11-20-2008

Towards a Framework for the Transferability of Results in IS Qualitative Research

Joan Rodon
ESADE, Universitat Ramón Llull, joan.rodon@esade.edu

Feliciano Sesé
ESADE, Universitat Ramón Llull, feliciano.sese@esade.edu

Follow this and additional works at: http://aisel.aisnet.org/sprouts_all

Towards a Framework for the Transferability of Results in IS Qualitative Research

Joan Rodon
ESADE, Universitat Ramón Llull, Spain

Feliciano Sesé
ESADE, Universitat Ramón Llull, Spain

Abstract
Despite the diverse calls for transferability in IS research, most IS qualitative research studies still pay little attention to the possible applicability of their results in other social contexts (settings). We argue that one way to enhance transferability is to characterize the deep features of the research setting. The two main premises of this paper are that although in IS qualitative research knowledge about results is context-bound, (1) the settings in which IS phenomena occur may have common features and characteristics, and therefore, the settings may be commensurable, and (2) the transferability of research results from one setting to another depends on the fit between those common features and characteristics of the settings. In this article, we draw on the constituents of structure proposed by Giddens to suggest these common features and develop a framework of four pure "structural configurations." We consider this framework may be a first approximation to typifying the setting in which IS phenomena occur, and therefore, a way to enhance the transferability of IS qualitative research by delineating the applicability of its results.

Keywords: Transferability, Research Setting, Qualitative Research, Structural Configuration, Structuration Theory

Towards a Framework for the Transferability of Results in IS Qualitative Research

Joan Rodon, ESADE, Universitat Ramón Llull, joan.rodon@esade.edu

Feliciano Sesé, ESADE, Universitat Ramón Llull, feliciano.sese@esade.edu

Abstract

Despite the diverse calls for transferability in IS research, most IS qualitative research studies still pay little attention to the possible applicability of their results in other social contexts (settings). We argue that one way to enhance transferability is to characterize the deep features of the research setting. The two main premises of this paper are that although in IS qualitative research knowledge about results is context-bound, (1) the settings in which IS phenomena occur may have common features and characteristics, and therefore, the settings may be commensurable, and (2) the transferability of research results from one setting to another depends on the fit between those common features and characteristics of the settings. In this article, we draw on the constituents of structure proposed by Giddens to suggest these common features and develop a framework of four pure 'structural configurations'. We consider this framework may be a first approximation to typifying the setting in which IS phenomena occur, and therefore, a way to enhance the transferability of IS qualitative research by delineating the applicability of its results.

Keywords: Transferability, Research Setting, Qualitative Research, Structural Configuration, Structuration Theory

1

Introduction

Recently, various authors (Gregor 2006; Hirschheim et al. 2003; Klein et al. 1999; Lee et al. 2003; Seddon et al. 2006) have stressed the need to generalize results in IS research. Particularly, in the case of qualitative research, regardless of the paradigm approach adopted –either positivism or interpretivism–, authors contend that researchers must deal with the applicability of their research results[1] beyond their settings –that is, the transferability[2] of research results (Lee et al. 2003; Seddon et al. 2006).

Regarding transferability, "Naturalistic Inquiry" (Lincoln et al. 1985) is probably one of the most cited references. In this book, Lincoln and Guba (1985) argue that the degree of transferability is a direct function of the similarity or fit between settings. That is, the applicability of research results in other settings depends on the degree of similarity between the research setting in which the phenomenon studied occurs and the settings in which the results are expected to be transferable. To our knowledge, however, no effort has been made to assess the similarity or fit between research settings. So,

---

[1] Research results will be used in this paper rather broadly to encompass measurements, observations, descriptions, frameworks, statements, hypotheses, conjectures, speculations, or propositions.

[2] We use the term transferability to mean the research results' potential to be applicable in other settings. Next section discusses this concept more in-depth.

the research question in this paper is as follows: what deep features[3] of research settings are common so that the settings are comparable?

We address this question by drawing on structuration theory (Giddens 1984) to propose a set of deep features for a setting. Relying on these deep features, we build a framework consisting of four basic 'structural configurations', that we consider it as a first approximation to characterizing the setting in which IS phenomena occur. We content that researchers may use this framework to typify their research settings according to common theoretical dimensions, and by doing so, they can make studies commensurable. Accordingly, this paper contributes to research by providing a common language that tackles the issues of commensurability of research settings and the transferability of research results.

In the next section, we examine the dominant paradigms in qualitative research and develop the concept of transferability of results. Next we look at the statements made by recent studies on the transferability of their results and develop an argument for the need to characterize the setting. This is followed by the presentation of the framework for characterizing the setting – something that makes it easier to assess the fit between settings. Next we present a two step-method to typify the research setting, and we make a proof of concept of the method by examining prior literature. Next, drawing on this typification of the setting and the concepts of contradiction and conflict

---

[3] By deep features of a setting we mean the significant distinguishing traits of the setting

3

from structuration theory, we present an explanation for the argument that the similarity of research settings enables the transferability of the results. Finally, we conclude by reflecting on the contributions and limitations of the paper and areas for further research.

The Notion of Transferability of Results in Qualitative Research

Qualitative research addresses a plurality of research paradigms (positivism, interpretivism and critical), within which there are many research methods (i.e. case studies, field studies, ethnography, action research) –see Myers (1997) for a general overview of qualitative research[4]. Regarding the two dominant paradigms (positivism and interpretivism), we find articles that (1) discuss and confront the metatheoretical assumptions of each of the paradigms (Weber 2004), (2) develop principles to guide research following each of the paradigms (Benbasat et al. 1987; Dube et al. 2003; Klein et al. 1999; Walsham 1995), and (3) empirically examine the use of each of the paradigms by prior literature (Chen et al. 2004; Orlikowski et al. 1991). Within qualitative research the notion of generalization has generated controversy, to the point that positivists and interpretivists do not see generalization in the

---

where a phenomenon occurs.

[4] A common element of qualitative research is the collection of data in the form of words and statements through interviews, documents, participant observation, etc, which is analyzed by methods that do not include statistics or any form of quantification.

4

same light as both paradigms differ about its meaning or whether it is possible (Guba et al. 1994; Lee et al. 2003; Lincoln et al. 1985).

A first criticism of qualitative research is that as it depends on small samples, it is not possible to satisfy statistical generalizing. Yin (2003) replies by saying that "such critics are implicitly contrasting the situation to survey research, in which a sample (if selected correctly) readily generalizes to a larger universe. This analogy to samples and universes is incorrect when dealing with case studies. Survey research relies on statistical generalization, whereas case studies (as with experiments) rely on analytical generalization. In analytical generalization, the investigator is striving to generalize a particular set of results to some broader theory" (p.37). Interpretivist researchers, although they do not discuss the concept of generalization in terms of statistical or analytical, also argue that there is philosophical basis for generalization: generalizations "should be carefully related to the field study details as they were experienced and/or collected by the researcher" (Klein et al. 1999, p.75). Walsham (1995) views generalizations in interpretive case studies as "explanations of particular phenomena derived from empirical interpretive research in specific IS settings" (p. 79). The author outlines four types of generalizations from interpretive case studies: the development of concepts, the drawing of specific implications, the contribution of rich insight, and the generation of theory (Walsham 1995).

Another criticism of qualitative research is that knowledge about results is context-bound, thereby diminishing the possibility to generalize findings to

wider contexts. This is not only a criticism to qualitative research, but also a source of discrepancy between those (interpretivist) qualitative researchers who consider such form of generalization to be of little, or even, no importance, and those (positivist) qualitative researchers who aim to generalize to wider contexts. Seddon and Scheepers (2006) aim to address this criticism by proposing what they call 'other-setting generalization', which they define as "the researcher's act of arguing, based on the representativeness of a sample, that there is a reasonable expectation that a knowledge claim already believed to be true in one or more settings is also true in other clearly defined settings." (p. 1142). These authors[5] argue that Yin's analytical generalization (Yin 2003), Walsham's 'drawing of specific implications' (Walsham 1995), Klein and Myers' principle of abstraction and generalization (Klein et al. 1999), or Lee and Baskerville's EE (generalizing from data to description) and ET (generalizing from description to theory) forms of generalizing (Lee et al. 2003) may be regarded as other-setting generalizations. Seddon and Scheepers (2006) suggest that for sound discussion of other-setting generalization researchers should delineate "clearly the boundaries beyond which their knowledge claims might not apply" (p. 1153).

