

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2012 Proceedings

Proceedings

Overcoming Mixed-Gender Requirements Misspecification with the Modified Coherence Method

Merrill Warkentin

Mgmt & Information Systems, Mississippi State University, Mississippi State, MS, United States., m.warkentin@msstate.edu

Nirmalee Malimage

Mgmt & Info Systems, Mississippi State University, Mississippi State, MS, United States., nirmalee@nirmalee.us

Follow this and additional works at: <http://aisel.aisnet.org/amcis2012>

Recommended Citation

Warkentin, Merrill and Malimage, Nirmalee, "Overcoming Mixed-Gender Requirements Misspecification with the Modified Coherence Method" (2012). *AMCIS 2012 Proceedings*. 7.

<http://aisel.aisnet.org/amcis2012/proceedings/SystemsAnalysis/7>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2012 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Overcoming Mixed-Gender Requirements Misspecification with the Modified Coherence Method

Merrill Warkentin
Mississippi State University
m.warkentin@msstate.edu

Nirmalee Malimage
Mississippi State University
nirmalee@nirmalee.us

ABSTRACT

Research has identified significant differences between the communication patterns employed by males and females in all cultures. The variances in communication can lead to ineffective transfer of information from the user to an analyst in the system development process. The quality of the resulting system will primarily depend on the information that is verbalized to the system analyst by the system users during the requirements elicitation process. Therefore, coherence between the parties, especially within mixed gender dyads, is vital in understanding what the user would expect from the system to be developed. We explore these communication differences in an attempt to improve the understanding among both parties in overcoming issues arising from lack of themal coherence. After analyzing those differences, the modified coherence method is presented as a primary method in overcoming the language barriers encountered during the discourse between analyst and users during requirements elicitation.

Keywords

Requirements elicitation, specification, discourse analysis, Modified Coherence Method, user-analyst communication, gender, miscommunication.

INTRODUCTION

It has been estimated that between 40% and 80% of the system development projects fail to achieve their objectives due to a plethora of reasons (Warkentin, Moore, Bekkering and Johnston 2009; Sauer, Gemino and Reich 2007). System development risk factors include inadequate or vague user requirements that can transform into inadequate systems. The success of a software development project primarily depends on the process of Requirements Elicitation (RE) (Hickey and Davis 2004). Sommerville and Sawyer (1997) define requirements elicitation or requirements gathering as the process of acquiring the system requirements from its various users, stakeholders and customers. The RE stage is designed to gather vital information for the system development process. The information elicited includes the user expectations about the system design, product usability, the system user interaction and the identification of major stakeholders in the system. The systems analyst and the user will have the utmost collaboration during the requirements elicitation phase of the system design (Lauer, Peacock and Jacobs 1992). Therefore, effective communication between both parties during the requirements elicitation process is imperative to the development of a successful system. The quality of the resulting system will primarily depend on the information that is verbalized to the systems analyst by the system users during the RE process. The success of a system mainly relies on the ability of the system analyst and the user to communicate between themselves and cooperate with each other irrespective of any other factors (Holtzblatt and Beyer 1995). The information elicited by the analyst in RE is extremely detailed, interconnected, and subject to contingencies. Therefore, the process of accurately eliciting, structuring, and organizing information elicited from the system users is a critical step in system development. Due to these constraints, the requirements gathering stage can be considered one of the most challenging aspects of the system development process (West 1995). The Requirement Elicitation phase, in which the majority of human interaction and discourse occurs, is regarded as the greatest bottleneck in the system development process. Despite a plethora of techniques (Dennis, Wixom and Roth 2012), interviews between the system user and the analyst remain the primary (Diederich and Ruhmann, 1987; Liou, 1992; Olson and Reuter, 1987) most common (Dennis et al. 2012) and the most preferred (Agarwal and Tanniru 1990; Holtzblatt et al. 1995) method of eliciting system requirements and other necessary information through discourse. Additionally, meetings and group discussions among analysts and users can provide resourceful information. However, when human discourse is utilized as the single method of Requirements Elicitation, various communications elements must be taken into consideration.

