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Nicholas Berente

Uri Gal

Sean Hansen

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Ethical implications of social stratification in information systems research

Nicholas Berente,* Uri Gal† & Sean Hansen‡

*University of Georgia, Athens, Georgia, USA, email: berente@uga.edu, †Copenhagen Business School, Copenhagen, Denmark, email: ug.caict@cbs.dk, and ‡Rochester Institute of Technology, Rochester, New York, USA, email: shansen@saunders.rit.edu

Abstract. *When investigating the use of information systems within organizations, researchers inevitably make decisions relating to the classification, or 'stratification', of information technology users. Most commonly, users are stratified along functional boundaries or by their membership in various communities of practice. It is important to note, however, that any such method of social stratification necessarily focuses the attention of a researcher on certain issues while unavoidably downplaying or neglecting other concerns. Individuals whose interests, values or identification align with these neglected issues may be inadvertently marginalized by the research approach. This observation suggests a range of ethical concerns related to the methods of social stratification used by researchers. In this paper, we argue that the method by which information systems researchers stratify organizational actors in their research has significant ethical implications. We propose a framework that maps stratification strategies that researchers bring to their analyses using Weber's theory of stratification and the dimensions of class, status and party, in conjunction with his distinction between heterogeneous and homogenous forms of work. We offer illustrative theoretical lenses for each category in the framework and demonstrate how each lens favours certain issues and potentially neglects others.*

Keywords: social stratification, IT users, critical social theory, information ethics

INTRODUCTION

The issue of rigour in information systems (IS) research has received ample attention over the years from researchers within the field. To acquire academic and institutional legitimacy, IS researchers and journal editors have tended to emphasize methodological precision in conducting research and as a key criterion in selecting manuscripts for publication (Benbasat & Zmud, 2003). This has led to a growing refinement of methodological principles to which both quantitative and qualitative researchers are expected to adhere. However, despite the focus on methodological rigour, one methodological issue seems to have evaded an explicit discussion in IS academic discourse – classification of research participants.

The way in which researchers classify their research population is of crucial importance. Classification is the foundation for all cognitive activity (Harnad, 1990; Estes, 1994). The impact of classification efforts in human life is as profound as it is inescapable. People, things and events only become meaningful when they are placed within a system of categories (Bowker & Star, 1999; Moscovici, 2001). Once classified, people, things or events can be compared and addressed based on the categories to which we deem they belong. Thus, an established system of categories provides social actors with the means for organizing and structuring their world. It makes them aware of certain characteristics in their environment and, at the same time, allows them to neglect or ignore other factors.

As researchers, we inevitably make choices concerning the stratification of the social systems that we study. These choices can have a powerful impact on our perception of the phenomena that we observe and on the conclusions that we draw from our observations. As the object of IS research often involves socio-technical phenomena involving human actors, our classification schemes are not necessarily value neutral. On the contrary, we argue that the choice of a classification scheme (e.g. according to membership in functional departments, communities of practice or project teams) can highlight certain social dynamics, perspectives and discourses, while obscuring others. The choice of human classification not only has an impact on research conclusions (Latour, 2005), but also may have significant ethical implications as well:

> . . . we are unaware of some of the most obvious things; we fail to see what is before our very eyes. It is as though our sight or our perception were dimmed, so that a given class of persons, either because of their age . . . or because of their race . . . become invisible when, in fact, they are staring us right in the face (Moscovici, 1988, p. 4).

As Moscovici reminds us, when humans are the objects of study, methods of classifying them into groups – often referred to as 'social stratification' – can lead us to inadvertently marginalize certain individuals. Classification systems are often the basis of political and social struggles as different groups try to advance their own interests, agendas and views of the world (Bowker & Star, 1999). At an organizational level, the classification of employees into different categories is fundamental to the provision of institutional assets, as well as to the establishment of interpersonal and inter-group relationships. The action of stratifying thus has a crucial effect on the distribution of social and symbolic resources.

IS users have multiple group affiliations, local environments, unique interactions and identities (Lamb & Kling, 2003). Because of this multiplicity of relationships, actors vary in their degree of enrolment within the various social worlds that they straddle and, thus, experience what is described as *multiple-marginalization* (Kolaja & Kaplan, 1960; Vigil, 1988; Star, 1991). Further, many classification schemes may not attend to a variety of relevant actors in any given context. For example, Ferneley & Light (2008) found that the relationship between social groups and 'bystanders' is changing with the evolution of information technologies. To capture this diversity of both membership and marginalization, and to provide a multi-perspective view of the relationships among organizations, people and technology, IS researchers need to consciously and reflectively use varied classification schemes. To facilitate this, we propose a framework for

classifying individuals that provides a basis from which researchers can make explicit and informed methodological choices. We draw on Weber's (1978) framework of social stratification to suggest a number of theoretical perspectives through which organizations can be observed. These varied perspectives promote alternative ways of classifying people within organizations. We choose to build on Weber's work on social stratification because it is foundational to a great deal of sociological and organizational research. In addition, it offers a rigorous framework through which multiple lenses for observing organizations can be illustrated.

The remainder of the paper is organized as follows. First, we establish the critical perspective by which we judge ethical activity and highlight the importance of paying close attention to the ways in which researchers and developers classify users. Next, we present a framework for classifying individuals based on the focus of the conducted research. We then offer illustrative theoretical applications for each category in our framework, followed by examples of ways that IS researchers have adapted their stratification strategies to highlight potentially marginalized actors. We conclude with a discussion of the ramifications of information technology (IT) user stratification for the conduct of research.

ETHICS AND IS RESEARCH

Ethical issues surrounding the development, implementation and use of IS have significantly lagged technical advancements in IT (Laudon, 1995). One reason for this observation may be that, as with the discipline itself, ethical explorations of IS have been fairly diverse in nature. For example, the exploration of broad ethical issues in the *use* of IS, frequently referred to as Computer Ethics, has received significant attention since the 1990s (e.g. Forester & Morrison, 1994; Floridi, 1999; Johnson, 2003). Conversely, within organizational domains, research into ethics focuses on information management (e.g. Mason *et al*., 1995; Smith & Hasnas, 1999) and ethical issues related to information system development (e.g. Mason, 1986; Schuldt, 2005).

In addition to the literature that explicitly addresses ethical issues, a good deal of foundational research in IS calls attention to the ethical dilemmas (often implicit) that flow from the asymmetric distribution of power within organizations (e.g. Keen, 1981; King, 1983; Markus, 1983; Kling & Iacono, 1984; Markus & Bjorn-Andersen, 1987). For decades, researchers within this tradition have looked to the political dynamics of systems development and implementation efforts – raising questions about control, surveillance, resistance and the general exercise of power through the development and implementation of computer-based technologies.

