

*International Conference on Information Systems
(ICIS)*

ICIS 2008 Proceedings

Association for Information Systems

Year 2008

The Espoused Theories of IS: A Study of
General Editorial Statements

Francois-Xavier de Vaujany*

Vladislav V. Fomin[‡]

Nicolas Lesca[†]

Claudia Loebbecke**

*CERAG and University of Grenoble, devaujany@iae-grenoble.fr

†CERAG and University of Grenoble, nicolas.lesca@upmf-grenoble.fr

‡Vytautas Magnus University, v.fomin@if.vdu.lt

**University of Cologne, claudia.loebbecke@uni-koeln.de

This paper is posted at AIS Electronic Library (AISeL).

<http://aisel.aisnet.org/icis2008/10>

THE ESPOUSED THEORIES OF IS: A STUDY OF GENERAL EDITORIAL STATEMENTS

*Les Théories Épousées du SI:
Une Études des Déclarations Générales Éditoriales*

Completed Research Paper

François-Xavier de Vaujany

CERAG and University of Grenoble (IAE)

150 rue de la Chimie

38040 Grenoble

FRANCE

devaujany@iae-grenoble.fr

Nicolas Lesca

CERAG and University of Grenoble (IAE)

150 rue de la Chimie

38040 Grenoble

FRANCE

nicolas.lesca@upmf-grenoble.fr

Vladislav V. Fomin

Dept. of Informatics

Vytautas Magnus University

LT-44404, Kaunas

LITHUANIA

v.fomin@if.vdu.lt

Claudia Loebbecke

Dept. of Media & Technology Mgmt.

University of Cologne

Pohligstr. 1, 50969 Koeln

GERMANY

claudia.loebbecke@uni-koeln.de

Abstract

In the IS field there has been the ongoing debate about a potential identity crisis, which has led researchers to study the output of the community in order to evaluate where IS research currently is and where it could potentially be. This has resulted in various proposals for IS research 'in practice'. This research follows a different strategy and studies what IS research is claimed to be (the espoused theories of IS). The section of IS journals' General Editorials Statements (GES), that is, the informative section offered by most journals where they position themselves with regard to potential authors, already contains the answer. Basing our study on the AISWorld journal ranking, we collected GES for a sample of 30 IS journals for the years 1997 and 2007. We applied thematic, lexicometric, and factor analyses to the datasets of the 1997 and the 2007 GES. The results of the analyses show how the institutionalized discourse about IS research has changed over the last decade.

Keywords: Espoused Theory, IS Identity, General Editorial Statement, IS Journals

Résumé

De nombreuses études ont été réalisées sur la nature et l'identité de la recherche en SI. Pour la plupart, elles se sont appuyées sur les publications en SI. Cette recherche propose de s'intéresser davantage à l'identité affichée de la recherche en SI telle qu'elle ressort notamment des déclarations éditoriales générales des revues.

Introduction

In the IS field, a debate about a potential identity crisis of the field is in progress (Baskerville and Myers 2002; Benbasat and Weber 1996; Benbasat and Zmud 2003; Dufner 2003; Galliers 2003; Power 2003; Teo and Srivastava 2007). Several studies have focused on published papers or communications (in ICIS, ECIS, AMCIS, etc.) in order to grasp the diversity of IS research (see Desq et al. 2002, 2007; Lim et al. 2007). Other studies have targeted main IS theories or conceptualizations of IS research or objects to see what is or should be IS research (see Teo and Srivastava 2007).

In this paper we approach the unfolding discussion of the identity of IS (sometimes considered to be 'in crisis') based on conceptualizations of Argyris and Schön (1978), who argued that a domain will face a crisis if there are deep incoherencies between espoused and in use theories in that domain. For this research, we draw upon their notions of 'theories of actions' – 'espoused' or 'in use' - and 'collective identity' (Argyris and Schön 1974, 1978). According to Argyris and Schön (1974, 30), 'theories in use' contain "assumptions about self, others and environment", and hence they reveal what is the very nature of IS research: its core and its relevant boundaries. An espoused theory of an actor is "the theory of action to which he [or she] gives allegiance, and which upon request, he [or she] communicates to others" (Argyris and Schön 1974: 7). It is an account or a justification given to others when asked about the motives of action. As a verbal presentation of IS research for internal and external stakeholders, espoused theories point to the expected topics and boundaries of IS research. Both, theories in use and espoused theories, can be individual or collective (as those shared by the IS community). They are not static, but evolve through 'single' (without major changes in a cognitive structure) or 'double' (with a deep change in a cognitive structure) loop learning (Argyris and Schön 1974). Throughout this learning process (i.e. throughout the evolvement of both the theories in use and the espoused theories), the collective or research community needs to support the self-identity of its members and to maintain its collective identity (Schön 1973: 57). But this is not really completed by the actor in a harmonious way. Basically, "the theory that actually governs his [or her] action is his [or her] theory-in-use, which may or may not be compatible with his [or her] espoused [publicly stated] theory; furthermore, the individual may or may not be aware of the incompatibility of the two theories" (Argyris and Schön 1974: 7).

Roots of a community's collective identity are either espoused (and discursive) or in use (behavioural). Identity has been described either as knowledge, self-knowledge, discourses, beliefs, capabilities or structures (Schultz et al. 2000). Researchers may induce either from behavioural regularities or discourses of actors about themselves and their motives for action. **Whereas behavioural patterns have been the target of numerous studies in IS (for instance, publications, citations, co-citations, etc.), the official discourse and the 'espoused values' have been rather neglected.** Rarely do they explore what IS could/should be in traditional scholarly forums such as IS journals, conferences, and workshops offered by leaders in the field. However, investigating such statements could complement rather backward looking studies of the IS research practice, and thus stimulate a reflective discussion on the identity of IS research (through the lens of a set of espoused theories).