---

[5] Seddon and Scheepers' ontological stance in their paper is as follows: "we believe that objective reality exists beyond the human mind, though our perceptions about that reality are inextricably bound to the stream of experiences we have had throughout our lives. Further, we believe that there are many regularities and patterns in this objective reality that researchers seek to uncover, but that these regularities and patterns tend to apply in only limited contexts and are likely to be different for different types of people (managers, teenagers, etc.), different cultures, and over time." (p.1146).

6

This concept of 'other-settings generalization' is close to that of transferability (Lincoln et al. 1985), which is our object of study. Lincoln and Guba (1985), however, suggest that rather than "indicate the range of contexts to which there might be some transferability…[researchers are expected] to provide sufficient information about the context in which an inquiry is carried out so that anyone else interested in transferability has a base of information appropriate to the judgement" (p. 124-125). Accordingly, Lincoln and Guba (1985) argue that transferability is a process also performed by readers, by which they are able to infer that the results of the research would be similar in their own situation. Readers are responsible for making the judgment of how reasonable the transfer is,

"How can one tell whether a working hypothesis developed in Context A might be applicable in Context B? We suggest that the answer to that question must be empirical: the degree of transferability is a direct function of the similarity between the two contexts, what we shall call "fittingness". Fittingness is defined as the degree of congruence between the sending and receiving context. If Context A and Context B are sufficiently congruent, then working hypotheses from the sending originating context may be applicable in the receiving context." (p.124).

That is, transferability depends on the researcher delineating the characteristics of the setting under which her results hold, as well as on the reader determining if that setting is similar to the one where she wants to apply those results. We consider that despite the discrepancies between both

paradigms in qualitative research, these do not differ in terms of the notion of transferability as we use it in this paper. We do not tie the notion of transferability to research method or form of data analysis. Rather, we tie it to the potential applicability of research results in other settings. This potential applicability does not necessarily require the researcher to know the other settings where her results may apply, rather, the researcher must provide enough details about the setting so that readers can assess the applicability of those results (Klein et al. 1999). The following sections develop this point.

The Need to Characterize the Setting in Qualitative Research

Despite the calls for transferability of research results, IS studies still continue to avoid this issue or poorly handle it. In Table 1 we provide some recent examples of transferability statements in the IS literature[6].

Table 1: Statements for Transferability made at the MIS Quarterly
"…we speculate that the interaction of institutional and technology change triggers that we observed at the research site may also be occurring across the _U.S. healthcare sector_" (Davidson et al. 2007, p.755)
"We should not attempt to over-generalize our conclusions beyond the context of a _government organization in a country that recently introduced a process of democratization_" (Silva et al. 2007, p.350)
"While the two work units have a **number of similarities** in terms of the work being done (selling IT products and services) and the communication technologies available for use, there are also significant institutional differences … These differences appear to influence employees' perceptions of different communication media, and their appropriateness for use

---

[6] We selected some qualitative papers in the MIS Quarterly from the 3rd issue 2004 to the 4th issue 2007 and examine how authors made transferability statements accordingly.

8

in combinations." (Watson-Manheim et al. 2007, p.279)

"The IKA story may appear extreme and peculiar in comparison to the cases of business organizations studied in most IS research. But it is by no means exceptional. IS innovation entangled in contestations among alternative regimes of truth is a frequent finding in research in *countries and sectors undergoing socio-economic and organizational transition*" (Avgerou et al. 2007, p.312)

"A remaining limitation centers on the generalizability of our results, as we concentrated on one standard only. This is a common criticism of single case studies. However, in case studies, the generalization of the results should be extrapolated not to populations but to analytical generalizations or to bring about insights. Indeed, the *context of standards setting* varies tremendously in the IS and security arena. Many *de facto standards* are set by the Internet community with RFCs (requests for comment), such as RFC 2527 for Certificate Practice Statements, which are in fact merely embryonic standards, at an intermediate stage in the process of finalizing a full *de jure standard*." (Backhouse et al. 2006, p.429)

"With regard to the external validity of our case, we can ask: Is our case representative of a new class of standardization problems? We believe so, especially in the *health care domain*, where plans for developing electronic health records grow continuously bigger and more ambitious." (Hanseth et al. 2006, p.576)

"Not all industries resemble the mortgage industry in having *two nearly equal, dominant and competitive customers* that are susceptible to demands for standardization justified on the basis of the common good. An obvious counterexample is the retailing industry, dominated by Wal-Mart, which clearly puts its own economic interests first in discussions of industry-wide standards. Effective tactics in the mortgage industry, then, are unlikely to work in retailing." (Markus et al. 2006, p.461)

"our research is restricted to a single detailed case investigation…, such focus does limit the generalizability of our results across **dissimilar settings**" (Cotteleer et al. 2006, p.655)

"because our research sites offered very **similar characteristics**, the generalizability of our model to other contexts needs to be further investigated" (Beaudry et al. 2005, p.519)

"Our study is based on cases set in hospitals and has physicians as its focal group. As a result, caution is required in generalizing our findings. Because of the *power physicians hold in hospitals*, they are freer to choose whether they use a given system than many other types of users. To validate the model, it would be instructive to see how, in **similar settings**, the resistance of other groups, like nurses, evolves. Also, the model's external validity would be improved by studying the implementation of systems in different settings." (Lapointe et al. 2005, p.484)

"The main limitation of this research is the restriction of the phenomenon studied to organizational **contexts similar** to ManDisCo. Because we studied only one organization, which experienced a particular history and regional location, we are unable to provide a wider understanding of the contexts under which brokering might occur. However, our findings are potentially generalizable to _decentralized organizations_ in which IT professionals design and maintain shared systems in a federated IT structure." (Pawlowski et al. 2004, p.666)

"While this intervention proved quite successful in the context of SJHS [St. John's Health System], subsequent research must validate the success of the proposed prescriptions (hows) and associated causal relationships in other _hospital-physician relationships_" (Kohli et al. 2004, p.387)

As statements in Table 1 show, among those studies that have tried to characterize the research setting, they use dimensions (highlighted in italics): sector (Davidson et al. 2007; Hanseth et al. 2006), country (Avgerou et al. 2007), government organization (Silva et al. 2007), power (Lapointe et al. 2005; Markus et al. 2006), decentralization (Pawlowski et al. 2004), type of standard (Backhouse et al. 2006), that leanly capture the essential traits of the research setting. For instance, Davidson et al. (2007) and Hanseth et al. (2006) hypothesize that their results may occur across the healthcare sector. Silva et al. (2007) state that their conclusions apply to "government organization[s] in a country that recently introduced a process of democratization" (p.350). Markus, Steinfield and Wigand (2006) point out that the difference between settings may be the existence of one dominant actor. Lapointe et al. (2004) argue that the power that physicians hold in hospitals allows them to choose whether they use or not the system. Pawlowski and Robey (2004) highlight that their findings "are potentially generalizable to

decentralized organizations in which IT professionals design and maintain shared systems in a federated IT structure" (p.666).

Therefore, although these papers provide rich details in presenting their research settings, we consider that their transferability remains a complex issue as sometimes it is hard for readers to make decisions about the applicability of the results in their settings. On the one hand, readers who are not familiar with those research settings may feel overwhelmed by the quantity and depth of details.

On the other hand, readers may face difficulties in comparing and establishing the fit between the diverse settings. Some of the authors in Table 1 state that the transferability of their results to other sites depends on the similarity between those settings. They speak of 'similar characteristics', 'similar settings', or limit the 'generalizability of our results across dissimilar settings' (highlighted in boldface in Table 1). But the question is: When are two settings similar? Lincoln and Guba (1985) answer this question (as we saw in the previous section) by defining the similarity between two settings as the degree of congruence between them. But this definition still raises the same question: What common features must two settings have to be considered congruent or similar?