Another area for the consideration of ethics in IS is in the conduct of IS research itself. This facet necessarily entails a significant degree of introspection on the part of the researcher. Perhaps for this reason, it has received the least explicit exploration. To a significant degree, the consideration of ethics in IS research reflects developments in the broader domain of the social sciences. Specifically, IS researchers are subject to the same guidelines for appropriate research that were defined in the Belmont Report from the National (USA) Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979), namely, the

principles of respect for persons, beneficence (i.e. avoidance of harm to subjects) and justice (i.e. fair distribution of risks and rewards of research). However, in addition to the ethical principles governing all of the social sciences, several researchers have explored the ways in which ethical considerations are involved in key aspects of the research community's activity, including the collection and analysis of data, the writing of research articles and the refereeing of submitted work (Kock *et al*., 2000).

One framing that has been used repeatedly for the assessment of IS research ethics is the distinction between teleological and deontological ethics (Broad, 1930; Walsham, 1996; Davison, 2002). *Teleological ethics* reflect the consideration of appropriate behaviour with respect to the expected outcomes or ends of a research effort. Because of this emphasis on the consequences of one's actions, teleological ethics are frequently referred to as *consequentialist* (Pojman, 1990; Freeman, 1994). Utilitarianism, in which the ethical value of a behaviour is determined by the degree to which its results maximize the happiness of the greatest number of individuals, is frequently cited as an exemplar of a teleological approach (Vallentyne, 1987). By contrast, *deontological ethics* focus on the fundamental obligations of an actor. From this perspective, ethical behaviour is that which adheres to intrinsic principles or the duties of an individual, rather than solely on an assessment of the outcomes that may result (Vallentyne, 1987). Several authors have noted that a deontological perspective tends to emphasize the moral rules that should govern appropriate action (Tong, 1993; Harris & Sutton, 1995; Greco, 2001). Kant's categorical imperative and the Ten Commandments of the Judaeo-Christian tradition are frequently used as illustrations of a deontological view (Macdonald & Beck-Dudley, 1994; Walsham, 1996).

While the deontological/teleological distinction has been criticized as a false dichotomy by some philosophers (Toulmin, 1970; Vallentyne, 1987; Macdonald & Beck-Dudley, 1994), it plays a prominent role in 20th-century ethical frameworks (e.g. Rawls, 1971) and has been particularly widely used in the study of business ethics (Murphy & Laczniak, 1981; Donaldson & Werhane, 1983; Beauchamp & Bowie, 2001). Applying these two perspectives to IS can lead academics to a wide variety of ethical considerations in their research process (Davison, 2002). Teleologically, IS researchers must assess the value of their expected research outcomes. What benefits will one's research engender for the subjects involved, their organizations and other stakeholders? How can a research design be crafted in such a way as to maximize the benefit to those involved and to the broader IS community? Shifting to a deontological view, researchers must evaluate their duties in the conduct of research, both with respect to study subjects and to the community of researchers. What methods of coercion to participation may be involved in the recruitment of subjects (e.g. course credit for students)? To what degree are subjects informed of the purposes of a study and what control do they maintain over their role in the research? What are a researcher's obligations to their disciplinary colleagues with respect to accepted methods? It is worth noting that the debate over rigour and relevance in IS research can be understood as an effort to integrate these two ethical perspectives. The obligations of a researcher to apply appropriate rigour in his or her research methods (i.e. deontological assessment) must be balanced with the relevance of the study to the community of IS practitioners (i.e. teleological assessment).

The deontological ethical obligations of IS researchers continue to enjoy a good deal of exposure throughout the discipline and related institutions. For example, in the methodological domain, IS researchers seek guidance in a cornucopia of method-focused articles within IS journals (e.g. Lee, 1989; Klein & Myers, 1999; Boudreau *et al*., 2001; Hevner *et al*., 2004; Allen & March, 2006; Petter *et al*., 2007), as well as across reference disciplines such as psychology, sociology and economics. The IS discipline is built upon healthy reviewing and editorial institutions that are designed to ensure methodological adequacy. Academic careers are rewarded by publication in methodologically rigorous publication outlets. Furthermore, ethical expectations regarding issues such as plagiarism or misrepresentation are clearly articulated, and breeches are severely punished. Other deontological domains are also well addressed through the universities, funding organizations and review boards that make up the institutional context within which the IS researcher operates.

Teleological issues associated with IS research are often less thoroughly addressed. For example, with regard to the proper subject matter for the discipline – whether involving calls for practical relevance (Davenport & Markus, 1999), a central disciplinary 'core' set of ideas (Benbasat & Zmud, 2003) or a loosely coupled marketplace of ideas (Lyytinen & King, 2004) – the discourse tends to revolve around the self-preservation of the discipline rather than on broader moral imperatives.

CRITICAL SOCIAL THEORY AND ESSENTIALISM

One significant stream of IS research, however, is particularly noteworthy for its emphasis on ethical concerns, namely, that of critical social theory (Lyytinen & Klein, 1985; Lyytinen, 1992; Brooke, 2002; Klein & Huynh, 2004). The term 'critical social theory' is commonly used to describe a variety of theoretical perspectives that share a unifying thread – questioning the conventional wisdom of prevailing schools of thought and institutional practices with a primary focus on issues related to justice and power (Alvesson & Willmott, 2003; Kincheloe & McLaren, 2003). While critical social theory is often associated with the Frankfurt School of Adorno, Horkheimer and Marcuse – culminating in the work of Jürgen Habermas (Lyytinen & Klein, 1985; Lyytinen, 1992) – critical social theory is increasingly understood more broadly to include post-structuralist, deconstructionist and feminist perspectives (Alvesson & Willmott, 2003; Kincheloe & McLaren, 2003; Klein & Huynh, 2004). A common emphasis that runs through all perspectives that we label as critical social theory is their persistent concern with human emancipation from domination in all its forms (Alvesson & Willmott, 2003; Kincheloe & McLaren, 2003).

This concern for emancipation, when applied to social groups, focuses on the drivers, apparatuses and implications associated with inclusion, exclusion and marginalization of actors from the groups in question. Marginality, in particular, is salient to research relating to group membership. Because of multiple memberships, actors vary in their level of inclusion within particular groups, and thus, these groups, while uniform along certain dimensions, may be quite heterogeneous along other dimensions, creating tensions – including those relating to identity:

> People inhabit many different domains at once, as well, and the negotiation of identities, within and across groups, is an extraordinarily complex and delicate task. It's important not to presume either unity or single membership . . . Marginality is a powerful experience. And we are all marginal in some regard, as members of more than one community of practice (social world) (Star, 1991, p. 52).

Because of its emphasis on emancipation and related notions such as inclusion, marginalization, domination, control and power, research that is guided by critical social theory entails an overt consideration of a researcher's values and the surfacing of his or her own ethical assumptions. Indeed, some researchers have argued that the fundamental distinguishing feature of critical research in IS is its basis in ethics and morality (Stahl, 2008). Importantly, for critical researchers, ethical assessment must be applied not simply to the subjects of research, but also back upon the actions of the researchers themselves. Thus, the concept of critical self-reflection, or *reflexivity* (i.e. the self-conscious exploration of one's assumptions and the recognition that researchers' theoretical commitments serve to shape the observations that they make), is central to the conduct of critical social research (Alvesson & Deetz, 2000; Alvesson & Skoldberg, 2000; Alvesson & Willmott, 2003). Just such a critically reflective stance is what we seek to engender in the present study.