We draw on the General Editorial Statement (GES) of IS journals as *espoused theories of IS* that are usually written by Editors-in-Chiefs (EiC) and valid for several journal volumes; hence, they provide a comparatively stable, general, institutional vision of IS journals and thus IS research. By GES, we refer to the paragraphs positioning a journal, vis-à-vis its potential authors, its readers, and the whole IS community. GES present the aims, purposes and scope of journals (generally found under the headings 'Information about journal X', 'Authors guidelines', 'General Editorial Statement', etc.). It covers issues such as expected topics, expected research methods, affiliations, targeted audience, etc. We choose GES as a source to derive espoused theories over other sources such as calls for papers. Our choice is motivated by our belief that GES are more institutionalized and less elusive than most conference themes, and are more general than calls for papers for journal special issues, which target very specific topics. This is especially important as GES are considered to be a reflection of IS research.

The remainder of the paper is structured as follows: we first review the main tenets and arguments of IS research and the debates about its so-called identity crisis; next we present our research method consisting of thematic and lexicometric analysis and a factor analysis of GES in selected IS journals; finally, we present our data analysis with key findings and provide recommendations for further research.

Our analysis suggests a deep evolution of IS espoused theories over the last ten years as well as some clear divergences with theories in use as revealed by studies in IS publications.

Towards an Explanation of IS Identity

IS research and the debated identity crisis

Many studies have been published about IS research and the identity of the IS field. Larsen and Levine (2007) suggest five main categories of investigations of IS research and its identity: empirical citation analysis, classification analysis (meta-analysis of published articles), editorials and opinion pieces (in the form of essays), historical surveys of the cumulative work of the community, and forums. Some of these works are descriptive; others are normative.

Descriptive studies analyze published articles and citation data. They grasp the diversity of IS topics, and infer some theories in use by defining what IS research is in the eyes of researchers (e.g., Desq et al. 2002, 2007; Larsen and Levine 2007; Lim et al. 2007). Citation analyses focus on the dynamics of researchers' social networks, authors' relationships, and research field interdependencies (e.g., Clarke 2008; Holsapple and Luo 2003; Loebbecke et al. 2007). Most descriptive works emphasize a growing diversity of IS research (Desq et al. 2007; Vessey et al. 2002) with increasingly blurry boundaries between IS and other fields such as computer science, information science, sociology, and history of technology (de Vaujany 2005; Vessey et al. 2002).

In more normative works, leaders in the field reflect on what IS has been, will, or should be based on, for instance, broad categorizations of research papers (e.g., Orlikowski and Iacono 2001; Robey 1996). Normative papers emphasize legitimate IS research objects and propose boundaries for the IS field. Some call for a focus on the technological artefact (Benbasat and Zmud 2003), whereas others stress the need for a certain interpretive flexibility in IS topics (see Robey 2003). Still others have conducted meta-analyses on essays about IS research in editorials by leaders in the field (El Sawy 2003; Myers 2002). It can be assumed that the latter present an initial approach to grasping the normative discourse about IS research, its espoused theories.

Capturing the Espoused Theories of IS

While each offers a valid contribution to the debate on IS identity, previous studies of IS research have not attempted to make an in-depth analysis of the espoused theories of our collectivity (i.e., the 'agreed upon guideline' of IS research found, for instance, in GES), nor have they suggested a possible mismatch of the espoused theories in IS and the theories in use. The analysis so far has been limited to meta-analyses of essays by leaders of the field.

In order to abstract from the particular views of individuals, we analyze GES from 30 leading IS journals (see Appendix 1) between 1997 and 2007. As mentioned earlier, Argyris and Schön (1978) differentiate between espoused theories and theories in use. They also suggest that, as theories of action, both sets of theories interfere with collective learning and identity. A minimal fit between both theoretical levels is thus required for an effective collective action. Indeed, misfits may cause misunderstandings, coordination difficulties, and conflicts concerning common values.

Our ambition is thus threefold:

- To describe IS espoused theories;
- To grasp their evolutions over the last 10 years;
- To compare IS espoused theories with the main results of empirical studies on IS research concrete output (see the paragraph on descriptive studies).

Tracing IS Espoused Theories of Action: Five Propositions

We test the following 5 propositions derived mainly from Argyris and Schön (1974) and current descriptive or normative studies on IS research.

Proposition 1 relates to a 'volumetric' comparison of 1997 and 2007 concerning thematic diversity in GES, whereas Proposition 2 focuses on a lexicometric comparison concerning the diversity of vocabulary in the GES.

- P1: 2007 GES provide more details concerning journals' expectations from researchers compared to those of 1997 GES (to reflect and cope with the diversity in practice).*

P2: The 2007 lexical diversity is broader than the 1997 lexical diversity, both for GES on the whole and for the specific sections developing the expected topics.

Beyond vocabulary and words, Proposition 3 and Proposition 4 deal with the topics (categories) treated by GES.

P3: Topics treated by GES have increased between 1997 and 2007.

P4: Among the various categories, 2007 GES include more discourses on the ambitions of journals compared to those of 1997 GES.

Finally, Proposition 5 suggests that GES explicitly target the IS community claiming specificity of IS research.

P5: Other scientific fields and other theoretical references are less present in espoused IS theories than in the theories in use found in GES.

Data Collection and Methods of Analysis

We sampled IS journals (and their GES for 1997 and 2007) on the basis of AISWorld rankings (see Appendix 1). To assess propositions 1, 3, and 5 (see above), we applied a thematic analysis which builds on a thematic dictionary, and searches texts for categories and sub-categories (Bardin 1998; Weber 1990). We used a cross-coding procedure to iteratively develop a thematic dictionary. Following a cross-coding procedure to elaborate a thematic dictionary, we established an initial version of the thematic dictionary based on a GES sub-sample. Then we cross-coded all texts by two authors (see Weber 1990) to increase validity. For an example, see Appendix 2.

