

SYMBOLIC ACTION RESEARCH IN INFORMATION SYSTEMS: INTRODUCTION TO THE SPECIAL ISSUE¹

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This special issue introduction explores the need to study information systems as symbolic action systems, defines broadly the research domain and related assumptions, notes the origins of this perspective, articulates its key lines of study, and discusses the state of the field in light of published research. The essay also positions the three papers of the special issue in the broader Information Systems (IS) discourse and notes their specific contribution in bridging so far unconnected streams of research and expanding research methods amenable to symbolic action research. This introductory essay furthermore observes some unique challenges in pulling together the special issue that invited the editors to combat against the tendency to approach communicative processes associated with information systems as primarily psychological processes. In closing we note several lines of inquiry that can strengthen future studies of symbolic action including better design theories, more flexible and open use of methods, and attentive use of rich traditions that inform symbolic action research in IS.

Keywords: Symbolic action, information system, semiotics, speech act, symbol action, communication, collaboration, design, research methods

“The entire universe is perfused with signs, if it is not composed exclusively of signs.”

Charles Sanders Peirce

¹We acknowledge the equal contributions of all authors and have listed author names alphabetically following NISO TR03-1999, Guidelines for Alphabetical Arrangement of Letters and Sorting of Numerals and Other Symbols.

Introduction

The organizational use of information technology (IT) had a humble start as a means of electronic data processing, and a modest tool for decision support. IT has since then become ubiquitous, underpinning how we make sense of the world (cognition) and how we share and develop knowledge with others (communication). Indeed, computer-mediated processes now shape cognition and communication at all levels, organizational, community, and private. Similarly, computer mediated communication, especially with the recent onslaught of social media, has transformed communications in all facets of life—often in unexpected ways. This naturally raises the pivotal question of how to conceptualize these new mediations when studying the design, use, and impact of information systems.

In the past, many Information Systems (IS) researchers have approached information systems as primarily a process of automating data manipulation, transfer, and storage. At most, computerization was expected to have secondary effects in that information systems could process larger amounts of data with higher quality to improve decision making. Yet, even the ostensible information provisioning function of information systems for organizations cannot be adequately understood without treating information also as a symbol and as organizational action that is value-laden, mediated by symbols, dependent on social relationships, and immersed in human activity (e.g., Feldman and March 1981; Weick 1979; Winograd & Flores 1988). Indeed, from a symbolic action perspective, information systems are theorized not simply as information processors and conduits of transmission but as part of “meaning engagement practice” (Mokros and Aakhus 2002).

It would therefore be expected that the IS field might have come to grips with insights originating from a symbolic action perspective as these insights have been substantially developed over the last three decades in a multitude of studies about information use and organizational sense-making in many related fields. Yet as we will show below, these insights, despite having entered into the IS discourse, do not loom large. This is somewhat surprising, given the relevance of such insights for understanding information systems use and design where meaning engagement practices are increasingly prominent in topics such as enterprise architecture and social media. To address this gap, this special issue explores canons of IS research associated with the symbolic action perspective, so as to open up deeper investigations into facets of symbolic action in the context of information systems study. This opening covers classic interests, such as conceptual modeling, knowledge management, user percep-

tions of information system use, and media choice, but also new emerging topics, such as data science and large-scale computational data research—so called “big data.”

Symbolic Action

In this special issue, we adopt the term *symbolic action* in a broad and inclusive manner, as one plausible and important stance for advancing inquiry into IS. In this regard, symbolic action comes with specific ontological and epistemological commitments. A good starting point for understanding the ontological grounding of symbolic action is to consider the meaning of its two terms, *symbolic* and *action*. Here, a symbol is taken to be something that represents, or stands for, something else; action, in turn, refers to doing and performing. *Symbolic action* thus refers to the idea that users of information systems *act with symbols* (embedded or surrounding the system) and that users’ actions are enabled and conditioned by symbols and their interpretation. In this perspective, symbolic action is regarded as a ubiquitous feature of everyday life that defines the very basic nature of human existence: humans are symbol-creating animals.

Epistemologically, the explosion of symbolic action ideas emanates mainly from identifying weaknesses in social science’s “received view of language” and related assumptions about how world and symbols relate. At the turn of the 20th century, science consolidated several philosophical trends that were captivated by a dream of an exact, perfect language that would mirror reality and offer a universal language for expressing meaning about the world (Toulmin 2001). In this regard, logical positivism was the ultimate culmination of a movement that was “hot for certainty,” as Toulmin (2001, p. 75) eloquently puts it. Logical positivism criticized natural language for being riddled with shortcomings, which meant that it had limitations in establishing certain scientific knowledge. In contrast, symbolic action theories draw upon and develop alternative epistemological positions by appreciating the adaptation of natural language to human activities and the practical rationality of human conduct (Toulmin 2001, p. 67). Wittgenstein’s lucid attack on the shortcomings of received views (which he himself helped to establish before WWI) opened up the “linguistic turn” in the analysis of symbols. This was expressed tersely by Austin’s (1962) slogan: “how to do things with words,” which links symbols with action and agency, and opens possibilities for alternative interpretations, as the agent can always decide to do otherwise.