Interviews for Requirements Elicitation

Interviews can provide the analyst with detailed, meaningful content as the interviewer and the interviewee have the opportunity to clarify ambiguities more than information gathering via other direct methods (e.g. surveys and observation). Because requirements gathered during the interview is primarily dependent on the discourse process between the user and the

systems analyst, a detailed analysis of the discourse is vital to the understanding of how information is transferred and captured (Alvarez 2002). During the discourse, certain factors such as gender, age, vocabulary differences, demographics, and cognitive limitations (Byrd, Cossick and Zmud 1992) can have a fundamental role in the requirements elicited via interviews. Due to some of these limitations, interviews are considered as a resourceful but challenging method of requirements gathering (Moody, Blanton and Cheney 1998).

In her book, *That's not what I meant*, Tannen (1992) provides the reader an example of an interview situation where a woman is unable to explain to her interviewer that she basically had to run the whole company even though her job title was "Administrative Assistant." The inability to effectively verbalize relevant information to the interviewer resulted in the woman not being considered for the job (Tannen 1992). Furthermore, interviews are also vulnerable to the misinformation effect in comparisons to other information eliciting techniques such as surveys. Misinformation can be false or misleading information that fails to reflect the true nature or the state of mind of the end user (Appan and Browne 2011). The interview technique is plagued by problems of interviewer perception bias, the static setting, and the irrelevance and incomplete nature of expressed knowledge (Buchanan, 1982a; Butler, 1986; and Gaines, 1987). A communication gap between the user and analyst also exists, which stems from their divergent backgrounds and training and from their use of different sets of jargon and terminology. There can also be miscommunication and misinterpretations arising from both parties attributable to personal opinion and personal style of communication as well. Tannen (1992) states that it is also difficult to clarify miscommunications arising during interviews as the parties involved would not have any knowledge of its occurrence. Even though the process of requirement elicitation through interviews introduces some limitations, it still remains the most prevalent and most favored (Agarwal et al. 1990; Holtzblatt et al. 1995) method used for requirements elicitation (Dennis et al. 2012).

Gender Differences in Requirements Elicitation through Discourse

Analysis between traditional male-female communication patterns suggests that "stereotypically women demonstrate ineffective communication characteristics such as verbosity, constrained vocabulary, and indirect requests" (Thorne and Henley, 1975), whereas men tend to dominate the conversation, establish social standing and exchange information during the conversation (Tannen 1995; Tannen 2002). Gefen and Ridings (2005) state that the rich cultural background of an individual largely contributes to his or her communication patterns by giving way to misunderstandings when people from different cultures attempt to construe the meaning of the same message. These differences apply to gender as well. Research has shown that girls tend to learn more negotiative and resonate styles of conversations, whereas boys tend to learn more authoritative and status-seeking styles of conversation from their early age (Tannen 1995). Moreover, men and women tend to encompass different conversation styles when expressing similar opinions. Both genders tend to ascertain and value intimacy and independence to a great deal. However, the degree to which they emphasize these qualities tend to differ between genders. Men prefer a more independent style of life while women try to create intimacy throughout their relationships. Though both male and female conversation styles can be considered as equally valid by themselves, there can be problems that arise from the dissimilar communication styles during interaction (Tannen 2002). As Tannen (1995) states, "you can't assume that the other person means what you would mean if you said that same thing in the same way." In his book *Men are from Mars, Women are from Venus*, Gray (1992) states that, when a woman says "I feel like you never listen," the word "never" is not expected to be taken literally, but is a direct expression of her frustration. Tannen's work indicates how men tend to be more "literal" in their conversation styles, whereas women tend to focus more on meta messages.