We contend that the existence of common and accepted dimensions for characterizing a setting would facilitate the assessment of the fit between research settings, and therefore, IS qualitative research could enhance the transferability of their results by handling the characterization of the deep and

11

significant features of their research settings. That is, the transferability of results could be enhanced if there were a typification for research settings. Next, aiming to define the common dimensions, we seek to conceptualize the research setting by drawing on structuration theory. We develop a coarse-grained theory that supports the characterization of the setting in which IS phenomena occur.

The Research Setting as Structure

The research setting refers to the social context within which action (i.e. the IS phenomenon) occurs. In a given setting social actors are "suspended in a web of values, norms, rules, beliefs, and taken-for-granted assumptions, that are at least partially of their own making" (Barley et al. 1997, p.93), and that may enable and place limits to their action. This view of the research setting is close to the notion of 'structure' as defined by Giddens (1984). According to Giddens, social practice is the mediation between structure and agency: "the structural properties of social systems are both medium and outcome of the practices they recursively organise" (p.25). Social action does not exist apart from structure, and structure is enduring patterns of action. Therefore, structure and action are mutually constitutive.

Structure refers to "structuring properties allowing the 'binding' of time-space in social systems, the properties which make it possible for similar social practices to exist across varying spans of time and space and which lend them 'systemic' form" (Giddens 1984, p.17). Social systems do not have

structures, rather they exhibit structural properties. Structure exists "as memory traces orientating the conduct of knowledgeable human agents" (Ibid, p.17) and "as instantiated in action" (Ibid, p.377). Structure is comprised of "rules and resources, recursively implicated in the reproduction of social systems" (Ibid, p.377) (see Figure 1).

Figure 1: Constituents of structure
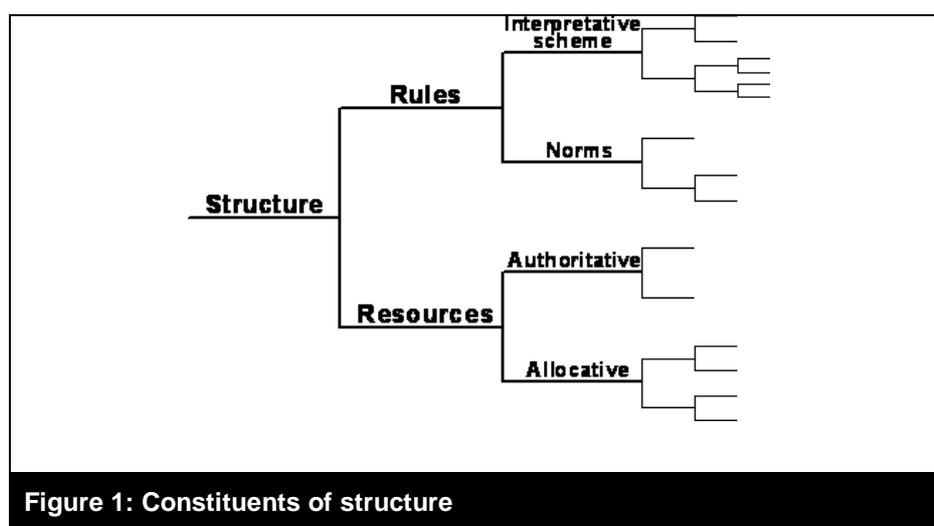
On the one hand, rules refer to "techniques or generalizable procedures applied in the enactment/reproduction of social practices" (Ibid, p.21). Giddens distinguishes between formulated and non-formulated rules. The former are those which can be verbalized or codified, for instance, conceptual schemes or laws. The latter, which constitute the bulk of rules governing social life, refer to those rules that have not been expressed verbally or in a written format but are nevertheless enacted by actors in the interaction. In addition, Giddens considers that any rule can be characterized by a combination of four elements: intensive-shallow, tacit-discursive, informal-formalized, and weakly sanctioned-strongly sanctioned. For

13

instance, language may be regarded as intensive rules that are tacit, informal and that give rise to light sanctions. Laws, policies and directives may be regarded as shallow rules that are discursive, formalized and result from strong sanctions (Markussen 1994). Actors draw upon rules in the course of their actions to routinely negotiate the situations of social life. For analytical purposes, Giddens distinguishes two aspects of rules: "Rules relate on the one hand to the constitution of meaning [interpretive schemes], and on the other hand to the sanctioning of models of social conduct [norms]." (Ibid, p.18) (see Figure 1).

Resources, on the other hand, are "structured properties of social systems, drawn upon and reproduced by knowledgeable agents in the course of interaction… Resources are media through which power is exercised, as a routine element of the instantiation of conduct in social reproduction." (Ibid, p.15). Resources can be authoritative and allocative. "Allocative resources refer to capabilities…generating command over objects, goods or material phenomena. Authoritative resources refer to types of transformative capacity generating command over persons or actors." (Ibid, p.33) (see Figure 1).

Viewing the research setting as structure directs our attention to the rules and distribution of resources that enable and constrain the phenomenon under study. For instance, the business processes of an organization –rules– constrain and enable the daily work. On the other hand, it also enables to focus on multiple levels of analysis (i.e. individuals, teams, organizations, sectors).

A Framework of Structural Configurations

Given that the constituents of structure –rules and resources– are the social medium that enables and constrains IS phenomena (Giddens 1984), we suggest that they can be used to broadly conceptualize the research setting where an IS phenomenon occurs. Relying on these two constituents of structure, we build the framework in Figure 2, which shows four 'structural configurations' that can broadly characterize the setting in which IS phenomena occur. In this paper we do not only refer to structure that is enacted by users through recurrent interaction with information technologies (Orlikowski 2000), but also to any structure that is enacted at any interaction – for instance, between users and analysts (Newman et al. 1992) – that occurs throughout an IS phenomenon.

Although researchers could split these two dimensions further (see Figure 1), we consider that it would not yield as much transferability to the reader. The more we break down each dimension, the closer description to a specific phenomenon we get. In the limit we would have a pure ideographic study that treats the phenomenon as being unique and not transferable. However, except in the case of ethnographic studies which are relevant in themselves, the less transferable are the findings, the less relevant is the study. Hence we argue that a coarse view of the setting may enhance transferability of results and the relevance of the study.

The first dimension in our framework is that of rules, which correspond to either cognitive structures or normative sanctions. Cognitive structures constitute meaning –i.e. the semantics of the data and processes executed in the setting, the vision, etc. Normative sanctions are the rules that define the organizationally sanctioned way of executing work (Orlikowski 1992). To build the framework we distinguish between rules which are collectively shared by the social entities that constitute the social setting, and rules which are unshared (see Figure 2).

The second dimension in our framework is that of resources, either authoritative or allocative, through which power is enacted. As Giddens recognizes, power is an elemental concept of social life, "directly implied in human action" (Giddens 1984, p.283), hence accounts of IS phenomena "need to give particular attention to the operation of power relationships" (Jones et al. 2008, p.135). "The exercise of power is not a type of act; rather power is instantiated in action, as a regular and routine phenomenon. It is mistaken moreover to treat power itself as a resource as many theorists on power do. Resources are the media through which power is exercised, and structures of domination reproduced." (Giddens 1979, p.91). However, in order to avoid changing the common use of the term power in the IS literature (Jasperson et al. 2002; Silva 2007), we label the second dimension of the framework (in Figure 2) as power. Power can be symmetric or asymmetric, which means that, following Giddens, it is the distribution of resources (which constitute the structure of domination and from which