One thread of research within the tradition of critical social theory that is particularly insightful for the present discussion is the study of gender and IS. A body of research emerged in the 1990s that focused on the role of gender in IS development, use and management. These studies focused on a wide range of gender issues, including rates of participation of women in IS-oriented professions (Truman & Baroudi, 1994), barriers to women in IS career advancement (Igbaria & Baroudi, 1995) and gender-based differences in IS perceptions and use (Gefen & Straub, 1997). More recently, a number of critical researchers have challenged the treatment of gender in these various studies (Howcroft & Trauth, 2004; 2008; Wilson, 2004). These authors contend that IS studies of gender reflect an essentialist approach. *Essentialism* is the principle that all members of a given classification or type share certain innate and invariable characteristics that define them. Thus, critical researchers contend that, by treating gender as a dichotomous and nominal variable, many studies of gender in relation to IS phenomena serve to reinforce rather than challenge gender stereotypes:

> However, we should recognise that these arguments are in danger of reproducing precisely the kinds of essentialist arguments that are used to justify women's unequal treatment in the IT industry. And indeed it is possible to recognise difference without ascribing this to 'nature' (Wilson, 2004, p. 82).

The important observation for the present argument is that this critique is not limited to the treatment of gender. The risks inherit in an essentialist approach are relevant for almost any system of classification that a researcher may choose to use – including the groupings of technology users across social dimensions. For instance, when researchers define IS users based upon functional unit affiliations, they are making certain assumptions about the essential characteristics of those users – namely, that the attributes shared by individuals within a

functional unit are more relevant for the object of study than differences between them or characteristics that might be shared by individuals across functional boundaries. While such assumptions are unavoidable in any process of social categorization, the critical imperative for researchers is to recognize the implications of the stratification method that they adopt.

Making essentialist choices in any given study are necessary – researchers must manage trade-offs and make intellectual commitments in order to derive insight from social research. However, these choices carry an ethical responsibility – researchers must recognize that within each stratification scheme, certain social affiliations, perspectives and voices are accentuated, while others are marginalized. If the same stratification scheme is utilized over time and across studies, these marginalized perspectives and voices may become increasingly extinguished. Thus, we argue that, in order to avoid the domination and suppression of marginal voices, essentialist assumptions should vary across research studies within the IS discipline. Next, we provide a framework for social stratification based on the work of Max Weber as a starting point for expanding the dimensions along which researchers classify IT users.

SOCIAL STRATIFICATION AND WEBER

Weber addressed the issue of social stratification at some length. In what was largely a refutation of Marx's ideas, he sought to show how Marx's conceptualization of humans in terms of a single, binary opposition (i.e. capital vs. labour) was overly simplistic (Weber, 1978). In contrast to Marx's classification that was based strictly on access to economic resources, Weber (1978) contended that individuals can have multiple memberships in a number of groups that cut across three dimensions, which he referred to as *class*, *status* and *party*. In Weber's model, economic interests do not necessarily take primacy, as such interests are but one instance of the many factors that may drive social associations (Clark & Lipset, 1991).

While not giving an individual's class a preferential position among the dimensions along which he or she can be stratified, Weber did acknowledge that class is often a valid dimension upon which to differentiate individuals. Although Weber agreed with Marx in stating that an individual's class is determined by economic factors, he stressed that mere participation in a class does not necessarily imply social cohesion or class-wide integration. Further, the 'ownership' class did not necessarily represent a uniform group of people but, rather, a contentious, diverse range of individuals with often competing interests (Giddens, 2008). Weber essentially treated class as a non-social form of association, situation or location, and highlighted the potential for mobility between multiplicities of classes (Gane, 2005; see also Clark & Lipset, 1991). He acknowledged that the opportunity for associative relationships does become more likely within a given class but still contended that this need not occur of necessity (Weber, 1978).

Status is another way that Weber stratified individuals. In contrast to class, which he treated as a situation, Weber used the term 'status' to describe social relations based on a people's shared value systems borne of association and implicated in notions of honour, respect and esteem. Whereas class-based association is primarily related to economic situations, status-

based associations are based on social evaluations in that individual identities and social esteem are rooted in subjective impressions and are expressive of ongoing social relationships. Weber believed that while economic class is determined by one's access to economic resources, social status is generally thought to have more to do with one's patterns of consumption (Coser, 1977). Throughout much of his work, Weber indicates that traditional notions such as honour, duty and other social status-inspired virtues may lead to economic wealth (cf. Weber, 1978). Much like class may (but need not) encourage the formation of social groups, social stratification might, in turn, bring about class formation (Hechter, 1978). This observation is consistent with Bourdieu's (1984) elaboration of Weber's stratification scheme, where Bourdieu articulated a dynamic, reciprocal relationship between social and economic groups with the tastes and dispositions that affect relevant consumption patterns. Against a backdrop of social relations, patterns of consumption do more to reflect the values of individuals and their interpretation of a variety of social situations. Therefore, Weber argued that stratifying individuals according to status better captures the subjective and affective elements of their self-identification with groups (Gane, 2005).

The third dimension along which Weber stratified individuals is 'party'. Parties are associations of individuals formed with the deliberate purpose of influencing social action, and they therefore operate within the sphere of power. Such political action is oriented towards the acquisition of social power and control of resources. Accordingly, membership in parties implies intentionality and human agency that manifests itself in collective action aimed at driving change. Political parties may be social in nature but are associative rather than communal, as their membership is based on rational forms of social action (Gane, 2005). These forms of social action are targeted towards the realization of a set of goals and necessarily imply the exercise of power (Weber, 1978).

While Weber is well known for his discussion of class, status and party, his detailed analysis of the roles and functions of individuals within this scheme is perhaps less widely recognized. Yet Weber did foreshadow his stratification scheme in his analysis of the forms of economic action (Weber, 1978, part I, chapter 2), wherein he indicated that labour has technical, economic and social components. While economic and social components of labour are broader group- or society-level concepts, technical categories of labour involve individual, functional, task-level activities – those activities where the 'machines' and 'implements of work' are embedded in the actions of individuals. In any situation where a 'plurality of persons are combined to achieve a coordinated result', Weber argued that there are two fundamental types of group tasks relating to organizational work: (1) *accumulation*, where all group members are engaged in uniform or homogenous tasks; and (2) *combination*, where group members each pursue unique, heterogeneous tasks in harmony (Weber, 1978, pp. 119–120). He did concede that this distinction is relative to the position of the observer, because at a certain level of granularity, quite distinct tasks may be grouped together (e.g. engineering), and conversely, very similar tasks might be distinguished (e.g. trim painting vs. wall painting). Further, Weber also broke down different forms of accumulation and combination (e.g. independent vs. collective action, simultaneous vs. successive action), but we maintain that this distinction is a good first step in distinguishing between groupings that involve homogenous or heterogeneous

action – particularly in an organizational setting. Building on this analysis of Weber's work, we will next present a framework to inform the stratification of IT users.