Grounded in an alternative ontology and epistemology, multiple, sometimes conflicting, theories of symbolic action have been proposed to account for or analyze the complex

relationships between symbol and action. Consequently, the universe of symbolic action theory is neither uniform nor static. Multiple variants of symbolic action theory have been put forward in the philosophy of interpretation (hermeneutics) (e.g., Gadamer; Schutz), philosophy of science (e.g., Bernstein, Kuhn, Rorty, Toulmin), philosophy of language (e.g., Austin, Grice, Searle, Wittgenstein), social theory and philosophy (e.g., Apel, Habermas), anthropology (e.g., Geertz), sociology (e.g., Garfinkel, Goffman, Giddens), psychology (e.g., Mead, Dewey), linguistics/sociolinguistics (e.g., Gumperz, Hymes), communication (e.g., Bateson), rhetoric (e.g., Burke), science and technology studies (e.g., Callon, Latour, Star), and design studies (Schön), among others. A common denominator is the fact that symbolic action theories shift attention from the received view's static logic and "mirror hypothesis" to viewing language as action, and formal rationality as practical.

In the following we deliberately avoid comparing and contrasting these distinct streams of symbolic action theory. This would easily justify a book-length contribution in itself (for example, Hirschheim et al. (1995) use only Wittgenstein and Habermas in their book). In contrast, the following section will elaborate the broader relevance of symbolic action thinking to the IS field, and how it can lay a foundation for the contributions included in this special issue. Overall, it would seem natural that IS, tightly linked as it is with the use of symbols, would also participate in this movement—if not lead it in some areas related to computer-based uses of the symbols. However, as we will see, the influence has been more sporadic and focused on specific domains of information systems practice.

Symbolic Action and Information Systems

Several areas of IS—especially conceptual modeling and database design—have remained firmly grounded in the received view. This has been referred to as *representation theory* (Burton-Jones and Grange 2013) in IS parlance per Wand and Wang's (1996) *representation assumption*: "An information system is a representation of a real-world system as perceived by users" (p. 88) whereby "by observing the behavior of an information system, we obviate the need to observe the behavior of the system it represents" (Weber 2003, p. viii). In this view, an information system acts as a repository and conduit of facts and communication becomes a process of transferring information objects representing these facts. Burton-Jones and Grange (2013, pp. 632-633), however, acknowledge that "other views of information

systems could have, and hopefully will be taken, and other implications could have, and hopefully will be drawn." We agree, and suggest here that a symbolic action view may be a fruitful way of doing just that.

In fact, already in the 1970s, several IS scholars started the push back against the dominant received view. They proposed that information systems fundamentally serve and enable symbolic action between people or organizations (Flores 1998; Goldkuhl and Lyytinen 1982; Stamper 1973; Winograd and Flores 1986) and articulated a new vantage point for analyzing information systems as "social systems only technically implemented" (Goldkuhl and Lyytinen 1982, p. 14) where "the very idea of an information system...is to provide a means and an environment for human communication" (Lyytinen 1985, p. 61). For these scholars, information systems are not merely a combination of calculating machines operating in semi-formal languages transmitting facts that mirror an external reality. On the contrary, information systems constitute part of social communication practices where meaning and action are negotiated and enacted in organizations.

With symbolic action as a starting point, several new directions have been opened up to conceive and investigate how symbol, action, and information systems interact. Symbols are seen to serve multiple "world-fits" (Searle 1969, 1995); thus the semiotic relationships interwoven through information systems convey information about states in the world, create states in the world, create expectations of future behaviors, or create or reinforce social bonds (Beynon-Davis 2010; Hirschheim et al. 1995; Lehtinen and Lyytinen 1986). For example, a physical car may be represented in a national vehicle registry by a vehicle object and associated identifier (it has semantic meaning). The existence of such an object implies a number of rights and obligations (it has deontic meaning), such as the right to drive the car on public roads and the obligation to pay road tax (Eriksson and Ågerfalk 2010). Depending on national legislation, the instantiation of the vehicle object in the vehicle registry may or may not require the existence of a physical car. In the former case the object must "correspond" to the existing physical car. In the latter, there is no physical "thing" to correspond to. These symbols are simultaneously a part of reality and a representation of reality that enables action. The manipulation of symbols in information systems constitutes social entities (e.g., car, person), relationships (e.g., car ownership), roles (e.g., car owner), and identities (e.g., personal identity numbers, vehicle registration numbers), and how these entities are related to physical and biological entities. Symbols and related relationships undergird all types of uses of information systems, including those that support decision making, collaboration, coordination, and negotiation.

These ideas are even more poignant today. Due to the deep computerization of social life, the distinctions between the physical and the social, between the material and the digital, and between the signifier and the signified, have become increasingly blurred (Kallinikos 2011). Think, for instance, of one of our society's most important institutions: money. The gold standard is long gone, and the value of money is now purely symbolic—yet, it is materialized in bills and coins and can be exchanged for goods. Most economic transactions today involve the use of information systems (electronic payments, credit card transactions, direct debits, bitcoins, etc.) and having money equals having a digital number on a bank account somewhere in “the cloud.”