power is exercised) that is symmetric or asymmetric. We shall therefore use the term 'power' to refer to the distribution of resources.
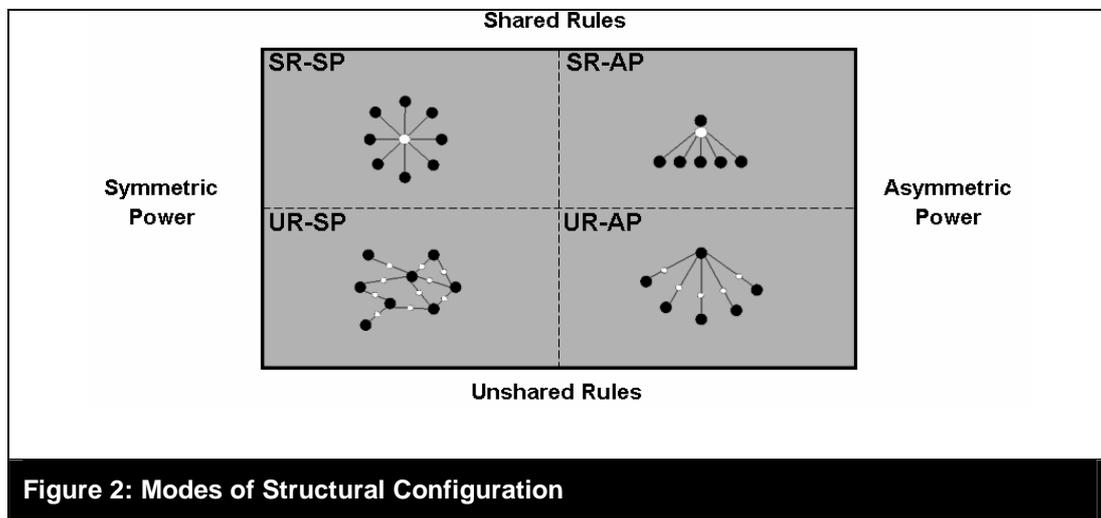

Figure 2: Modes of Structural Configuration

We focus our attention on the possible 'structural configurations' that arise when considering the two constituents of structure: rules and power. The rules of the research setting can be shared or unshared by the members; and regarding the distribution of resources, the arrangement of power in the research setting can be symmetric or asymmetric. Each cell in the framework represents an ideal type of 'structural configuration'. The four configurations are thus SR-SP (Shared Rules and Symmetric Power), SR-AP (Shared Rules and Asymmetric Power), UR-SP (Unshared Rules and Symmetric Power), and UR-AP (Unshared Rules and Asymmetric Power). The black circles in Figure 2 represent social entities (e.g. individuals, departments, firms); the black lines mean the prevailing interaction between these social entities; and the white circles represent the set of rules which social entities draw upon in their interaction. In the configurations SR-SP and SR-AP the

17

interactions between social entities pass through the common set of rules that govern the interactions. In the configurations UR-SP and UR-AP the rules are not shared, but established between each pair of social entities.

In order to present and illustrate each type of structural configuration we selected a small sample of papers from the MIS Quarterly from the 3rd issue 2004 to the 4th issue 2007 (the same papers we used for Table 1) and examined how authors characterize the research setting. In total, we identified 24 papers conducting IS qualitative research. Of these, we discarded 11 papers based on the following criteria: (1) papers that did not study a phenomenon[7] relevant for our framework (Chua et al. 2007; Garud et al. 2005; Iversen et al. 2004; Lindgren et al. 2004; Malhotra et al. 2005; Martensson et al. 2004; Porra et al. 2005; Puri 2007), and (2) papers that did not provide enough evidence about the structural configuration of the social setting in which the IS phenomenon occurred (Avgerou et al. 2007; Braa et al. 2007; Slaughter et al. 2006). Finally, we analyzed 13 papers (see Table 2). We used additional literature to enrich the illustration in some of the configurations.

---

[7] A phenomenon relevant to our framework may be described as one that deals with: (1) the conditions and social processes through which information systems are developed, implemented, used and institutionalized in organizations or industries, and (2) the consequences of developing, implementing, using and institutionalizing such information systems.

SR-AP configuration

In an ideal SR-AP configuration, for instance an army, power is completely asymmetric, and interpretative schemes and norms are fully shared between social entities. SR-AP configurations can be found inside organizations and in inter-organizational arrangements. For instance, Beaudry and Pinsonneault (2005) in studying IT adaptation of accounts managers in two banks describe the setting of Bank A as,

> "Prior to the implementation of the new account management system, account managers met their clients at a branch and used a terminal to access the bank's centralized database in order to print a copy of the client's record…[later] load request forms would be dispatched to the branch manager for approval before being sent to the head office." (p.504).

On the other hand, Markus et al. (2006) describe the US secondary mortgage market as,

> "By contrast [to the primary mortgage market], the secondary market can, for most intents and purposes, be considered a duopsony. The GSEs [government-sponsored enterprises], Fannie Mae and Freddie Mac, have grown rapidly into dominant players: Roughly 50 percent of the $6.3 trillion in outstanding U.S. mortgage debt for single family residences is either held in portfolio by the GSEs or is held by investors in the form of mortgage-backed securities guaranteed by the GSEs. The perceived and

real power and privileges of these two companies generates considerable controversy, heightened by recent accounting investigations." (p. 448)

"The two GSEs…, were fierce rivals both in the secondary mortgage market and in providing revenue-generating IT support for mortgage industry processes. They pioneered the use of EDI with mortgage bankers for the sale of closed loans in 1980s, but each GSE had it own proprietary data requirements and EDI message formats." (p.542)

So in the US secondary mortgage market we find that each GSE with their mortgage banks has historically constituted a SR-AP structural configuration.

UR-AP configuration

In the UR-AP configuration, interactions are dyadic between a dominant social entity and the rest. The interpretative schemes and norms are usually established by a dominant social entity for each of the other entities. The kinds of relationships these dominant entities establish with their partners are usually also dyadic. For instance, Cotteleer and Bendoly (2006) study the influence of ERP implementation on operational performance at Tristen Corporation (a U.S.-based producer of peripheral equipment for computerized devices). The authors, in defining the drivers for implementing the ERP, describe a setting that fits into the UR-AP configuration,

"…the need for sales office to confirm every order through its respective MDC [manufacturing/distribution center] could generate significant order delay. The process often included repeated telephone and fax contacts

between customers, sales offices, and the MDC in order to secure product commitments. In the presence of a near lack of inventory and production plan visibility, the ordering commitment subprocess could take upwards of one week. Furthermore, logistics personnel were required to manually track inventory across MDCs. Depending on the time and location of a contact with Tristen, a customer might receive different lead-time commitments for the same product order. …[the need for] standard protocols that spanned the firm's operating units…led Tristen to establish an enterprise systems initiative. " (p.647)

UR-AP configurations also occur in inter-organizational arrangements. For instance, the automotive (Gerst et al. 2005) and chemical (Christiaanse et al. 2005) industries, which are characterized by dominant firms interacting – exchanging structured information– with a host of smaller partner firms on the basis of pre-established agreements for the interaction. Such agreements are usually dyadic, and their content tends to be settled by the dominant firms.

UR-SP configuration

In a UR-SP configuration, interaction is dyadic. For instance, this is the case of a network of firms where there is no dominant company and there are no vertically-integrated firms. In this network, the distribution of power is symmetric, and due to the dyadic nature of the interactions, the interpretative schemes and norms are negotiated and established between each pair of social entities. So there are no shared public rules or common patterns of

21

interpretation governing the interactions between the diverse social entities. In inter-organizational arrangements, the UR-SP configuration has traditionally been supported by bilateral systems –i.e. fax, email, EDI. For instance, Kumar et al. (1998), in analyzing the reasons for the failure of SPRINTEL in Prato, describe the setting where the implementation of SPRINTEL took place:

> "The coordination in the chain is primarily achieved by horizontal communication between the adjacent parts of the chain and through a lesser extent by the flow of information to and from the *impannatore* who "owns" the order. Thus the *filiera tessile* can be considered as a self-organizing dynamic value chain in which production materials and information flow directly from one firm…to the next with only minimal interference or control by the *impannatore*. It is very common for the *impannatore* to communicate only with the first and the last actor of the chain, and to communicate with other only to track order progress and in case of problems or exceptions." (pp.207-208)

On the other hand, Pawlowski and Robey (2004), who study knowledge brokering from the perspective of IT professionals at a manufacturing and distribution company (ManDisCo), describe the setting in the following terms:

> "ManDisCo's IT organization followed the federated governance model. Each business unit had an IT group that reported to the unit's vice president. A central IT unit headed by a CIO provided support for enterprise-wide systems and IT infrastructures, such as networking

services...A federated IT organization represents an intermediate position between extensive centralization and extensive decentralization. As such, the federated model implies a balance of power (possibly unsettled) regarding the control of computing resources. Historically, conflicts had occurred between the corporate and business unit IT groups, due partly to the preference of IT professionals in newly acquired business units to remain independent of corporate influence." (p.651)

SR-SP configuration

The SR-SP configuration is an archetype of a social context where power between the entities is symmetric, equally distributed among entities, and where the rules of meaning and norms are public and common (e.g. the Stock Exchange is close to the SR-SP ideal). Other examples of SR-SP configuration are the accounting and law service industries as described by Greenwood et al. (1990) and Cooper et al. (1996). For these authors, until the 1990s accounting and law firms were organizations of dispersed professionals working within a legal framework of partnership, which "stresses a view of ownership and governance that values partnership, autonomy and democracy" (Cooper et al. 1996, p.626), and downplays the use of formal hierarchy.

