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Ethical Information Systems Development: *A Baumanian Postmodernist Perspective**

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Abstract

The paper offers a critique of traditional methodical approaches to Information Systems Development (ISD), arguing that a number of assumptions (for example, universality and rationality) underlying these approaches lead to incomplete ontological and epistemological considerations, and thereby contribute to IS failures in many cases. The paper proposes that ethical analysis undertaken in conjunction with traditional ISD approaches may be a way to address some of the limitations experienced during traditional ISD. Drawing upon ideas from postmodern ethics formulated by Zygmunt Bauman, the paper argues that increased focus on the moral responsibility of key ISD players (such as the team of analysts) may improve the ISD process. Finally, this paper suggests how, consistent with the postmodern stance, such moral responsibility can be implemented in the context of ISD. The paper concludes with the contributions and future implications of this research.

Keywords: *Information Systems Development (ISD), ethics, postmodern ethics, systems analyst, moral impulse, fairness, moral responsibility, moral agent, case interpretation*

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Ethical Information Systems Development: A Baumanian Postmodernist Perspective

1. Introduction

Information Systems Development (ISD) is an important arena within the field of Information Systems (IS) (Iivari et al. 2006). Changes in technology, together with changes in organizations and their operating environment and values, have imposed new demands on the development of information systems (Hirschheim et al. 1997). Consequently, a central focus of the IS field has historically revolved around formulating/refining ISD approaches and methods (Hirschheim et al. 1997; Iivari et al. 2000) to develop better IS artifacts (Kautz et al. 2007; Fitzgerald et al. 2002).

Historically, ISD has been undertaken from within an engineering or functionalist paradigm (Varey et al. 2002; Hirschheim and Klein 1989).¹ The focus has been on the application of software engineering principles, embodying the functional approach to ISD, that can lead to “manageable, predictable, and disciplined systems development processes with consistent performance outcomes” (Patnayakuni et al. 2006: 546). Past research has also recognized that such functionalist approaches to ISD are certainly mature, more popular, and widely accepted (Samoilenko 2008). Functionalist approaches have been developed, adopted, customized, and implemented with a fair amount of success (e.g., Fitzgerald 1997). Specifically, Kautz et al. (2007) note, based on prior studies, that software developed using the functionalist approaches have often “proved their usability in a variety of settings” (p. 223).

At the same time, however, the functionalist paradigm has not always been seen as enabling effective IS development and implementation, and indeed, a sizeable number of ISD projects have failed or underperformed (Wynekoop and Russo 1995; Wastell 1996; Truex et al. 2000; Doherty and King 2001; Clegg et al. 1997). Given this contradictory evidence, the question naturally arises: *Why have functionalist ISD approaches based on software engineering principles not been as successful as they should have been, and what needs to be done in order to correct this?*

There are at least two distinct strategies to answering this question and enhancing the success of functionalist ISD approaches. The first strategy (and perhaps the most common one) is to come up with methodologies that apply the functionalist principles even better. A contrasting (and less common) strategy is to question the principles and assumptions embodied in functional approaches (Hardgrave et al. 2003), and to find additional guiding principles that replace or complement the functionalist assumptions. In pursuing the second approach, this paper aspires to contribute to the existing ISD literature by augmenting the functionalist ISD approaches with certain ethical or fairness considerations drawn from postmodern ethics, thus, potentially increasing the likelihood of ISD success. Building upon prior explications that postmodern ethics is relevant to ISD (Yuthas and Dillard 1999), this paper delves deeper into the fundamental nature of functionalist ISD and how notions of postmodern ethics can help achieve success for functionalist ISD.

We structure the paper as follows. First, we argue for the importance of applying ethical perspectives to the ISD process, contrasting such an approach with the drawbacks of the functionalist approaches. We reinforce our arguments through a case study discussion of a failed ISD process. Second, we discuss what an ethical perspective should include, based on Zygmunt Bauman’s postmodern ethics (1989; 1993). Third, we discuss how such an ethical approach can be implemented in the ISD process, using our case to illustrate key points. Finally, we conclude with the contribution and other implications of this research.

2. Ethical Issues in ISD Projects

The potential limitations of functionalist approaches to ISD – a case illustration

In this subsection, we discuss why functionalist approaches to ISD may have inherent problems, and how ethics may need to be viewed as a necessary condition for increasing the effectiveness of

¹ We discuss the functionalist paradigm in greater detail later in this paper.

functionalist approaches to ISD. In doing so, we first revisit the functionalist approaches to ISD and their basic assumptions. The area of ISD has been generally characterized by methodical² developments that subscribe to functionalist approaches (Patnayakuni et al. 2006), ranging from the waterfall model, to prototyping, to evolutionary models, and to object-oriented design and development (Iivari and Huisman 2007). This methodical, engineering-oriented development, which has dominated the scene for ISD, has been classified under *functionalism* in the existing literature (Varey et al. 2002; Hirschheim and Klein 1989; Iivari et al. 2000).

While it is difficult to characterize functionalist ISD in terms of steps and techniques, given the diverse ISD methodologies that draw inspiration from this line of thinking, the key assumptions/ideals of functionalist approaches to ISD include *control*, *social integration*, *linearity*, *universality*, *rationality*, and *goal predetermination* (Truex et al. 2000; Goles and Hirschhiem 2000; Hirschheim and Klein 1989), which we summarize in Table 1 below.

Table 1. Assumptions/ideals of functionalist approaches to ISD (adapted from sources: Truex et al. 2000; Goles and Hirschheim 2000; Hirschheim and Klein 1989)

Assumptions/ideals	Description of the Assumptions/ideals
Control	Information Systems Development (ISD) is a process that is managed and controlled. It pre-supposes management control over developers and users.
Social Integration	ISD is an orderly process where social integration, in the form of shared assumptions and goals among ISD stakeholders, exists.
Linearity	ISD is a process that can be represented as a set of linear, sequential steps.
Universality	ISD is a replicable, repeatable, and standardized process.
Rationality	ISD is a rational choice process, in terms of requirements analysis, resource allocation, implementation strategy, and so on.
Goal pre-determination	ISD idealizes stability in goal predetermination and process predetermination (in order to achieve the predetermined goal).

In order to illustrate the potential problems associated with such functionalist principles, we use a case study of dramatic ISD failure (Sarker et al. 2006; Sarker and Lee 1999) in the context of an IT-enabled organizational change initiative that was guided to a great extent by the assumptions/ideals mentioned above, without any noteworthy ethical considerations. We provide a brief narrative of the case below.

TELECO was an independent telecommunications company having approximately 3,500 employees. In response to the growing concerns regarding inevitable changes in the organization's external regulatory and competitive environment, the management initiated the IT-enabled organizational change project by hiring a reputed consulting firm and then assembling a team consisting of 25 members from different parts of the organization. The team was housed in the top floor of the company building, completely isolated from other employees in the organization. It was made responsible for gathering requirements, redesigning the business processes, formulating the conceptual design of the enabling IT, prioritizing the projects, selecting the vendor(s) who would develop the specified IT, and then managing the implementation.

The espoused objective of the initiative, which included IS development, implementation, and organization change, was to significantly enhance service, speed, quality, and value addition to customers. The team members analyzed the organization for several months and came up with an

² A method is defined as an "orderly, predictable, and universally applicable process" (Madsen et al. 2006: 225, citing Truex et al. 2000) for Information Systems Development.

elaborate redesign of the existing business processes and systems. The design process was fragmented and many of the processes and enabling IT were envisioned by individual members of the team, or sub-teams. Communication with and involvement of users were limited during the entire project, particularly in the initial phases, and many aspects of the design were mandated by management, apparently with the interest of self-preservation. The redesign consisted of before and after process maps along with detailed descriptions, human resource specifications, technology specifications, and schedules for employee layoffs synchronized with IT implementation. The entire blue-print was stored in "process-binders."

The implementation turned out to be a disaster with many employees being "retired" as per the predetermined schedule even before the IT (that was to substitute for the employees) was actually implemented. This resulted in breakdowns in relationships with external constituents such as customers and suppliers. Customer service became virtually non-existent, and the company almost went out of business. As the organization was struggling to make a transition to its new redesigned, IT-enabled form, the management driving the project changed. Given that the assumptions about the environment that prompted the initiation of the project were no longer true, the new management abandoned the direction inscribed in the process binders, and declared the IT-enabled change project defunct (and a failure). Apart from the confusion caused in the company, most employees perceived this abrupt change in direction as negative, feeling that all the pain that they and their co-workers had endured had been in vain, resulting in a further spiraling down of morale.

Below, we illustrate how control, social integration, linearity, universality, rationality, and goal predetermination played out in the case. The discussion presented below is summarized in Table 2.

Control

The dysfunctional impact of managerial control became evident in a number of ways. For example, during the redesign phase, the management continued to control how the processes were designed, much to the frustration of the designers, who felt that the changes being dictated were based on management interest rather than the goals of service, speed, quality, and value addition to the customer. Also, a basic assumption of the design team in justifying the head-count reduction through layoffs was the availability and successful implementation of certain information systems (IS), and this was reflected in the implementation plan through dependencies in the schedule. Unfortunately, during implementation, these dependencies were not respected, primarily due to *pressure from the managers guiding the project*. For example, one of the systems that was proposed (an enhanced billing system), when implemented, was expected to make about 50 customer service representatives redundant. The original plan documented in the process-owner binder clearly recognized the fact that the 50 employees would lose their positions *only after* the new billing system was implemented. However, on the scheduled date of billing system implementation (as per the original plan), the customer service representatives were let go due to the project management's insistence on adherence to the original implementation plan, even though the new billing system was still in its early phase of development. This led to a disastrous situation where there were very few customer service agents available to serve the entire customer base using the old billing system, resulting in a rapid deterioration of service.