Through digitalization, individuals, organizations, and society become constructed and construed through new types of action. Step by step as our world gets filled with swaths of information where the “original” and the “copy” reside inside as well as outside an information system proper (Eriksson and Ågerfalk 2010; Kallinikos 2011), what used to be a valuable document (e.g., an airfare ticket, a vehicle service book) may now only be a physical copy of a digital original that resides in the information systems of some corporation or authority. The digitization of things and experience (Yoo 2010) further blurs the separation between symbolic action and material action and forms of meaning; think, for example, of how audio streaming has profoundly changed music consumption, through which the album as a collection of tracks on a physical medium, defined and distributed by the music industry, has been replaced by the playlist managed by the consumer. Paradoxically, users control more of their IT reliant activities, yet they delegate more and more of their actions to information systems. IT, as a material agent, thus becomes part of meaning engagement practice. These shifts call for novel conceptualizations of the role and effects of symbolic action in the context of widening digitization effects.

A symbolic action perspective for IS has evolved similarly, especially when IS scholars have drawn upon organizational and communication studies. Organizations can now be conceptualized as bundles of activities grounded in language and communication (March and Olsen 1976; Suchman 1987; Weick 1979). Information systems can now be viewed as architectures that define social relationships and organizational action (Bowker and Star 1999; Latour 2005; Star and Ruhleder 1996). Innovations can now be understood as expanding capabilities for symbolic action and for constituting new relations, new organizing, and novel collaborations (Flores 1998; Goldkuhl and Lyytinen 1982; Mingers and Willcocks 2014; Taylor et al. 2001; Weigand 2006; Winograd and Flores 1986). Information system designs can now be seen as practical theories about communication that bundle

presumptions about how communication works and how it ought to work to transform contexts of action—that is, system designs hypothesize how to render possible specific forms of activity (Bødker and Andersen 2005; Jackson and Aakhus 2014). Information systems can now be also seen as meta-communicative, in that they symbolize and signal communicative roles and relations that actors can take up with each other (Ågerfalk 2004) and underwrite collective practices and ways of identifying and knowing (Star and Ruhleder 1996).

We note that the current surge in sociomaterial theorizing (e.g., Leonardi and Barley 2008, 2010; Orlikowski and Scott 2008) also militates against some of the assumptions of the received view. Sociomaterial theorizing acknowledges the constitutive nature of (sociomaterial) practices and in this regard shares similar ontological commitments. At the same time, this view deviates from a symbolic action perspective in its interpretation of the role of symbols in IS inquiry. The primary difference is that, in the sociomaterial view, the main focus is on material practices and their relationship with social practices (so-called entanglement) and thus views information systems mainly as material (technological) automation systems. There is less interest in viewing information systems primarily as symbolic systems. Ironically, while the sociomaterial line of research complains that the IS field does not take seriously the material basis of practices, the representation theory (mainstream) view is accused at the same time of reducing all uses of information systems to material references. In this regard, a symbolic action perspective, by providing more nuanced theories for the uses of symbols, may offer a fruitful way to bridge these streams and facilitate cumulative theorizing that is attentive to social, symbolic, and material realities of information systems.

With this backdrop, we distinguish three dominant themes to investigate information systems as symbolic action. They all focus on specific relationships between communication, cognition, organization, and information systems in a digitally rich world.

- (1) ***The constitutive relationships between information systems and organizational action:*** How do information systems become constitutive and dependent on specific forms and contexts of organizational action (Leonardi 2010)? Since structuration theory was introduced to IS research in the early 1990s (Orlikowski 1992), the relationship between IS and action has been studied using a variety of perspectives. The most popular ones now are probably affordance theory (Faraj et al. 2011) and sociomateriality (Orlikowski and Scott 2008). Also, critical realists have recently offered their interpretation of how information systems, symbols, and action relate

(Mingers et al. 2013; Mingers and Willcocks 2014). These developments share ontological and epistemological common ground with the symbolic action perspective including an action orientation and post-positivistic epistemology. However, a symbolic action view explicitly problematizes the symbolic nature of information systems, and views computational artifacts as being created for the purpose of mediating and transforming meaning engagement practices. A symbolic action perspective accordingly attends to technologies that deal specifically with symbols and is interested in the triad of (a) symbols, (b) symbol mediating technologies, and (c) humans/social systems and practices. This raises a host of specific questions, such as: How do information technologies enable or constrain specific forms of action through the mediation of symbols? How do information technologies shape ways in which organizations and individuals make sense of their actions based on IT-mediated symbols? How do these interpretations become institutionalized and influence organizational behaviors?

(2) **Organizing and governing in large-scale collaborations:**

How do new digital capabilities, and the ubiquitous interaction afforded by information technologies, influence large-scale collaborations across time and space? The new era of “perpetual contact” (Katz and Aakhus 2002) has created unprecedented possibilities for collaboration and intellectual cross-fertilization. At the same time, perpetual contact entails new levels of digital sensing and tracking, producing big data that represent behaviors that were heretofore invisible. This swathe of digital data, in turn, can be used to signal, predict, and determine future social behavior; consider, for example, the recent Facebook study on massive-scale emotional contagion by Kramer et al. (2014). We can ask: To what extent is the new *homo connectus* capable of coping with the capabilities brought about by new communication technologies (Faraj et al. 2011) and, at the same time, shaping them? To what extent are the current circumstances truly different for collaborations, and can our institutions and theories, both normative and descriptive, effectively help us to understand and engage in such collaborations?