In the IS literature we also find several empirical examples of the implementation of information systems in SR-SP configurations. For instance, Kambil and van Heck (1998), who study the impact of ICT on the

processes and stakeholders of the Dutch Flower Market, describe the market:

> "The flower auctions provide a central location for the meeting of buyers, with suppliers allowing for efficiencies in quality control, logistics, and product redistribution [as well as] efficient search, communication, and product representation …The auction method…reduces the bargaining costs…and provides dispute resolution mechanisms that mitigate against opportunism risk encountered by buyers and sellers." (pp. 4-8)

However, in the traditional Dutch Flower Market "the auction rules and service costs of the buyers for processing trades favors trading in smaller lots instead of purchases of large lots" (Kambil et al. 1998, p.8). That is, the small lots favor growers (sellers). This power asymmetry was reduced with the introduction of the Tele-Flower Auction (Kambil et al. 1998). Tele-Flower Auction aimed to transform the structural configuration of the market into a pure SR-SP by reducing the influence of growers on auction policies.

On the other hand, Beaudry and Pinsonneault (2005) in studying IT adaptation of accounts managers in two banks note that in Bank B account managers share the responsibility for managing the accounts of corporate clients: "At bank B, the account manager position is more prestigious. As in Bank A, although very detailed working procedures exist, account managers benefit from significant latitude in terms of the way they fulfill their jobs" (p.504-505).

Composite Configuration

Finally, it may happen that a given qualitative study is conducted in a context that has more than one setting, and hence more than one structural configuration (Beaudry et al. 2005; Lapointe et al. 2005; Markus et al. 2006; Silva et al. 2007). For instance, Markus et al. (2006), who study the standardization process in the U.S. mortgage industry shows that the structural configuration of the primary (UR-SP) and secondary (SR-AP) mortgage markets are different. Beaudry and Pinsonneault (2005) study the adaptation to IT of account managers in two North American banks, each bank having different structural configuration. In the case of Silva and Hirschheim (2007), who study the implementation of a strategic information system in two public hospitals by the Ministry of Health of Guatemala, we identify two settings: the setting of hospitals (UR-SP) and the setting of the Ministry (UR-AP). In case that the context has more than one setting (or type of structural configuration) researchers are expected to link the results to the structural configuration in which they apply.

A Typification of the Research Setting

In the previous section we showed that one way to characterize the setting was by specifying the structural configuration where the IOIS phenomenon under study occurs. Often, however, an IS phenomenon transforms the social system within which it occurs: "Implementation of an information system disturbs the socio-technical system of an organization. The extent of

this perturbation determines the difficulty of the change and the management skills that must be applied." (Lee 2001, p. viii). Through the lens of our framework this means that an IS phenomenon may entail a change of the structural configuration. For example, the implementation of industry information systems that aim to standardize –therefore, change– the business processes and data (rules) that support the interaction of multiple actors (Boh et al. 2007; Markus et al. 2006; Rodon et al. 2008). We consider that in such cases, delineating the initial 'structural configuration' of the setting may be insufficient as it will provide a snapshot of the setting before or after the phenomenon occurs, but omit the transformation of the 'structural configuration'. That is to say, we cannot take a single snapshot of the setting at one point in time and believe we have captured the characteristics of the setting. Hence we argue that researchers should typify the setting in two steps: 1) identify the initial 'structural configuration' for the setting(s), and 2) describe the transformation of 'structural configuration' that occurs in the setting; that is to say, identify the target 'structural configuration'.

Next we explored the transformations of structural configuration (the second step) in prior literature and we identified four types (Figure 3): (1) from UR-SP to SR-SP (Davidson et al. 2007; Hanseth et al. 2006; Lapointe et al. 2005; Markus et al. 2006); (2) from UR-AP to SR-AP (Cotteleer et al. 2006; Street et al. 2004); (3) from UR-SP to SR-AP (Kohli et al. 2004; Lapointe et al. 2005); and (4) no significant transformation (Beaudry et al. 2005; Levina et al. 2005; Pawlowski et al. 2004; Watson-Manheim et al. 2007). Table 2

presents the initial structural configuration and the transformation of structure (target structural configuration) for each paper. Next we briefly comment on each of these transformations.

From UR-SP to SR-SP

Lapointe and Rivard (2005), in analyzing the success of the implementation of an electronic medical record system in a university hospital show that the system mainly represented changes in the working procedures, but not in the power symmetry between physicians and managers of the hospital. Hanseth et al. (2006) analyze the side effects of an unsuccessful implementation of an electronic patient record system aimed to transform the structural configuration into one where the rules of physicians, departments, and specialties were shared, but did not try to introduce any substantial changes into the power symmetry. The authors argue the unsuccessful implementation of the system in the following terms, "The failure of DocuLive, at least as a standardization story, can be seen as a failure in attempting to control complexity. Arguably, the main mistake was to follow a traditional standardization approach—typical for (first) modernity; that is, overemphasizing criteria of universality, uniformity, and centralization of control to achieve alignment, stabilization, and closure." (Hanseth et al. 2006, p.575).

Table 2: Typification of Research Settings in Literature				
Reference	**Phenomenon being studied**	**Social entities**	**Initial structural config. (Step 1)**	**Target structural config. (Step 2)**
(Davidson et al. 2007)	Implementation of a computerized physician order entry system at a non-profit hospital in the U.S.	Physicians, managers, nurses, pharmacists, and laboratory technologists.	UR-SP	SR-SP
(Silva et al. 2007)	Implementation of a Strategic Information System in two public hospitals by the Ministry of Health of Guatemala	Ministry of Health, Hospitals, Minister, Project Manager (K.C.), Administrators of hospitals	Setting 1: Hospitals UR-SP Setting 2: Ministry UR-AP	Setting 1: SR-AP Setting 12 SR-AP
(Watson-Manheim et al. 2007)	Media usage in two sales divisions of two Fortune 100 where there is a multiplicity of communication media available to employees	Service managers, product specialists, client managers, consultants, account representatives, technician	UR-SP	NST
(Backhouse et al. 2006)	Development of a security management standard (BS7799) in the UK	Government and industry	UR-SP	SR-SP
(Hanseth et al. 2006)	Historical and contingent analysis of the consequences of the development of an Electronic Patient Record system in the Riskhospitalet in Oslo	Hospital, IT department, Consortium, Consultancy	UR-SP	SR-SP
(Markus et al. 2006)	Standardization process in the US mortgage industry	GSEs, mortgage banks, mortgage brokers, service providers, IT vendors	Setting 1: Secondary market SR-AP Setting 2: Primary market UR-SP	Setting 1: NST Setting 2: SR-SP
(Cotteleer et al. 2006)	Influence of ERP implementation on operational performance at Tristen Corporation (US producer of	Manufacturing distribution centers	UR-AP	SR-AP

	peripheral equipment for computerized devices)			
(Beaudry et al. 2005)	User adaptation to IT in two North American banks	Account managers, bank management	Setting 1: Bank A: SR-AP Setting 2: Bank B: SR-SP	Setting 1: Bank A: NST Setting 2: Bank B: NST
(Lapointe et al. 2005)	Resistance of physicians to implementation of electronic medical records in hospital settings	Managers, physicians (secondary: nurses, pharmacists, administrators)	Setting 1: Case 2: UR-SP Setting 2: Cases 1&3 UR-SP	Setting 1: Case 2: SR-SP Setting 2: Cases 1&3 SR-AP
(Levina et al. 2005)	Emergence of practices supporting boundary spanning associated with the implementation of intranet applications in an insurance company (Insura)	Local sales teams, headquarters, project manager	SR-AP	NST
(Pawlowski et al. 2004)	Knowledge brokering from the perspective of IT professionals at ManDisCo (manufacturing and distribution company with facilities in North America)	IT professionals	UR-SP	NST
(Kohli et al. 2004)	An attempt of a hospital's management to 'informate the clan' of physicians to reduce clinical procedural costs and adopt practices benchmarked to produce better outcomes. The hospital is in the Midwest region of the U.S.	Managers, physicians	UR-SP	SR-AP
(Street et al. 2004)	Ways in which a small business management team (of a Canadian electronics manufacturer) develops an IS-enabled solution to address their growth needs	President and CEO, Management team	UR-AP	SR-AP