We contend that an ISD process that focuses on control essentially reduces focus on fairness, since control is often in contradiction with fairness and procedural justice (e.g., Lind et al. 1990). An environment of control curbs spontaneity and creativity (Truex et al. 2000) and suppresses the "voice" (or interests) of some stakeholder groups, in effect, rendering any process within the environment as essentially unfair to them.

Social Integration

While the benefits of social integration cannot be denied, the assumption of social integration in an ISD project is not only naïve, but it also results in overlooking the most critical problems with ISD, those of different expectations and reactions of different stakeholders. For example, one of the design team members, in recalling the lack of social integration between the design team and the systems users or those who would be impacted by the implementation project at TELECO, commented:

Basically what they did is to set up a group of people [i.e., the design team] (away) from the rest of the organization... and a lot of what we were working on was extremely confidential in terms of the goals we were trying to achieve... and other employees would ask us questions about things that we couldn't really answer... so then mistrust started developing...

As the project progressed, things got worse. Specifically, a marketing executive lamented:
I don't think there was a good feedback loop... they [the design team] heard all the things... we are dying in the trenches... people are losing orders and everything is falling apart on us... all the input went above or somewhere, and we never heard anything.

Such lack of social integration was evident even *within* the design team, when the team was asked to prioritize the IT systems proposed earlier by individuals or sub-groups within the design team. The two criteria proposed by the consulting company to aid the prioritization process were: 1) Criticality of the design to the initiative's goals and 2) Estimated cost of implementation. Interestingly, "dropping IS projects" became very difficult for the team, since each designer (or sub-group of designers) insisted that the system he or she proposed was both critical and cost effective.

We reiterate here what other scholars have long recognized -- ISD involves many social actors, and in many cases, consensus is not achieved during ISD (e.g., Robey and Newman 1996). Thus, the assumption that stakeholders achieve consensus with respect to assumptions, requirements, design and implementation tactics, etc. is misplaced/misleading/suppressing, and consequently, unfair to individuals who have not been able to reach agreement with the dominant view.

Linearity

In reality, ISD teams, even those guided by linear methodologies (e.g., waterfall) do resort to quick fixes, and very often, do not undertake ISD tasks in a linear, sequential manner. For example, in the TELECO case, during the initial phase, rather than systematically redesign all processes, the design team focused on "quick hits," i.e., implementing small-scale IT and related changes that would produce almost immediate impact to the company's *economic* bottom-line. Indeed, one of the design team-members recalled:

Some of the things that we found can be fixed immediately... I call it the hatchet in the head... if somebody has a hatchet in their head, pull it out... sometimes they are called quick-hits... low hanging fruit...

Similarly, as discussed under "control" (above), the dependencies between different ISD tasks are often ignored during projects for practical or political reasons. For example, customer service staffs were let go before the new system arrived, resulting in a situation where the customer service function collapsed, which we see as being unfair to some stakeholders, primarily customers.

The reason why we believe such deviations from the overall process can be unfair is because quick fixes are often undertaken in an *ad hoc* manner, wherein careful stakeholder impact analysis, which might otherwise be part of the formal ISD process, is bypassed.

Universality

It is now widely acknowledged that the universality of ISD is a myth; the process is strongly tied to the social and cultural contexts of organizations involved in the ISD (Iivari and Huisman 2007). For example, in many cases, we find organizations engaging in IT department driven projects; while in others, we see user-driven ISD (Hirschheim and Klein 1989). Each process is very different. Indeed, in the TELECO case, we see evidence that the representation of IT personnel on the design team was deliberately kept at a minimum, given the sentiment prevailing in TELECO that IT personnel would prevent the team from creatively envisioning possibilities, and instead force the team to think in terms of the processes/systems that existed at the time of redesign. This cannot be considered universal practice in ISD. Similarly, the union, which was powerful, negotiated several conditions including overly attractive retirement benefits for staff who would "retire" following the IS

implementation. Again, it would be reasonable to say that not all organizational workers are represented by a powerful union, which actively shapes the agenda/constraints related to an ISD project.

Being sensitive to social and cultural contexts is fundamental to the idea of fairness (Lind et al. 1997). We believe that a process that is universal tends to overlook fundamental human concerns about dissonance of the designed systems with core values, artifacts, or organizational rituals (e.g., Hirschheim and Newman 1991), thus rendering it unfair.

Rationality

Due to the fact that human beings have bounded rationality (Simon 1956), the assumption of rationality underlying ISD is untenable, as seen in the TELECO case. First of all, there was poor estimation and scheduling, what Nelson (2007) refers to as a “classic mistake” in IT projects, reflective of the limited rationality of humans. In the words of a vice president:

A lot of restructure and redesign was dependent on the major systems... coming to fruition. We have found that almost every single one of those are well behind schedule... everybody promises that yeah, I have got this, or we can do this, but when it comes down to delivering, you don't get what you expected.

Moreover, the rational choice process was clearly not at work during IS vendor selection after the redesign phase, when TELESYS, a company owned by TELECO's parent company was “preferentially” awarded the outsourcing contracts for developing some of the critical systems, even though they had “treated TELECO as a low priority customer in the past.” In light of the above, we contend that the assumption of rationality can be unfair, given that it sets up expectations among systems stakeholders that are often impossible to meet.

Goal Pre-Determination

We found several instances within the TELECO initiative when goal pre-determination did not hold true. After the design was completed, an IT director realized that there was complete lack of clarity among designers and users regarding the systems, the goals they would achieve, and the resources required. He stated:

What do you really need? What are the systems in practice? How's that going to work? What kind of budget do you need to make this happen?... [we need to] start digging and doing at least some of the analysis... or these things are never going to happen...

Another dramatic instance of lack of goal pre-determination was experienced during the implementation of systems and associated organizational change when the leader of the initiative suddenly retired and a new individual with a different vision took over. The implementation process was suddenly discarded in its entirety, with the new leader announcing “No more anything on this ...project. We are no more doing anything that the process owner binder says.” Clearly, the sudden discontinuation of the project was not fair to the stakeholders, given all the pain that they went through to participate in the initiative – many employees lost jobs, and design team members even reported high stress and significant weight loss. Literature indicates that in ISD, goals are often revisited, and projects end up deviating from the initial goal (Avison and Fitzgerald 1995). On similar lines, Hirschheim et al. (1996) describe that ISD goals can often be “malleable” or “drifting.” Thus, we believe that an assumption of goal predetermination and, related to it, process pre-determination (in order to achieve the goal), fails to acknowledge (and address) the causes of potential strife and instability in the lives of stakeholders, and is hence unfair.

We provide a summary of our above discussion (with respect to the case evidence regarding the principles of functionalist approaches to ISD) in Table 2. In essence, we can infer that functionalist approaches to ISD have certain assumptions that are *either invalid in many cases, or, if valid, may lead to certain undesirable outcomes*. On a broader philosophical note, we can argue that a critical examination of the assumptions shows that these functionalist approaches to ISD may suffer from *incorrect and incomplete* ontological and epistemological assumptions (Jackson 1991, cf. Rose

Table 2. Compromising fairness through the assumptions of functionalist ISDs

Principles/ideals of functionalist ISD	How they compromise fairness	Summary evidence from the case example
Control	A focus on control essentially reduces focus on fairness, as control is often in contradiction with fairness (Lind et al. 1990). Control curbs spontaneity and creativity, and suppresses dissenting voices (Truex et al. 2000).	<ul style="list-style-type: none"> • The management forcibly put into place part of the original implementation plans, letting go customer service representatives even though the new system taking over some of their responsibilities was not fully implemented. This was unfair to many stakeholder groups, most notably the customers, who experienced breakdown of services.
Social Integration	ISD involves many social actors, and in many cases, consensus is not achieved during ISD (Robey and Newman 1996). The myth of social integration is often used to hide the lack of consensus, resulting in unrealistic (and unfair) expectations on individuals who do not achieve this consensus.	<ul style="list-style-type: none"> • The top management encouraged segregation (detrimental to social integration) amongst the employees • Lack of a “feedback loop” indicated the absence of real social integration between the team and the users/employees; seeking input from employees was more a façade used to hide the lack of consensus.
Linearity	ISD often resorts to ad hoc actions and fixes (Avison and Fitzgerald 1995), thus there is often not enough time to undertake stakeholder analysis, compromising fairness to stakeholders.	<ul style="list-style-type: none"> • “Some of the things that we found can be fixed immediately... I call it the hatchet in the head... if somebody has a hatchet in their head, pull it out.” This quotation of a design team member, shows how the design team undertook ad-hoc actions and fixes, in sharp contrast to the image of linearity of the ISD process portrayed.
Universality	An assumption of universality ignores cultural and contextual differences that are part of ISD (Iivari and Huisman 2007). Being sensitive to social and cultural contexts is fundamental to the idea of fairness (Lind et al. 1997).	<ul style="list-style-type: none"> • Projects may be user-led or systems personnel-led, as in our case illustration. • Involvement of a powerful union in an ISD process is not necessarily a common occurrence.
Rationality	Human beings are not fully rational (Simon 1956). Any assumption of rationality sets up unfair expectations among systems stakeholders that are most often impossible to meet.	<ul style="list-style-type: none"> • The expectation that the IT vendor, TELESYS, would perform well this time was irrational (as they had a poor prior record with respect to performance on TELECO’s projects); however, TELESYS was awarded the contract to develop several systems • Estimation and scheduling (which turned out to be quite poor) was not critically examined, due to the presumed rationality of the process.
Goal pre-determination	ISD goals are often “malleable” or “drifting” (Hirschheim et al. 1996). An assumption of goal predetermination and related to it, process pre-determination, fails to acknowledge (and address) the causes of potential strife and instability in the lives of stakeholders, and is hence unfair.	<ul style="list-style-type: none"> • The entire project initiative was suddenly abandoned with the taking over of a new leader. Such abrupt change in goals caused further instability in the lives of many stakeholders – many felt that all the pain that they had experienced during the project was in vain.