(3) **Designing information systems as symbolic action systems:** Information systems are in a sense hypotheses about how communication and cognition are expected to work in an organizational context. As noted, each information system designed to support human interaction makes assumptions about a range of matters, including but not limited to the symbolic acts to be performed, the taking of turns, identities to be managed and displayed,

commitments invoked, the means to repair coherence and coordination, and, finally, what the system use is about (Aakhus 2007; Ågerfalk 2004). Information systems design and the process of design is thus implicitly theory laden (Jackson and Aakhus 2014). The potential of IS as a disciplined design enterprise is increasingly contingent on how much attention is paid to the assumptions about symbolic action enabled by technologies—the symbolic “actability” of the technology (Goldkuhl 2009). Despite this, current information systems design approaches typically rest on referential theories and a materialist ontology that are unable to capture the inherently social and symbolic character of information systems (Allen and March 2006; Eriksson and Ågerfalk 2010; Hirschheim et al. 1995; Wyssusek 2006).

Central issues to be tackled in engaging these themes involve the conceptualization of information systems as mediators of symbolic action, illustrations and empirical analyses of use and design of information systems as symbolic action, and methods for investigating information systems as grounds, means, and outcomes of symbolic action. This special issue was conceived as a call for such theoretical reviews, novel empirical and design studies, and new methodology development that would advance understanding across these three themes about how symbolic action can be explained and understood within IS research. In the following, we will explore these themes by first taking stock of the current state of IS research relative to symbolic action and then introducing the three papers of the special issue. Finally, we provide a reflection on further research opportunities.

Symbolic Action and IS Research

Study Design and Sample

To understand how symbolic action had been taken up in IS research, we took stock of the research on symbolic action published in the last decade in the top IS journals. We reviewed what had been published, what could have been published (in other words, what we expected to find, but did not), and, more importantly, by noting gaps in research, what should be published.

We chose four international journals from the AIS basket of eight that deal with diverse aspects of information systems: *European Journal of Information Systems* (EJIS), *Information Systems Research* (ISR), *Journal of the Association for Information Systems* (JAIS), and *Management Information Systems Quarterly* (MISQ). In fair disclosure, we (the editors of this

special issue) have been involved as editors and authors in these journals. The next step was to establish the selection criteria for including or excluding papers in or from the data set. For a paper to be included, it had to deal with some aspect of symbolic action (as defined above). We also looked for references to the classic literature of symbolic action, as described above, and the information systems theory that has taken into account seminal work, such as the work of Winograd and Flores, but also to the more contemporary IS researchers associated with symbolic action referenced above. Although we did not specify that the research should explicitly involve IT design or use, it was implicitly assumed that this would be the case, because of the source journals chosen.

The third step was to establish the dimensions of analysis concerning how symbolic action had been treated in these studies. We decided on the following list of attributes: research genre (explained below); then if empirical, whether it was more quantitative or qualitative; then if design, what was the design product; the IT phenomenon studied and, if available, its unit of analysis; source theory; and a characterization of communication—whether it was about design or about use, and whether it was communication about IT or general communication enabled by IT. The three themes identified above to investigate information systems as symbolic action were then used as seed categories to provide additional structure to the analysis.

The sequential outline of the three steps above may be misleading, because the actual study process was more iterative. In particular, we met (virtually) three times to finalize the selection criteria and validate the data fields for analysis. In the first meeting, tentative criteria were set, which were later renegotiated amongst us in light of our initial findings and interpretations based on initial coding. One striking realization early in the process was the diversity of how symbolic action was, and could be, used in information systems. This led us to characterize the studies reviewed according to several dimensions (including new attributes as listed above).

In particular, the use of symbolic action appeared in several genres of research related to the themes identified above. We used the following classification of genres:

1. *Theoretical reviews and analysis* that seek to interrogate and develop understanding of information systems as symbolic action.
2. *Empirical studies* investigating either the relationships between information systems and organizational action or the role of information systems in organizing large-scale collaborations.

3. *Design studies* (including the evaluation of design products) that explore designing information systems as symbolic action systems.

Results

We scanned all issues of the four target journals (EJIS, ISR, JAIS, and MISQ) for the years 2002 to the middle of 2013. For the analysis, we included all research articles either empirical or theoretical, but excluded editorials, issues and opinions, and short notes. By working with these criteria, we identified a total of 26 publications as shown in Table 1.

The distribution of symbolic action studies across genres was the following: 6 conceptual papers, 11 empirical papers, and 9 design studies. To understand better how symbolic action research in IS has been undertaken and developed, we next offer a brief discussion of our key findings. In particular, we highlight the approaches to inquiry on information systems, matters of attention, and key theoretical sources.

The six theory review and analysis papers attended to matters of general interest in the IS field, including assessment (Nardon and Aten 2012), diffusion (Barrett et al. 2013), knowledge management (Schultze and Leidner 2002), genre theory (Yetim 2006), and ethics (Mingers and Walsham 2010). Each of these authors advanced conceptualization of information systems as symbolic action in different ways, by showing either how information systems mediate communication and cognition (Nardon and Aten 2012; Yetim 2006), by discussing how information systems are contested terrain, because these systems are deeply implicated in the growth and development of knowledge and knowing (Barrett et al. 2013; Schultze and Leidner 2002), or by applying discourse ethics in business and information systems (Mingers and Walsham 2010). Goldkuhl (2012) makes an important contribution by opening up discussion about differing conceptualizations of research methods for symbolic action research. Overall, these articles primarily address the first theme above, namely the constitutive relationships between information systems and various forms of organizational action.

