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EXAMINING GROUP COMMUNICATIVE PROCESSES: CRITICALLY BASED TOOLS AND TRAINING

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Abstract

This paper provides tools and training in the application of tenets of Jürgen Habermas' theory of communicative action in the examination of group dialogue. Creating applied, empirical tools from Habermas' work highlights the value and insights provided through a critically-based investigation as well as promoting this unique perspective through tangible measures. This paper extends the use of critical social theory in Information Systems through the production and application of critically-based research tools and training.

Keywords: Critical social theory, theory of communicative action, tools, training

Introduction

The investigation of information systems phenomena continues to be based on various philosophical perspectives. One perspective, critical social theory (CST), has been used to explore how individual identity shapes personal differences in small groups, small organizations, and large organizations. With respect to the application of CST to the field of Information Systems, several strengths and weaknesses are evident. Its application has led to an investigation of the people and structures that guide the systems development (Janson et al., 1991; Janson et al., 1993; Klein and Hirschheim, 1993; Hirschheim and Klein, 1994; Hirschheim et al., 1996; Myers and Young, 1997; Clarke and Lehane, 2000), systems implementation (Lyytinen and Hirschheim, 1988; Myers, 1994), and systems use (Ngwenyama and Lee, 1997). These studies have improved the process of explaining and understanding information systems across various lines of inquiry. However, from an applied, empirical approach, many of these studies have fallen short. Often maintaining a view at the metatheoretical level provided through CST, frameworks evident in CST have not often been used in the examination of concrete interactions and the production of empirical tools (Parkin, 1996).

In Habermas' early work, he challenges both empirical and hermeneutic sciences as lacking in their ability to deeply understand individuals within society (Wilson, 1991). The theory of communicative action (TCA) (Habermas, 1984; 1987) is used to reconcile the aforementioned approaches by drawing from empirical evidence to form a basis of understanding upon which a hermeneutic lens can be applied (Wilson, 1991). In particular, TCA is used to understand communication breakdowns, or distortions, in society, exploring how various factors affect the production of these breakdowns. This paper applies TCA-based frameworks in the development of a models and tools in the examination of communication channel use, providing a distinct point upon which to investigate this topic from a critically motivated, applied, and empirical perspective. The methods set forth in this paper provide the empirical base upon which a deeper understanding of communication processes from a critically based perspective can be determined.

In addition, this paper extends the understanding of communicative *processes* in the input-process-output relationship in information systems use. Few studies have delved toward understanding how communicative processes impact group outcomes through the direct examination of *group dialogue*. The model and tools provided in this paper not only address the aforementioned need for empirical, applied CST-based tools, but also addresses the need to directly explore group communication in the understanding of group communication processes and their potential impact on group outcomes.

Critical Social Theory

Through specific goals, purposes, or aims, individuals produce knowledge (Habermas, 1976). Knowledge production exists in three forms: technical, practical, and emancipatory (Giddens, 1985). Knowledge is created when producing predicted outcomes (technical), when understanding meaning (practical), or when achieving individual autonomy from domination (emancipatory). Each form of knowledge production has a corresponding method of study. Table 1 shows the relationships between all knowledge producing perspectives and their associated methods of study.

Table 1. Knowledge Production and Method of Study (Adapted from Giddens, 1985)

<i>Knowledge Production</i>	<i>Method of Study</i>
Technical (Prediction and control)	Empirical sciences/ Positivism
Practical (Understanding of meaning)	Hermeneutic disciplines/ Interpretivism
Emancipatory (Emancipation)	Critical social theory

With respect to the current research, the production of emancipatory knowledge states that all societies involve levels of domination and individuals strive to achieve autonomy from the domination through deliberate actions. Through CST the production of emancipatory knowledge is examined. In the broadest sense, CST acts more as a philosophical perspective than as a theory with constructs and relationships. A researcher using CST is not concerned with such familiar concepts as usefulness, performance, or productivity, but instead is intent on understanding how influences guide individuals in their actions.

The Theory of Communicative Action

The application of CST to the communicative environment is one aspect of Jürgen Habermas’ theory of communicative action (Habermas, 1976; 1984; 1987) and is rooted on two key premises. First, individuals strive toward the creation of an ideal speech situation. The ideal speech situation allows equal discussion opportunity for all individuals, imposes no constraints on individuals enacting meaning on messages, and provides for communication to be challenged and subsequently justified (Habermas, 1984; Giddens, 1985). The tools and training presented in this paper explicitly focus on the ability to justify challenged messages in the movement toward the ideal speech situation.