2000). Functionalist approaches are primarily based on the assumption that there is a complete understanding of the problem and the solution, and that agreement exists amongst the stakeholders in an ISD process, an assumption that is *often false* (Paul 1993; Rose 2000). Further, in assuming ideals such as universality, rationality, and social consensus, these approaches often tend to ignore the *actual contextual reality* surrounding the ISD process and also provide overtly *objective* steps in order to gain knowledge from that reality.

Having noted the possible problems with functionalist approaches to ISD, let us now turn our attention to how these problems can be rectified. We have already proposed our argument, based on the case that one of the causes of ISD failures is that functionalist assumptions compromise fairness. But in order to understand why we should be concerned about fairness in the first place, and how to subsequently promote it, we first need to understand ISD as a social action and a multi-dimensional change process. We do this next.

ISD as Social Action and Change, and the Relevance of Ethics

ISD has been conceptualized as a multidimensional social change process. Within this perspective, Lamb and Kling (2003) have characterized information systems as “networks of people,” highlighting the social dimension of information systems. On similar lines, Goulielmos (2004) argues that ISD should be understood as a complex social activity that is influenced by the organizational context in which it takes place. Other researchers have also argued that the inherent social dimension to ISD cannot be ignored (Hirschheim and Klein 1989; Hirschheim et al. 1995), and that failures in ISD can often be attributed to the lack of acknowledgement of the social nature of ISD (Goulielmos 2004).

What this means, in effect, is that ISD cannot be separated from the social and cultural context that surrounds the development process (Iivari and Huisman 2007). This view is consistent with that of Lytinen (1987), who sees systems development activities (such as the choice, development, implementation and evaluation of computerized information systems) as including cultural, social, political, and *moral* aspects.

Thus, it becomes critical to understand the ISD process as one that produces a social change across multiple dimensions. If ISD has such social implications, then *fundamental human issues* become relevant. By fundamental human issues, within the scope of this paper, we refer to *social justice and fairness* (Alvesson and Wilmott 1992), which are synonymous notions (Joshi 1989) drawn from ethics, and which we argue should be considerations in any ISD process. In fact, Klein and Lytinen (1985) emphatically make the point that the issues of justice or fairness cannot be ignored while undertaking ISD. Drawing on the Rawls' (1971) principles of justice, they draw our attention to the fact that fairness should be the ultimate goal of ISD—a notion reiterated by noted ISD scholars (e.g., Klein and Hirschheim 2001).

Interestingly, the concept of fairness implicitly assumes that one needs to have a complete picture of the surrounding reality and move away from overtly objective and rationalistic interpretations of individuals. Achieving ontological clarity of the problem domain and context is an important and necessary endeavor in ISD (Bowen et al. 2006; Hadar and Soffer 2006), and the notion of fairness drives us closer toward that goal. We posit that if an ISD method includes an ethical analysis (with the aim of improving fairness), then the entire ISD process will be significantly improved, leading to fewer cases of IS failures.

While our stance to substantially include consideration of ethical issues in ISD may seem to be at odds with the general focus of developing IS for greater efficiency and profit maximization, it is worth emphasizing that the concepts of fairness or justice are not entirely divorced from the notions of economic profits. As Chatterjee et al. (2009) categorically argue, based on Cropanzano et al. (2001) and Tyler (1987), fairness or justice can be relevant to long-term economic benefits. After all, an image of caring and concern for any endeavor (a direct outcome of the concern for fairness or justice) builds goodwill and reputation, which is likely to enhance economic profits in the long run. On a related note, Boehm and Sullivan (2000) argue that the fundamental goal of any ISD should be to create *social value*, linking ethics to ISD. As we see in the case example of TELECO, a system that

violates the ethical considerations of its stakeholders fails to bring social value, and ultimately leads to economic losses as well.

We should note here that the call for ethical considerations in ISD can be found in previous research (e.g., Wood-Harper et al. 1996; Rahanu et al. 1996; Rogerson et al. 2000; Mumford 1995; Yuthas and Dillard 1999; Checkland 2000;). In fact, Checkland (2000) argues that the Soft Systems Methodology can be extended to include an ethical analysis. Other authors such as Friedman et al. (2006) have also echoed the view that ethical values are inherently relevant to the design and development of information systems. While there have been such sporadic efforts to justify the need for and to incorporate ethics within ISD, the issue has not been systematically addressed. Indeed, as we see later on in this paper, achieving fairness and ethicality within ISD (and any such social process) is not an easy task -- a unique ethical perspective is required.

However, in order to introduce this unique perspective, that of *postmodern ethics*, we first revisit the major schools of ethical thought and show how/why they may be less capable of producing fairness within ISD, thus motivating our use of postmodern ethics. This is what we explore next in this paper.

3. Philosophical Background

Theories of Ethics

While there are a number of schools of ethical thought, each with its strengths and limitations, we believe that the postmodern ethical perspective is suitable and relevant to our goals in this paper, and we seek to justify it. Our choice of postmodern ethics stems not only from its relevance to the scope of this paper, but also from certain limitations associated with other ethical theories that have shaped much of philosophical thought, notably the *consequentialist school* of ethics and the *deontological school* of ethics.

The consequentialist school (Mill 1861/1979) holds that the rightness (or wrongness) of an action is determined by how much consequential benefit (or loss) results from the action. The deontological (or categorical) school of thought, on the other hand, believes that rightness (or wrongness) of a behavior is guided by certain rules in place, the classic example being Kant's (1804/1994) categorical imperatives: "the categorical imperative would be one, which represented an action as objectively necessary in itself, without reference to another end" (p. 25). For example, within the deontological perspective, it is *necessary* to speak the truth, and hence it would be "unethical" to lie even to help somebody.

The above two views represent the "universalist" view of ethics -- that is they provide abstract universal principles in order to undertake any ethical analysis. A universalist view of ethics can be defined as the view that recognizes one human nature and essence, thus implying that there are overarching grand rules that can always be applied to every human being (Bauman 1993). Many of the classical and twentieth century ethicists subscribe to this notion of ethics, where the human being is presumed to be the free, detached rational agent with objective thought processes, and guided by fixed standards that decide on the moral course of action (Yuthas and Dillard 1999). However, the basic problem with this perspective is that the application of such universal principles implies an objective conception of reality, where the knowledge is separate from the reality and is neutral (Yuthas and Dillard 1999). This implicit assumption is the basis of much recent criticism of the universalist view of ethics (e.g., Sandel 1982; Hursthouse 1999; O'Neill 1996; Taylor 1985). Critics argue that universal theories of ethics present an idealized view of the reality, for example, by overlooking the embeddedness of human beings within particular situations and contexts, and ignoring much in terms of human emotions and moral impulses (Bauman 1993; Yuthas and Dillard 1999). Due to this impersonal and "neutral" position, they provide an incomplete view of human nature and action (Whetstone 2001). Thus, we believe that the universalist perspectives, if used to guide fairness considerations in ISD, is likely to result in an *entrapment into the same incomplete ontological and epistemological assumptions that we wanted to address within the traditional ISD processes in the first place*. We will be no nearer to achieving fairness in the ISD process if we use the universal ethical principles.

Moreover, the application of the two universal perspectives to ISD may be problematic, because they often provide contradictory guidance. In table 3, we provide an illustration of this point, using the following ethical aspects: *access and equity, quality of work life, system quality and accuracy, and intellectual property* (adapted from sources: Mason 1986, Granger et al. 1997, and the ACM code for ethics (1997/2003)).

The point of the examples in Table 3 is to highlight a *significant* shortcoming of such universal perspectives of ethicality. Employing such universal perspectives takes away the primary *moral responsibility* from the entity, because such perspectives cannot account for “commonsense moral convictions and preferences” (Donaldson and Dunfee 1994, p. 257) within different situations and contexts, and thus, tend to equate ethicality to rationality (Stahl 2008). Thus, in effect, the universal perspectives of ethicality move us back to the same problems associated with a functionalist approach. Further, universal moral theories fail to acknowledge the bounded moral rationality of agents – that is, no matter how informed or rational the moral agents are, they have a finite set of intellectual resources, and are inherently bounded because of this (Donaldson and Dunfee 1994; Simon 1956).

