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# The many facets of communication – a socio-pragmatic conceptualisation for information systems studies

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**Abstract**

Development and usage of information systems (IS) involve communication. There is a need for theories and frameworks on communication for IS research studies. This paper presents a socio-pragmatic framework on communication intended to be used for different kinds of IS research; e.g. for human communication during IS development and for usage of IS. The framework builds upon the principle of communicative multi-functionality and it consists of nine communication functions: Messages should at the same time be trans-situationally compliant, situationally responsive, expressive, referential, accountable, directed, relational, projected and mediational. The theoretical grounds of the framework are briefly described. The paper includes examples of using the framework on some IT-mediated messages.

**Keywords:** Communication, message, communicative function, social action, information system

## 1 Introduction

Information systems (IS) are by many scholars seen as communication instruments (e.g. Winograd & Flores, 1986; Ljungberg, 1997). People use IS to communicate in structured ways with people inside and outside organisations. People use IS to inform themselves about important matters concerning their work. Information systems are seen as instruments for technology-mediated work communication (Goldkuhl et al, 2004; Cronholm & Goldkuhl, 2004). This raises claims for proper frameworks on communication when studying such aspects in IS studies. This paper addresses the need for a communication framework appropriate for IS studies.

This need is however not only concerned with the study of the IT artefact as a communication instrument. There are many other communication aspects relevant to inquire in IS studies. There may exist needs to study human communication in business processes. It may be important to obtain such knowledge as a precondition for information systems development (ISD). When evaluating the role of IS in business processes, there is probably necessary to understand IS as well as non-IS parts in business processes.

Information systems development is usually a complex human endeavour. It consists of much human communication; creative and informal as well as structured and formalized through the use of methods and documentation software.

There are such different communication situations that require frameworks in order to arrive at informed inquiries. The diversity of situations may give rise to a need for several frameworks. As said above, there are needs to study both human-to-human direct communication and technology-mediated communication. There are needs to study creative and informal as well as structured and formalized communication.

One must distinguish between a framework as a conceptual precondition to be used in inquiry and the theoretical end result of such an inquiry (figure 1). Conceptualisations are used both to inform such studies and to be the intended end result (Walsham, 1995). The end results – theories if we dare to call them so – must of course be well adapted to the empirical phenomena studied. These post-conceptualisations will differ due to different character of the empirical phenomena. If we study creativity and communication during ISD, we will come up with a theory on these phenomena. If we study IS-based communication in a structured business process, we will get a theory on these phenomena. The end results will differ, but must the pre-conceptualising framework differ?

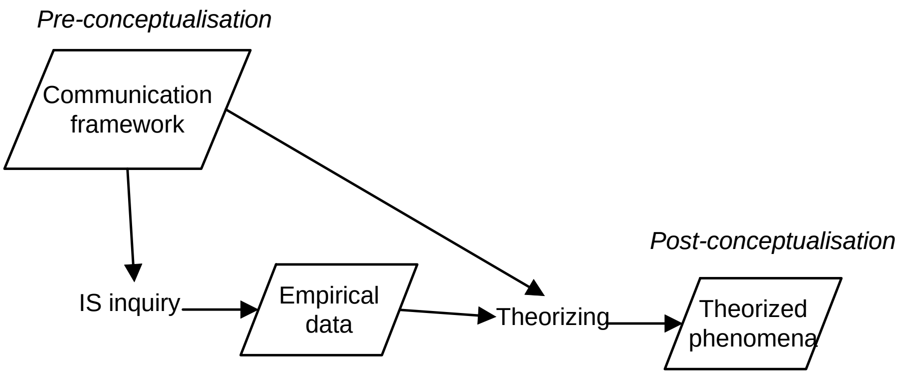


**Figure 1:** The role of a communication framework in different phases of information systems research

A communicative framework with ambitions to cover different kinds of communication must be a generic and comprehensive framework. What can be yielded by using one common framework? One coherent and generic framework will make it possible to compare findings from different studies. The end theories (post-conceptualisations) will be possible to relate to each other even if they cover different phenomena. Diverse pre-conceptualisations would make it harder to develop congruent theories. This line of argument follows the ideal of seamless theorizing put forth by Goldkuhl (2005). Seamless theorizing entails a common framework.

I will in this paper follow this line of thought. The purpose is to present a communicative framework intended to be used in different kinds of IS studies. The ambition is not to present a framework for all possible communication studies. My lens for structuring this framework has been my disciplinary knowledge on information systems. I do think that the framework would be possible to use in studies of non-IS character, but as I said this goes beyond my ambition, at least in this paper. It should at this stage of work not be evaluated as a pure general communication framework.

The presented framework should be seen as hypothetical one. I am putting forth a possible framework. It should be applied and evaluated and based on such probation it can be refuted or found as a candidate for further work. Further studies should lead to revisions and improvements as a normal scientific procedure.