To assess propositions 2 and 4, we applied a lexicometric analysis. A lexicometric analysis uses a set of methods to quantitatively describe textual sequences of a corpus (Guilhaumou 1986). It relies on the counting of occurrences of all words used in a text (without tool words such as adverbs or prepositions), co-occurrences (i.e., words present on the left or the right of some key words also called pivot analysis, Bardin 1998), repeated text segments (like ‘information system’, ‘information technology’, etc.), or the development of lexicometric indicators such as Type Token Ratio (TTR). A TTR (Bardin 1998: 256) measures “the variety (or poverty) of the vocabulary by means of a ratio comparing the number of different words compared to the total number of words”. Higher TTR indicate richer and more diverse texts. For our lexicometric analysis, we used the software called Sphinx Lexica TM. A summary of the operationalization of variables included in the five propositions is shown in Table 1:

Table 1. Operationalization of Variables	
Source	Operationalization
Prop. 1	<ul style="list-style-type: none"> - Variety of coding (i.e., number of codes counted to GES) in 1997 and 2007. - Comparison of the number of words in GES between 1997 and 2007.
Prop. 2	<ul style="list-style-type: none"> - Number of words in GES for 1997 and 2007 (after elimination of irrelevant contents). - Use of a Type Token Ratio (TTR) (Bardin, 1998) for years 1997 and 2007 (both for complete GES and for the specific sections where the topics of the journal are described).
Prop. 3	<ul style="list-style-type: none"> - Analysis of the sub-categories described in GES (coded as ‘TOPIC’)
Prop. 4	<ul style="list-style-type: none"> - Ratio of text corresponding to the ambition compared to that describing the topic dealt with by the journal. Comparison between 1997 and 2007. - Qualitative analysis of the section describing the ambition of the journal.
Prop. 5	<ul style="list-style-type: none"> - Occurrences of the code EXTRA used for discourses evoking external fields like computer science or sociology (see Appendix 3 for a presentation of codes and definitions). - Ratio EXTRA/COMP for 1997 and 2007. - Ratio EXTRA/number of coding for 1997 and 2007.

Using the software package Sphinx Lexica, we conducted a factor analysis to complement the thematic analysis. We factor analyzed the thematic coding (see Tennenhaus 1993) and compared the results of 1997 to those of 2007. This approach allowed us to get a broader picture of the similar changes in the categories, sub-categories and journals between 1997 and 2007. Based on the results of the factor analysis, we retrieved the structuring axis in the content of GES.

Results and Analysis

Lexicometric Analysis: Comparing 1997 and 2007 GES Data

Occurrence of Words

Corpora of words for 1997 and 2007 GES are 5,021 and 8,800, respectively. The comparison of 1997 and 2007 GES is based on the relative frequency of word occurrences.

The comparison of the most frequently used words (e.g., frequency of GES lexical > 0.25% for both years) shows similarities for the two years. A corpus of 21 words is identified and organized in six categories presented in Table 2.

Category	Words	Relative Frequency (%)		
		1997	2007	Δ
IS topics (TOPIC)	System(s), information	3.86	2.60	-1.26
	Technology, computer(s), software, application(s), design, development(s), data	3.30	3.09	-0.34
	Management, organisation(s/al), decision(s), DSS(s)	2.27	1.58	-0.69
Expected contribution (CONT)	Field(s), area(s), theor(y/ies)	1.04	1.48	+0.44
	Research, journal(s), paper(s), article(s)	1.50	2.56	+0.61
	New	0.36	0.32	-0.04

Some words are frequently used one year (relative frequency of GES lexical > 0.25%), but less in another year (relative frequency of GES lexical ≤ 0.1%). This comparison shows significant differences for the two years. A corpus of six words is identified and organized in three categories (see Appendix 4).

As shown in Table 3, the central focus of IS GES seems to have remained unchanged. The conception of IS research provided by GES of IS journals appears to be quite stable.

Co-Occurrence of Words: Pivot Analysis

For 1997 and 2007, a pivot analysis on the words 'systems', 'information' and 'management' shows the following word associations.

Table 3. Words Used Only in One Year				
Category	Word	Relative Frequency (%)		
		1997	2007	Δ
Expected contribution (CONT)	Acoustic(al), aerospace, automotive, biocybernetics, biological, biophysical, ecological, economy, energy, entrepreneurship, HCI, mathematics, mechanical, medical, physics, physiological, psychologi(cal/ists), semantics, semiology, socioeconomic, sociology	0.80	0.00	-0.80
	Astronomy, genetic, geographic, geophysics, history, microscopy, numeric(al), radar	0.00	0.14	+0.14
Audience (AUD)	Africa, Asia, Europe(an), Latin, North, Pacific	0.00	0.09	+0.09
	Ethnicities, multinational, nation(s), regions, subcultures.	0.00	0.16	+0.16

Table 4. Frequency of Words Associated with 'Systems', 'Information' and 'Management'										
Pivot Words (#)	Most Frequently Associated Words	Word Associations 1997			Word Associations 2007			Frequency (%)		
		Pivot -2 & -1	Pivot +1 & +2	Σ	Pivot -2 & -1	Pivot +1 & +2	Σ	1997	2007	Δ
System(s) 1997: 109 2007: 134	Information	41	1	42	53	2	55	38.5	41.0	+2.5
	Database(s)	3	0	3	8	4	12	11.0	9.0	-2.0
	Management	9	1	10	7	2	9	9.2	6.7	-2.5
	Support	5	2	7	7	3	10	6.4	7.5	+1.1
	Human(s)	0	1	1	4	3	7	0.9	5.2	+4.3
	Computer	3	2	5	4	1	5	4.6	3.7	-0.9
	Engineering	0	2	2	0	6	6	1.8	4.5	+2.7
	Application(s)	0	2	2	0	7	7	1.8	5.2	+3.4
Development	0	5	5	1	1	2	4.6	1.5	-3.1	
Information 1997: 84 2007: 95	System(s)	1	41	42	2	53	55	50.0	57.9	+7.9
	Technolog(y/ies)	0	15	15	0	8	8	17.9	8.4	-9.5
	Management	6	3	9	5	4	9	10.7	9.5	-1.2
	Application(s)	5	2	7	1	5	6	8.3	6.3	-2.0
	Access	0	0	0	0	8	8	0	8.4	+8.4
Retrieval	0	2	2	1	7	8	2.4	8.4	+6.0	
Management 1997: 31 2007: 49	System(s)	1	9	10	2	7	9	32.3	18.4	-13.9
	Information	3	6	9	4	5	9	29.0	18.4	-10.6
	Database	1	0	1	6	2	8	3.2	16.3	+13.1
	Data	3	1	4	6	0	6	12.9	12.2	-0.5

As seen in Table 4, the words associations with ‘systems’, ‘information’ and ‘management’ show similar results for both years:

- The word ‘system(s)’ is mainly associated with the expected word ‘information’. But it is also related to a set of various words, such as ‘database(s)’, ‘management’, ‘support’, ‘human’, ‘computer’, ‘engineering’, ‘applications’, ‘development’, etc. The presence of the word ‘system’ and its relationships with many central IS terms seems to fit Alter’s vision (2003) of IS research as being more related to a systemic vision of organizations and their flow of information than to IT artefacts.
- The word ‘information’ is mainly associated with the word ‘system(s)’. But it is also related to other words, such as ‘technolog(y/ies)’, ‘management’, ‘application(s)’, ‘access’, ‘retrieval’, etc. Thus, the item is either assumed to be part of a broader ensemble (a ‘system’) or a problematic object which needs to be ‘managed’, ‘retrieved’, ‘evaluated’, etc. Interestingly (and this is also confirmed by our direct reading of GES), information is more seen as part of a technology than as content. A limited number of IS journals explicitly invited researchers to submit non-technical papers about information management.
- The word ‘management’ is mainly associated with the words ‘system(s)’, ‘information’, ‘database’ and ‘data’.
- The comparison of the word associations’ frequencies shows significant differences ($|\Delta| \geq 5\%$) between 1997 and 2007 for the pivot words ‘information’ and ‘management’:
- ‘Information’ is more frequently associated with ‘access’ (+8.4%), ‘system(s)’ (+7.9%) and ‘retrieval’ (+6%), but less frequently with ‘technolog(y/ies)’ (-9.5%).
- ‘Management’ is more frequently associated with ‘database’ (+13.1%), but less frequently with ‘system(s)’ (-13.9%) and ‘information’ (-10.6%).

Thematic Analysis: Comparing 1997 and 2007 GES Data

For 1997 and 2007, we found the following distribution of codes (see Table 5).

Categories	Codes	Occurrences of Codes		Frequency (%)	
		1997	2007	1997	2007
Audience	AUD	66	65	48.9	31.2
Expected Contribution	CONT	35	87	25.9	41.8
Methods	METH	2	11	1.5	5.3
IS topics	TOPIC	32	45	23.7	21.6
Total		135	208	100.0	100.0

As evident in Table 5, AUD and CONT (see Appendix 3 for the thematic dictionary) dominate for 1997 and 2007. **For both years, GES are more focused on the description of their audience than their expected/legitimate topics.** They are also more focused on the expected contributions (and best practices in the design and communication of research) than on the presentation of a relevant set of topics. We notice an increase in the description of methodological aspects.

Assessing Propositions

- P1: *2007 GES provide more details concerning journals’ expectations from researchers compared to those of 1997 GES (to reflect and cope with the diversity in practice).*

Table 6. Codes Counted and Thematic Diversity for 1997 and 2007		
	Codes Counted	Share of Thematic Dictionary Used (%)
1997	135	100
2007	208	100
Δ	+73 (+54%)	0

The number of codes counted (i.e., the number of times codes of the thematic dictionary have been used) for year 2007 has increased by 54% compared to 1997 (see Table 6), whereas the number of words in GES increased by 75% (from 5,021 to 8,802, see Table 7). We find no new categories or sub-categories in the coding of 2007 GES. **P1 is thus rejected.** Relative to the increase of GES themselves, thematic diversity did not increase between 1997 and 2007.

P2: The 2007 lexical diversity is broader than the 1997 lexical diversity, both for GES on the whole and for the specific sections developing the expected topics.

Table 7. Comparison of the Number of Words in GES for 1997 and 2007			
	Words in GES (a)	Words in TOPIC Category (b)	GES Devoted to TOPIC (b)/(a) (%)
1997	5,021	2,227	44.3
2007	8,802	3,681	41.8
Δ	+3,781 (+75.3%)	+1,454 (+65.3%)	-2.5

The comparison of the number of words in GES for 1997 and 2007 shows (see Table 7, 8, and 9):

- A significant (chi-squared = 8.387; $p = 0.004$) increase in the number of words in GES (+75.3%) and in the TOPIC category (+65.3%).
- A 2.5% decrease in the proportion of the GES in the number of words devoted to the TOPIC category (see Table 7).

Table 8. 1997 and 2007 Lexical Richness of GES						
	Words (a)	Mean (Words per GES)	Different Words (b)	Unique Words (c)	Lexical Variety (%)	
					Different Words (b)/(a)	Unique Words (c)/(a)
1997	5,021	37.19	1,242	683	24.7	13.6
2007	8,802	42.32	1,685	808	19.1	9.1
Δ	+3781 (+75.3%)	+5.13 (+13.8%)	+443 (+35.7%)	+125 (+18.3%)	-5.6	-4.5

The comparison of the general lexical richness of GES between 1997 and 2007 (Table 8) shows:

- A significant increase in the number of words (+75.3%), the mean number of words (+13.8%), the number of different words (+35.7%), and the number of unique words (+18.3%) (however, this latter evolution is not statistically significant: chi-squared = 14.177; $p = 0.0002$). Thus, GES have become more voluminous during the last decade (+3,781 words). The numbers of different words (+443) and unique words (+125) have increased in volume as well.
- A slight decrease in the proportions of different (-5.6%) and unique (-4.5%) words in the GES. Thus, the lexical diversity (the diversity of vocabulary employed) has decreased significantly (chi-squared = 7.918; $p = 0.005$).

The lexical richness of the TOPIC category (see Table 9) has decreased slightly (-4.5%) but significantly (chi-squared = 7.918; $p = 0.0049$).

	Words (a)	Different Words (b)	Unique Words (c)	Lexical Variety (%)	
				Different Word (b)/(a) (%)	Unique Words (c)/(a) (%)
1997	5,021	950	314	18.9	6.25
2007	8,802	1,270	306	14.4	3.47
Δ	+3781 (+75.3%)	+320 (+33.6%)	-8 (-2.5%)	-4.5	-2.78

Even though both the complexity of IS research and the volume of IS journals' GES have significantly increased during the last decade, the lexical diversity (i.e., the vocabulary richness) of GES has decreased. This result contradicts Proposition 2, assuming that GES vocabulary richness may have increased along with the increase in the complexity of IS research. **P2 is hence rejected.**

P3: Topics treated by GES have increased between 1997 and 2007.