The 11 empirical articles focused on the relationship between information systems and organizational action. They attended particularly to the interpersonal and group interactions during information systems use (Bondarouk 2006; Gasson 2006; Majchrzak et al. 2005; Miranda and Saunders 2003; Schultze and Orlikowski 2004), how IS practitioners symbolize and communicate IT and information systems aspects (Berente et al. 2011; Davidson 2002; Wang and Ramiller 2009), the role of information systems in organizational communication and

Table 1. Counts of Symbolic Action Papers*

Year	EJIS	MISQ	ISR	JAIS
2002	0 (21)	2 (14)	0 (21)	0 (7)
2003	0 (20)	0 (13)	1 (15)	0 (13)
2004	1 (22)	0 (20)	1 (19)	0 (17)
2005	0 (29)	0 (23)	2 (20)	0 (11)
2006	7 (45)	0 (35)	0 (20)	0(26)
2007	0 (48)	0 (25)	0 (21)	0(27)
2008	0 (38)	0 (25)	0 (22)	0(29)
2009	0 (39)	1 (26)	0 (26)	0(31)
2010	0 (37)	1 (24)	1 (49)	1(30)
2011	0 (38)	1 (39)	0 (47)	1(32)
2012	1 (38)	0 (41)	0 (73)	1(31)
2013	0 (29)	3 (32)	0 (58)	1 (22)
Total	9	8	5	4

*Count of all papers published in parentheses.

decision making (Shaw and Stahl 2011; Vieira da Cunha 2013), and the behavior of firms (Vannoy and Salam 2010). Six of these articles brought a symbolic action motivated research approach to other types of information system theory, such as, Gasson's (2006) qualitative-interpretive investigation of boundary spanning during information systems design that engaged with Checkland's theory of systems design (Checkland 1994; Checkland and Holwell 1998). Others have formulated their study by using classic works in symbolic action, such as Habermas' theory of communicative action (Shaw and Stahl 2011), Toulmin's model of argumentative reasoning (Berente et al. 2011), or Goffman's dramaturgical analysis (Vieira da Cunha 2013). Except for one questionnaire-based field study (Majchrzak et al. 2005) and one experiment (Miranda and Saunders 2003), the remaining nine studies used combinations of discourse analysis, fieldwork, and participant observation. These papers primarily addressed the first theme identified above—organizational action and information systems—but were typically framed empirically in terms of the second theme: organizing and governance in large-scale collaborations.

The nine design oriented articles emphasized facets of analyzing information systems as symbolic systems. Six articles focused on improving or developing aspects of modeling, including activity modeling (Andersen 2006; Karlsson and Wistrand 2006; Krogstie et al. 2006; Rittgen 2006), data modeling (Chen et al. 2013), or conceptual modeling (Ågerfalk and Eriksson 2004; Eriksson and Ågerfalk 2010). The other two articles focused on design

process by attending to conversation practices of groups (Eryilmaz et al. 2013; Levina 2005). The methods of the design oriented studies emphasized the implementation and development of a design method, while the others used qualitative or illustrative case studies. The studies drew upon speech act theory and the language/action perspective (Ågerfalk and Eriksson 2004; Eriksson and Ågerfalk 2010; Rittgen 2006), activity theory (Chen et al. 2013) and the language/action perspective (Andersen 2006; Karlsson and Wistrand 2006), semiotics (Krogstie et al. 2006), conversational theory (Eryilmaz et al. 2013), and pragmatic theory (Levina 2005). Given their focus on design, these articles primarily addressed the third theme—designing information systems as symbolic action systems—although typically drawing on the first theme as conceptual foundation.

Regarding the theoretical sources used in the papers reviewed, we mainly observed two kinds of symbolic action theory: (1) speech act and communicative action theory and associated models and (2) pragmatic theories of contextual language use that relate symbolic action to other constructs such as Goffman's dramaturgical theory to understand self's impression management and Kolb's learning theory to understand system implementation. However, none of the empirical studies strictly applied the chosen theories to analyze and interpret data. For instance, although theoretical papers have shown how intentions play an important role in understanding symbolic action (Te'eni 2001), none of the studies attempted to identify intentions *in situ*. In practice, of course, it is difficult to determine someone else's intentions,

but using symbolic action theories to analyze communication behavior and to design systems that support communication may provide substantial payoffs in addressing this issue. It would also seem that advances in computerized techniques of content analysis and the growth of big data might bring about new research that applies symbolic action theories more fully.