NST: No Significant Transformation

芽|Sprouts

From UR-AP to SR-AP

Street and Meister (2004) show that when a small company grows, if it is to avoid co-ordination problems between departments, departments have to standardize rules. On the other hand, Cotteleer and Bendoly (2006) in presenting arguments for the need to implement an ERP at Tristen Corporation state, "The need for ATP [available-to-promise functionality], standard protocols that spanned the firm's operating units, and other operational improvements led Tristen to establish an enterprise systems initiative" (p.647). Likewise, in commenting the results of the implementation, the authors say, "The imposition of enterprise-wide standards provided direct and indirect benefits as well. Interface and process standards reduce variance in the execution of order specification, configuration, and quality assurance tasks." (p.649).

From UR-SP to SR-AP

Kohli and Kettinger (2004) study the implementation of management-sponsored performance monitoring IS in a hospital aiming to 'informate the clan' of physicians. The new system aims to homogenize the rules between physicians and the management team of the hospital as well as increase the control of the latter over the physicians. The authors describe the relation between the management and physicians of the hospital as: "physicians represent an extreme case of knowledge asymmetry (even among knowledge professionals), making it more problematic for the hospital

(principal) to design and enforce detailed contracts with this type of agent [physician]…[Physicians] have a peer-review relationship with each other." (Kohli et al. 2004, p.388). Lapointe and Rivard (2005) study the resistance of physicians to the implementation of an electronic medical record system in three hospitals. The implementation in two of the hospitals failed (the system was withdrawn). In such cases the implementations would have transformed the structural configuration of the setting from UR-SP to SR-AP (although the transformation finally did not take place). In giving arguments for the failures of these two implementations, the authors state,

"[in case 1] while physicians had traditionally held more power than nurses, the use of the system challenged this distribution of power" (p.474)

"The system [in Case 3] presented a threat to this position because it could upset the existing balance of power between physicians and nurses." (p.477)

"the perceived threats stemmed from the administration's attempt to take away the physicians' privileges" (p.479).

No significant transformation

In the case that there is not a significant transformation of the structural configuration (Beaudry et al. 2005; Levina et al. 2005; Pawlowski et al. 2004; Watson-Manheim et al. 2007), we contend that researchers should pay attention to the possible changes of rules; especially, to the possibility of new and old rules to be reconciled. For instance, in some cases as a result of the

IS phenomenon the conceptual schemes (rules) do not change from unshared to shared or vice versa, but the new and the old conceptual schemes are incompatible, thus occurring semantic conflicts (Park et al. 2004; Sheth et al. 1990; Soh et al. 2000).
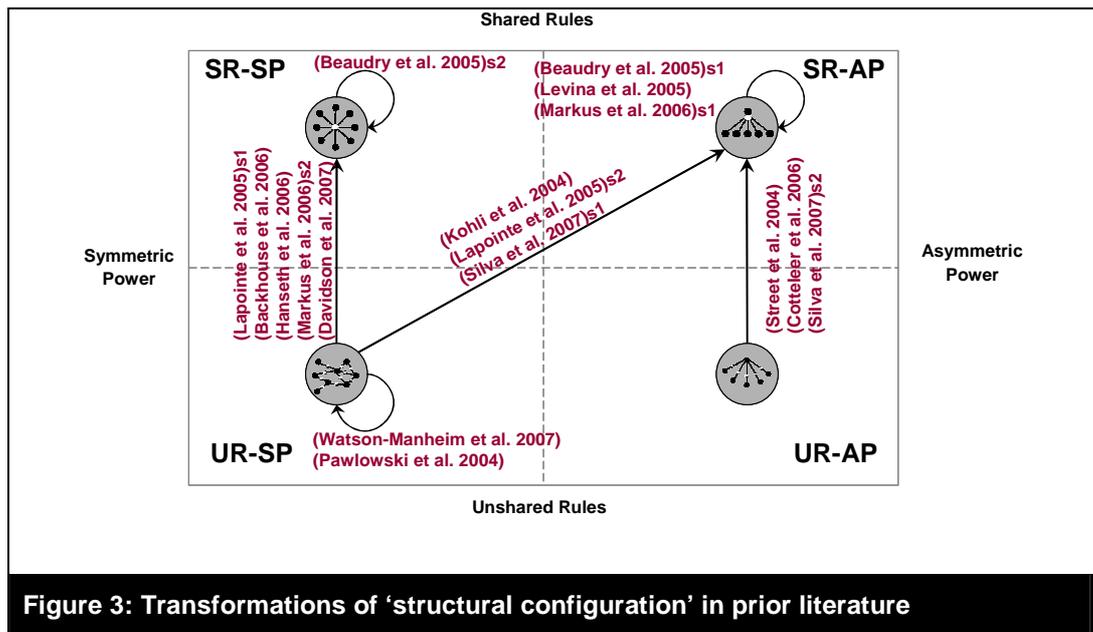
Figure 3: Transformations of 'structural configuration' in prior literature

Similarity of Settings and Transferability of Results

According to Lincoln and Guba (1985), "the degree of transferability is a direct function of the similarity" between settings (p.124). In the previous sections we have addressed one aspect of this statement: the similarity of settings. Accordingly, we developed a typification that tackles the commensurability of research settings, and showed that two settings may be deemed to be similar or congruent when their initial and target structural configurations are the same. However, a second aspect of Lincoln and

Guba's statement has still been largely ignored in the literature: why if two settings are similar the results obtained in one setting are expected to be applicable to the other setting?.

Drawing on our typification of research settings as well as on the concepts of contradiction and conflict as developed by Giddens (1984), we now develop a theoretical explanation that addresses this question. By doing so, this paper is expected to not only support the commensurability of settings but also enhance the transferability of results. Consequently, we contend that the similarity of research settings may enable and condition the transferability of some research results.

We have shown before that IS phenomena often create some disruption in the structural configuration, which means that the initial and target structural configurations may be different. Through the lens of structuration theory, this means that any IS phenomenon is prone to clashes of interest and conflict – "the actual struggle between actors and groups" (Giddens 1984, p.198). Such conflicts reflect the existence of contradictions of structure which negatively affect the diverse actors. Structural contradiction is the "dysfunction of structural principles of system organization" while conflict is "struggle between actors or collectives expressed as definite social practices" (Giddens 1984, p.198). Conflict occurs due to an underlying problem of the social structure: "Conflict and contradiction tend to coincide because contradiction expresses the main 'fault lines' in the structural constitution of societal systems. The reason for this coincidence is that contradictions tend

33

to involve divisions of interest between different groupings or categories of people…Contradictions express divergent modes of life and distributions of life chances in relation to possible worlds which the actual world discloses as immanent" (Giddens 1984, p.198). For instance, Walsham (2002) shows the conflicts that arise during cross-cultural software production as a result of differences in the meaning systems, forms of power relations, and norms of behavior between the different groups involved in the production process.