We reiterate that in their quest for objectivity and neutrality, the universal views of ethics are *unable* to account for *individual moral beliefs, convictions, and impulses* (Bauman 1993). The present world is infinitely complex, and the entire panorama of situations and contexts is huge; consequently, universalism cannot be readily applied across such contexts and situations (O’Neill 1996). Not surprisingly, both the universal principles and those applying these principles (the rational entities) fall short when undertaking ethical analysis of any situation, particularly of social processes associated with ISD.

Given that universal principles of ethicality are subject to criticism on many grounds, it is clear that there is a need to explore other perspectives on ethics that have potential to meaningfully address the problem at hand. To this end, we discuss the ideas of postmodern ethicists, notably Bauman (1989; 1993), in the next sub-section.

Postmodern Ethics and its basic tenets

What is postmodern ethics? Faigley (1992, cf. Markel 1997) provides the following description: *...there is nothing outside contingent discourses to which a discourse of values can be grounded—no eternal truths, no universal human experience, no universal human rights, no overriding narrative of human progress. This assumption carries many radical implications. The foundational concepts associated with artistic judgment such as “universal value” and “intrinsic merit,” with science such as “truth” and “objectivity,” and with ethics and law such as “rights” and “freedoms” suddenly have no meaning outside of particular discourse and are deeply involved in the qualities they are alleged to be describing objectively (p. 8).*

Postmodern ethics can be viewed to be posing a challenge to the basic precepts of the traditional universal theories of ethics, notably deontology and consequentialism. It is a significant part of the overall postmodern movement, which questions the modernist traditions originating in the “age of enlightenment” in the later Renaissance period through the 18th and 19th centuries in Europe. This age of enlightenment developed human ideas along the lines of the philosophy of science, and ushered in the rationalist movement amongst philosophical thought. Philosophical/scientific trends like rationalism (Descartes, 1596-1650), empiricism (Locke, 1632-1704), mechanism (Newton, 1642-1727), positivism (Comte, 1798-1857), and communicative rationality (Habermas 1929-), through management trends like scientific management (Taylor 1856-1915) and Fordism (Ford, 1863-1947), have all been part of this modernist enlightenment movement, where scientific pursuit of knowledge, rationality, and universality were the core concepts driving philosophical thought (Boje 2006). Postmodernism emerged from a philosophical (counter-) movement that challenged this centuries-old modernist movement. It sought to undermine the authority of reason, the scientific worldview, and a universal approach to gaining and perpetrating knowledge.

Table 3. Some contradictions in applying the universal ethical perspectives

Number	Ethical Aspect	Definition	An example of a system being developed	Deontological View	Consequentialist View
1	Access and Equity	Whether the use of technology is biased or if all groups have access to technology.	An application developed to log on to a database containing sensitive company information.	The systems developed should be equally accessible to all members of the organization at the very least.	The systems developed should not be made accessible to everybody, since granting access to all may result in greater losses than benefits.
2	Quality of work life	Whether the technology improves the quality of work life.	An electronic monitoring system for managers to monitor employees.	The systems developed should not monitor employees, as they all have a right to privacy; at the very least, the employees being monitored should be made aware.	The application should be able to discreetly monitor the employees, since this would justify the consequential benefit of the system (e.g., greater productivity, less thefts, etc.).
3	System quality and accuracy	Whether the system is reliable, accurate, and safe, and whether it is vulnerable and has the potential to do harm.	A transaction processing system.	The system developed should represent information faithfully, since accurate representation of information is mandatory.	It may be appropriate for a system to represent "biased" information if such a representation benefits the organization or a focal community of users.
4	Intellectual property	Whether the technologies provide the opportunity for everyone to share information.	A web-based application developed to display company financial data.	The application should be accessible by everybody, at least within the organization, since everyone has a right to true information.	The application should only provide access to selective individuals; providing access to all individuals can result in more harm than good and ruin the company's competitive advantage due to leakage of sensitive data.

The postmodern movement is a vast literary and scholarly movement, which, of course, would be difficult to review in a single piece of work such as ours. Indeed, as Kilduff and Mehra (1997) note, postmodernism includes many "diverse intellectual trends" (p. 455). In fact, as Best and Kellner (1991) point out, by the very nature of postmodernism, we cannot have a unified postmodern theory. While all postmodernists are opposed to the aforementioned precepts of modernism, they vary a great deal in their argumentation and resolutions, as evidenced in the works of different authors in this area such as Foucault (1980), Derrida (1982), Lyotard (1984), and Baudrillard (1987), to name only a few. Indeed, according to Kroll (1987), it is this diversity that encourages the creative trend in postmodern thought.

In line with postmodern thought, postmodern ethics can be viewed as an answer to the concerns surrounding the universal theories of ethics and their inherent assumptions of objectivity and rationality. According to Bauman (1993, p. 2), the modern age has reached its "self-critical, often self-denigrating, and in many ways, self-dismantling stage." The postmodern movement, in ethical terms, has opened the "possibility of a radically novel understanding of moral phenomena" (p. 2). This is consistent with Boje's perspective (2006), where he sees the modernist movement as being focused on "empiricism, positivism, rationality, mechanisicity or organicity of science, [and] technology" (p. 479). Drawing from Nietzsche (1968, sec 1, p. 7), he justifies this modernist agenda as one that would lead to an obliteration of "value, meaning, and desirability," (p. 479) and thus, of fairness and ethics.

Postmodernist ethicists undermine the *authority of reason* (and thus address the problems faced by the universal perspectives of ethics), holding that any universal principle can never guide any [ethical] decision-making process (Mumby 1997). This is because they represent "totalitarian" ways to approach ethics and understand ethicality in terms of achieving consensus (Mumby 1997, Lyotard 1984), which is of "outmoded and suspect value" (Lyotard 1984, p. 66). Any attempt at achieving consensus (i.e., consistent adherence to universal principles of ethical conduct) is perilous because it moves us away from the concerns of different stakeholders such as practitioners, workers, and managers (Kilduff and Mehra 1997).

Postmodern ethicists *reject the rational worldview* propounded by the universal theories of ethics (Bauman 1989). The postmodernist argument draws from Nietzsche's notion that *objective reality does not exist, but is often constructed by human beings* (Nietzsche 1873/1995) and, hence, there cannot be any notion of universal knowledge (Remenyi et al. 1997). So, according to postmodernist ethics, *what we think as objectively true or accept to be morally right stems from nothing but a subjective understanding that varies from person to person and from context to context* (Mannheim 1936). Indeed, it is argued that the core aim of ethics is not to provide any overarching principles of ethicality but to achieve improvements in localized human settings and for short periods of time (Beck et al. 1994, cf. Yuthas and Dillard 1999). In other words the same principles of ethics can have varying degrees of relevance (i.e., from no relevance to extreme relevance) across different nations, customs, cultures, and situational contexts (e.g., the deontological principle, *do not kill*, becomes irrelevant in a war).

Apart from that, postmodern thought becomes relevant because it involves the daily aspect of our social lives (Kilduff and Mehra 1997). In fact, one of the core motivations of the postmodern movement has been to contest the narrow and simplistic understanding regarding complex social processes (Rosenau 1992), derived from the "machine" model of human beings (Kilduff 1993).

Given that the postmodern thought that underlies postmodern ethics is a vast intellectual tradition, in this paper, we confine ourselves to the arena of the *postmodern ethical perspective* proposed by Zygmunt Bauman (1989; 1993), who is widely acknowledged as being a leading postmodern ethicist in recent times (Yuthas and Dillard 1999). It should be noted that, consistent with other scholars identifying with the postmodern movement, Bauman is critical of the concepts of modernism such as rationality, objectivity, universality, and mechanistic orientation. We now discuss the basic tenets of postmodern ethical thought, put forward by Bauman (1993).

Human beings are morally ambivalent

According to Bauman (1993), human ethical ambivalence is an ignored fact and all “rationally articulated and pondered rules and duties” (p. 10) (including deontology and consequentialism) contribute to the obliteration of this notion of moral ambivalence. In his view, human entities, in essence, are neither bad nor good. Also, he maintains that rationality cannot override the *moral impulse*. Following Bauman’s arguments, we can see that there is no way to design ethical rules (such as deontology and consequentialism) that can guide ambivalent human beings so as to guarantee the possibility of an ethical outcome.

Moral Phenomena are inherently not rational

The second precept of Bauman’s argument is that moral phenomena are essentially non-rational. A rational outlook tends to assume that there can be only one good choice and numerous bad ones in a given situation and that certain rules can be formulated to provide us with clear-cut ethical prescriptions for every situation. However, as Bauman notes, in order for that to happen, moral phenomena have to be “regular, repetitive, monotonous, and predictable,” (p. 11), which they are not. Furthermore, he contends that following these rational rules (as in deontology and consequentialism) moves us from an understanding of morality as an implication of the autonomy of the moral entity to an understanding of morality as “power assisted heteronomy” (p. 11).

Morality is characterized by eternal self-doubt

As Bauman (1993) notes, there are few moral choices that are “unambiguously good” (p. 11) (or bad), and mostly, “moral choices are made between contradictory impulses” (p.11). Thus, morality may only be understood by the continuous existence of self-doubt within the moral entity. The realistic target of morality, then, is the continuous existence of the moral impulse of human beings.