Second, communication is rational in nature and constructed to achieve, sustain, and review a consensus that rests on the individual recognition of disputable validity claims (Habermas, 1976). The theory of communicative action (TCA) states that the rationality of communication comes in the forms of cognitive-instrumental rationality and communicative rationality. Each entry into rational communication, whether cognitive-instrumental or communicative, is termed a social action (Habermas, 1987). TCA explicitly states that individuals partake in three social action types: instrumental, strategic, and communicative (Habermas, 1976; 1987; McCarthy, 1978). A fourth social action type, discursive action, is implicitly set forth by Habermas (1987; 1996) and echoed in other research (McCarthy, 1978; Lyytinen and Hirschheim, 1988; Hirschheim et al., 1996; Ngwenyama and Lee, 1997; Germonprez, 2001; Germonprez, 2002).

TCA continues, stating that within social actions, validity claims are implicitly or explicitly made in all communicative acts, they are sometimes challenged, and are possibly resolved (Figure 1).

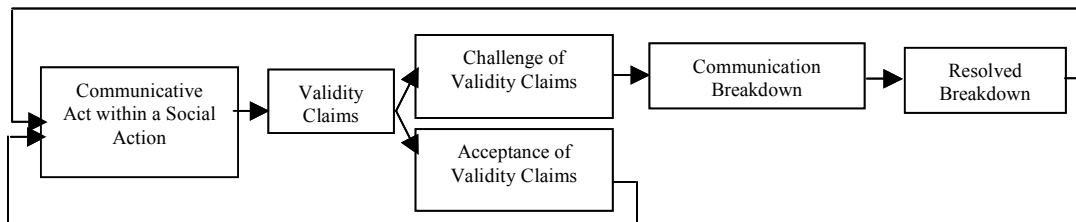


Figure 1. Temporal Relationship of a Single Communication Act: Social Actions to Resolved Communication Breakdowns

Examining Figure 1, a communicative act ends when a speaker changes the subject or when another individual speaks (Poole, 2001). Within each communicative act, individuals engaged in social actions undergo periods of reflection when validity claims are set forth and these claims are either accepted or challenged (Habermas, 1984). To accept the validity claims within a social action, a listener has accepted the communicative act (Goldkuhl, 2000) and the context in which it was set forth. To challenge the validity claim, a listener has questioned the truth, completeness, sincerity, or rightness of the communicative act (Ngwenyama and Lee, 1997).

Seven validity claims can be presented and challenged across the four social actions. The set of seven validity claims extends Habermas' original representation of four universal validity claims to provide depth and extension of the validity claim concept (Goldkuhl, 2000; Ngwenyama and Lee, 1997). The validity claims include:

- (1) *Contextuality*: Appropriateness of action.
- (2) *Efficiency*: Ability of action to achieve desired ends.
- (3) *Effectiveness*: Authority of communication partner.
- (4) *Clarity*: Precision of message and associated jargon.
- (5) *Completeness*: Totality of message.
- (6) *Truthfulness*: Honesty of message.
- (7) *Sincerity*: Earnestness of communication partner.

Relationships between social actions and validity claims provide a framework around which communication actions can be studied. Based on social actions and validity claims used in various contexts, relationships develop as to which validity claims are evident, and can therefore be challenged, in respective social actions (Germonprez, 2002). These relationships are seen in Appendix A.

Finally, if a receiver of a communicative act challenges a sender's validity claim based on it being false, incomplete, insincere, or unwarranted, a communication breakdown occurs (Ngwenyama and Lee, 1997). A communication breakdown sets into motion critical discourse to resolve contested validity claims. A resolution is a communicative act used to accept a challenged validity claim to restore truth, sincerity, normative rightness, or comprehensibility.

Dialogue Analysis Model

The dialogue analysis model (DA model) is used to supplement individual research models investigating the movement toward ideal speech situations through group dialogue in the production of group outcomes. This model has been applied to investigate the impact of normative technology characteristics on the process of channel expansion (Germonprez, 2002) and will be explored here.