Accordingly, we contend that studies about similar phenomena, conducted in similar settings (settings having the same initial and target structural configurations), are more likely to present similar contradictions, similar conflicts, and hence similar results. Thus the argument put forward is that by delineating the initial structural configuration and the transformation of the setting in which an IS phenomenon occurs some results can be transferred to other settings with similar characteristics. We do not mean that the similarity of structural configurations and transformations determines the research results. Rather, the social actors' knowledgeability and reflexivity may also shape the results (Giddens 1984). Accordingly, without neglecting the emergence of unacknowledgeable conditions or unintended consequences of action, we conjecture that similar structural configurations and transformations may place similar "limits upon the range of options open to an actor…in a given circumstance" (Giddens 1984, p.177) and hence similar results can occur. In fact, if we study the same phenomenon in two similar settings and obtain different results, then an interesting research question is

Sprouts - http://sprouts.aisnet.org/8-17

how agency may explain those differences. On the other hand, we also contend that if two settings have different structural configurations or different structural transformations, the transferability of results between them is highly unlikely because the type of contradictions and conflicts will be different.

Contributions and Conclusions

This concluding section briefly points out some limitations of the paper, outlines its main conceptual contributions, and suggests some areas for future research.

This paper is subject to some limitations. Firstly, we recognize that besides power and rules, in some settings there may be additional relevant characteristics that may shape action. Moreover, power may be interpreted differently depending on the national culture or even the professional culture. On the other hand, the paper treats the rules and power dimensions of social entities as dichotomical dimensions. However, in the real world, there is a continuum between shared and unshared rules, and between symmetric and asymmetric power. Additionally, in a real setting we rarely find pure structural configurations. Usually, real social settings are hybrids composed of the combination of several 'structural configurations', even though one 'structural configuration' dominates the others. So the task of the researcher resembles playing LEGO with the configurations we have presented. Furthermore, our framework neither distinguishes between the two types of rules: normative and codes of meaning, nor between the allocative and authoritative forms of

power (Giddens 1984). Splitting these dimensions could enrich the typification of the real-world setting, but it would also make it more difficult for the researcher to discriminate the kind of configuration of the real-world setting she studies and hinder the transferability of research results. All these limitations suggest potential areas for further research.

Notwithstanding these limitations, this paper contributes to IS literature by proposing a conceptual framework that encourages researchers to specify some coarse characteristics of their research setting. Firstly, the framework does not replace the need for further contextualization of IS qualitative research (Klein et al. 1999), but allows the commensurability of research settings. In addition to the historical and social contextualization of interpretations (Klein et al. 1999), researchers can use this framework to characterize their settings. We show that to typify the setting researchers must delineate first the initial structural configuration and second the transformation (or the target structural configuration) that results from the phenomenon under study. On the other hand, the framework may be viewed as a 'common language' that can be used to compare the similarity of research settings. Therefore, this paper conceptualizes the notion of similarity between settings.

Secondly, drawing on the concept of structural contradiction and conflict we provide a theoretical explanation that links the similarity of settings and the potential transferability of results. We consider further research should empirically prove this explanation by looking for patterns between research

results and the transformation of structural configurations. On the other hand, this explanation may also have practical implications. It suggests that conflict is likely to arise when an IS phenomenon entails a transformation of structure (different initial and target structural configurations). Such conflict reflects the existence of contradictions of structure which negatively affect the diverse actors, for instance, differences in organizational or national culture between developers or users (Walsham 2002), conflicts of power (Avgerou et al. 2007; Markus et al. 2006) or inconsistency of the conceptual schemes to be embedded in the information system (Soh et al. 2003). Accordingly, by focusing on the possible transformations of structure, practitioners could use the framework to anticipate conflicts.

Thirdly, the typification presented in the framework breaks with the distinction between intra-organizational and inter-organizational information systems that has dominated IS research. Organizational and inter-organizational settings may have the same structural transformations. In such case, we conjecture that the kind of problems and the results obtained in intra-organizational settings may be similar and to some extent transferable to inter-organizational settings, and vice versa.

Finally, we consider that transferability is a must if we want to enhance the relevance of qualitative research. This framework may be regarded as a meta-theory, as it provides a way of thinking about other theories in the IS field (Gregor 2006). It can be used to demarcate the transferability of prior studies that lack a characterization of the setting of the phenomenon studied.

This paper attempted to articulate the significant traits of research settings and developed a possible typification. The paper argues that if future qualitative research studies emphasize the deep features of the setting, they can achieve greater transferability. Otherwise, qualitative research will continue to produce situated accounts that offer rich details of the setting, but claim their limited transferability. We contend that by developing further research on transferability we can support researchers in the development of theories relevant in real-world settings.

References

Avgerou, C., and K. McGrath (2007) "Power, Rationality, and the Art of Living Through Socio-Technical Change," *MIS Quarterly* (31) 2, pp. 295-315.

Backhouse, J., C.W. Hsu, and L. Silva (2006) "Circuits of Power in Creating de jure Standards: Shaping an International Information Systems Security Standard," *MIS Quarterly* (30) 5, pp. 413-438.

Barley, S.R., and P.S. Tolbert (1997) "Institutionalization and Structuration: Studying the Links between Action and Institution," *Organization Studies* (18) 1, pp. 93-117.

Beaudry, A., and A. Pinsonneault (2005) "Understanding User Responses to Information Technology: A Coping Model of User Adaptation," *MIS Quarterly* (29) 3, pp. 493-524.

Benbasat, I., and D.L. Goldstein (1987) "The Case Research Strategy in Studies of Information Systems," *MIS Quarterly* (11) 3, pp. 169-386.

Boh, W.F., C. Soh, and S. Yeo (2007) "A Case Study of RosettaNet," *Communications of the ACM* (20) 12, pp. 57-62.

Braa, J., O. Hanseth, A. Heywood, W. Mohammed, and V. Shaw (2007) "Developing Health Information Systems in Developing Countries: The Flexible Standards Strategy," *MIS Quarterly* (31) 2, pp. 381-402.

Chen, W., and R. Hirschheim (2004) "A paradigmatic and methodological examination of information systems research from 1991 to 2001," *Information Systems Journal* (14) 3, pp. 197-235.

Christiaanse, E., and J. Rodon (2005) "A Multilevel Analysis of eHub Adoption and Consequences," *Electronic Markets* (15) 4, pp. 355-364.

Chua, C.E.H., J. Wareham, and D. Robey (2007) "The Role of Online Trading Communities in Managing Internet Auction Fraud," *MIS Quarterly* (31) 4, pp. 759-781.

Cooper, D.J., C.R. Hinings, R. Greenwood, and J.L. Brown (1996) "Sedimentation and Transformation in Organizational Change: The Case of Canadian Law Firms," *Organization Studies* (17) 4, pp. 623-647.

Cotteleer, M.J., and E. Bendoly (2006) "Order Lead-Time Improvement Following Enterprise Information Technology Implementation: An Empirical Study," *MIS Quarterly* (30) 3, pp. 643-660.

Davidson, E.J., and W.G. Chismar (2007) "The Interaction of Institutionally Triggered and Technology-Triggered Social Structure Change: An Investigation of Computerized Physician Order Entry," *MIS Quarterly* (31) 4, pp. 739-758.

Dube, L., and G. Pare (2003) "Rigor in information systems positivist case research: Current practices, trends, and recommendations," *MIS Quarterly* (27) 4, pp. 597-635.

Garud, R., and A. Kumaraswamy (2005) "Vicious and Virtuous Circles in the Management of Knowledge: The Case of Infosys Technologies," *MIS Quarterly* (29) 1, pp.

Gerst, M., and R. Bunduchi (2005) "Shaping IT Standardization in the Automotive Industry:The Role of Power in Driving Portal Standardization," *Electronic Markets* (15) 4, pp. 335-343.

Giddens, A. (1979) *Central Problems in Social Theory*, London: Macmillan.

Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*, Cambridge: Polity Press.

Greenwood, R., C.R. Hinings, and J.L. Brown (1990) "The P2 form of strategic management: corporate practices in the professional partnersip," *Academy of Management Journal* (33) 4, pp. 725-755.

Gregor, S. (2006) "The Nature of Theory in Information Systems," *MIS Quarterly* (30) 3, pp. 611-642.