IT USER STRATIFICATION FRAMEWORK

We note two overarching aspects of Weber's ideas on social classification. First, while the location of an individual in a certain social class is determined mostly by objective criteria of access to economic resources, the status of the individual is established on a subjective value system, identifications and social relationships. Both of these associations can be distinguished from membership in a party that aims to mobilize political action, advance valued interests or engage in a power struggle. Second, Weber stresses the difference between homogenous forms of work, or 'accumulation', and differentiated heterogeneous tasks, or 'combination'. We take this principle and generalize not just about the task, but also about the attributes of people. Homogeneity implies some important shared attribute or set of attributes across its members, whereas heterogeneity implies an assemblage of diverse actors under a common theme or label. In Table 1 below, we combine these aspects of Weber's argument to offer a framework along which individuals can be classified (Table 1). In developing the framework, we discuss the characteristics of each classification scheme as well as the potential ethical considerations that its utilization may involve.

Our argument is that the choice of a classification scheme should be informed by the focus of the research and the researcher's assumptions concerning the forms of organized work being studied. As the framework indicates, research can be focused on *objective* elements that characterize an organization and its use of IS. Examples of this may be research that looks at the influence of various dimensions of organizational structure on the implementation outcomes of IS or perhaps the effect of novel IS as they are appropriated by virtual teams. Additionally, research can focus on *interpretive* aspects and processes that underlie an organizational situation – e.g. research that tries to uncover the manner in which an information system is appropriated and given diverse meanings by different organizational actors. Research may also highlight *political* processes and power relations that underscore multiple

Table 1. User classification framework with examples of associated means of social stratification

Assumptions about common attributes 'Forms of work'	Research focus		
	Objective elements 'Class': situation/location	Interpretation 'Status': norms and values	Power relations 'Party': intention/purpose
Homogeneity 'Accumulation'	Shared attributes (example lens: communities of practice)	Shared symbols (example lens: social representations)	Union (example lens: labour union)
Heterogeneity 'Combination'	Shared designation (example lens: functional groups)	Shared rationalities (example lens: institutional logic)	Coalition (example lens: political party)

organizational situations and IS implementation and use, as groups intentionally seek to protect or advance their interests. An example of this type of research would be studies that examine management attempts to enforce a new technology and its associated behavioural scripts or resistance to such efforts by different organizational groups.

In terms of the researcher's assumptions concerning attributes of the individuals, they move along a continuum which, on one end, emphasizes homogeneity and, on the other end, stresses heterogeneity. Assuming *homogeneity*, on the one hand, implies emphasizing the commonalities in members' attributes that are salient for the purposes of the analysis. For example, much of the research on communities of practice accepts that what binds community members together is that they engage in a similar practice, face similar problems, and share similar interests and concerns. Assuming *heterogeneity*, on the other hand, implies highlighting the differences in members' attributes – typically through a form of division of labour – where a group is assembled or structured often with a specific purpose in mind. For example, research that focuses on functional organizational units presupposes that members of each functional unit perform different jobs, engage in different practices and possess different skills that combine to bring about synergistic outcomes.

Taken together, the two dimensions of the framework yield six different broad theoretically informed domains by which individuals in organizations can be classified. It is important to note that these categories are not mutually exclusive. They may overlap or be combined, and a number of conceptual lenses may be relevant within each category or across categories. We review the different categories below and offer representative theoretical lenses for each of them.

Objective elements

Research that focuses on objective elements typically highlights readily identifiable assessment criteria to evaluate individual or group performance, and stresses the formal labels and definitions that characterize individuals' roles, responsibilities and location within the organizational structure. Assumptions regarding forms of work may range from an emphasis on similarities among group members' tasks and goals (i.e. serving as a common base of understanding in facilitating relationships) to underlining differences among members whose complementary skills and knowledge are integrated to support organized work.

Shared attributes

There are a variety of shared attributes by which individuals can be categorized, including gender, race, national origin, socio-economic class, etc. In addition to demographic criteria, researchers often use other shared attributes to classify individuals: everything from shared work practices of professions, to the shared affiliations of social networks, to 'objective' manifestations of cultural capital (Bourdieu, 2001). Research that uses the concept of communities of practice is exemplary of categorization according to objective criteria that highlights homogeneity (Brown & Duguid, 1991; Wenger, 1999). Research on communities of practice is

used to gauge forms of organizing that may deviate from officially mandated organizational structures and bureaucratic distinctions. This is rationalized by arguing that individuals in organizations often create informal associations based on commonality of activities and interests that preoccupy them on a daily basis, and that such association may not conform to formal organizational structures (Brown & Duguid, 1991). Thus, researchers who stratify individuals across communities of practice do so according to the objective basis of an individual's work practices. For example, if a person's daily work involves developing Web applications using Java, that person is likely to be associated with a 'Java programmers' community of practice, regardless of the organizational department to which he or she may formally belong.

A common argument characterizing research on communities of practice is that they play a significant part in people's lives and can therefore be an important consideration when implementing organizational initiatives and understanding people's reactions to those efforts. While this line of enquiry openly defies conventionally prescribed organizational definitions (e.g. functional divisions), classifying individuals based on practice-based associations may fall prey to the very problem that researchers advocating this approach seek to avoid. Focusing on practice as a basis for classification is meant to assure an authentic understanding of organizational dynamics – one that is tied to real processes and interactions, rather than to abstract descriptions or definitions. However, using a lens of communities of practice may involve an overemphasis of salient common practices and a marginalization of peripheral practices. The approach may also overlook individuals that have a stake in the practices of a community yet are not 'full-fledged' members of the community (e.g. supporting staff associated with the community or managerial personnel). Thus, using communities of practice as a basis for stratification highlights certain aspects of IT-related activity but may neglect peripheral stakeholders who are not fully involved in the practice.

Shared designation

Sometimes, individuals are aggregated not by attributes that they possess but by imposed categories, including those stemming from common goals. Two people in different organizations may have a number of similar attributes but may be grouped separately with their respective organizations in a particular study. In a different study, people from two different organizations may be grouped together as part of a virtual team. Classifying individuals through shared designations emphasizes the formal, explicit and teleological assemblages of individuals, and often implies a division of labour. Research that focuses on functional groups in organizations typifies a form of categorization according to the objective criteria of shared designations. A common way that researchers stratify organizations is through functional units, which represent the objective positioning of individuals within formal organizational structures. Members of each functional unit have various skills and specializations, and perform different jobs, which are combined to facilitate increased productivity. In their classic work, Lawrence & Lorsch (1967) paved the way for a contingency theory of organizational structure based on levels of differentiation and integration of functional groups within manufacturing firms. They

are consistent with early sociologists in their conception of the division of labour, as can be understood from their Spencerian description of firm evolution: 'as systems become large, they differentiate into parts, and the functioning of these separate parts has to be integrated if the entire system is to be viable' (p. 6). Lawrence and Lorsch attribute these differences to variation in the environments that each of these functional groups faces. Furthermore, they argue that over time, individuals within a common functional group will tend to become similar across a variety of dimensions, such as time and goal orientations. We contend that this is directly comparable to Weber's 'class' designation, as a 'situation' may facilitate shared interests, but not necessarily so.