One striking feature of the results was the diversity of phenomena studied. For instance, we found that studies of communication among users, between users and developers, and among developers engaged in differing communication activities such as learning, modeling, question and answer, forming groups, managing knowledge, selling, and planning, to name a few. Yet, of the 26 studies, only 8 studied communication between users of systems in comparison to communication between developers of systems. And surprisingly, at least 16 of the 26 studies examined conversations or knowledge sharing about IT (e.g., conversations about new technologies or new methods) with far fewer studies about conversing through the information system. Furthermore, we found only one (Majchrzak et al. 2005) of the 26 studies that built on previous studies published in IS journals, but it may have been too early to expect otherwise. The distinction between the genres of *empirical studies* and *design studies* raises the distinction between the study of computer mediated communication between people (i.e., using a system for communication) and the study of communication between people while designing or implementing a system. As we note below, symbolic action has been used to understand both types of communication. We also found it worthwhile to distinguish between studies of communication through IT (i.e., IT-enabled communication, which is a frequent type of communication studied in the IS journals) and studies of communication about IT, for example, discussions of how virtual worlds are perceived.

IT is increasingly being used for many different purposes, in all aspects of life, and it may be that a symbolic action focused study could be fruitfully complemented with additional theories to account for the growing diversity of information systems phenomena. Admittedly, we found it rather disappointing that, despite an established tradition of research into symbolic action in information systems and IT mediated communication,² the visibility of this line of inquiry in the mainstream IS literature remains limited. We can only speculate as to why this is the case. Perhaps pragmatic symbolic action researchers do not believe that pursuing a possibly long, winding process of publishing at the highest

level is worth the effort, and instead choose to focus their attention on more immediate and practically useful outcomes. Perhaps it is due to a perceived resistance from the top-level journals to publish symbolic action research. Perhaps it has to do with the fact that the symbolic action oriented scholarly communities are predominantly based in Europe, which has for a long time had a different publication tradition than in the United States (Lyytinen et al. 2007).

Summary of the Special Issue Contributions

We received 32 papers for the special issue, and after initial screening, 21 manuscripts were sent for review. We finally accepted three papers, which yields an acceptance rate of approximately 10 percent. This shows that associate editors and reviewers worked hard to maintain and demand consistent quality, which is evident in the papers that made it through the review process. What is noteworthy about the papers selected is that each addresses an area of prolonged research interest but from a symbolic action vantage point: knowledge management, user perceptions and media choices, and large-scale quantitative analysis of a linguistic data corpus. We next summarize the contributions of each paper, and suggest how each paper points to rich connections for further investigation into symbolic action within the mainstream of inquiry into information systems.

In "Take Their Word for It: The Symbolic Role of Linguistic Style Matches in User Communities," Stephan Ludwig, Ko de Ruyter, Dominik Mahr, Martin Wetzels, Elisabeth Brüggem, and Tom de Ruyck address the issue of how to integrate various user communities into the business process, and in doing so, deal with the first theme identified above: the constitutive relationships between information systems and organizational action. The authors offer a novel approach to this problem. While the majority of the content analysis research begins and ends with the goal of extracting semantic content from the text, the authors focus on how the content is produced in the first place, and what factors influence the quantity and quality of user-generated content. They develop algorithms for detecting and mapping the evolutionary trends of linguistic style matching and reversals in the micro-sequences of contributions by participants within user communities. Their approach suggests new strategies for approaching big data, in particular how to advance the analytics of unstructured textual data for theoretical and practical ends. This includes developing ways of stimulating high quality collaborative content generation in user communities.

²Manifested by conference series such as "The Language-Action Perspective on Communication Modelling," "Action in Language, Organizations and Information Systems," and "The Pragmatic Web."

Much of what is achieved in this article would not have been possible without seriously engaging in the premises and implications of symbolic action. The authors build their work around a fundamental premise of symbolic action, namely that communication involves both content and relational meaning such that the substantive meaning of a message depends on the meaning of the identities and relationships among the communicators. Here they have drawn on the sociolinguistic tradition of Gumperz (1982) and, in particular, the communication accommodation theory concerning linguistic style matching (Giles and Ogay 2007). Central to their innovation is the use of the computational text analysis of function words (Chung and Pennebaker 2007) to detect linguistic style and their incorporation of argumentation theory to code for content quality (Gouran 1990; Seibold and Meyers 2007).

In the second article, “Beyond Being There: The Symbolic Role of Communication and Identification in Perceptions of Proximity to Geographically Dispersed Colleagues,” Michael Boyer O’Leary, Jeanne M. Wilson, and Anca Metiu address the problem of the distance that people need to understand in managing their virtual work, and deal with the second theme: organizing for large-scale collaboration. A key finding of this study is that subjective, symbolic understanding of distance matters for distributed collaborations while objective proximity has little bearing on relationship quality. The authors use a novel crowd-sourcing approach to collect cognitive and affective data about distance and then use thematic content analysis of open-ended comments by those surveyed. Their mixed-method study enables them to see how distant relationships depend on the content and timing of communication and the subjective interpretation and symbolic construction of distance. Thus, rather than treating distance as something determined by geographical location and dispersion, the authors examine how distance is a matter of perceived proximity managed through symbolic action. People can, for instance, be geographically distant but relationally close, and vice-versa, due in large part to how they symbolically manage their relationship through media.