Proposition 3 has been the subject of a more qualitative inquiry. On the basis of our thematic dictionary and its application, we notice that epistemology-related codes were rarely used (in contrast to most debates about IS theories in use). Then, direct reading of GES led us to a clear conclusion: most GES maintained a high level of generality. They avoid (and this tendency seems to strengthen from 1997 to 2007) restrictive delineations of the topic, always suggesting a non-sufficiency when a list of subjects is put forward. Lastly, the diversity of the field is not explicitly evoked. The IS field seems to be 'out there', and its definition (never treated in 2007) is seemingly not a problem. **P3 is therefore rejected.**

P4: Among the various categories, 2007 GES include more discourses on the ambitions of journals compared to those of 1997 GES.

	AUD-AMB Words (a)	TOPIC Words (b)	Ratio (a)/(b) (%)
1997	693	2,227	31.12
2007	1,156	3,681	31.40
Δ	+463 (+66.8%)	+1,454 (+65.3%)	+0.32

The AUD-AMB/TOPIC ratio shows a slight increase (see Table 10). Also, the change in AUD-AMB is not statistically significant ($p = 0.2667$). The association between rows (groups) and columns (outcomes), however, is statistically significant ($p = 0.0038$). The description of the general ambition of the journal is thus an increasing part of the topic description, but not in a statistically significant way (at least for the AUD-AMB category). **P4 is hence not confirmed.**

P5: Other scientific fields and other theoretical references are less present in espoused IS theories than in the theories in use found in GES.

If there are more discourses on external fields (like computer science, economics, sociology, information science, etc.), this increase should be relative, compared both to the increase in the volume of GES (see Table 9) and the proportion represented by the sub-category EXTRA in the category CONT (-1.6% , see Table 11). But EXTRA has not significantly changed ($\text{chi-squared}_{\text{EXTRA}} = 0.462$; $p = 0.4965$). Conversely, a CONT change is significant ($\text{chi-squared}_{\text{CONT}} = 9.032$; $p = 0.003$). **P5 finds initial support. The support is, however, not statistically confirmed.**

Table 11. Comparison of External Fields Based on Code EXTRA			
	Occurrences in Section Coded CONT-EXTRA (a)	Occurrences of Code EXTRA (b)	Ratio (%) (b)/(a)
1997	135	5	3.7
2007	208	11	5.2
Δ	+73 (+54%)	+6 (+120%)	+1.5

Table 12. Comparison of External Fields Based on EXTRA/CONT Ratio			
	Occurrences of Code CONT (a)	Occurrences of Code EXTRA (b)	Ratio (%) (b)/(a)
1997	35	5	14.2
2007	87	11	12.6
Δ	+52 (+48.6%)	+6 (+120%)	-1.6

Factor Analysis of Thematic Coding

Both for 1997 and 2007, the factor analyses converge on the same point. The main structuring axis (but with a low explained variance) distinguishes journals focused on the precise description of the relevant audience and ambitions of the journal ('leading journal about e-commerce' for instance) and less focused journals. Another axis differentiates journals emphasizing methodological aspects (quantitative or qualitative) from those stressing specific topics (see Table 13 for the results of the factor analysis).

Some journals are heavily linked to a specific axis. In 1997, for instance, DSJ was linked to axis 1 and JMIS was related to axis 2. This mapping approach grasps the editorial strategy of IS journals. Do journals expect state-of-the-art research methods? Do they require clear theoretical or empirical contributions? Or do they finally demand specific discourse targeted at a specific audience (for instance, IS managers)?

Table 13. Factor Analysis of Thematic Coding for 1997 and 2007

Contribution	1997				2007			
	Axis 1 (%) (+3.1%)		Axis 2 (%) (+2.9%)		Axis 1 (%) (+4.5%)		Axis 2 (%) (+ 4%)	
Positive	CONT	+20.4	METH	+31.3	AUD	+17.3	METH	+39.7
	METH	+10.3	JMIS	+17.5	AMB	+8.3	OTHER	+16.3
	DSJ	+9.7	DSJ	+11.6	FREQPUB	+3.0	SURV	+10
	HCI	+5.7	TOPIC	+3.5	MIXPRO	+2.2	QUANT	+5.4
	JMIS	+3.6	IEEETSE	+0.9	CAIS	+1.9	QUAL	+5.4
	IEEETIE	+2.7	I&M	+0.9	AFF	+1.8	ISJ	+4.6
	IS	+2.2	JCSS	+0.6	Database	+1.6	CAS	+3.2
	DSS	+1.3	IEEETIP	+0.5	JCSS	+1.4	JMIS	+2.4
	AI	+1.2	JACM	+0.4	TOPIC	+1.4	ACMTDS	+1.6
Negative	AUD	-18.8	CONT	-14.8	CONT	-18.5	CONT	-1.7
	MISQ	-3.4	HCI	-3	CRIT	-9.5	TYPEPAP	-0.6
	JACM	-3.2	IEEETIE	-2.7	CACM	-6.8	JGIM	-0.5
	ACS	-3.2	IS	-2.1	TYPEPAP	-6.8	TOPIC	-0.5
	ACM transa	-3.2	IJEC	-1.9	MISQ	-1.6	MISQ	-0.5
	ACMTDS	-3.2	JAIS	-1.6	EXTRA	-1.4	CRIT	-0.4
	CACM	-2.1	ISF	-1.3	PURP	-1.3	IEEEsw	-0.4
	IEEEsw	-1.2	AI	-1.2	ACS	-1.2	ACS	-0.4
	EJIS	-0.7	IEEETC	-0.8	JGIM	-1	PURP	-0.3

Key Findings and Contributions

In short, we found that the vocabulary and topics used in GES have not really diversified from 1997 to 2007. We further show that the statements in GES about what IS research should encompass do not reflect the reality of IS research (IS ‘theories in use’). We cannot confirm that IS journals increasingly stress their ambitions in GES in order to accentuate their focus and strengthen their position among competitors. Lastly, we found some support that GES focus mainly on IS issues and are not used as guidelines towards further extending the scope of IS research to other fields. Table 14 summarizes the assessment of the propositions.