Morality cannot be universalized

Bauman (1993) notes that in spite of the “diversity of moral beliefs and institutionally promoted actions, the past and persistent variety of individual moral postures” (p.12), modern thought has regarded these as problems and has sought to overcome them. Modernism (which included the movements of deontology and consequentialism) has tried to institute a code of ethics relevant to all human beings, conveniently ignoring “local distortions” (p. 12) and the fact that such local distortions are the ones that give morality its scope. According to Bauman, the quest for, and the seeming substitution of, traditional ethical rules for the “autonomous responsibility of the moral self” (p.12) implies the obliteration of the moral self, and thus, of morality. In his opinion, the primary effect of such universal ethical rules has been the silencing of the moral impulse of the moral entity.

Moral impulse is at the core of morality

Bauman’s basic arguments highlight that our society, which often holds us to ethical rules, is itself the product of our moral impulse. According to him, our moral impulses “supply the raw material of sociality and of commitment to others in which all social orders are moulded” (p. 13). Bauman finds it ironic that such societal rules and norms, including the universal acknowledgments of rights and duties (which, one may recall, is essentially a deontological stance), become instruments to curtail the overall development of moral impulse of the moral entity. According to Bauman, morality can be achieved only through the enactment of moral impulse -- this is the starting point of the existence of society. This moral impulse is the inherent responsibility that one feels toward the “Other.” The “Other” is Bauman’s (1993) conception of moral subjects who are at the receiving end of our actions, and whom we may negatively impact during the course of our actions.

Summing up the arguments of Bauman’s postmodern ethics

So, what do these basic tenets of Bauman’s postmodern ethics tell us? To start with, the focus of ethical analysis in postmodern ethics is the moral entity, because morality can never be achieved through the implementation of a universal rule; morality is generated from within an entity through the enactment of a moral impulse (Bauman 1993). The postmodern argument of “goodness” is that it is existential in nature; an argument that refers back to our previous notion that morality is essentially narrowly (or locally) bounded in a spatial, contextual, and temporal manner. Rather than the understanding of what is “good” and “true” as being universally agreed upon, to the postmodernist

they are subjective (depending on the entity) and are conditioned by each entity's unique set of afflictions (Weiss 2000). Since the real world is often a product of human consciousness (Becker and Niehaves 2007), ethicality within a postmodern perspective is a product of emotions and impulses, and not of any preordained, universal, rational, or unambiguous truths that are observable in the world (Bauman 1993).

Why should postmodern ethics, such as that propounded by Bauman, be suited to traditional ISD? First of all, we have shown that ISD initiatives fail because they often lack fairness. And this lack of fairness comes from the assumptions of traditional ISD, which may either be invalid or give rise to negative outcomes (as shown in Table 2). So, we need to take additional steps so that fairness is not compromised. However, we cannot rely on the universal theories of ethics for this, because they are themselves based on the same set of assumptions (e.g., objectivity, universality, and rationality) that have proven to be problematic for functionalist ISD. Thus, we adopt the postmodern ethics route. Indeed, our position is further justified by the observation that prior works have pointed to the relevance of postmodern ethics for ISD (Yuthas and Dillard 1999; Remenyi et al. 1997)

Also, in the context of ISD, because the postmodern approach to ethics is strongly rooted in a relative and subjective understanding—necessitating consideration of the moral entity's preferences and the context of an action—this approach forces an ever-continuing spiral of analyses that corrects the problems that would have been introduced by a merely objective analytical rendering of the universal ethical theories. One of the significant reasons for failure of IS is that the requirements are always changing (Remenyi et al. 1997), rendering as inappropriate assumptions of objectivity and universality. Thus, to achieve fairness in ISD, we need to look beyond the assumptions of objectivity and universality, and what better lens to look through than that of postmodern ethics, which does away with these very assumptions.

Having justified the need for postmodern ethics to ISD, where do we start our ethical perspective of ISD according to postmodern thought? If we recount the salient features of Bauman's argument, we find that we must focus on the moral responsibility of the moral entity toward the moral subjects (i.e., the recipient of the actions of the moral entity) and subsequent existence and enactment of the moral impulse of the moral entity.

Given that the focus of postmodern ethics is on the entity and begins with the implementation of the involvement of the key entity in the social process (Kilduff and Mehra 1997), it motivates us to shift our ethical focus and uncover a focal set of human beings important to the development process -- the analyst team. Before proceeding, we need to address an important question: Can teams or groups behave as moral entities? It is noteworthy that the basic tenets of postmodern ethics, which present an understanding of morality from an entity/agent perspective, are consistent with a conception of the group as a moral agent. There exist well-developed arguments supporting the view that groups or teams are entities with postmodern qualities (Hawkins and Tolzin 2002) and that they have moral impulse (Le Bon 1896). Furthermore, a fair share of academic research has been devoted to understanding the concept of group morality and has posited that it is a standalone, real, and relevant concept (e.g., Cohen et al. 2006; Niebuhr 1941; Ridley 1996). Within the ISD context, the central role of the team of analysts — who influence how a) requirements are collected and interpreted, b) designs are formulated and implemented, and c) reality of stakeholders are shaped, morally or immorally — makes it the ideal candidate for consideration as the key moral agent for ISD projects. We expand on this theme next.

4. The team of analysts as an ethical agent

Analysts are arguably the most important human element in IS development (e.g., Hirschheim and Klein 1989). Ethical decision making is a part of the systems development process (Iivari 1991) and, as such, literature addressing ethical issues in systems development has addressed the role of the analysts (by analysts, here we refer to systems as well as functional analysts, both of whom are critical in an ISD process) as moral agents (Walsham 1993, Mason et al. 1995; Collins et al. 1994). Other works have reiterated the importance of ethical individuals in the context of ISD (Mumford

1995; Stahl 2007).

Indeed, in the context of ISD, the focus on the team of analysts as the ethical agent can be seen as an answer to the call for *more people-centric ISD* as opposed to a process-centric approach (Nerur et al. 2005). True to the postmodern perspective of ethics, we argue that the ethicality involved in the whole process of systems development is contingent upon what decisions the analyst team makes based on its moral impulse, and not as agents of any universal ethical principles.

The notion of moral impulse is closely associated with the notion of *moral responsibility*. In fact, as Bauman (1996) argues, following the moral impulse makes it imperative to assume moral responsibility for "the Other," whose vulnerability prompts us to assume responsibility (ten Bos 1997). As noted earlier, "the Other" is Bauman's concept of moral subjects who are at the receiving end of our actions and whom we often "deface" (i.e., dehumanize and relegate as non-moral subjects) in order to clear the path for our actions (Bauman 1993). In effect, the concept of "the Other" entails an understanding that other human beings are the same as ourselves (Rorty 1989; cf. Yuthas and Dillard 1999). In the context of ISD, "the Other" thus translates into the human beings who are stakeholders in the ISD process. So, to summarize in plain language, ethicality in any social process (including ISD) is achieved through *an enactment of moral responsibility toward the individuals who are stakeholders in the process*.

In addition, the importance of moral responsibility to ISD can be gauged from an understanding that one of the main problems with information technology is that it causes distancing between individuals developing the technology, individuals using the technology, and individuals affected by the technology (Yuthas and Dillard 1999, Sarker and Lee 2006). Consequently, *the moral responsibility associated with the system tends to get diffused*, and many information systems failures are believed to result from such diffusion. The idea of moral responsibility associated with postmodern ethical thought (Bauman 1993) has the potential to provide some respite in this regard.

Thus, there are two steps to implement morality from the postmodern perspective: First, we need to identify "the Other," for the analyst team (i.e., the stakeholders to an ISD process) and, Second, we need to give the analyst team strategies to implement their moral responsibility for these stakeholders. In the next section, we provide an understanding of the concept of stakeholders and draw upon the stakeholder theory to identify these stakeholders.

5. Stakeholders to ISD

Identification of stakeholders is necessary to understand and apply postmodern principles in the ISD context (Yuthas and Dillard 1999). This is because, as noted before, in order to satisfy moral responsibility for "the Other" within the context of an ISD process, we need to delineate what "the Other" is for the analyst team. This delineation can be achieved through a consideration of the stakeholder theory (Donaldson and Preston 1995; Freeman 1984), one of the important theories in management research.

As Freeman (1984) defines, a stakeholder is "any group or individual who can affect or is affected by the achievement of the organization's objectives" (p. 46). As noted by Mitchell et al. (1997), and subsequently reinforced by Agle et al. (1999), there are many criteria for identifying stakeholders (e.g., in terms of contract, exchange, legal right, moral right, or moral interest in the harms and benefits generated by the organization's actions). As Freeman and Evan (1990) note, all stakeholders should be taken into account, as inclusion of stakeholders in such ethical analyses adds to *fairness* of procedures (Freeman and Evan 1990, Luoma and Goodstein 1999), making it relevant to our ethical standpoint. According to Donaldson and Preston (1995), stakeholder interest and involvement is intrinsically valuable, and each stakeholder merits consideration because of the fact that he or she is a stakeholder. So, we can say that if we identify potential stakeholders to an ISD project and implement moral responsibility for them, we can achieve overall fairness in ISD, as the stakeholders are "the Other," which we alluded to earlier.