In focusing on formal and objective organizational structures, functional stratification is inclined to favour a managerial view of the organization, which tends to represent organizational structures, actors and their activities in a relatively neat and unproblematic manner (Ciborra *et al*., 2000). Alternative perspectives, informal practices and bottom-up organic associations, identifications and structuring are often marginalized or entirely ignored.

Interpretation

A fundamental assumption of classifying individuals according to objective elements is that practice or functional affiliation drives an individual's cognitive and emotional orientation. Although Weber acknowledges that this is often the case, he indicates that the situation or social location of individuals, defined by objective criteria, is not necessarily the primary driver for their interests or inclinations. Along with Weber, we hold that an individual's situation is simply an opportunity for social (i.e. affective and value based) group membership rather than a necessary driver of participation. Often, local social interpretations and a sense of belonging take a primary role in guiding a given task or behaviour. Individuals have a certain degree of mobility within and across organizations, and they have an array of associations outside of a given organizational group or system of practices. Therefore, it may often be more appropriate to stratify individuals according to the interpretations, symbol systems, goals and values that guide their actions.

Shared symbols

When researchers adopt a perspective that emphasizes homogeneity within groups, symbol systems such as language are vital for understanding how group members organize and develop a collective understanding of some aspects of their environment. Examples of such a perspective include various semiotic and linguistic approaches, such as speech–act analysis (Lyytinen, 1985) and discourse analyses (Grant *et al*., 2004), as well as socio-psychological approaches, such as Weick's (1979) sensemaking and Moscovici's (2001) theory of social representations.

To explore one example, a social representations perspective focuses on the collective production of common social knowledge. Social representations are shared elaborations of unfamiliar phenomena or events that serve to render them meaningful for social actors

(Moscovici, 2001). Such phenomena or events only become meaningful by virtue of their representations, which are collectively formed by group members through ongoing communicative activities. Only in being represented by a group of people through familiar conceptual devices can an event or phenomenon become a social object that can be perceived, characterized, compared with other social objects, and used in language and action. Stratifying according to social representations cuts across functional or practice-based stratification, because the groups that form social representations are not likely to be aligned solely with existing communities of practice or functional units. Therefore, this form of stratifying offers an alternative method for examining organizational phenomena (Gal & Berente, 2008).

That said, researchers using a classification scheme informed by a social representations perspective need to be aware of its potential limitations. Because a social representations perspective focuses on the creation of shared representations of reality, it tends to neglect personal variations in the understanding of different events. Furthermore, because the perspective emphasizes *symbolic* regularities and common experiences of individuals, it often marginalizes the physical, technical and tangible elements that may play an important role in mediating interpersonal associations and communicative activities.

Shared rationalities

If, however, researchers wish to attend to the personal variations across individuals in a particular collection of people, or with the assumption of heterogeneity within groups, then it may be necessary to look beyond the ostensible aspects of the group such as a specific symbol system towards deeper social domains, which guide individual action and cognition – the 'rationalities' that individuals draw upon to guide action (Clegg *et al*., 2006). Recent work in institutional theory attempts to make sense of the principles, goals and assumptions that guide practice through the notion of 'institutional logics' (Friedland & Alford, 1991; Thornton & Ocasio, 2008), but a variety of theorists have approached similar ideas with terms such as 'modes of rationality' (Clegg & Wilson, 1992), 'habitus' (Bourdieu, 1977), 'logics of action' (DiMaggio, 1997) and, more broadly, ideologies, philosophies or belief patterns in general. Each of these constructs looks to identify the fundamental rationale by which individuals justify specific behaviours, organized practices and assumptions. In certain situations, the relevant behaviours within a given group, community or assortment of individuals are not entirely consistent and, in certain situations, can diverge dramatically. In such situations, researchers cannot assess these groups with assumptions of uniformity but, instead, must use theoretical lenses that stratify these individuals according to their motivations. For example, members of a given church or political party might be expected to hold certain divergent views or engage in conflicting behaviours. Therefore, how might a researcher categorize people within the same church or political party whose views or behaviours are inconsistent? In cases where such within- and across-group distinctions are important, the means for stratifying groups should enable researchers to attend to heterogeneity within groups.

Thus, this classification scheme combines a grouping of individuals based on a common denominator with a simultaneous appreciation of their plurality. Take, for example, a hypo-

thetical enquiry into what is 'true' in a debate among public office holders. Friedland & Alford (1991) indicate that institutions of science and religion both involve the pursuit of truth but have independent rationalities and assumptions to guide that endeavour. Therefore, although heterogeneous along other dimensions (there are different types of scientists and different religions, each with further nested heterogeneity), institutional logics of science and religion provide a unifying frame based on which individuals can be grouped together. A generally religious person can come down on the side of science in any particular issue; thus, with respect to that issue, the individual would be stratified according to the logic of the scientific institution. Within an organizational domain, heterogeneous organizational actors can be stratified by virtue of relevant broader institutional logics such as that between professional logics and the logic of managerial rationalism – and the same person can adopt different logics in different situations (Berente & Yoo, 2007).

An institutional logic classification scheme focuses on regularities of institutional identification across heterogeneous members. However, the potential for marginalization persists. Specifically, the lens of institutional logics neglects issues relating to human agency and personally motivated calculation of interests, thus silencing those who do not fully accept or subscribe to predominant institutional systems.

Power relations

Research that focuses on power relations in organizations typically highlights conflict-laden or competitive relationships. Such research emphasizes the attempts by different organizational stakeholders to influence each other's activities, advance their interests or gain a position from which they are able to exert power and control over a range of organizational processes. In this perspective, individuals may join or align themselves to a group with the deliberate purpose of defending or pursuing certain interests in a competitive struggle for resources or influence.

Union

When researchers adopt a power-based perspective that emphasizes homogeneity within groups, people's common interests and backgrounds are emphasized to explain the formation and functioning of social associations that pursue certain goals. Cases where common interests are shared by individuals that are homogenous along applicable dimensions are well represented by labour unions. Union members typically share a similar set of challenges and pursue mutual objectives such as wage increases, reduction of work hours and improvement of working conditions. While this approach highlights the commonalities binding the involved individuals as a way to explain their ability to negotiate with and contest institutionalized forces, it may marginalize those dissenting voices whose interests do not align precisely with those of the established union groups. Accordingly, such idiosyncratic concerns will not be taken into account in the struggle for influence, control and resources.