Table 14. Summary of Results and Interpretations

Proposition	Issue	Assessment	Provocative Interpretations
1	Raised expectations by journals from researchers over time	Rejected	Discourses in GES do not coherently reflect recent developments of the field
2	Increased lexical diversity over time	Rejected	Vocabulary used in GES has not diversified; there is a relative lexical stability
3	Espoused theories of IS and IS theories in use being coherent	Rejected	Statements in GES about what IS research should be do not reflect reality of IS research
4	Increased discourses over journal ambitions over time	Not confirmed	IS journals do not increasingly stress their ambitions as means to accentuate focus and strengthen position
5	Less periphery represented in espoused theories of IS compared to IS theories in use	Initial support (not statistically confirmed)	GES with inward focus are not used as guidelines towards further extending the scope of IS research to other fields

The assessment of the propositions indicates the specificity and relative autonomy of the espoused theories of IS. Over the last ten years, the disarticulation between IS theories in use and IS espoused theories has been increasing. This can be interpreted in the way that the espoused theories of IS degrade. IS research in practice becomes increasingly complex and diverse. Whereas Argyris and Schön (1978) suggest a necessary coherence between espoused and in use theories in the long run, the IS field reflects some degree of incoherence.

Looking at the dimensions of collective action as detailed by Teo and Srivastava (2007) - periphery, process, and perspective -, we examine the following differences between the theories in use and the espoused theories of IS: Concerning the *periphery* dimension, which defines that which matters to the field, the theories in use are exclusive of 'peripheral' topics. They are focused on core topics and show clear boundaries. Espoused theories, on the other hand, draw no clear boundaries between the core and the periphery, hence discourse is much more inclusive than exclusive. Regarding the *process* dimension, which defines how the collective action unfolds, theories in use continuously acquire new topics, thus increasing the diversity of the field. The espoused theories, in contrast, remain conservative and maintain poorer lexical and thematic discourse on the field. With respect to the *perspective* dimension, theories in use more often refer to practitioners and provide managerial implications, whereas espoused theories are academia-oriented. Few GES mention 'managers', 'practitioners', 'actionable knowledge', or 'usefulness'. Overall, the obvious divergence between the two sets of theories does not seem to be significant enough to point to an identity crisis. However, it does appear that the editorial discourse in top IS journals may not have kept pace with the recent developments in the field¹, and that this situation is likely to continue due to the often practice-driven nature of the IS field.

This research contributes to the literature in three ways. First, it offers a way to analyze the espoused theories of IS research, beyond a meta-analysis of leaders' visions. GES, representing the espoused theories of IS, have, to some extent, been neglected in recent studies of the IS field, its research and identity. Second, this research distinguishes two elements of the normative discourse of the IS field, academic research contribution as representation of IS theory in use and GES as representation of espoused theory of IS. Whereas some journals emphasize an open exchange with other scientific fields, others are more exclusive and stress an intra-community focus. Some journals demand a general ambition (theoretical or empirical), whereas others emphasize the importance of the implementation of research methods in the creation of knowledge. Third, this study has identified some gaps between espoused theories of IS and IS theories in use and thus serves to stimulate the reflexivity of the field. As argued by Argyris and Schön (1978), deep incoherencies between espoused and in use theories damage the effectiveness of collective action in the long run. The extent of the difference between both theories suggests that this is the case.

¹ We are thankful to anonymous reviewer for suggesting this interpretation of the findings.

Limitations and Future Research

This study has several limitations. First, the study suffers from the ambivalent functions and understandings of GES. Whereas this study regards GES as reflecting espoused theories, GES may also be considered as a managerial tool to market a journal. Second, the lexicometric analysis applied in this work is based on the assumption that the importance of a word and an idea is linked to its frequency in a given text (see Bardin, 1998). This assumption can be and has been questioned. Finally, sampling GES of mainly A and B journals may be considered misleading; a broader sample might have included more niche outlets with the accompanying different results.

Related to the last limitation, further research could extend the sample of IS journals to include more outlets, also targeting niches of the IS domain. Further research may also want to include IS practitioners' vision of IS and, for instance, investigate which espoused theories and which theories in use IS managers have in mind, how they define organizational IS, how they theorize it, and finally how their views differ from those of academics.

References

- Alter, S. "Sorting Out Issues About the Core, Scope, and Identity of the IS Field," *Communications of the AIS* (12:41), November 2003, pp. 607-628.
- Argyris, C., Schön, D. *Theory in Practice: Increasing Professional Effectiveness*, Jossey-Bass, San Francisco, US 1974.
- Argyris, C., Schön, D. *Organizational Learning: A Theory of Action Perspective*, Addison Wesley, Reading, US, 1978.
- Bardin, L. *L'analyse de contenu*, Presses Universitaires de France, Paris, France, 1998.
- Baskerville, R., Myers, M. "Information Systems as a Reference Discipline," *MIS Quarterly* (26:1), March 2002, pp. 1-14.
- Benbasat, I., Weber, R. "Rethinking Diversity in Information Systems Research," *Information Systems Research* (7:4), December 1996, pp. 389-399.
- Benbasat, I., Zmud, R. "The Identity Crisis Within the IS Discipline: Defining and Communicating the Discipline's Core Properties," *MIS Quarterly* (27:2), June 2003, pp. 183-194.
- Clarke, R. "A Citation Analysis of Australian Information Systems Researchers: Towards a New ERA?," *Australasian Journal of Information Systems* (15:2), June 2008, pp. 35-56.
- Desq, S., Fallery, B., Reix, R., Rhodain, F. "Vingt-cinq Ans de Recherche en Systèmes d'Information," *Revue Systèmes d'Informations et Management* (7:3), 2002, pp 5-31.
- Desq, S., Fallery, B., Reix, R., Rhodain, F. "La Spécificité de la Recherche Francophone en Systèmes d'Information," *Revue Française de Gestion* (33:176), November-December 2007, pp. 63-80.
- de Vaujany, F. "Information Technology Conceptualization: Respective Contributions of Sociology and Information Systems," *Journal of Information Technology Impact* (5:1), 2005, pp. 39-58.
- Dufner, D. "The IS Core-I: Economics and Systems Engineering Approaches to IS Identity," *Communications of the AIS* (12), November 2003, pp. 527-538.
- El Sawy, O "The 3 Faces of IS Identity: Connection, Immersion, and Fusion," *Communications of the AIS* (12), November 2003, pp. 588-598.
- Galliers, R. "Change as Crisis or Growth? Towards a Trans-Disciplinary View of Information Systems as a Field of Study: A Response to Benbasat and Zmud's Call for Returning to the IT Artifact," *Journal of the AIS* (4:6), 2003, pp. 337-351.
- Guilhaumou, J. "L'Historien du Discours et la Lexicométrie. Etude d'une Série Chronologique: Le Père Duschesne d'Hébert," *Histoire et Mesure* (1:3/4), 1986, pp. 27-46.
- Holsapple, C., Luo, W. "A Citation Analysis of Influences on Collaborative Computing Research," *Computer Supported Cooperative Work* (12:3), September 2003, pp. 351-366.
- Larsen, T., Levine, L. "The Identity, Dynamics, and Diffusion of MIS," in *Proceedings of the IFIP WG8.6 Conference on Organisational Dynamics of Technology-Based Innovation: Diversifying the Research Agenda*, DeGross, J., Ferneley, E., McMaster, T., Wastell, D. (Eds.), Manchester, England, June 2007, pp. 163-177.
- Lim, J., Rong, G., Grover, V. "An Inductive Approach to Documenting the 'Core' and Evolution of the IS Field," *Communications of the AIS* (19), June 2007, pp. 665-691.
- Loebbecke, C., Berthod O., Huyskens, C. "Research Importance in the Information Systems Field: A Citation Analysis," in *International Conference on Information Systems (ICIS)*, Montreal, Canada, December 2007.