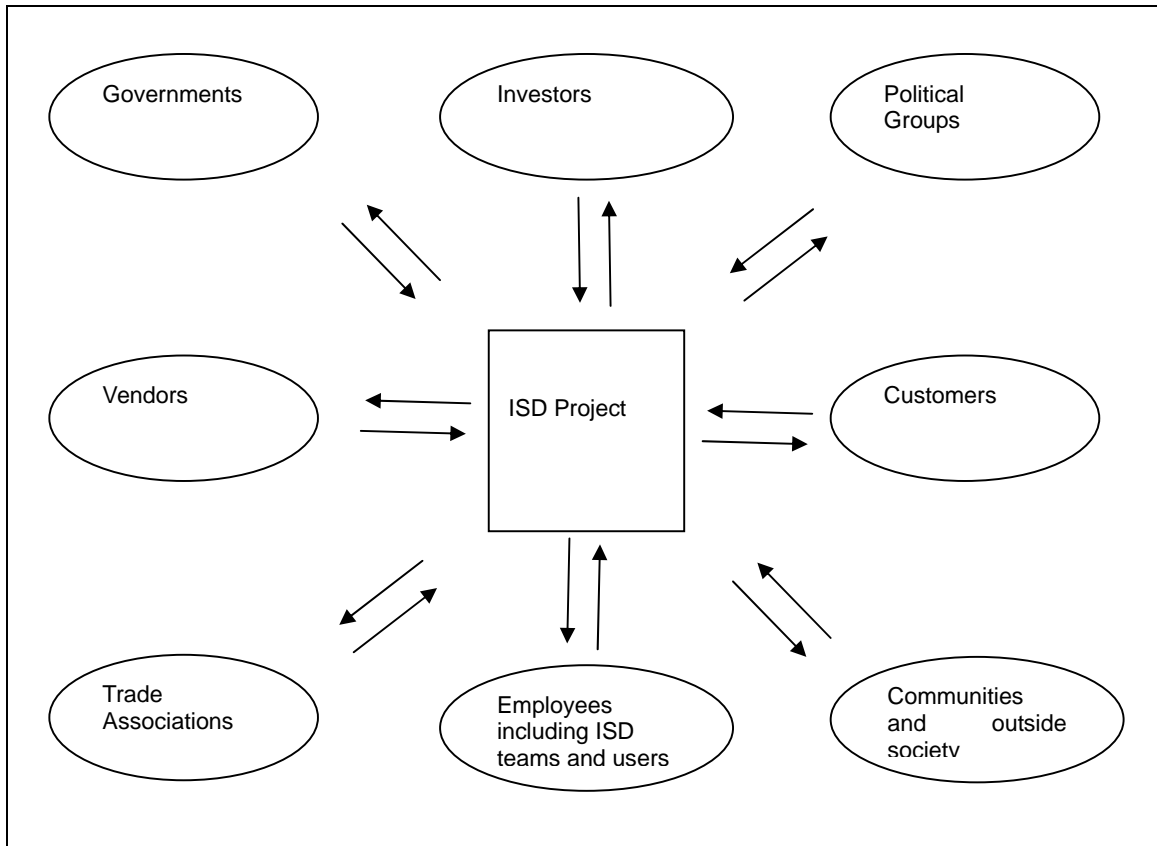


Figure 1. The stakeholders to an ISD project (adapted from Donaldson and Preston 1995)

Who, then, are the stakeholders to the ISD projects within the organization? Adapting from the stakeholder theory model proposed by Donaldson and Preston (1995), such stakeholders include employees, customers, investors, vendors, trade associations, governments, outside society, and even outside political groups (shown in Figure 1). It is worthwhile to note that these stakeholders form a relationship of mutual influence with the ISD projects that take place within the organization (represented by the arrows both ways). It should be noted that this set of stakeholders forms a rather exhaustive case -- the actual set of stakeholders may vary from project to project. What is important is that in each case, *the specific set of stakeholders pertinent to that ISD project is identified*. This case by case analysis and attention to stakeholders from the above set is what identifies "the Other" for a specific ISD project.

Having identified "the Other," we now turn to discuss strategies and considerations for ensuring that the moral responsibility for "the Other" is upheld, at least to some degree. This we discuss in the next section.

6. Discussion

The implementation of Moral Responsibility: Implications for Practice

The implementation of moral responsibility involves strategies that put the onus of ethicality on the moral entity (here, the analyst team), consistent with the tenets of postmodern ethics. It should be noted that the strategies discussed below, which are to some degree inter-related (since they all seek to develop greater ontological and epistemological completeness of the reality, and a moral impulse toward all stakeholders), highlight key considerations a team of analysts should have. Of course, the actual achievement of these considerations would depend on the situation and the context within

which the analyst team finds itself.

In this sub-section, we discuss each of the implications, first in general, and then in the context of our TELECO case introduced earlier. We see that, in many instances, the proposed strategies were not followed in TELECO, leading to negative consequences. We submit that these undesirable consequences provide a preliminary validation for the implications derived from the postmodern school of thought on ethics. We present a summary of our discussion below in Table 4, with thoughts on how our postmodern strategies could have been helpful in the TELECO case.

Table 4. How postmodern principles could have helped in the TELECO case	
Postmodern Principle	Some examples on how it could have helped in the TELECO case
Developed familiarity with the stakeholders and their changing concepts.	Had the analyst team not assumed the social consensus (which we have characterized as a myth propagated by functionalist ISD traditions), they would have pursued <i>greater familiarity</i> with the stakeholders, <i>developing a moral impulse</i> , which would not only lead to greater fairness but possibly also to a more effective ISD process overall.
Anticipate and address consequences of ISD, whether intended or unintended.	The analyst team could have <i>anticipated the result</i> of their not reducing the priority of their “pet” projects. If they had done so, they would probably have reduced the priority of their “pet” projects, thus being fair and causing less resentment amongst the various stakeholders who accused them of prioritizing <i>only</i> their pet projects.
Gain a sense of personal responsibility by reducing de-individuation and anonymity.	If the analyst team had indeed developed <i>personal responsibility</i> , it would probably have questioned the various assumptions (e.g., control, social integration, etc), and actively engaged in efforts to prevent/mitigate harmful consequences that followed.
Increase ownership for the artifacts such as the design, the IT system, and the new IT enabled business processes.	If the analyst team members had prided themselves in <i>being the owners</i> for the design, they would have taken steps to reduce managerial control (possibly through dialogue with management, and by making management and other stakeholders aware of the ramifications) so that the disastrous results that followed could have been mitigated.

Develop familiarity with the stakeholders and their (changing) contexts

A core value in postmodern ethical thought is to include “hitherto marginalized voices within the scope of inquiry” (Kilduff and Mehra 1997, p. 460). Without such inclusiveness, the fundamental concerns about the systems development of marginalized stakeholders can never be brought to the fore, and ontological/epistemological assumptions underlying the given ISD initiative cannot be complete. The issue of familiarity is further stressed by Yuthas and Dillard (1999), who argue that in order to achieve morality (especially within a postmodernist ethical stance), familiarity with stakeholders is paramount (Ignatieff 1985; Yuthas and Dillard 1999). Through familiarity, we can develop an understanding of those whose lives are influenced -- their characteristics, ideas, and contexts -- leading to their recognition as “the Other” and a subsequent development of a moral impulse toward them (Bauman 1993).

In the realm of ISD, the analyst team should, as a *matter of obligation*, identify and learn about the different stakeholder views, exercising care and compassion toward them and incorporating their expectations into the systems design (Lyytinen and Hirschheim 1987). Enacting this principle is likely to lead to the general fairness of the ISD process and of the system from the perspective of different stakeholders. Ignoring or marginalizing the perspectives of certain stakeholder groups (based on “rational” considerations) is not acceptable – *there has to be engagement and dialogue*, even if the wishes of all stakeholders cannot be accommodated in the end.

In the TELECO case, the analyst team remained secluded from the rest of the organization, reflecting the absence of the often-presumed social integration during ISD, and thus, did not have an opportunity to develop familiarity for, and the moral impulse toward, many stakeholders within an organization. Without such moral impulse, the team members were not in a position to be compassionate toward the organizational members and their expectations. The lack of empathy and understanding became evident in the way the team members allowed themselves to be led into designing business processes/systems at the behest of management, without considering the potential impact of the design on TELECO employees. Moreover, the team members failed to recognize the changing environmental (i.e., regulatory) conditions while they were busy designing and implementing the systems, which rendered the systems and the massive changes they had planned for unnecessary. The team was presumably being guided by the myth of linearity and goal predetermination embodied in functionalist ISD thinking, and thus, they failed to keep track of the changing contexts and assumptions of different stakeholders, which they could have done by developing a more intimate understanding of the stakeholders. It was only when the management leading the project changed that the team was forced to modify course.

On a positive note, there was one clear instance, where an analyst (an IT director) did make a serious attempt to gain an understanding of the “true” perspective of some stakeholders. He narrated a situation wherein even on the limited occasions where stakeholders had been given the opportunity to provide input, they had been unable to do so because of their unique circumstances:

This is how it would have felt to one of those people in my session. On Monday, in the newspaper you read, ‘TELECO is going to eliminate 800 jobs’. On Wednesday, I call you to the meeting, and say, ‘. do you believe in my project?’ People were reluctant, for fear of losing their jobs, to say ‘no’. Because the backdrop they were working in was... ‘Well, if I say that we can’t do this, I am not going to be picked into a new position, and I may be one of these 800 people that gets cut.’ ... if they would have known... that they were secure... they might have spoken up more...