In the DA model, six relationships are examined in the reconstruction of communicative processes through tenets of TCA. First, all communicative acts occurred within an aforementioned social action, through a communication type (face-to-face, computer message board, computer chat room, etc.), and on a message type (topic, process structure, salutation, etc.). Representing essential aspects of the communicative process as determined through tenets of TCA, the first three relationships represent the foundational relationships between social actions, communication type, and message type.

Second, through the generation of communicative acts, communication breakdowns sometimes occur on the dialogue. Examining the relationship between the foundational components and communication breakdowns aids the understanding of communicative processes as breakdowns are necessary antecedents to resolutions.

Third, challenged validity claims are treated as a deconstruction of a communication breakdown. While all communicative acts inherently generated claims of validity, not all validity claims are challenged. This model is used to explore the presence and occurrence of *challenged* validity claims resulting in communication breakdowns.

Forth, the relationship between communication breakdowns and resolutions is explored. Returning to Habermas, as individuals strive toward the ideal speech situation, one aspect is the creation of a communicative environment that allows for the challenge and subsequent justification of all validity claims. As the current research applied the DA model in a single experimental setting, the model can be applied to numerous research questions regarding communication processes. Figure 2 shows the DA model.

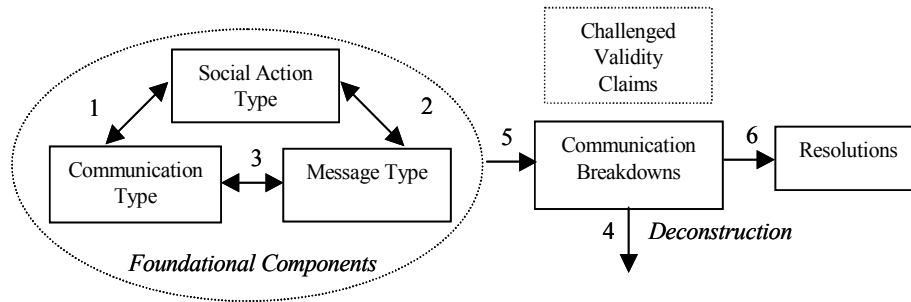


Figure 2. Dialogue analysis model

Application of the Dialogue Analysis Model: Tools and Training

The DA model was used in the development of tools in the examination of group dialogue. The current research applied the DA model in an experimental setting. The study used two person groups who communicated through a web-based information system. The groups were free to discuss issues regarding the research topic (e-privacy) using synchronous or asynchronous communication tools, at any time of the day, and in any communicative approach they felt useful.

Dialogue was collected from all groups and consolidated in a linear timeline. The collected dialogue was coded and analyzed as per a coding sheet (Appendix B) used to gather eight distinct components of group dialogue:

- (1) *Message Number* – A message is a single communicative act and ends when a speaker changes the subject or another individual speaks.
- (2) *Synch/Asynch* – Whether the asynchronous or synchronous tool was used to communicate the message.
- (3) *Message Type* – Whether the message concerns the topic, process structure, or other.
- (4) *From* – Which group member sent the message.
- (5) *Social Action* – What social action the message represents
- (6) *Breakdown* – If the sender questions a validity claim of their partner and the message number on which the breakdown occurred.
- (7) *Validity Claim* – What validity claim a sender was challenging and the message number at which the validity claim was challenged.
- (8) *Resolution* – If, as evident in a message(s), the communication breakdown was resolved and the message number upon which the resolution occurred.

Figure 3 illustrates how the coding sheet was used to display three messages that result in a communication breakdown and a subsequent resolution.

Message Number	Synch/Asynch	Message Type	From	Social Action	Breakdown	Validity Claim	Resolution
15	Synch	Topic	Tom	Comm			
16	Synch	Topic	Sue	Comm	Yes	(15), [Cxt]	
17	Synch	Topic	Tom	Comm			Yes (16)

Figure 3. Coding Sheet Example

In this example, three synchronous messages were exchanged between Tom and Sue. All messages were exchanged in the *social action* of communicative action and were of topic *message type*. A communication breakdown occurred at message 16. The *validity claim* that was called into question was set forth in message 15 and the validity claim was that of contextuality. A *resolution* of the *communication breakdown* at message 16 was provided in message 17. This brief example illustrates how the

coding scheme was used to identify and relate challenged validity claims, communication breakdowns, and subsequent resolution of the breakdown.