Verbosity

When women are in conversation, they tend to use minimal responses such as "M-hm" and "Yeah, yeah" more frequently than men do. These can be interpreted by the speaker as the other woman is listening to the conversation but she does not necessarily agree with the facts. In contrast, men will interpret the minimal responses of the woman as though she is agreeing with the facts presented. It can be frustrating to men when they discover that the woman's minimal responses didn't mean that she agreed with him. Moreover, women often concede the other party in conversation before they express their opinion on the subject matter while men tend to directly express their personal views. In mixed gender dyads, these types of conversation styles may make the woman feel completely disregarded (Law 2007).

Furthermore, females tend to adopt more generalized forms in communication such as metaphors and meta messages in expressing their feelings. Females tend to use this type of discourse in situations where they want to express their frustration. For example when a woman says “Nothing is working,” she only wishes to express how irritated she is with all the work she has to complete. Males tend to interpret these expressions “literally” resulting in misinterpretation of the anticipated message (Gray 1992).

Interruption/Turn Taking

In conversation, men will concurrently talk with the other person only when they want to interrupt the speaker. Conversely, women will engage in a concurrent conversation with the other party only when they want to support or agree with the speaker. So in a mixed gender dyad with a woman talking simultaneously with a man, the man would interpret it as the woman not agreeing with him but instead trying to interrupt the conversation (Law 2007). Thus, the pattern of interruption and garnering of turns is a socially endorsed method of gaining control, and is most prevalent in conversations where there are men involved. By interrupting, one can gain turns while also lengthening the amount of time allotted to any one turn. In fact, the pioneering researchers on the subject, Eakins and Eakins (1978) find in their studies that males, without exception, spoke longer per turn.

Further research indicates that men primarily consider conversation as a means of competition in order to speak the most, whereas women consider ways to facilitate the conversation. In other words, women often allow others to take the chance to talk while men normally take the chance to themselves. Especially when it comes to settings such as seminars, meetings and interviews, men will talk a lot more than women. In such situations, women feel that they were not granted the chance to speak while the men are left with the feeling that women did not take the chance to speak (Law 2007).

Tag questions

McMillan, Clifton, McGrath and Gale (1997) also discovered that women tend to use tag questions in discourse to a greater extent than men. Tag questions are defined as a questioning phrase after a sentence which is mainly used by speakers in order to reassure themselves that their speech has significance. In other words, the speaker attempts to gain conformation from the listener by implying his/her uncertainty of the facts. An example is “The system interface is not user friendly. Don’t you think so?” Research indicates that differences in the way the genders us tag questions can lead to miscommunication.

These gender differences in discourse can create a communication barrier between the interviewer and the interviewee during requirements elicitation resulting in inadequate information gathering, as indicated in Tables 1 and 2. Table 1 portrays the gender dyad in the context of female user/male analyst, which has a high potential for bias arising from failure to extract important rule heuristics from associated background or by simply misinterpreting the conversation. Table 2 portrays the gender dyad in the context of male user/female analyst, which has great potential for bias with a tendency to de-emphasize high priority rules.

User Statements (Women’s Conversation Style)	Analyst’s Interpretation (Man)
“The system never works.”	Men may interpret the word “never” literally to conclude that the system did not function at all whereas the women simply means that often the system does not function properly.
“Everyone thinks the system is flawed.”	The woman is trying to emphasize her strong opinion of the system by empathizing with the others, but men may misinterpret this.
“The system interface is not user friendly. Don’t you think so?”	The woman is trying to gain conformation from the man by implying her uncertainty of the facts with this tag question. The man will tend to believe the woman is not confident about the facts she is presenting and will not consider them significant.

Table 1. Common Complaints Made by Women That Are Misinterpreted by Men

User Statements (Men’s Conversation Style)	Analyst’s Interpretation (Woman)
“Sometimes the system is slow, but it is not a problem for me.”	Women will interpret the phrase “not a problem” as there is a problem with the system and something needs to be done about it. The man is simply trying to state that the system being slow does not really affect his daily tasks.
“The program only runs in windows OS and not in Mac, but it is not a big deal for me.”	Women will interpret the phrase “it is not a big deal for me” in the context that the man is expecting some sort of solution to the problem while the man is simply trying state that the system being slow does not really affect his daily tasks.
“The system interface is not very user friendly, but you can adapt to it easily.”	Women will interpret the phrase as the system interface needs to be changed even though the man is trying to imply that changing the interface is not a priority.