The above example shows that understanding stakeholders’ views is a complex process, and merely asking for their perspective may not be sufficient during many ISD projects. Thus, it becomes more important for the team of analysts to actively engage with stakeholders so as to gain a true understanding of their contexts and needs. In the TELECO case, for example, had the analyst team not assumed the social consensus (which we have characterized as a myth propagated within functionalist ISD traditions), they would have pursued greater familiarity with the stakeholders, developing a moral impulse, which would not only lead to greater fairness but possibly also to a more effective ISD process overall.

Anticipate and address consequences of ISD, whether intended or unintended

Yuthas and Dillard (1999) draw our attention to this important idea within postmodern ethics, and its relevance especially to ISD. We can argue that, given the inherently distanced nature of social processes such as ISD, actions undertaken during such processes have far reaching consequences in space and time (Bauman 1993; Yuthas and Dillard 1999). The moral imperative can be understood by the fact that the invisibility of such temporally and spatially remote effects makes it easy for us to dismiss them as not being relevant or important (Yuthas and Dillard 1999). In order to overcome this, *human beings have a responsibility for visualizing the long reaching effects for their actions*. Of course, it must be acknowledged that the visualization of possible future effects will never be complete, as consequences are difficult to determine *a-priori* (Chatterjee et al. 2009). However, it is important that individuals in responsible roles make an active effort to recognize the potential impacts. Through an understanding of the vulnerability of the (negatively) affected stakeholders, a moral

impulse is triggered, which, in turn, contributes to the fulfillment of moral responsibility (Bauman 1993).

In the realm of ISD, the analyst team has a moral responsibility to analyze the potential consequences of the system being developed and how it will affect the stakeholders downstream. If there is any ambiguity with respect to the consequences, then the analyst team should be involved in a discourse with the concerned stakeholders so as to develop a greater level of understanding of the situation resulting from the ISD process and to limit the undesirable consequences of the developed system. Skeptical readers may argue that such an idea is already factored into the functionalist approaches to ISD. For example, any ISD involves a cost-benefit analysis to gauge the potential impact. However, such cost-benefit analyses are usually instrumental in nature. In contrast, factoring in the effect on stakeholders (beyond economic considerations) entails a genuine moral impulse and thus a moral responsibility concerning the effect of the IS/ISD on "the Other." *Design tradeoffs must involve the consideration of a broader set of factors*, including the long-reaching physical, social, psychological, and economic impacts on stakeholder groups.

A number of instances within the TELECO case point to the lack of effort to anticipate consequences. For example, when the team members were charged with prioritizing the systems that had been proposed at the end of the design phase, by resisting any attempt to reduce the priority of their "pet" projects, regardless of the actual benefits (in terms of criticality to vision, and cost to implement), most team members demonstrated a lack of anticipation of consequences (e.g., the scope of the project becoming unmanageable) and moral responsibility to stakeholders of the initiative. This was perhaps a reflection of the poor social integration amongst them. Similarly, the team simply did not anticipate the fact that the retirement plan that the powerful union had negotiated would lead many employees who were considered very valuable to the "new" TELECO (after the completion of the initiative) to leave the organization, and in many cases, join the competition. If the analyst team had been sensitive to the need to anticipate potentially negative consequences for stakeholders, then some of the disastrous consequences may have been averted. This also leads us to the next implication, that of taking personal responsibility.

Gain a sense of personal responsibility, by avoiding de-individuation

The idea of personal responsibility is in contrast with the current phenomenon of a "de-centered" world (Foucault 1980). The emphasis on the organization in today's business world has led to the subjugation of individual voices within it (Schultz 1996). De-centering is the process by which entities lose their sense of personal accountability as they are submerged in a common voice (e.g., Schultz 1996). Related to de-centering is the idea of de-individuation, which tends to occur most frequently when corporate members think that they are anonymous (Schultz 1996), disguised, or masked (Zimbardo 1970). This phenomenon allows individuals to obscure matters of attribution and responsibility, giving rise to (possibilities of) unethical behavior (Cheney 1989, cf. Schultz 1996).

The postmodern outlook on moral responsibility necessitates that such de-centering within organizations should be avoided, and personal responsibility actively promoted. Specifically, the analyst team members should be encouraged to develop a personal accountability to the stakeholders who are affected by their actions or the systems they propose/implement.

We now attempt to illustrate the above idea by interpreting the events at TELECO. Indeed, we find that the "de-centered" and "de-individuated" design team members had been relegated to the role of a "tool" for developing/implementing systems as per the whims of the dominant stakeholder groups, and the team appeared to have surrendered the ability and obligation to voice concerns regarding the ISD project. The members found themselves proposing, perhaps to protect their own careers, inefficient designs that seemed to reflect managerial self-interests more than those of the other stakeholders – this was a clear indication of a lack of social integration among stakeholders.

Another instance illustrating the impact of de-individuation was the use of offensive language by the analysts to describe the functions of employees of their company -- *their colleagues*. A team-member explained:

Some of the things that we found can be fixed immediately... hatchet in the head... if somebody has a hatchet in their head, pull it out... sometimes they are called quick-hits... low hanging fruit...

Not surprisingly, the employees were deeply offended by metaphors such as “low hanging fruit,” “hatchet in the head” and “quick-hits” that were introduced into the organizational language to describe them or their situations. Again, we can attribute the use of such insensitive symbolism to the lack of moral impulse, because of the diffusion of personal responsibility among the design team members, some of whom attributed the language to the external experts/consultants.

Further, the analyst team was silently acquiescent, possibly in deference to managerial control, to the action of laying off the customer service representatives before the new billing system was available for implementation. Through their silence, we may argue that the team members had failed to accept their moral responsibility toward the customer service representatives who were prematurely laid off, and the customers, who were left without any service for an extended period as a result of the implementation strategy enacted. There was no evidence that the team was guided by a moral impulse in dealing with this aspect of implementation, given that the members did not attempt to resist managerial actions. The team members did not participate in any dialog with management, who were exercising (what was seen by the design team as “political”) control over the implementation process. The team members just did what they felt they had to for the sake of project completion (*attributable to goal predetermination*), for the managers they reported to (*attributable to control*), and for the survival of the organization as a whole (*attributable to the myth of social integration*), following the approach recommended by the experienced consultants (*attributable to the myth of rationality and universality*). Based on this interpretation, we feel that it is reasonable to propose that the team members had been de-centered and de-individuated, and consequently, felt excused from taking personal responsibility for their decisions and actions. One possible way to reduce such de-centering and de-individuation effects is for management to promote *the development of an independent and public identity of the ISD team*. Members would need to take personal responsibility for each decision – pointing to other pressures or causes (e.g., management wanted it, my team members wanted it, consultants wanted it, or methodology dictated it) should not be acceptable. We believe that if the analyst team had indeed developed personal responsibility, they would probably have questioned the various assumptions (e.g., control, social integration, etc), and actively engaged in efforts to prevent/mitigate the harmful consequences that followed.

Increase ownership for the artifacts such as the design, the IT system, and the new IT-enabled business processes

The idea of increasing ownership is in contrast to the idea of distancing. Distancing can be defined as a phenomenon that creates, maintains, and alters an actor’s perception of responsibility and accountability (Schultz 1996), due to the nature of the linkage (i.e., a degree of separation) between the actor and his/her actions (or the object of his/her actions) in time and space. The problem of diffused responsibilities goes back to the idea of a loss of general moral accountability for any action. In such a case, the entire organization (of which the team of systems analysts is a part) becomes instrumental in dissolving moral responsibility (Bauman 1989, cf. Yuthas and Dillard 1999). In the case of a team of systems analysts, it may be argued that, as a result of distancing, they become emotionally and cognitively separated from the designs/systems created (or even the creative process itself), thereby losing personal ownership of the outcome (Sarker and Lee 2006).

In the TELECO case, there is much evidence suggesting that the team members did not “pride” themselves on ownership of the design. One of the designers stated:

...Ideally, you document the existing situation, you sit up and brainstorm about how things might change, or how we might end up with a process, then you establish a vision... I did not sit into any brainstorming session.. I can tell you... at the point we were... put[ting] together presentations to present to all the... managers... damn presentations... The business of producing and documenting was very cumbersome... we refined the hell out of this thing...

Another analyst angrily described how their designs were being rejected by management, and they were asked to go back to the drawing board with design constraints that made no sense, in terms of efficiency/effectiveness metrics:

...talk about political... you come back with eight processes and they say no... you got to have twelve... why?...guess what... because there are twelve people [VPs] I see on the sheet who need [process-owner] jobs...

It is not difficult to see how the analyst team, primarily as a result of managerial control, would be distanced from the designs, and, hence, not feel any moral impulse toward the stakeholders whose lives would be affected by the systems being developed and implemented.

In the context of our case, we can say that if the analyst team members had prided themselves in ownership of the design, they would have taken steps to reduce managerial control (possibly through dialogue with management and by making management and other stakeholders aware of the ramifications) so that the disastrous results that followed could have been mitigated, at least to some extent.