- Myers, M. "Defining the Core Properties of the IS Discipline: Not Yet, Not Now," *Communications of the AIS* (12), November 2003, pp. 582-587
- Orlikowski, W., Iacono, S. "Desperately Seeking 'IT' in IT Research: A Call to Theorizing the IT Artifact," *Information Systems Research* (12:2), 2001, pp. 121-134.
- Power, D. "The Maturing IS Discipline: Institutionalizing Our Domain of Inquiry," *Communications of the AIS* (12), November 2003, pp. 539-545.
- Robey, D. "Diversity in Information Systems Research: Threat, Promise, and Responsibility," *Information Systems Research* (7:4), 1996, pp. 400-408.
- Robey, D. "Identity, Legitimacy and the Dominant Research Paradigm: An Alternative Prescription for the IS Discipline," *Journal of the AIS* (4:7), December 2003, pp. 352-359.
- Schön, D. *Beyond the Stable State. Public and Private Learning in a Changing Society*, Penguin, Harmondsworth, England, 1973.
- Schultz, M., Hatch, M., Larsen, M. (eds). *The Expressive Organization: Linking Identity, Reputation and Corporate Branding*, Oxford University Press, Oxford, England, 2000.
- Teo, T., Srivastava S. "Information Systems (IS) Discipline Identity: A Review and Framework," *Communications of the AIS* (20), November 2007, pp. 518-544.
- Tennenhaus, M. *Méthodes Quantitatives de Recherche en Gestion*, Dunod, Paris, France, 1993.
- Vessey, I., Ramesh, V., Glass R. "Research in Information Systems: An Empirical Study of Diversity in the Discipline and its Journals," *Journal of MIS* (19:2), October 2002, pp. 129-174.
- Weber, R. *Basic Content Analysis*, Sage, Thousand Oaks, US, 1990.

Appendices

Appendix 1: Selected IS journals (see www.aisworld.org/csaunders/rankings.htm)

N°	Journal Code	Journal Name	Average Rank Points	1997 GES found	2007 GES found
1	MISQ	Management of Information Systems Quarterly	1.11	PV	PV
2	CACM	Communications of the ACM	2.75	OW	PV
3	JMIS	Journal of Management Information Systems	4.86	PV	PV
4	AI	Artificial intelligence	6.00	OW	PV
5	DSJ	Decision Sciences	6.43	PV	PV
6	IEEETIP	IEEE Transactions on image processing	8.75	OW	PV
7	IEEETIE	IEEE Transactions on industrial electronics	NR	OW	PV
8	EJIS	European Journal of Information Systems	10.17	PV	PV
9	DSS	Decision Support Systems	10.67	PV	PV
10	IEEESw	IEEE Software	11.00	OW	W
11	I&M	Information and management	11.89	OW	PV
12	ACMTDS	ACM transaction on database systems	12.00	OW	PV
13	IEEETSE	IEEE transaction on software engineering	12.17	PV	W
14	ACMTrans	ACM transactions	13.00	PV	PV
15	JCSS	Journal of computer and system sciences	13.00	OW	PV
16	CAIS	Communication of the AIS	14.00	OW	PV
17	IEEETSMC	IEEE Transact. on Systems, Man, and Cybernetics	14.00	OW	W
18	ACS	ACM Computing surveys	15.71	PV	PV
19	JComp	Journal on computing	16.00	PV	PV
20	IJEC	International journal of electronic commerce	17.50	PV	PV
21	JAIS	Journal of the AIS	17.75	OW	W
22	IEEETC	IEEE Transactions on Computers	18.00	OW	W
23	ISF	Information Systems Frontiers	18.00	PV	OW
24	ISJ	Information Systems Journal	18.71	PV	PV
25	JGIM	Journal of global information Management	19.00	PV	PV
26	DATABASE	The database for advances in information systems	19.57	OW	OW
27	IS	Information Systems	20.00	PV	PV
28	JACM	Journal of the ACM	20.40	PV	PV
29	HCI	Human Computer interactions	20.67	OW	PV
30	IT&P	Information Technology & People	21.00	PV	PV

* Legend: W: Publisher's website; PV: Paper-based version we received through libraries, administrative managers of the journal or Editors in Chief; OW: Other way (e.g., direct contacts with Associate Editors or colleagues)

We removed: (1) general management journals in AISWorld ranking (MS, HBR, SMS, AMJ JMS OS ASQ AMR CRM); (2) journals that started publishing later than 1997 (IEEE Transactions on Industrial Informatics, IEEE Computer), and (3) three journals for which we did not get the 1997 GES (ISR, AI mag, JDM). We filled the list up to 30 journals following the AISWorld ranking. We also added IEEE Transactions on Industrial Electronics as we considered it part of the IEEE.

