamwork, process focus, low-level decision making, and action orientation. By working at the lowest levels in the company with the prototypes, the organization began to infuse these new elements into the culture. A rich understanding an organization's culture depends on knowing the norms of behavior. This can best be accomplished by working at the lowest levels of the company -- the level at which the work actually gets done.

2. Try many things; keep what works [CC-2]

There are many tools, techniques and structures that can be tried in an organizational prototype. Rather than use one methodology, prototype participants tried many quality and organizational development tools (e.g. process mapping, affinity diagrams, fishbone cause and effect diagrams, business simulation games, etc.). People adopted the tools that they liked and applied them again in follow-on BPR teams.

3. Stretch the culture; recognize the process is gradual [CC-3]

Transformation is gradual and cannot be forced. The organizational prototype is an excellent method to "stretch" the culture toward transformation. Metrum (as in many organizations) had standard operating procedures that were somewhat flawed. Over time, the procedures were modified and an informal system evolved that worked. The informal system grew out of a need to solve problems and establish methods to get work done. The prototypes allowed understanding the informal systems and opened up communication at the level where these informal systems operated.

For example, in one instance it became evident that management thought a particular process occurred differently from an employee's version. The employee had developed work-arounds to bypass the blocked process but management did not know this. Arguments ensued about how the work was actually performed; however, with senior management commitment to the prototype process, the problem was resolved.

4. Build on skills; apply in new contexts [CC-4]

Build on the skills that are present in the organization, regardless of where they are located. Cultural transformation requires many skills be diffused throughout the organization. In Metrum's case, the IS organization possessed strong overall knowledge of the business and analytical skills. Introducing IS personnel to quality tools and facilitation skills strengthened this base. Other employees exhibited speaking and problem-solving skills during the prototypes and subsequently took leadership roles in further change efforts.

[3] Metrum is the name of the organization in the case study.

HUMAN-INTERACTION GUIDELINES TO ORGANIZATIONAL PROTOTYPING

In addition to these four prototype attributes which expanded into the broader organization, prototype facilitators used four techniques to address human-interaction problems. These techniques form guidelines in approaching some of the common people issues typical in major change efforts.

1. Secure executive support [HIG-1]

Executive management did not actively participate in the organizational prototypes (except for doing a process map of management's own process). Instead, they granted formal organizational authority to those teams *irrespective of team members' hierarchical positions.*

With this explicit authority, old regime managers had to accept what the teams proposed unless they could prove that the action would severely interfere with long-term profits or sacrifice customer satisfaction. This stipulation proved crucial in resolving differences (as in the previous example illustrating the difficulty in gaining a common view of a work process from a manager and an employee), and in securing cooperation among middle managers to become process owners.

2. Obtain human resource support [HIG-2]

A human resource development specialist (Elizabeth Ruppe) played a major role in change management interventions by working with the facilitators to help train prototype participants in team skills. Comments Ruppe:

The teams learned that most of the problems that arose were related to the lack of good team skills and not around lack of understanding BPR tools and techniques. Initially, the teams just wanted to start mapping immediately, "do doing," and not take the time to establish team goals, roles and process. But they found that most barriers to progress were related to poor team dynamics and lack of team skills.

3. Publicize and give credit [HIG-3]

Rewarding small successes of those actually involved in doing the work fosters employee buy-in and ownership. Small successes were publicized and credit was given to team members -- **not** to the IS facilitators.

4. Act swiftly [HIG-4]

Doing something immediately gave people the power to act and made them more amenable to subsequent formal, orchestrated change efforts. Part of this tactic was a concerted effort to only *understand* the current process rather than to document it in detail. In addition to taking considerable time and resources, spending too much time on what is currently happening discourages a "clean slate" view.

Key actors: Executive management articulated the vision (CC-1), set the boundaries (HIG-1), and supported low-level decision making (HIG-1). Middle managers (referred to as "old-regime") were likely to advocate the status quo and resist change (HIG-1). Action (work process redesign and cultural change) occurred at the lower-levels of the organization where "work actually gets done" (CC-1). IS personnel acted as facilitators (HIG-4) and other employees who exhibited speaking and/or problem-solving skills were tapped for leadership in subsequent change initiatives (HIG-4).