This study exposes problems in conventional wisdom about the connection between distance and communication, thanks to the authors’ engagement with symbolic action. By integrating insights from Clark’s (1996) theories of language use in communication with the self-categorization theory of identification (Dutton et al. 1994), they can articulate new and novel hypotheses. But the authors go further by embracing the fundamental assumption of symbolic action that actors, through the design of their conduct, mutually shape the intersubjective possibilities in any circumstance. Thus, to explain what they actually found, the authors incorporate Burke’s

insights about identification as the basis for a new rhetoric and Wertsch’s insights about mediated action from the perspective of sociocultural activity theory. This combination, along with Clark’s theory, allows for a richer and more nuanced interpretation of evidence and a more refined articulation of their underlying perspective (O’Leary and Cummings 2007) on the relationship between communication, identification, and information technology use. Their findings make more sense when interpreted in the light of the uses of language on social media to a particular social context and its commanding relationships.

Finally, in “Knowledge Exchange and Symbolic Action in Social Media-Enabled Electronic Networks of Practice: A Multilevel Perspective on Knowledge Seekers and Contributors,” Roman Beck, Immanuel Pahlke, and Christoph Seebach go beyond knowledge exchanger’s individual characteristics and explore how the discursive relationships between knowledge seekers and contributors influence the knowledge exchange. This paper also focuses on the first theme: the constitutive relationships between information systems and organizational action. Beck and his colleagues show that knowledge seekers’ active interpretation of a symbolic discourse defines the quality of knowledge being exchanged, and that such interpretations are shaped by participation in the sociomaterial context, which includes both individual and relational characteristics. A major contribution of this study is to operationalize and measure knowledge transfers that take place during dialogue, and how such dialogs are influenced by the technology’s material features, such as how it promotes social presence or expresses social network ties. The study integrates in an interesting way the use of statistical techniques to analyze linguistic transfer events between knowledge transfer dyads.

Beck, Pahlke, and Christoph also question the traditional knowledge-as-object view commonly adopted in knowledge management research. Drawing on Winograd and Flores’ (1986) notion of conversation-for-action, the study emphasizes the pragmatic co-constructive nature of knowledge and how meaning emerges out of conversations. It views knowledge transfer not as a sort of “phlogiston” theory where knowledge somehow immaterially moves from one head to another, but as an active process of knowledge construction that takes place in a symbolic discourse through questioning and answering. Overall, this study represents an innovative way of integrating traditional aspects of the study of knowledge communities and knowledge transfer with the symbolic aspects of engaging in a dialog by means of social media technology.

Directions Forward

The noteworthy contributions of this special issue are outcomes of an unusual and rewarding editorial journey into the realm of symbolic action. The journey was unusual, in that the articles published were from researchers who may not otherwise have attempted a symbolic action approach, were it not for this special issue. We next comment on these notable features of the special issue in terms of surprises, and then discuss the general directions the special issue offers the IS field.

Guiding this journey has been a basic principle: namely, to develop novel ideas. Detmar Straub (at the time, MISQ Editor-in-Chief) encouraged the editors and all contributors to follow this principle at our pre-submission workshop at ICIS 2011 in Shanghai.³ Such a principle invites an adventure with no promise of a smooth and routine journey. We must acknowledge that the expectation of novelty was deeply reflected with our experience during the review process, especially the inquiries that resulted in surprising and satisfying destinations, despite traveling along some long and winding trails. For the authors, the review process became an opportunity to deeply engage with salient topics in the field, while creatively integrating their quantitative expertise into research designs conducive to analyzing information systems from the vantage point of symbolic action. For the editors the review process turned out to be a deep and fruitful engagement with a wide variety of scholars—especially those not ordinarily engaged in symbolic action research. For us, there was no surrendering to a false sense of incommensurability during the review process. Everyone involved had to engage in the hard work of appreciative inquiry into alternative ways of making sense of the phenomena in the pursuit of novel insights. At times, we had to ask the authors to go to literature with which they were not well-acquainted and, at other times, to collect data sets or re-analyze data to strengthen the evidence and argument. In some cases, we had to ask for this to be done several times. While writing the editorial letters, we could hear how their teeth would be grinding as they read another decision letter. Each round enriched our own views as we revisited what it means to adopt a symbolic action perspective, and what the consequences are for doing so in terms of theorizing, research methods, and types of evidence. All this back-and-forth tacking became a pivotal source of learning for the editors and authors in terms of how to realize and deepen symbolic action research within the IS field. Some key surprises and consequences may be gleaned from the adventure.

³Organized by the AIS Special Interest Group on Pragmatist IS Research (SIGPrag).

We note three key surprises that call for reflection on symbolic action and IT/information systems. The first, and perhaps biggest, surprise may be that the three papers included in the special issue use quantitative methods. The reader may be tempted to conclude that rigorous quantitative analysis had to be applied in order to qualify for inclusion. For the editors, however, this was clearly not the case: several submissions that drew on qualitative, interpretative, and case-based approaches made it to the second round, but had yet to make an appropriate connection to symbolic action or to demonstrate the required rigor and relevance to the IS community at large. Regrettably, these had to be rejected. Second, the reader may be surprised to find that the three submissions do not truly create new symbolic action theory in the ways one would expect when reading the call for papers for the special issue (Aakhus et al. 2011). The value of the three outstanding papers, however, lies in how they connect symbolic action based analyses to study contexts where it has not been applied in the past (e.g., knowledge management) and by using new and novel computational methods with novel digitally created data sets to extend the insights of established theories. Third, although a handful of submissions picked up on social media as a context of research, as emphasized in the call for papers, none managed to push the envelope very far in the anticipated direction and focus called for. The call for papers explicitly mentioned social media, but the call also highlighted how information systems have always been primarily social systems. In this sense, studying so-called social media is no guarantee that the study is pushing further into an examination of just what makes media social. The articles published, in contrast, help to develop new ways of advancing theory and research on information systems as symbolic action systems in an evolving media environment.