Table 2. Common Complaints Made by Men That Are Misinterpreted by Women

User	Analyst	Information
Male	Female	Information expressed in brief statements. Analyst’s perception might be that inadequate explanation is given, or that the background provided is inadequate. Analyst may feel left out of the process as no corroboration is expected. Utilization of verbatim such as “I am OK” and “It’s not a big deal” would give the analyst the impression that the user is in need of a solution nevertheless. <i>Action:</i> high potential for bias, tendency to de-emphasize high priority rules. Analyst should re-evaluate all emphasis, and make adjustments from an understanding of user’s expectations.
Female	Male	Information expressed embedded in explanatory statements. Analyst’s perception might be one of “too much junk.” There may be frequent interruptions to the user’s conversation by the analyst. Frequent use of verbatim such as “never” and “always” will be taken literally by the analyst where the user only intends to express frustration through their use. <i>Action:</i> high potential for bias, arising from failure to extract important rule heuristics from associated background or simply misinterpreting the conversation.

Table 3. Gender Variations on Informational Exchange in Requirements Elicitation

Table 3 summarizes the variations of gender dyads and their respective communication patters in the context of the user and the analyst.

Some examples of dyad dialogues include:

Q: “Have the reports being helpful? A: Well, some people say they are helpful”.

Q: “What is wrong with the current system? A: People don’t like it”.

These examples portray how important it is for the user and the analyst to have a “meeting of the minds” during the requirements elicitation process. Coherence between the parties especially within mixed gender dyads is vital in the understanding of what the user would expect from the system that is to be developed. During the requirements elicitation process through interviews, communication becomes a responsibility of both parties. Lack of themal coherence where the user and the analyst are not in the same dimension during the elicitation process will result in systems which are unable to meet the user requirements.

The Coherence Method as a Tool for Discourse Analysis

The ambiguities that arise during discourse due to mixed gender dyads can greatly impact the requirements elicited from the users. Because the comprehensive grasp of communication between the systems analyst and the user is a critical factor for the success of a system development project, the utilization of discourse analysis techniques can maximize the effectiveness of information transfer between the dyads. One of the primary methods that is utilized in the discourse analysis process is the Coherence Method, which consists of three phases, the “development of the world plan, investigation of the internal structure of the discourse, and investigating the macrostructure of the discourse” (Abdul-Gader and Kozar 1990). This usually reveals dissonance between the macro-level view and the micro-level view which will be helpful in ascertaining areas of complexity and confusion. The essence of coherence method lies in the fact that it evaluates discourse at the microstructure and macrostructure levels to consider semantic relations along with issues of function and theme.

The Modified Coherence Method

In the Modified Coherence Method (MCM) (Warkentin, 1993), each phase of the Coherence Method has been refined and augmented in order to include additional microanalysis in phase 2. As illustrated in the Figure 1, phase 1 of the MCM involves a microanalysis function typified by establishing a world plan that serves as the fundamental model. This plan illustrates the activities and sub goals necessary to achieve the ultimate goal state. As the formulation of a world plan is undertaken, the user and the systems analyst must come to an understanding of each other’s roles in the discourse so that individual behavior can be better comprehended.

Phase 1 (Microanalysis)

1. Identify world plan and central goal.

Phase 2 (Mesoanalysis)

2. Discourse decomposition
 - a. Identify, isolate, and examine “discourse primitives” (elements of conversation)
 - b. Document adjacency pairs, verbosity, turn taking, and tag questions
 - c. Document user actions, procedures, and processes
3. Evaluate semantic relationships between and within segments and ideas.
Map discourse primitives to the world plan identified in Phase 1.
4. Identify deviations from goal structure which need clarification (bridge to macro)
Utilize these distinctions to trigger further detailed investigations

Phase 3 (Macroanalysis)

5. Establish global coherence.
 - a. Analyze local goals and local coherence
 - b. Define areas of conflict between local goals and central goals
6. Analyze themal coherence.
 - a. Identify recurring threads or themes central to goal achievement.
 - b. Pinpoint areas for further exploration.