It is interesting to contrast the notion of “ownership” with the “consulting” or “contracting” mindset prevalent in today’s business world. The basic idea of ownership is that the analyst team does not essentially assume an instrumental involvement in the role (i.e., carrying out the activity because of the fact that it is part of the employment contract); *involvement is related to a moral urge since the team is the focal entity in a process of creation*. This feeling often results in a greater ownership for the system, rather than a feeling that it was only a “part of their job.” Thus, from an ethical standpoint, it is critical that systems analysts feel a sense of personal ownership with respect to the processes, systems, and implementation plans they design or execute.

7. Contribution and Implications

Contribution

The paper contributes to existing IS research in multiple ways. First, with respect to the IS field, in general, it examines the application of ethical perspectives within the IS design and implementation process. While ethical issues have been mentioned within the realm of IS, they have often been relegated to a secondary position in favor of considerations focusing on greater economic efficiency and profits. This paper, by addressing core ethical issues of ISD, showcases the need for ethical considerations and how they can be actually implemented with the scope of ISD.

Second, from the point of view of ISD, this research specifically examines the postmodern ethical perspective, one that has generally been overlooked in the IS literature. This paper aspires to contribute to the literature by attempting to shift, at least partially, the focus in ISD from the process to the core entity (analyst team) involved in the process. This contribution is in line with current research on agile trends in ISD that emphasize the human element (Nerur et al. 2005), though the agile movement is not explicit about the role of ethics in ISD. In a way, this research carries the people-centric paradigm of agile approaches to ISD further and extends it into the realm of postmodern ethics relevant for ISD processes. It highlights the notion that one of the fundamental aims of ISD is to achieve human fairness or justice, a stance that has generally been ignored.

Third, from the point of view of a contribution to the IS ethics literature, this paper provides a fairly novel perspective of ethical analysis and implementation, one that has received little (if any) mention in mainstream ISD research. This paper illuminates ethical principles that can inform both the design and use of IS. For reasons articulated in the paper, postmodern ethics can become a relevant lens for initiating scholarly dialogue within the field of IS: By making IS scholars aware of ideas central to postmodern ethics and their applicability to IS research, this paper contributes in that direction. Given the limited research on IS ethics, generally, and postmodernist views, more specifically, this paper illustrates how views from a rich intellectual tradition can enrich our ideas about IS. In this context, we should mention that prior works have argued that the postmodern ethics literature suffers from a lack

of clearly distilled and implementable principles (Yuthas and Dillard 1999). Our paper, drawing from prior works including Bauman's postmodern perspective, focuses on the moral responsibility of the analyst team and provides a set of principles for the implementation of this moral responsibility, thus addressing this gap.

Fourth, this paper establishes the moral responsibility of the team of analysts and establishes their role as the agent of change in IS development and implementation. In a sense, we extend the role of the team of systems analysts from being only systems experts (as critiqued in Hirschheim and Klein 1989) to *also being moral experts*, by including the moral accountability of the systems analysts as an important aspect of ISD.

Finally, this paper answers the call for greater emphasis on ethical issues within business disciplines, especially in light of the recent scandals that have plagued it (Nevins et al. 2007). Postmodern ethics can be used as a lens to investigate ethical phenomena not only within IS, but also other business disciplines, and this paper contributes by raising this call.

Implications for research

Regarding research implications, we believe that this paper provides the following: First, the paper examines different ethical viewpoints (e.g., deontology and consequentialism) and provides a way for future research to better define the ethical domain of ISD. This paper also presents an example of how rigid adherence to functional principles, ignoring issues of fairness, may actually lead to dysfunctional ISD. Future research may want to investigate information systems failures using ethical perspectives (specifically, postmodern ethics) as a starting point.

Second, the paper develops an ethical view of ISD, understanding the team of analysts as a principal moral agent. This is something that future research could address and try to improve on, e.g., analyzing the role of the analyst team in greater detail and developing a more comprehensive set of guidelines for ethical ISD. Such efforts can influence practice by providing improvements to traditional approaches to ISD—focusing more on developing and designing systems that improve the general quality of human life.

Third, the paper can motivate future research to incorporate postmodern perspectives (other than ethics) in order to analyze IS development, implementation, and impact. As mentioned earlier, the pursuit of the postmodern perspective can prompt us to question the applicability of scientific methods to understand the field of IS. In effect, this paper can motivate a stream of studies that aim to shift the modernist focus on rationality and objectivity to an understanding of human impulses, characteristics, and attributes within the realm of IS. Nietzsche (1886/1969) mentioned that it may be more important to have “good” philosophers than “good” philosophy, i.e., to be concerned with what philosophers *are* rather than what they do (i.e., philosophize). Likewise, this paper may illustrate the need to shift our focus to *what IS professionals* (whether they be academics or practitioners) *are*, from *what they do* (i.e., IS research, practice, and pedagogy).

Implications for pedagogy

We believe this research also has practical pedagogical considerations, both for the classroom and the real world training of ISD members, especially analysts. We should note that, much as in the real world, most classroom approaches to teaching ISD focus on functionalist approaches to ISD. By explicating the additional need for ethics within this functionalist paradigm, this paper provides food for ethical thought in teaching ISD to both students and practitioners. As budding systems analysts or practicing analysts, they need to understand the ethical perspectives of ISD and how systems analysts can act as moral agents in the development process. We summarize our prescriptions for ISD teaching/training below in Table 5.

Given this prescription, how do we effectively include ethics within an ISD curriculum and training? A mere descriptive account on the above topics would likely be insufficient, since knowledge is best ingrained through practice and application. Arguing on the basis of the work by Huff and Martin

(1995), we can say that ethical analysis is not necessarily enabled through theoretical knowledge; instead, it requires skills that can be developed through careful examination of concrete cases, identifying the ethical issues, applying the methods of ethical analysis, and dwelling on the alternative courses of action. The guidelines provided in Table 5, thus, provide greater value addition if augmented through practical case analyses.

Table 5. Prescriptive topics for value addition to an ISD course/training

Understand the fundamental goal of system development, i.e., to achieve human fairness.
Understand how this fundamental goal is often compromised by blindly following the functionalist approach.
Understand how ethical analysis may help align systems development to the fundamental goal.
Understand the two act-based universal theories of ethics as primary but arguably incomplete/ineffective perspectives informing ethical analysis of systems development.
Understand how the above incompleteness can be bettered through an understanding of moral responsibility of the analyst team.
Understand the individuals/entities toward whom analysts have moral responsibility.
Understand how to implement moral responsibility toward those stakeholders.

Adams et al. (1998) present a stepwise approach to teaching ethical issues to business students. This can be easily adapted to our case of an ethical understanding of ISD. Based on their approach, and our arguments in this paper, we present a formal approach of teaching ethical analysis and sensitivity to ISD students and practitioners. The formal approach is presented in Table 6.

Table 6. Approach to teach ethical analysis of ISD

Sequential Stages	Description and action plan at each stage
1	Provide a descriptive and illuminating account of the importance of ethics to systems analysis and development. This entails covering the areas and topics represented in Table 5 in detail.
2	Ask students/trainees to write their own ethical dilemmas from their work experience (if applicable) or ask them to construct ethical scenario cases that they think would be important and relevant to systems development. Alternatively, present them with ethical scenarios found in the literature. The more ambivalent these ethical scenarios are, the more it would provide scope for increased exercise of moral responsibility.
3	Distribute the cases developed by students/trainees to the entire class, with an anonymous questionnaire in order to understand which incidents raise strongest feelings, not necessarily rational but more impulse-based, amongst the students.
4	Selecting the cases that have evoked the strongest and conflicting responses, ask students/trainees to work as a group to apply the theoretical ethical knowledge gained in step 1 in order to resolve the ethical dilemma in each case. In particular, ask them to focus on issues of incomplete understanding of the situation, diffusion of responsibilities, silencing/suppression of voices by pointing to rationality, universality, etc., and not developing a moral impulse toward stakeholders. Ask them to analyze how they think a team of systems analysts would react in such a situation, thus making them focus on the ethical dilemmas.
5	Generate a class/training discussion depending on the various ways and approaches to solve the ethical dilemma. In particular, look out for responses based on differing conceptions of moral responsibility of the students/trainees and varied application of the two universal ethical principles. Urge the students/trainees to resolve dilemmas by appealing to their common sense morality and not through the theoretical application of universal perspectives. Look out for instances where the students/trainees do not make any assumptions like the functionalist assumptions earlier in the paper and make decisions with a genuine feeling of concern toward the possibly impacted stakeholders. Illustrate the concept of moral responsibility using these examples.

We are of the opinion that if this formal approach to ethical sensitivity to ISD were articulated as a part of an ISD course/training, it would facilitate the development of "good" analysts who could be part of a "good" (ethical) analyst team. Given the shift of focus from the process to the entity, as argued in this paper, it could have substantial impact on the practice of designing and implementing IS. In fact, such an approach would answer the call to produce better systems analyst teams, ethically focused and motivated to apply the concept of fairness in ISD, through a deeper understanding of, and commitment toward, their moral responsibility.

To conclude, we hope that this paper highlights the importance and need for an ethical understanding of ISD, and how the ideas can be implemented in educational programs and in practice. Further, we intend this paper to contribute to a growing stream of research on IS ethics, energizing new explorations of this very relevant arena.

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