Narrative: Work process redesign necessitates concomitant cultural change. The culture has to be opened to allow people to speak of informal "work arounds" that might be irrational, but serve to get the job done (CC-3). Executive support is critical to empower people to speak and to act "irrespective of team members' hierarchical positions (HIG-1)". Mutual understanding is served through (a) executives examining their own process to understand the procedure (HIG-1); (b) action of the human-resource specialist to help teams with process skills and to thwart a tendency to rush toward task performance (HIG-2); and (c) the acceptance of the notion of a "tool kit" rather that a locked-step sequence of steps to understand and revamp work processes (CC-2).

Plot: The plot is emancipation through autonomy for participants to influence both process and outcome. Executives supported teams with "formal organizational authority" but allowed self-direction to the teams (HIG-1). Executives set boundaries so that actions could not "severely interfere with long-term profits or sacrifice customer satisfaction (HIG-1)." However, they also permitted the process to take place quickly so participants believed that demonstrable change could occur (HIG-4).

Assumptions: In this PD (ODP) case, the epistemology is subjective because people acquire knowledge subjectively, through "an active process (or struggle) for individual and collective self-determination (Alvesson & Willmott 1992, p. 433)." The social world (ontology) is in conflict, however conflict is reconcilable through reciprocal self-interest between executive management and low-level workers – also mid-managers if they agreed to relinquish

hierarchical control for process ownership (HIG-1).

PD (CP) Text and Interpretation

The text representing PD (CP) is a short case about hospital information systems development from the proceedings of the PDC '96 conference (page 114). The case is part of a larger paper entitled, "Participatory Design: Examples and Institutional Needs," by Frank Emspak (1996).

Frame 1

In 1995 the University of Wisconsin Hospitals and Clinics, Center for Clinical Sciences, Department of Nursing (UWHC) and 1199W/United Professionals for Quality Health Care, Service Employees International Union (1199) entered into an agreement to jointly develop the design criteria for the new information system being implemented by the UWHC. "Our project is aimed at ensuring participation in the design of a technical system, by its primary users, nurses." In October 1995 the FMCS[4] awarded the committee a grant to assist the project. As of this writing the project is ongoing. Of particular note is the signed letter of intent from the superintendent of the hospital to work with the overall design of the UWHC information system. Of course only time will tell how successful this effort will be.

Frame 2

The composition of the group includes registered nurses and senior nursing administration including the information systems manager. The Executive Associate Director of Nursing, the Executive Director of the union and the President of the union are also members of the group. The author has been the facilitator and trainer for the group.

Frame 3

To date the committee has identified the values most important to nursing. It is the group's desire that the system support these values. As the NISDG[5] put it [sic] is the overall goal to "design an information system which supports nurses in their work as information gatherers and users, as opposed to an information system by which, by design or neglect, facilitates collection and recording of information in ways which frustrate or undermine the professional role of nurses."

As with the Carpenter's project all key decisions are made by consensus especially those decisions that reflect values.

[4] The acronym, FMCS, is not defined.

Frame 4

The committees plan of work includes finalizing the information map of the key departments -- meaning understanding both the formal and informal flow of information and determining to whom nurses must communicate and what must be communicated. After this task is completed the group will identify the types of technologies that might support nursing values, especially systems which allow for an increased bed side presence. Once the basic systems are identified, e.g. wireless communications, interactive record keeping etc., the group will refine their requests. At this stage the group intend[s] to present a white paper to the overall hospital administration and enter into broader discussions to ensure that the overall information system incorporates their concerns.

Frame 5

As with the Carpenters' project institutional constraints hamper their work. The FMCS for example can supply only limited financial support for any individual project. Software or systems development is both time consuming and expensive. There is no existing group like ours [PDC'96 participants] to view several competing ideas at once and get relatively unbiased information. Thus the only way to proceed is to purchase engineering or technical assistance at considerable cost, or become dependent on a medical information system software house which certainly has its own objectives.

One is limited in the alternatives precisely because there is no institutional framework for participatory design initiatives. While it might seem reasonable for the University Hospitals to support the implementation of the design criteria outlined by nurses, there is no particular reason for them to do so, as the direction of the nursing initiative is exactly in the opposite direction from the direction now being pursued by HMOs -- namely the reduction in number and role of R.Ns.

Key actors. Active participants are registered nurses and senior nursing administrators from the UWHC Department of Nursing (including the information systems manager); high-ranking officials from the nurses' union, and the case author (Frank Emspak) who trains and facilitates the group **(frame 2)**. The superintendent of the hospital has "signed [a] letter of intent" to work with the overall design of the

[5] The acronym, NISDG, is not defined.

new information system – not an intent to work directly with the group **(frame 1)**.