Guba, E.G., and Y.S. Lincon (1994) "Competing Paradigms in Qualitative Research," in N.L. Denzin, Y. S. (ed.) *Handbook of Qualitative Research,* Thousand Oaks: Sage Publications, pp. 105-117.

Hanseth, O., E. Jacucci, M. Grisot, and M. Aanestad (2006) "Reflexive Standardization: Complexity and Side-effects in Standard-making," *MIS Quarterly* (30) 5, pp. 563-581.

Hirschheim, R., and H.K. Klein (2003) "Crisis in the IS Field? A Critical Reflection on the State of the Discipline," *Journal of the Association for Information Systems* (4) 10, pp. 237-293.

Iversen, J.H., L. Mathiassen, and P.A. Nielsen (2004) "Managing Risk in Software Process Improvement: An Action Research Approach," *MIS Quarterly* (28) 3, pp. 395-433.

Jasperson, J., T.A. Carte, C.S. Saunders, B.S. Butler, H.J.P. Croes, and W.J. Zheng (2002) "Review: Power and information technology research: A metatriangulation review," *MISQ Quarterly* (26) 4, pp. 397-459.

Jones, M.R., and H. Karsten (2008) "Gidden's Structuration Theory and Information Systems Research," *MIS Quarterly* (32) 1, pp. 127-157.

Kambil, A., and E. van Heck (1998) "Reengineering the Dutch Flower Auctions-A Framework for Analyzing Exhange Organizations," *Information Systems Research* (9) 1, pp. 1-19.

Klein, H.K., and M.D. Myers (1999) "A set of principles for conducting and evaluating interpretive field studies in information systems," *MIS Quarterly* (23) 1, pp. 67-93.

Kohli, R., and W.J. Kettinger (2004) "Information the Clan: Controlling Physicians' Costs and Outcomes," *MIS Quarterly* (28) 3, pp. 363-394.

Kumar, K., H.G. van Dissel, and P. Bielli (1998) "The merchant of Prato - Revisited: Toward a third rationality of information systems," *MIS Quarterly* (22) 2, pp. 199-226.

Lapointe, L., and S. Rivard (2005) "A Multilevel Model of Resistance to Information Technology Implementation," *MIS Quarterly* (29) 3, pp. 461-491.

Lee, A.S. (2001) "Editor's Comments - Research in Information Systems: What we haven't learned," *MIS Quarterly* (25) 4, pp. v-xv.

Lee, A.S., and R.L. Baskerville (2003) "Generalizing Generalizability in Information Systems Research," *Information Systems Research* (14) 3, pp. 221-243.

Levina, N., and E. Vaast (2005) "The Emergence of Boundary Spanning Competence in Practice: Implications for Implementation and Use of Information Systems," *MIS Quarterly* (29) 2, pp. 335-363.

Lincoln, Y.S., and E.G. Guba (1985) *Naturalistic Inquiry*, Beverly Hills, CA: Sage Publicatiosn.

Lindgren, R., O. Henfridsson, and U. Schultze (2004) "Design Principles for Competence Management Systems: A Synthesis of an Action Research Study," *MIS Quarterly* (28) 3, pp. 435-472.

Malhotra, A., S. Gosain, and O. El Sawy (2005) "Absorptive Capacity Configurations in Supply Chains: Gearing for Partner- Enabled Market Knowledge Creation," *MIS Quarterly* (29) 1, pp. 145-187.

Markus, M.L., C. Steinfield, and R. Wigand (2006) "Industry-wide Information Systems Standardization as Collective Action: The Case of the US Residential Mortgage Industry," *MIS Quarterly* (30) 5, pp. 439-465.

Markussen, R. (1994) "A historical perspective on work practices and technology," in P.B. Andersen, B. Holmqvist and J.F. Jensen (eds.) *The computer as medium,* New York: Cambridge University Press, pp. 457-476.

Martensson, P., and A.S. Lee (2004) "Dialogical Action Research at Omega Corporation," *MIS Quarterly* (28) 3, pp. 507-536.

Myers, M.D. (1997) "Qualitative research in information systems," *MIS Quarterly* (21) 2, pp. 241-242.

Newman, M., and D. Robey (1992) "A Social-Process Model of User-Analyst Relationships," *MISQ Quarterly* (16) 2, pp. 249-266.

Orlikowski, W.J. (1992) "The duality of technology: Rethinking the concept of technology in organizations," *Organization Science* (3) 3, pp. 398-427.

Orlikowski, W.J. (2000) "Using Technology and Constituing Structures: A Practice Lens for Studying Technology in Organizations," *Organization Science* (11) 4, pp. 404-428.

Orlikowski, W.J., and J. Baroudi (1991) "Studying Information Technology in Organizations : Research Approaches and Assumptions," *Information Systems Research* (2) 1, pp. 1-28.

Park, J., and S. Ram (2004) "Information Systems Interoperability: What Lies Beneath?," *ACM Transactions on Information Systems* (22) 4, pp. 595-632.

Pawlowski, S.D., and D. Robey (2004) "Bridging User Organizations: Knowledge Brokering and the Work of Information Technology Professionals," *MIS Quarterly* (28) 4, pp. 645-672.

Porra, J., R. Hirschheim, and M.S. Parks (2005) "The History of Texaco's Corporate Information Technology Function: A General Systems Theoretical Interpretation," *MIS Quarterly* (29) 4, pp. 721-746.

Puri, S.K. (2007) "Integrating Scientific with Indigenous Knowledge: Constructing Knowledge Alliances for Land Management in India," *MIS Quarterly* (31) 2, pp. 355-379.

Rodon, J., J.A. Pastor, F. Sese, and E. Christiaanse (2008) "Unravelling the dynamics of IOIS implementation: an actor-network study of an IOIS in the seaport of Barcelona," *Journal of Information Technology* (23) 3, pp. 97-108.

Seddon, P.B., and R. Scheepers (2006) "Other-Settings Generalization in IS Research." *International Conference on Information System*, Milwaukee, 2006, pp. 1141-1158.

Sheth, A.P., and J.A. Larson (1990) "Federated database systems for managing distributed, heterogeneous, and autonomous databases," *ACM Computing Surveys* (22) 3, pp. 183-236.

Silva, L. (2007) "Epistemological and theoretical challenges for studying power and politics in information systems," *Information Systems Journal* (17) 2, pp. 165-183.

Silva, L., and R. Hirschheim (2007) "Figthing Against Windmills: Strategic Information Systems and Organizational Deep Structures," *MIS Quarterly* (31) 2, pp. 327-354.

Slaughter, S.A., L. Levine, B. Ramesh, J. Pries-Heje, and R.L. Baskerville (2006) "Aligning Software Processes with Strategy," *MIS Quarterly* (30) 4, pp. 891-918.

Soh, C., S.K. Sia, W.F. Boh, and M. Tang (2003) "Misalignments in ERP Implementation: A Dialectic Perspective," *International Journal of Human-Computer Interaction* (16) 1, pp. 81-100.

Soh, C., S.K. Sia, and J. Tay-Yap (2000) "Cultural Fits and Misfits: Is ERP a Universal Solution?," *Communications of the ACM* (45) 4, pp. 47-51.

Street, C.T., and D.B. Meister (2004) "Small Business Growth and Internal Transparency: The Role of Information Systems," *MIS Quarterly* (28) 3, pp. 473-506.

Walsham, G. (1995) "Interpretative case studies in IS research: Nature and Method," *European Journal of Information Systems* (4) 2, pp. 74-81.

Walsham, G. (2002) "Cross-cultural software production and use: A structurational analysis," *MIS Quarterly* (26) 4, pp. 359-380.

Watson-Manheim, M.B., and F. Bélanger (2007) "Communication Media Repertoires: Dealing with the Multiplicity of Media Choices," *MIS Quarterly* (31) 2, pp. 267-293.

Weber, R. (2004) "The rhetoric of positivism versus interpretivism: A personal view," *MIS Quarterly* (28) 1, pp. III-XII.

Yin, R.K. (2003) *Case Study Research: Design and Methods*, (3rd ed.) Thousand Oaks, CA: Sage.

芽|Sprouts