Figure 1. Discourse Analysis using the Modified Coherence Method (MCM)

The first phase is marked by the analyst establishing a representation language in analyzing verbatim of the user. In other words, the analyst will try to transform the individual verbalized sentences into an illustration of its actual meaning (Abdul-Gader et al. 1990). The verbalized information along with factual information gathered from sources such as textbooks and case studies will yield the initial world plan which will typically revolve around one central goal.

The microstructure of the discourse is analyzed during the second phase (steps 2-4) through careful dissection of the system user’s speech. Initially his/her speech is decomposed by using linguistically consistent methods of transcribing and segmenting the discourse (step 2). The traditional coherence method is modified to incorporate an analysis of factors related to conversation regulation and control. These factors, the subject of research by (Coulthard 1977; Jefferson 1973; Sacks and Schegloff 1974; Schegloff 1968; Schegloff and Sacks 1973; Stubbs 1983; Taylor and Cameron 1987), include turn taking,

adjacency pairs, tag questions, and interactional roles related to the initiator's control over the conversation. By decomposing the discourse, each action or procedure in the initial world plan will be documented by the system user's description of the related processes and steps necessary to achieve the world plan. The turn is the basic unit of data (discourse primitive). Research has shown that speaking turns are taken and given in an orderly and predictable fashion in ordinary conversation (Brown and Yule 1983). Adjacency pairs are used to describe the situation in which phrases that emanates from different speakers are closely related to one another. This can be best exemplified by the situation where a conversation partner finishes a sentence for you or mirrors your last utterance with one almost identical. Informally, we may think of these incidents as evidence of "being on the same wavelength." Therefore, the rules of turn taking and adjacency pairs help to understand the high-level structure within conversation.

Step 3 involves the analysis of the semantic relationships between and within segments and ideas. The close evaluation of sentence connectors such as *then*, *and*, *but*, and *when* is an integral part of the process. In the traditional Coherence Method, accomplishing step 3 relies on standard linguistic decomposition and analysis. Step 4 provides the bridge between the microanalysis of phase 2 and the mesoanalysis of phase 3, by comparing the microstructure to the overall goal structure. Areas that do not match exactly or that appear to deviate from the goal structure of the world plan indicate where clarification is needed. Amplification of these regions of inconsistency may lead to revision of the world plan, segments of the discourse, or both. This process is valuable in that an expert's speech is constantly compared with the central goal and, thus, a check against misinterpretation of ineffective communication is provided.

In the final phase (in steps 5 and 6), a discovery of the main themes that represent the expert's domain is undertaken at the macroanalysis level. The focus of phase 3 is to match the system user's description of individual processes with the ultimate goal as displayed by the world plan. This can be achieved, in part, by analyzing local coherence and defining areas of conflict between local goals and global goals. By identifying where local goals are detracting from global goals, we can define areas of conflict (step 5). Thus, identifying local coherence is crucial to establishing global coherence, which is the ultimate task of the Coherence Method. Global coherence exists when the overall goals (world plan) match perfectly with the system user's explanation of the local goals, or individual processes, needed to achieve the world plan.

The sixth and final step is concerned with the themal analysis of discourse. The main concern at this stage is to identify recurring 'threads' or themes that appear throughout the discourse. These themes are central to the ultimate goal achievement and, thus will pinpoint areas that need further exploration. The study of recurring themes is accomplished by analyzing themal coherence, which represents the central ideas that give the discourse focus and meaning. Achieving themal coherence, where local and global goals support at least one theme serves to validate major concepts, procedures, and theories.