Coalition

Political aims are not always pursued by homogenous groups. Frequently, the advancement of certain interests or the struggle for power and control over resources can be undertaken by groups of people whose individual aims, beliefs and views of the world differ significantly. When researchers adopt a power-based perspective that emphasizes heterogeneity within groups, people's diverse interests and backgrounds are highlighted when explaining the formation and functioning of social associations that aim to pursue collective goals. For example, in many parliamentary political systems, the government in power is composed of a coalition of multiple parties. Each party may represent a different constituency, espouse different values and aim to advance its own individual goals. Despite their diversity, these parties form an alliance that situates them in a favourable position from which to realize their ambitions. While stratification of groups or individuals according to coalitions emphasizes heterogeneous actors and intentionality in the quest for increased power, control or economic profits, it may marginalize the agendas and viewpoints of those groups and individuals who are not part of the coalition and whose claims are therefore not clearly and vocally articulated.

Actor-network theory (ANT) places a distinct emphasis on the development and maintenance of coalitions (Latour, 2005). ANT-oriented research typically depicts a struggle to form a durable actor-network in an attempt to set a unified technological standard that cuts across different contexts, such as companies, industries and countries (Callon, 1992). While research using this lens usually provides rich descriptions of the negotiations, alliances and political tactics that characterize the efforts to assemble (i.e. translate) a robust actor-network, it often does so from the point of view of a single actant, or 'heterogeneous engineer'. As a result, this research tends to overlook the perspectives of other involved actants and the possibility that multiple translations may occur simultaneously (Star & Griesemer, 1989).

Thus far, we have argued that there are ethical implications to the choices of social stratification schemes that IS researchers adopt, and we have proposed a framework to assist researchers in locating their work. Next, we draw upon some illustrative examples from empirical research in IS to contextualize our framework.

ETHICAL ISSUES AND STRATIFICATION IN THE IS LITERATURE

If one were to explore IS literature, it would be clear that the way that researchers stratify users generally remains consistent throughout a given study, particularly in more positivistic studies. Studies generally begin and end with the same social stratification scheme. For example, in a quick scan of recent volumes of *MIS Quarterly*, one would find a variety of social classification schemes, by market relationships (Klein & Rai, 2009), reporting relationships (Iacovou *et al*., 2009) and national origin (Cyr *et al*., 2009; Hahn *et al*., 2009; Sia *et al*., 2009), among others. Because we can only go off of the data presented in a given research article, we cannot make claims about what was *not* included in the research through this choice of stratification scheme. Therefore, beyond speculation, it is difficult to determine the ethical implications of their choices.

However, there are a number of exceptions, where authors shift the way that they choose to stratify users within a given study, and these studies illustrate potential ethical implications. For example, Allen (2005) begins the presentation of his study of an enterprise resource planning (ERP) implementation with a functional classification of actors (*shared designation*). Different departments deal with the ERP system in different ways. Over the course of the data analysis, however, Allen finds that conflicts are less about overt power struggles where functional groups engage in conflict over competing interests but more about competing values and interpretations that actors bring to certain situations – which Allen (2005) describes as 'value conflicts'. One such value conflict, 'evaluation fairness', has less to do with group interests and more to do with different trade-offs on what aspects of activities can and should be encouraged, measured and made transparent by the new system. In one of Allen's examples, 'buyer/planners' did not rate their tasks to measure the degree to which they are on schedule – a measure which was 'emphasized in the ERP system' (p. 44). By viewing such activity using a functional stratification scheme, one might conclude that buyer/planners were resisting or undermining the process in some way. However, when Allen moves the level of analysis to that of values rather than groups, it is clear that the buyer/planners are not necessarily acting in their own short-sighted best interests, which would involve gaming the system, 'because we could make it look good by scheduling everything way out' (p. 44). Instead, the conflict was about what was best for the organization with respect to different standards by which to judge action. In some cases, the visibility implied by the ERP system was simply 'unreasonable' given the priorities of the organization. In focusing on fairness, buyer/planners avoided the 'fear' and 'humiliation' of production workers forced to choose between unreasonable measures and the honest portrayal of their work. The conflicts have less to do with groups (e.g. buyer/planner activities aided the production workers) and more to do with competing interpretations. If Allen was to have maintained the functional unit of analysis (*shared designation*), then a reader may have dismissed legitimate disagreement based on what may have actually been best for the organization (*shared rationalities*).

A number of other recent articles reflect similar social stratification shifts in the conduct of the research. Next, we will briefly address five such studies to show how the stratification scheme shifted in some way and, in doing so, illuminated certain potentially marginalized actors. These studies are not intended to be representative of the discipline. Quite the contrary, they are put forth as illustrations of the importance of attending to multiple stratification schemes. Table 2 summarizes the stratification moves in each article.

In one study, Davidson & Chismar (2007) found that a natural result of technical and institutional change associated with a large-scale IT implementation at a hospital drove the need for greater cross-disciplinary interaction in order to successfully implement change. Early in the study, groups were stratified across communities of practice (physicians, nurses, pharmacists), but in the wake of the implementation, they were more often described in terms of cross-disciplinary coalitions (support groups and task forces). While not explicitly attending to ethical implications, the power and privileged position of the physicians is evident throughout the case description, and the cross-disciplinary groups that emerged represented a moderator or counterbalance to the physicians (Davidson & Chismar, 2007). Thus, within this case

Table 2. Examples of stratification shifts in information systems literature

Article	Example marginalized group	Stratification move
Allen (2005)	Production workers	Shared designation → shared rationalities
Davidson & Chismar (2007)	Nurses	Shared attributes → coalition
Lapointe & Rivard (2007)	Doctors	Shared attributes → union
Gallivan & Keil (2003)	Disengaged salespeople	Shared attributes → shared symbols
Millerand & Baker (2009)	Co-developers	Shared attributes → coalition Shared attributes → shared designation
Levina (2005)	Graphic designers	Shared designation ↔ coalition → shared attributes → shared symbols → shared rationalities

description, a gradual transition from classification by communities of practice (*shared attributes*) to classification by *coalitions* is evident, and this move serves to highlight issues of power within the hospital.

In an alternative description of the dynamics of implementing IT in health care, Lapointe & Rivard (2007) describe a number of situations in which a shift from communities of practice to within-community unification occurs (in contrast to Davidson and Chismar's shift to cross-functional coalitions). Throughout this study, the researchers focus on two primary groups – the physicians and the nurses (although other groups such as administrators are mentioned). Using multiple lenses, the researchers show how practice-based concerns such as absorption, usefulness and ease of use might explain resistance in certain situations (*shared attributes*), while power struggles between unified communities such as *unions* offer a more fruitful explanation for resistance in other situations. Because resistance phenomena suggest the presence of ethical dilemmas or concerns, this study shows how different forms of stratification might orient a researcher to distinct explanatory mechanisms with substantial ethical implications.