Rater Training

The analysis of the group dialogue included two key steps (Habermas, 1976). At each step, important questions were asked that must be addressed when determining a communication breakdown and a subsequent resolution. The two steps provide a basis of interpretation of observed events:

- (1) Was it a communicative act? Within what social action was the communicative act occurring?
- (2) Does the communicative act result in a communication breakdown? The challenge of what validity claim requires resolution? Was a resolution of the communication breakdown provided?

Using the coding system to analyze group dialogue, the coding of group messages was extended to include the reconstruction of the communication situation within which group members communicated. The coding system was used to “peer through the surface structure” of the communicative act to discover the context under which the communicative act was produced (Habermas, 1976).

Two raters were used in this project, both authors, one who was initially unfamiliar with the goals of the research. A guideline sheet was used by both raters when coding group dialogue. The sheet, as shown in Appendix A, provided both raters with definitions, social action-validity claim relationships, and a flow chart of how to approach the coding process.

Raters met a total of four times. The first meeting described the coding process, introduced terms used, discussed group tasks, and identified potential areas of difficulty. The final three meetings evaluated the coding of three groups to ensure high levels of reliability between the raters. Examples will be provided to illustrate the training approach, rater disagreements, and resolution of those disagreements on key points during the coding process.

First Training Step

The first step required the identification of a communicative act, identified as ending when a speaker changes the subject or someone else speaks. Teasing out communicative acts from large blocks of dialogue proved necessary, as the communicative act is the unit of analysis upon which the current tools and training are based on.

Within the first step was the identification of the social action within which communication partners were engaged. Differences in the identification of social actions were largely based on the rater’s ability to identify social actions outside of communicative action. As the vast majority of social actions were communicative, the identification of instrumental, strategic, and discursive action required the most attention. An example upon which the two raters disagreed on the coding of a social action is provided:

Training Example: Social Action Identification

[M1] 09/11/2001 7:04 PM – Georgio

Subject: Greeting...

Hello Tina! How are you doing? It's nice to meet you. My name is Georgio, and I'm a MIS graduate student at [University]. I go by George, by the way. Again, it's my pleasure to work on this project with you. I look forward to hearing from you soon... Regards, George.

[M2] 09/12/2001 10:38 AM – George

Subject: Are you there?

Just wondering if you're ready to start working on this project. I'm in the middle of reading the assigned articles for this week. Ready when you are...

[M3] 09/14/2001 1:34 PM – George

Subject: Hello

Hi, Tina! Nice to meet you. [the administrator] just sent me an e-mail saying that we will be working as a team for this project. I'm pleased to work together with you. Leave me a message when you're in so we can get started with this project. Thanks, George

[M4] 09/17/2001 9:15 PM – George

Subject: Still waiting...

Hey, I'm still waiting for you to reply to my earlier message. Please let me know what your status looks like ASAP. Thanks! George

[M5] 09/18/2001 2:59 PM – Tina

Subject: Sorry

I am sorry that it has taken me so long to get on but I just found out yesterday that you were my partner.

In this example, one rater coded the entire message set as communicative action, while another coded M5 as strategic. Following discussions between the raters, M5 was determined to be strategic as the message was used to address the four previous messages sent by George. M5 was interpreted as an attempt to alleviate concerns that George had regarding the group communication process, influencing George through information that was not intended to be acted upon. In this case, Tina appeared to view George as a partner unable to act on the message, attempting to influence his attitude toward the group communication process.

Second Training Step

The second step was used to train raters in identifying communication breakdowns, challenged validity claims, and subsequent resolutions. Communication breakdowns and their subsequent resolutions were oftentimes subtle, and other times obvious in appearance. Considerable training was spent on the second training step.

Identified as communications that are incomplete, insincere, false, or unwarranted (Ngwenyama and Lee, 1997), the identification of communication breakdowns represented an essential entry toward the ideal speech situation. The following example illustrates how the two raters came to agreement regarding the presence of a communication breakdown.

Training Example: Communication Breakdown Identification

[M1] 09/20/2001 1:15 PM - George

Subject: My status

Hi Tina, I'm in the middle of writing the very first paper right now. I'll be available to resume to our discussion tonight. Just let me know when you're ready. What I want to do is to finish our discussion about the first topics and jump into the second stage. If you could answer to my last question, which was about important factors, I would greatly appreciate it. Thank you! – George

[M2] 09/24/2001 8:07 PM - George

Subject: What's going on?