The MCM is an important application of discourse analysis to systems analysis, because it provides a new technique for requirements elicitation and allows the system analyst carefully analyze the information elicited both at the linguistic (micro) and conversational (macro) levels before requirements specification. It serves to provide a logical mapping from the traditional requirements elicitation discourse (interviews) to the task of coding the elicited requirements into a complete system. It lends validity to the requirements gathering process and, therefore, bolsters confidence in the developed systems themselves. The MCM makes a significant contribution to the requirements elicitation literature, however, it requires further development before it can be deployed in an effective, reliable, and consistent manner.

Conclusion

In interviews conducted between the user and the analyst in mixed gender dyads, gender differences in discourse may create a communication barrier between the interviewer and the interviewee. Furthermore, there may be miscommunication and misinterpretation of critical information by the analyst. In order to ensure objective and accurate information transfer, the sender and receiver should both be aware of the gender-related differences in communication semantics and discourse mechanisms. The transfer characteristics are most important in the case of requirements elicitation where the conveyed information becomes the specification for the developed system. Ineffective communication can result in ineffective information transfer which can lead to inadequate system design. In the system design context, possible errors in system design can be avoided if an adjustment is made for the bias inherent in the communication of information. An understanding of the effects of gender bias in the communication paradigm is necessary in order to overcome any ambiguities that arise from discourse that will be transferred through to the system development process. This understanding is derived from the well-known measures of information communication, respectively in the contexts of information uncertainty, information semantics, and action results of information.

The application of the modified Coherence Method and other discourse analysis techniques to the requirements gathering phase can substantially increase the effectiveness of the systems development process. This is accomplished by a thorough analysis of the verbalized language describing the system requirements which will directly be transferred to the system

development process. The thorough analysis of the discourse will simply eliminate any inconsistencies or misunderstandings that will be programmed into the system. In essence, the discourse analysis will allow an environment where the “debugging” can be initiated during the system requirement elicitation and familiarization stage. The MCM will add structure to the requirements gathering process by improving the accuracy of the information transfer. Since MCM mainly relies on human discourse, with its inherent ambiguity and complexity, the tool cannot be completely reliable. Nor can it be automated. Any tool that depends on the discourse process is inherently imperfect and requires great proficiency. A strong background in linguistics is recommended, as is specific training in discourse analysis techniques. Furthermore, in our global environment, language and cultural barriers continue to impede all forms of information transfer.

By employing discourse analysis techniques such as the MCM, analysts can account for the gender variations in discourse in order for them to conduct effective transfers of requirements elicited from users. Additionally, by gaining a better understanding of the users, the analyst may actually enjoy the task more, and thereby be more effective. Ultimately, if accurate transfer does not occur, then the validity of developed system will be jeopardized. A more complete evaluation of this one-on-one discourse is warranted as it is a critical success factor for the system development process. Finally, this basic framework must be expanded to account for other identified variations in the use of communications.