Appendix 2: Example GES and its coding (MIS Quarterly 2007) (without passages not related to our GES definition)

[CONT-CRIT:] Research Articles

Submissions to the Research Articles department should offer a contribution that is sufficiently original and significant so as to warrant a full-length article for the authors to develop and present their argument have a strong grounding in theory, whether it is a new theory the authors are advancing or an existing theory the authors are testing, refining, or challenging

[CONT-MIX:] Submissions to the Research Articles department typically have theoretical and empirical components, but pure-theory submissions are also appropriate. [CONT-PURP:] Most submissions to, and most papers published in, the MIS Quarterly are in the Research Articles department.

[AUD-AMB:] Issues and Opinions

This department provides a forum for the communication of well-developed and well-articulated position statements concerning emerging, paradoxical, or controversial research issues. [CONT-CRIT:] An Issues and Opinions article may be described as a rigorously argued and scholarly editorial. Issues and Opinions submissions should open new areas of discourse, close stale areas, and/or offer fresh, insightful views on research topics of importance to the information systems field. They should identify the issue(s) in terms that are easy to understand provide appropriate conceptual frameworks for the issue, offer opinions and supportive arguments, and describe the implications of these opinions for research, practice, and/or teaching

[CONT-TYPEPAP:] Research Note

This department provides a forum for two types of concise contributions:

[AUD-AMB:] Commentaries that relate to an important methodological issue (or issues) associated with a published MIS Quarterly article. [CONT-CRIT:] The connections between a Note's content and earlier articles published in the MIS Quarterly must be clear. Published Notes ought to arouse controversy and encourage dialogue on an important methodological issue. Incremental contributions of an empirical nature that relate to important topics that appear frequently in the MIS Quarterly.

[CONT-TYPEPAP:] Research Essay

Occasionally, manuscripts are received that solely address methodological issues but apply a depth of exposition and analysis that goes beyond the level normally associated with a 'Note'. This department provides a forum for such submissions.

Theory and Review

Submissions to this department promote research by surveying and synthesizing prior theoretical and empirical research. They set directions for future research. They also act as a repository for the knowledge that has been accumulated on an important topic within the information systems field and advance theory in that topic area.

[CONT-CRIT:] Types of Papers the MISQ Does Not Publish

The MIS Quarterly does not publish the following types of papers: descriptions of information systems applications, methodologies, or practices where these descriptions are atheoretical or purely formal; replication of prior topics unless the replication provides important new insights about a topic; criticisms of prior research unless the criticisms provide important new insights about a topic; descriptions of instrument development or refinement; research or commentaries on professional topics (e.g., journal rankings, promotion and tenure criteria, employment practices); research or commentaries on educational topics; and definitions, frameworks, or taxonomies.

The MIS Quarterly also does not publish papers that address topics that are only tangentially relevant to the information systems field. Before submitting their paper, authors should evaluate whether their paper contributes primarily to knowledge in the information systems field or primarily to knowledge in another field. If the paper primarily contributes to knowledge in another field, it should be submitted to journals in that field because that is where the article will have its greatest impact. Authors should clearly and persuasively state the contribution to the information systems discipline made by their paper.

Appendix 3: Thematic Dictionary (used for GES coding)

Category	Sub-Category	Definition
TOPIC	[DES]	Technology design (parameter-setting, conception, development, modelling)
Main technological and managerial topics covered:	[USE]	Adoption, use and management (investment, project management, maintenance, training, communication, appropriation, evaluation, strateg) [USE]
- Descriptive/normative discourse (Why versus how?)		
- Mono-cultural/pluri-cultural		
- Exhaustive/non-exhaustive	[MIX]	Mix of both topics [MIX]
- Compared to other (affiliated?) journals or not		(if GES does not deal explicitly with topic, we used the code 'MIX')
METH	Nature: Qualitative [QUAL], quantitative [QUANT] or combination [COMB]	Nature of data and data treatment
Expected research methodologies and epistemologies	Time scope: Transversal [TRANS] or longitudinal [LONG]	Temporal orientation of the research
	Content: Case [CAS], survey [SURV], experiment [EXP], action research [ACT], other [OTHER] which means both others and mixture	Overall research strategy
	Epistemological stance: positivist [POS], interpretative [INT], critical [CRIT], mixture [MIX]	Vision of reality
AUD	Audience scope: worldwide [SCOWORLD] or spatially targeted [SCOTARG]	Target audience (global, i.e., without precise focus, or targeted)
Audience and mission	Audience profile (both potential authors and readers): practitioners [PRAT], academic [ACA], or both [MIXPRO]	Profile of expected readers
	Journal ambition [AMB] with dimensions such as high quality or innovation	Sections describing journal ambitions
	Frequency of publication [FREQPUB]	Monthly, bi-monthly, quarterly
	Affiliation, relationship with broader official society or organization [AFF]	E.g., affiliation with professional or academic networks
CONT	Nature: methodological [METH], Theoretical [THEO], EMPIRICAL [EMP] or mixed [MIX]	Nature of expected contributions
Expected contributions:	Quality criteria for doing and writing research, i.e., good practice [CRIT]	Evocation of good practices
Dimension:	Types of papers [TYPEPAP]	Type of expected papers (full paper, research note, research in progress, book review, invited paper)
- Criteria for publication: inclusive [CRIINC] or exclusive [CRIEXC]		
- Research in progress (yes/no)	Boundaries of contribution: intra IS field [INTRA] or extra IS field [EXTRA]	Explicitly invited contributions from other fields (yes / no)
	General purpose and management of the review [PURP]	Main objectives and management of review process

Appendix 4: Words with Changing Frequency between 1997 and 2007

Category	Word	Relative Frequency (%)		Δ
		1997	2007	
IS topics (TOPIC)	Intelligen(t/ce)	0.26	0.10	-0.16
	Process(es)	0.30	0.09	-0.21
	Database(s)	0.10	0.70	+0.60
Audience (AUD)	Professional(s)	0.38	0.07	-0.31
	Societ(y/ies)	0.42	0.10	-0.31
Methods (METH)	Survey(s)	0.10	0.40	+0.30