Hey Tina, What's going on? I just completed the second survey. How did your first paper go? Just wondering when we could resume to our discussion... Please let me know. Take care!

In this example, one rater did not code a communication breakdown at either message. The second rater coded a communication breakdown at M2 and ultimately, M2 was coded as a communication breakdown. The identification was based on M2 calling into question the ability of M1 to create an efficient communication environment through which the project tasks could be completed. As four days passed between the messages, George created a communication breakdown on his previous message in an apparent attempt to encourage group communication through additional communication actions.

Following the identification of communication breakdowns, challenged validity claims were coded. As challenged validity claims acted as an important platform upon which to better understand communication breakdowns and their subsequent resolution, coordination between raters in their identification was essential. In the following example, both raters identified a communication breakdown, however the validity claim type upon which the breakdown was based differed.

Training Example: Challenged Validity Claim Identification

[M1] 9/20/2001 9:15 PM – Mark
Subject: I'm good, thanks.
Thanks for your help. See you on the next one.

...

[M4] 10/03/2001 2:02 PM - Carol
Subject: my thoughts
Hey Mark, I haven't heard back from you lately, but I started writing my paper anyway. I haven't finished it yet, but I posted what I have finished on the file sharing thing so that you can see what I have so far. I think all I really need to add is the HIPAA info. I posted my paper now because I can't access the [utility] for some reason from my home computer. Anyway, I hope to hear from you soon and I'll keep checking the message board :-)

This example shows how Mark, in M1, stated that he was willing to help Carol in the production of the group deliverable during the next phase of the project. During this two-week gap between the messages, Mark did not respond to Carol, causing Carol to ultimately respond to M1 with M4, resulting in a communication breakdown. One rater coded the communication breakdown as occurring on the validity claim of truthfulness, stating that Carol was calling into question Mark's truthfulness as indicated in M1. The other rater coded the communication breakdown as occurring on the validity claim of efficiency, or the ability of the communication process to achieve the desired ends. Through a reexamination of the dialogue by both raters, it was determined that the validity claim being challenged by Carol was *efficiency*. This was based on the fact that Mark may have had every intention of communicating with Carol prior to M4, and no where in M4 did Carol directly address Mark's statement in M1. Carol was questioning the ability of the group communication process to accomplish the group task.

Finally, once a communication breakdown and challenged validity claim were coded, a resolution of the communication breakdown was identified. At no point during the training process did the raters disagree on the identification of a resolution. The following example shows the resolution of a communication breakdown and returns to the prior example of Carol and Mark.

Training Example: Resolution Identification

[M5] 10/08/2001 5:49 PM – Mark
Subject: second project
well, I think that I really screwed up with the paper! I didn't know when it was due or anything... I did read yours though and it seems to have some good content.

[M6] 10/08/2001 7:20 PM - Carol
Subject: don't worry
Hey Mark, don't worry about not responding much for the second paper, we've still got a third to make up for it.

Following Carol's challenge of the efficiency validity claim, Mark responded with M5, addressing the communication breakdown and providing a resolution of the breakdown, a resolution echoed by Carol in M6. This training example illustrated not only the resolution of a communication breakdown, but entry into the breakdown and the validity claim upon which the breakdown occurred. Together, the two training steps provide a solid foundation upon which to read, interpret, and code dialogue to determine the movement toward the ideal speech situation.

Findings: Training and Tool Characteristics

The tools and training described in this paper have characteristics that are valuable to researchers investigating questions about group communication approached via the analysis of dialogue. Initially developed to investigate a single research problem from a critically motivated perspective, the characteristics of the tools and training are valuable in a wide variety of research investigations.

The application of the DA model provides a consistent procedure enabling researchers to parse dialogue into discrete and identifiable components. In turn, this allows for the pursuit of a wide variety of research interests regarding the relative or absolute frequency of occurrence of dialogue components, relationships between components, and context of occurrence of all components. This simple flexibility allows the procedure to work well with other, non-critically based theoretical approaches involving the analysis of dialogue.