Another study (Gallivan & Keil, 2003) highlights the way in which researchers and practitioners alike might err in perceiving that members of a development team who are intended to represent 'users' as a whole are indeed representative of that population. Specifically, Gallivan & Keil (2003) suggest that there might be a certain moral hazard evident in standard approaches to user participation in development efforts, as the more enthusiastic and technology-oriented members of the user community more readily accept membership on, or engagement with, the development team. In making the assumption of group uniformity, this common stratification method essentially silences the voices of users who might fundamentally disagree with the effort – to the detriment of these users, the implementation team or both. This observation necessitated a shift on the part of the researchers from stratifying according to a salesperson community of practice (*shared attribute*) to a greater focus on human interpretation and framing (*shared symbols*).

In a similar study about the dynamic role of users of a technical standard, Millerand & Baker (2009) began with a practice-based stratification scheme distinguishing between users and developers. While this distinction appeared satisfactory in the early phase of design, as

the development, implementation and (particularly) deployment progressed, users and developers shifted in their roles and in their group memberships (*shared attributes*). On the one hand, they formed 'webs of developers' where multidimensional coalitions were formed to advocate for a given standard (*coalition*). On the other hand, 'webs of users' were also formed as functional assemblages of 'co-developers' and 'co-users' collaborated to deploy and drive subsequent cycles (*shared designation*). In their analysis of this transformation, Millerand & Baker (2009) accentuate the dynamism of group formation and group membership, thus highlighting the drawback of using a single-group stratification scheme. With a strict classification of individuals as either users or developers, the critically important co-developer and co-user boundary spanners may be de-emphasized or completely neglected in other studies of similar phenomena.

Using a particularly fluid stratification scheme, Levina (2005) navigates virtually all of the domains of classification that we have discussed as she attempts to triangulate on the multidimensional social dynamics of a Web system development effort. In this study, she stratifies individuals according to organizations and does so both in a functional sense, describing the business relationships (*shared designation*), and in a political sense – particularly as she describes the development organization as a *coalition* of diverse professionals engaged in power conflicts with the customer organization. Further, she delves within this organizational level of stratification to identify communities of practice and to differentiate them not only by their practices (*shared attributes*), but also by the culture and rationalities that are inherent to professional identities (*shared rationalities*). This cultural facet was captured by the way that the designers ignored certain artefacts (i.e. symbol sets) as they were perceived to compromise the professional identities of the designers themselves: 'I am not a water faucet that just turns on and out comes beautiful art work. Beautiful artwork comes from taking a little time to create that beautiful art work. It is not just, you know, point and click . . .' (Levina, 2005, p. 126). Although she was not making an explicitly ethical argument, by triangulating across dynamics on multiple levels and by using multiple stratification schemes simultaneously, Levina (2005) thoroughly characterized the causes, effects and experiences of graphic designers – a group that is likely often marginalized in studies of 'settings dominated by business analysts' (p. 127). This study stands as an exemplar of how multiple stratification schemes can be leveraged in the same study.

DISCUSSION

In his book, *Images of Organization*, Morgan (1986) proposes a range of metaphors to conceptualize and understand organizations. Ranging from 'cultures' to 'psychic prisons', each characterization offers a different vocabulary and imagery through which organizations can be explored. Any one metaphor only exposes a certain aspect of the complex multidimensional phenomena that comprise an organization. Considered collectively, various metaphors can assist in generating a more profound and nuanced understanding of the nature of organizations. This insight reflects the emphasis on obtaining and modelling multiple perspectives on

a problem space that one encounters with several of the pioneering systems thinkers (e.g. Churchman, 1971; Checkland, 1981). To a large extent, our claim in this paper builds upon this fundamental systems concept. Any one method of classifying social actors can only expose certain aspects of the social dynamics at play in the development and use of IS within organizations; each promotes a particular understanding of interpersonal processes. A recurrent application of an organizational perspective that advocates a common classification logic may therefore have a stifling effect on research outcomes and on the way in which individuals perceive organizations. Because of the potential for the marginalization or exclusion of certain perspectives or concerns, the choice of a classification system necessarily involves a significant ethical decision.

That the application of classification systems can have significant ethical implications is not a novel concept. For example, Bowker & Star (1999) demonstrated the centrality of racial classification in South Africa and its role in facilitating the subjugation of the black population under the apartheid regime. Similarly, Star's study of US Census forms (1999) illustrated how the seemingly mundane available choices of race category in the form did not appropriately reflect the ethnic variety of the population residing in the country. As a result, the Census Bureau's processes effectively silenced those people who did not belong to the officially recognized racial categories and excluded them from the formal institutional view of American society.

Indeed, issues of social exclusion are central to the ethical challenge that faces researchers, managers and policy makers. The act of classification inevitably involves the segmentation of social systems into groups or classes of individuals that receive differential treatment. Furthermore, it implies that classification is conducted by institutional players that are in a position of power from which they can control the extent to which different groups are included in the formal view of a given social system. Included groups are formally recognized by the system and may stake a claim to their share of the system's resources. However, excluded groups or individuals may go unrecognized by the system, their voices rendered mute. As a result, they will not enjoy the benefits that the system has to offer. Such exclusion may have detrimental consequences. For instance, a variety of studies have found social exclusion to be associated with poverty (Jordan, 1996), unemployment (Atkinson, 1998), poor physical health and premature death (Wilkinson & Marmot, 2003), mental disease (Sayce, 2000) and reduced cognitive performance (Baumeister *et al*., 2002). Building upon these insights, we contend that it is imperative for researchers to consider the ethical implication of the choices that they make with regard to the classification of their research subjects and consciously exercise ethical and analytical sensitivity in their employment of a particular classification scheme. Beyond demographic characteristics such as race, gender, age, etc., it is often useful to classify IT users into distinct social groups. However, social groups of homogenous individuals that have a stable membership, are conflict free and are characterized by unproblematic boundaries do not come readily formed to the researcher. Rather, researchers construct relevant aggregates in the course of their research (Latour, 2005). The IS discipline tends to focus on a handful of 'objective' forms of stratification (i.e. functional groups, teams, communities of practice, social networks) even when addressing issues of power and interpretation. This approach reflects an

essentialist (typically defended as pragmatic and necessary) assumption that such objective groups will generally share interpretations and interests (e.g. Lawrence & Lorsch, 1967). While this 'necessary' approximation may have been adequate in the relatively static industrial age, it is less defensible in the contemporary information society, which is more fluid and in which individuals have multiple, often fleeting attachments (Bauman, 2000). Single associations do not define individual identities as social actors straddle multiple groups (Lamb & Kling, 2003). These groups span multiple levels and are unstable, dynamic and rife with conflict, yet researchers impose unproblematic constructions of 'groups' on research contexts as a matter of course – using relatively arbitrary boundaries (Latour, 2005).