We note three implications that arise from our experience from this editorial process and the analysis of the existing literature in light of the above identified themes for investigation of information systems and symbolic action.

1. **Legitimize the symbolic action perspective across a range of research methods and topics.** As witnessed by our literature review, symbolic action based IS research has primarily concerned the modeling and ethnographic work on sense making, mainly associated with (design) conversations. These are likely to remain important topics in the future. It seems, however, that these topics have become over the years self-fulfilling, and has lead to a rather insular focus for symbolic action studies. The community has been content, it seems, to coexist in self-sealing communities, with the consequence that not enough effort has gone into reaching into the broader IS community by dealing with topics that are

of a general interest or finding ways to make symbolic action theories accessible both conceptually and methodologically. Each article in this special issue connects symbolic action theory elements to studies of mainstream topics and offers an important lesson that this is possible. Each article also engages in quantification, and thus points to the opportunity for drawing upon a wider range of methods in the study of symbolic action. For the broader audience of IS researchers, it is now possible to see that symbolic action research is amenable to a variety of methods for gathering and analyzing evidence. Symbolic action study designs can use quantitative and qualitative methods, and many times they use them in rich combinations. What is key is that the methodology calls for rethinking, from a symbolic action perspective, how particular methods are used in developing evidence, interpreting evidence, and reasoning about research and design claims in the context of symbolic action. The papers in this special issue show in particular how the symbolic action approach can deliver genuine insights into conventional IS topics such as knowledge management or teamwork. These insights emerge from analyzing representations and actions in terms of meaning engagement while enrolling information technology into action and interaction.

2. **Symbolic action entails commitments to the social nature of uses and effects of symbols.** Dominant assumptions that frame much of the current thinking about communication, action, and its mediation with information systems allude to what Reckwitz (2002, p. 247) describes as *mentalism*: the assumption that “mind is the place of the social, because mind is the place of knowledge and meaning structures.” Accordingly, in current IS research there is a tendency to “psychologize” communicative processes as if they totally take place within the skull of the user. This downplays the role of information systems as mediators of collective intentionality, since it does not allow for a social reality beyond individual perceptions, attitudes, and dispositions. It is as if Popper’s World 3 never existed, and we were stuck with a Cartesian model that links physical world and mental state without the ability to collectively agree on objective knowledge. As noted by Searle (1995, pp. 26-27),

It is indeed the case that all my mental life is inside my brain, and all your mental life is inside your brain, and so on for everybody else. But it does not follow from that that all my mental life must be expressed in the form of a singular noun phrase referring to me. The form

that my collective intentionality can take is simply “we intend,” “we are doing so and so,” and the like.

We could see this clearly when we had to give repeated advice to authors to engage with and deploy a symbolic action perspective, in contrast to attributing all explanations to what happens inside the user’s skull. Alas, many times authors had a hard time seeing their evidence in the light of a more social view of communication, which partly explains the many rejected submissions. Why this bias prevails is a deeper question that may have to do with the past privileging of individual or psychological theories about communication and action. It may also be a constraint that has come about as a result of the dominant survey based instrumentation of empirical research (Lyytinen 2009).

3. **Grounding design research in symbolic action.** Notably, none of the articles accepted for this special issue explicitly addressed information systems design, although we received such for review. It seems that the foregrounded psychologism paired with a strong bias toward representation theory anchored in the IS community impedes developments of information systems design approaches grounded in symbolic action. Of great importance for improving IT design practices is to recognize how IT artifacts embody theories of communication and therefore their design is concerned essentially with theorizing about communication (Aakhus 2007). The challenge, then, is how to impact these biases in a positive way (i.e., how to change the way people conceive the ontological, deontological, and axiological nature of an information system). Here, symbolic action researchers need to show significant improvements in the usefulness and quality of symbolic action based design artifacts (conceptual models, modeling languages, design methods, systems, etc.) for them to be taken as a serious contenders (Gregor and Hevner 2013). Challenging dominant and deeply rooted assumptions can sometimes be rewarding (Alvesson and Sandberg 2011), while offering constructive alternatives requires substantive evidence. However, from a symbolic action point of view, it is simply too limited to continue to reinforce a paradigm for information systems design based on ontological and epistemological commitments grounded exclusively in natural science (March and Allen 2014). These just bypass too lightly the performative and constitutive nature of symbols. Theories of symbolic action are more than “means of identifying interaction” (Wand and Weber 2002, p. 369); they also emphasize how and why information systems become constitutive of social reality and how information systems serve performative func-

tions. In this way, the symbolic action perspective can be used as a means to understand information systems not as representations of reality but as extensions of meaning engagement practice—that is, as vehicles for mediating and organizing social interactions by maintaining and manipulating symbols that may exist independently of physical representations but at the same time retain fidelity to material reality, if and when needed.

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