In addition, the coding sheets provide a clear record of the coding process allowing for review, resolution of conflicting interpretations, and a variety of secondary comparisons. Patterns and relationships between occurrences can be readily revealed through simple graphical and descriptive statistical methods. The coding sheet record also provides a means of revisiting group dialogue in a systematic way in order to gain a deeper understanding based upon new insights or points of investigation.

The clarity of the procedure provides an easy and short training period and produced very high inter-rater reliability. Two raters coded the dialogue generated by all groups, per the current research. Each rater was responsible for approximately 50% of the coding. To determine inter-rater reliability, three groups were randomly selected for comparison. The raters met at three different times to compare the three different groups during the data analysis process to coordinate and focus coding efforts. Inter-rater reliability was determined using a percent agreement approach. This approach compared the coding of a single group along the coded components of message type, social actions, communication breakdowns, challenged validity claims, and resolutions to determine agreement per communicative act. An overall inter-rater reliability of .90 was achieved in the comparison of the 3 groups, or 11.1% of all groups. The inter-rater reliability of message type, social actions, communication breakdowns, resolutions, and challenged validity claims was .85, .91, .92, .93, and .89 respectively.

Finally, this procedure greatly reduced the time needed for analysis of large amounts of dialogue, a common constraint associated with this type of analysis. In its original application, two coders were able to analyze over 1700 messages in several days working time. The relatively short timeframe for coding dialogue enabled by the procedures described results in the task of analyzing this rich data source to be less daunting.

Conclusions

The tools and training, as based on the DA model provided in this paper, offer researchers a starting point in the investigation of group communicative processes from an applied, empirical, critically-based perspective. Such an approach weaves together components from Habermas' theory of communicative action (Habermas, 1984; Habermas, 1987), Poole's examination of communicative acts (Poole, 2001), and Parkin's call for the production of applied tools rooted in CST (Parkin, 1996).

In addition, this paper provided tools and training that can be incorporated and shaped into a variety of research agendas. In particular, the tools and training placed an investigative eye on group communicative processes, a lightly investigated aspect in the input-process-output relationship of information systems. Through continued efforts in the development of applied, empirical, critically-based tools for the investigation of information system phenomena, important components of CST can be identified and articulated to reach an audience often hesitant to use CST-based approaches. Creating tangible and reproducible techniques based on concepts rooted in CST may encourage the success and use of this unique perspective in the field of Information Systems.

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Appendix A – Rater Guideline Sheet

Definitions

Communicative Act: A communicative act ends at the speaker's function change or when another individual speaks (Poole, 2001).

Process Structure Communication: Communication that is concerned with task coordination and timing, work distribution, and statement regarding completed work.

Topic Communication: Communication that is concerned with the central task topic.

Other Communication: Communication that is not concerned with process structure or topic. Communication centers around humor, the benefits/drawbacks of the current technology, and greetings.

Communication Breakdown: Communication acts that are false, incomplete, insincere, or unwarranted (Ngwenyama and Lee, 1997).

Resolution of Communication Breakdown: Communication acts that accept a challenged validity claim to restore truth, sincerity, normative rightness, or comprehensibility.

Validity Claims: Statements of truth, sincerity, normative rightness, and comprehensibility that occur within every communicative act.

- (1) contextuality – appropriateness of action.
- (2) efficiency – ability of action to achieve desired ends.
- (3) effectiveness – authority of communication partner.
- (4) clarity – clarity of message and associated jargon.
- (5) completeness – completeness of message.
- (6) truthfulness – truthfulness of message.
- (7) sincerity – sincerity of communication partner.

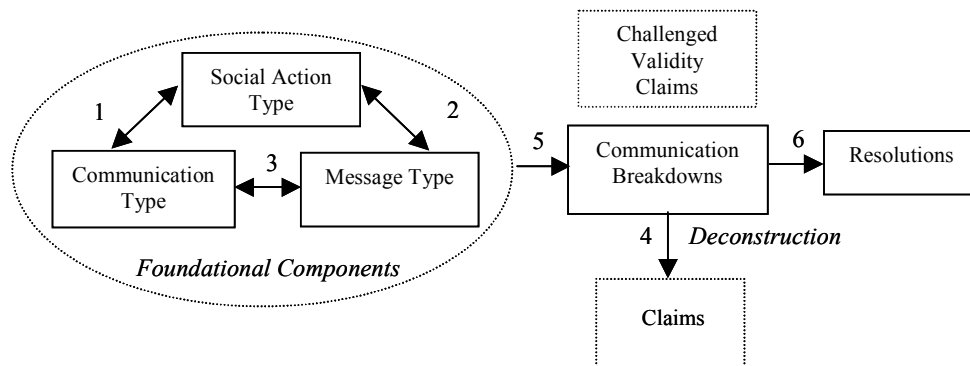
Social Actions: Various rational communicative instances in which individuals engage in the form of instrumental, strategic, discursive, and communicative.