REFERENCES

1. Abdul-Gader, A. H. and Kozar, K. A. (1990) Discourse analysis for knowledge acquisition: The Coherence Method, *Journal of Management Information Systems*, 6, 4, 61-82.
2. Agarwal, R. and Tanniru, M. R. (1990) Knowledge acquisition using structured interviewing: An empirical investigation, *Journal of Management Information Systems*, 7, 1, 123-140.
3. Alvarez, R. (2002) Discourse analysis of requirements and knowledge elicitation interviews, *Proceedings of the 35th Hawaii International Conference on System Sciences*, January 7-10, Manoa, Hawaii, USA, University of Hawaii, 255.
4. Appan, R. and Browne, G. J. (2011) The impact of analyst-induced misinformation on the requirements elicitation process, *MIS Quarterly*, 36, 1, 85-106.
5. Brown, G. and Yule, G. (1983) *Discourse analysis*, Cambridge University Press, Cambridge.
6. Byrd, T. A., Cossick, K. L. and Zmud, R. W. (1992) A synthesis of research on requirements analysis and knowledge acquisition techniques, *MIS Quarterly*, 16, 1, 117-138.
7. Coulthard, M. (1977) *An introduction to discourse analysis* (Applied Linguistics and Language Study), Longman Press, London.
8. Dennis, A., Wixom, B. H. and Roth, R. M. (2012) *Systems Analysis & Design*, John Wiley & Sons, Inc., New Jersey.
9. Eakins, B. W., and Eakins, R. G. (1978) *Sex differences in human communication*, Houghton Mifflin Press, Boston.
10. Gefen, D. and Ridings, C. M. (2005) If you spoke as she does, sir, instead of the way you do: a sociolinguistics perspective of gender differences in virtual communities, *The DATA BASE for Advances in Information Systems*, 36, 2, 78-92.
11. Gray, J. (1992) *Men are from mars, women are from venus*, HarperCollins Press, New York.
12. Hickey, A. M. and Davis, A. M. (2004) A unified model of requirements elicitation, *Journal of Management Information Systems*, 20,4, 65-84.
13. Holtzblatt, K. and Beyer, H. R. (1995) Requirements gathering: The human factor, *Communications of the ACM*, 38, 5, 30-32.
14. Jefferson, G. (1973) A case of precision timing in ordinary conversation: Overlapped tag-positioned address terms in closing sequences, *Semiotica*, 9, 1, 47-96.
15. Lauer, T. W., Peacock, E. and Jacobs, S. M. (1992) *Questions and information systems*, Lawrence Erlbaum Associates, New Jersey and London.
16. Law, P., (2007) *The art of conversation*, BBC, <http://www.bbc.co.uk/voices/yourvoice/conversation1.shtml>.
17. McMillan, J. R., Clifton, A. K., McGrath, D. and Gale, W. S. (1977) Women's language: Uncertainty or interpersonal sensitivity and emotionality?, *Sex Roles*, 3, 6, 545-559.
18. Moody, J. W., Blanton, J. E. and Cheney, P. H. (1998) A theoretically grounded approach to assist memory recall during information requirements determination, *Journal of Management Information Systems*, 15,1, 79-98.

19. Sacks, H. and Schegloff, E. A. (1974) A simplest systematics for the organization of turn-taking for conversation, *Language*, 50, 4, 696-735.
20. Schegloff, E. A. (1968) Sequencing in conversational openings, *American Anthropologist*, 70, 6, 1075-1095.
21. Schegloff, E. A., and Sacks, H. (1973) Opening up closings, *Semiotica*, 8, 3, 289-327.
22. Sommerville, I. and Sawyer, P. (1997) *Requirements engineering: A good practice guide*, John Wiley and Sons, West Sussex.
23. Stubbs, M. (1983) *Discourse analysis: The sociolinguistic analysis of natural language*, University of Chicago Press, Chicago.
24. Tannen, D. (1992) *That's not what I meant!: How conversational style makes or breaks relationships*, Virago Press, London.
25. Tannen, D. (1995) The power of talk: Who gets heard and why, *Harvard Business Review*, 73, 5, 138-148.
26. Tannen, D. (2002) *You just don't understand women and men in conversation*, Virago Press, London.
27. Taylor, T. J. and Cameron, D. (1987) *Analysing conversation: Rules and units in the structure of talk*, Pergamon Press, New York.
28. Warkentin, M., (1993) Verbal domain knowledge acquisition: Unplugging the bottleneck, *Heuristics: The Journal of Knowledge Engineering and Technology*, 6, 3, 21-26.
29. Warkentin, M., Moore, R., Bekkering, E., and Johnston, A. (2009) Analysis of systems development project risks: An integrative framework, *The DATA BASE for Advances in Information Systems*, 40, 2, 8-27.
30. West, D., (1995) The appreciative inquiry method: a systemic approach to information systems requirements analysis, *Information System Provision: The Contribution of Soft Systems Methodology*, McGraw-Hill, London.