Narrative. The expressed interest of this committee is to ensure nursing participation in a new design for a hospital information system **(frame 3)**. Nurses' interests are best captured through a representative body formed to establish common values and assure that these values are captured in the design and technological choices **(frames 3 and 4)**. An explicit expectation is that management will not effectively consider nor integrate nurses' interests without specific representation by the nurses **(frames 3 and 5)**. Hospital administration, whose views are reflected in the information system, is considered at best unreceptive and at worst hostile to nurses' best interests **(frames 3 and 5)**.

The committee's main agenda is to determine the desirable information flow from the viewpoint of nurses accomplishing their work **(frame 4)**. There does not seem to be an interest in developing group relations and/or problem solving skills in general. No time period is stated but one gets the idea that the work will cover multiple sessions and that resources are a problem **(frame 5)**. When they finish their work, the nurses will write a white paper and participate in "broader discussions" **(frame 4)**. This indicates that the committee work is preliminary, to be used to consolidate the nurses' position as they approach their larger "foe" the hospital information system project participants. Outside medical information software houses (if used) are perceived to be instruments of management bidding **(frame 5)**.

Plot. PD (CP) is an avenue to help professional users to overcome constraints and pressure from the hospital administration. The administration is cost conscious and will champion an information system which will cut costs and may jeopardize nurses' working lives (even to the point of eliminating nursing positions) **(frame 5)**.

Assumptions. In this case the epistemology is objective in the sense that adherents believe in the reality of separate economic forces – production and labor (in this case professional labor). Social conflict exists, and task alignment is presumed impossible except through political negotiation. The mood is cautious and to an extent, self-defeating; the text anticipates defeat for the less powerful body of primary users, the nurses.

Discussion

The hermeneutic text analysis supports the assertion that PD (ODP) and PD (CP) anticipate social change to be problematic and characterized more by conflict than by order (a common ontology). Conflict necessitates radical change and this common view differentiates PD overall from approaches favoring incremental, evolutionary change strategies such as total quality management. However, the analysis supports the argument that PD (ODP) and PD (CP) may differ on how to deal with social conflict. PD (ODP) prefers to find a common consensus between all stakeholders (a subjective epistemology) while PD (CP) assumes common interests may not exist and targets political compromise (an objective epistemology).

Limitations

The advantage of hermeneutic methodology is that it allows insight into socially construed reality through examination of text. However, hermeneutic methodology delves deeply into selected examples rather than broadly across a representative sample. Therefore, generalization to a larger population PD (ODP) and PD(CP) practitioners) is not feasible. Further, both the interpretations and the literature citations tend to focus on North America, further limiting generalizations. From the literature, it appears that PD (ODP) is heavily influenced by the Australian tradition fostered by the Emerys. There is little evidence to suggest that contemporary European initiatives in PD have had much influence in PD(ODP) theory or practice in North America.

CONCLUSION

In North American, cooperation is STS or in PD projects has been minimal despite persuasive appeals suggesting that cooperation would be beneficial. More than twenty years ago Bostrom and Heinen (1977a, page 29) concluded:

> Successful integration of the change technologies requires new roles for both the systems designer and the behavioral scientist. First, they must develop some type of mutual design theory so that they can effectively communicate with each other. Second, the design effort must be a truly collaborative effort. This means that the behavioral scientist whose past role has been primarily to help implement predesigned interventions must assume a new design role. Third, for a collaborative design effort to be successful, each party will have to learn more about the other's change technologies. Thus, the behavioral scientist needs to have a good understanding of MIS related technology while the systems designer must understand the usefulness and consequences of OD type interventions.

Today, the wording might change to call for more cooperation and communication between the systems designers knowledge of change methodologies (e.g. PD) and the behavioral scientist knowledge of team building.

This paper attempts to understand why collaboration has been infrequent in North America. Several reasons surface in the literature. One is the influence of background and training for those studying behavioral science versus engineering. Another is that, historically, design excellence has been hampered by human requirements, which led to

tension between behavioral and technical professionals. This paper considers another possible factor, that socially construed reality may be different for PD(ODP) and PD(CP) professionals and that this difference affects both the process of work and the meaning of work. Interpretation of text from both professions supports the argument that PD(ODP) may place a greater emphasis on the feasibility of consensus, whereas PD(CP) may place more importance on political compromise. In any case, "[t]he phrase 'multidisciplinary work' trips from the tongue more easily than it is realized in practice (Klein 1993, p. 374)."

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