- (1) Instrumental - One partner views the other partner as an information receptacle, rather than as an actor. Often an individual giving orders to another individual.
- (2) Communicative - Obtaining a mutual understanding between communication partners. Treats both members of the dialogue as actors, and not receptacles of information.
- (3) Discursive – Achieving agreement between communication partners and the disagreement needs solved.
- (4) Strategic - When one actor attempts to influence another through communication.

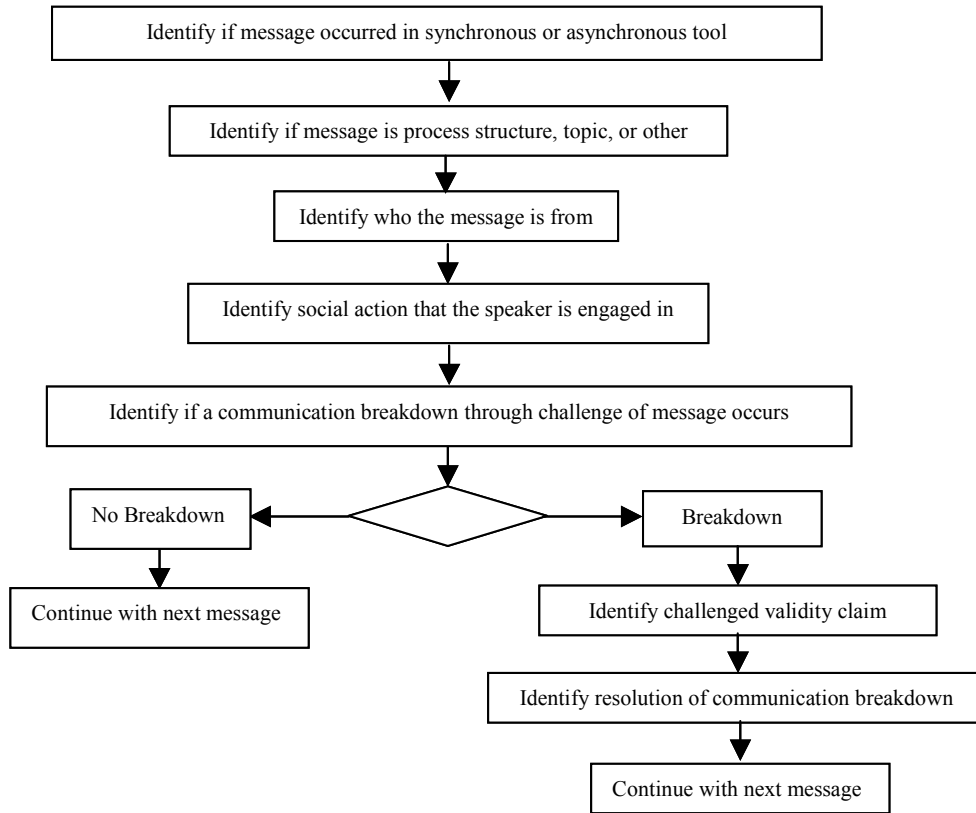
Social Actions	Validity Claims						
	Comprehensibility		Sincerity	Truth	Normative Rightness		
	Completeness	Clarity	Sincerity	Truth	Context	Efficiency	Effectiveness
Communicative	X	X	X	X	X	X	X
Discursive	X	X	X	X	X	X	X
Instrumental	X	X		X	X	X	X
Strategic	X	X		X	X	X	X

Validity Claim/Social Action Relationships

Dialogue Analysis Model



Dialogue Analysis Flow Chart



Appendix B – Dialogue Coding Sheet

Coder Name _____

Date _____

Transcript Description _____

Message Number	Synch/Asynch	Message Type	From	Social Action	Breakdown	Validity Claim	Resolution
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							