A social actor is not captive to a single inclusionary group that adequately approximates the entirety of his or her identity, interests and perspectives across domains. Because, sometimes, inclusionary, objective groups do not adequately represent the salient characteristics of social action in a given research study, it may often be more appropriate to apply lenses that stratify social actors according to alternative situated identities, interests and perspectives. Likely, theoretical lenses that avoid some of the pitfalls of group construction include social representations (Moscovici, 2001), institutional logics (Friedland & Alford, 1991), actor-networks (Latour, 2005) and others. Undoubtedly, these alternative lenses bring their own shortcomings to a research endeavour. It is clear, however, that if the IS discipline generally focuses on a handful of widely accepted methods for stratification, then the voices of marginal group members will continue to go unheard. While there is no single grouping or perspective that will ensure a voice across organizational actors, if a variety of slices of social activity are repeatedly used and compared in a dialectical fashion across research projects, then over time, the discipline can move *towards* greater representation of all organizational actors.

To guide reflexivity of researchers as they attend to this increased diversity of social categorization, we have proposed a multidimensional framework that provides six broad domains of information system user stratification (see Table 1). Importantly, while proposing a number of possible classification systems, we make no claims as to the superiority of one over another. Rather, we point out that each one emphasizes certain concerns, voices and perspectives, while necessarily neglecting others. That said, the framework can be used to guide researchers' choices with regard to using a certain classification scheme. We contend that choosing a classification scheme based on the focus of the research at hand (objective elements, interpretive elements or power relations) and the researcher's assumptions concerning forms of work (homogeneous or heterogeneous) can yield fruitful research outcomes while aiding the researcher to be conscious of ethical issues. Researchers frequently apply a classification scheme because it is common among researchers who study the same phenomenon (e.g. studies that examine implementation of ERP systems tend to assess their impact on different functional groups within an organization) or because it seems like the most obvious choice given their research setting (e.g. a highly bureaucratic organization that emphasizes its formal structure may lead researchers to classify individuals based on that structure). Instead, we maintain that the choice of a classification scheme should be theoretically informed. For instance, when studying the structuring of shared meanings among orga-

nizational members, researchers would be better served by classifying individuals according to groupings that reflect the contours and variations of the phenomenon that they wish to observe (e.g. according to social representations).

Furthermore, researchers should, to the extent possible, avoid using the same classification scheme across studies, and if they do so, this scheme should be theoretically justified rather than used in an offhanded manner. Again, this is because each classification scheme necessarily advances certain voices and (usually implicitly) silences other voices. This silencing of voices is a key indicator that ethical issues pertain to the research undertaking, regardless of the ethical perspective that a researcher may want to adopt. For example, such marginalization may imply that user 'rights' are somehow being disregarded (Mason, 1986; Schuldt, 2005). Perhaps this marginalization reinforces the ideological domination from which critical social theorists wish to emancipate the user (Klein & Huynh, 2004). Finally, marginalization may simply signal the need to enter into a discourse about the ethical ramifications of the classification scheme (e.g. Stahl, 2007).

CONCLUSION

However one wishes to determine ethically appropriate research conduct, the key contribution of this paper to IS research is to draw researchers' attention to the ethical implications of the way that they stratify organizational actors in their research. By leveraging Max Weber's (1978) work on social stratification, we propose a novel framework that takes into account both the research focus and assumptions of forms of work. Beyond topics relating to bureaucratization and rationalization, much of Weber's work remains largely neglected in organizational literature (Lounsbury & Carberry, 2005). His theories relating to the multidimensional stratification of individuals is particularly salient to issues facing postmodern organizational forms (Lounsbury & Carberry, 2005), where organizations are becoming less functionally oriented with the emergence of alternative, dynamic forms of organizing and the ubiquity of knowledge work (Yoo *et al*., 2006). While our purpose in this paper is to call attention to the ethical implications of user stratification, the framework we provide is the first such framework that analyses stratification methods. Future research using this framework can look to situate existing research methods evident in the literature to better understand the issues that are emphasized and those that may be neglected within IS research. In this sense, our work fits with the growing critical tradition in IS research (see Howcroft & Trauth, 2005; Brooke, 2009) in that we reflectively address practices and methods of researchers. We do so with an agenda for enabling marginalized voices to be heard – and this concern for the marginalized is central to the ethical 'turn' that critical theory can bring to IS research (Adam, 2005). Accordingly, we have a normative component to our critical stance (Stahl, 2009), and there are definite implications for what 'ought' to occur going forward. First, researchers should be conscious of the way that they and others choose to stratify the social realm, and the framework offers some guidance to locate these choices. Second, researchers should be open to shifts in their

stratification scheme as our examples illustrate. The fluidity of stratification schemes evident in Levina's (2005) work might be difficult to duplicate, but her article can be used as an exemplar to guide future research.

In addition, while we focus on the way in which researchers socially stratify the subjects of their research, this framework can also be used by development teams to categorize users in increasingly novel ways to view the prospective user community more holistically. Similarly, the framework may enable managers to better understand the users of information technologies within their organizations. Finally, our framework can be used to guide specific research efforts that look to triangulate social phenomena across different methods of categorization to gain novel insight into organizational dynamics. It is important to note, however, that social stratification is only one of the ways that alternative lenses and perspectives can impact ethical issues associated with IS users. IT affords a variety of potentially contradictory enactments that can both generate and emerge from entirely new social contexts (Arnold, 2003). Thus, researchers would be well advised to avoid one-dimensional characterizations of IT users even within a given social grouping, regardless of the stratification scheme.

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Biographies

Nicholas Berente is an Assistant Professor of Information Systems at the Terry College of Business at the University of Georgia. He studies the intersection of organizational innovation, design and information technologies from a social systems perspective. Nick draws upon institutional, discursive and critical traditions of social theory in his research. He earned his PhD and MBA from Case Western Reserve University and conducted his postdoctoral studies at the University of Michigan.

Uri Gal is an Assistant Professor of Information Systems at the Copenhagen Business School. He holds a PhD in Information Systems from Case Western Reserve University and an MSc degree in Organisational Psychology from the London School of Economics and Political Science. His research takes a social view of organizational processes in the context of the implementation and use of information systems. He is particularly interested in the relationships between people and technology in organizations, and the changes in the nature of work practices, organizational identities and interactions associated with the introduction of new information technologies.

Sean Hansen is an Assistant Professor of Management Information Systems at the E. Philip Saunders College of Business at Rochester Institute of Technology. He conducts research in the areas of requirements engineering, IT strategy, Web 2.0 technologies and the application of contemporary cognitive theory to information systems development. His current research focuses on the emergence of new approaches to requirements engineering in response to advances in systems design and implementation. Prior to embarking on a career in research, Sean consulted to a wide range of industries in the areas of management and technology. His research has been published in several scholarly journals, including *Information and Organization*, *The Information Society*, *Business & Information Systems Engineering* and *Artifact*, as well as the edited volume, *Design Requirements Engineering: A Ten-Year Perspective*. He has presented his research at a variety of conferences, including the International Conference on Information Systems (ICIS), the Americas Conference on Information Systems (AMCIS), the Annual Meeting of the Academy of Management (AoM) and the Administrative Sciences Association of Canada (ASAC) Conference.