The framework presented is not just a passing fancy. It has emerged through several years of communication-focused IS research. One forerunner to this work is Goldkuhl (2000), where I made a critical analysis of parts of Habermas' (1984) communication framework; some general communication categories emerged through that analysis and a couple of them are now found in this new framework. The framework has emerged from close readings of many theories on language use and communication. There exist empirical and theoretical grounding of what I present. The emphasis in this paper is however to present the framework as such and I will not make a thorough theoretical and empirical grounding. I will however go through some of my theoretical inspirations (section 2) as a background and later (section 3.3) make some explicit connections. I will also use examples from the IS area to illustrate the framework (section 3.1 and 4).

I call this framework *socio-pragmatic*, since it emphasises communication as social action and interaction. This follows an accentuation in many schools of thought; for example conversation analysis (Sacks, 1992), discourse analysis (Schiffrin, 1994), dialogue theory (Linell, 1998), language use theory (Levinson, 1983; Clark, 1996), speech act theory (Austin, 1962; Searle, 1969), communicative action theory (Habermas, 1984), symbolic interaction (Blumer, 1969; Strauss, 1993), linguistic anthropology (Duranti, 1997) and social semiotics (Vološinov, 1985; Halliday, 1994).

I am presenting this socio-pragmatic framework as an alternative to other possible communication frameworks. I do acknowledge the existence of such frameworks in the IS area; for example the language action perspective (e.g. Winograd & Flores, 1986) and organisational semiotics (e.g. Stamper, 2001; Liu, 2000). Although important contributions to our understanding of communication in IS, I have not found these frameworks as the final word. It is beyond the scope of this paper to make any in-depth assessment of these and other frameworks. Critical analyses of these other frameworks can however be found in Goldkuhl (2000; 2003) and Goldkuhl & Ågerfalk (2002). The attentive reader will find both resemblances and differences in my framework in relation to those mentioned frameworks.

## 2 Theories on communication functions

There are several linguistic and semiotic theories which have been attracted attention in the IS field (confer e.g. Lyytinen, 1985 for an overview). This depends partially on the identified need to linguistically characterize messages of an IS. One influential theory is speech act theory. Austin (1962) and his follower Searle (1969) made a differentiation into basic functions of speech: The locutionary or propositional, the performative or illocutionary and the perlocutionary. The propositional function relates the utterance to the "world"; what is talked about. The performative function is what is done by the locutor in delivering the utterance. One of the core elements in speech act theory is that speech is action. The performative/illocutionary function of utterances emphasises what kind of action is performed by the locutor in relation to the addressee. The perlocutionary function is concerned with the effects on the addressee. The performative/illocutionary function has been further differentiated into a taxonomy of illocutionary classes by Searle (1979):

- Assertives
- Directives
- Commissives
- Expressives
- Declarations

This taxonomy has been widely used in the IS field (e.g. Winograd & Flores, 1986; Schoop, 1998). Based on criticisms among linguistic scholars several alternative, more empirically based, taxonomies have been presented, e.g. Kreckel (1981) and Ballmer & Brennerstuhl

(1981). Other criticisms against speech act theory can be found in Allwood (1977) and Linell (1998).

Habermas (1984) has in his theory on communicative action built upon the works by Austin and Searle. Habermas has introduced the concept of validity claim in relation to speech acts. ”A *validity claim* is equivalent to the assertion that the *conditions* for the *validity* of an utterance are fulfilled” (ibid p 38). Four basic validity claims are raised in communication according to Habermas; claims to

- Truth
- Normative rightness
- Sincerity
- Comprehensibility

Habermas’ theory has also had a great impact on IS research. There have been discussions among IS scholars about possibilities to combine the frameworks of Searle and Habermas. Some authors have found them possible to combine while others disagree. Confer Dietz & Widdershoven (1991), Reijswoud (1996), Ljungberg & Holm (1996), Schoop (1998), Eriksson (1999) and Goldkuhl (2000) for such discussions.

Habermas investigates basic functions of communication. Here he relates to the early works by Bühler (1934). Bühler describes three basic functions of the linguistic sign: “It is a *symbol* in virtue of being correlated with objects and states of affairs, a *symptom* (indication, index) in virtue of its dependence of the sender, whose subjectivity it expresses, and a *signal* in virtue of its appeal to the hearer, whose external or internal behavior it steers like other traffic signs.” (ibid; translation from Habermas, 1984 p 275). As Habermas (ibid) notices these are three simultaneous functions.

There are several semiotic followers treating different linguistic functions. One of them is Jakobson (1960). Besides the three functions from Bühler (1934), he has added three more functions: The *poetic*, the *phatic* and *metalingual* functions. The poetic function has to do with message as an (artful) combination of linguistic elements. The phatic function is also called the contact function. Jakobson (1960) has actually identified two aspects of this function: “a contact, a physical channel and a psychological connection between addresser and the addressee, enabling both of them to enter and stay in communication”. This comment by Jakobson himself makes it appropriate to differentiate this function into two functions; one related to channel or media and one to relations between communicators; I will return to this in section 3 below. The metalingual function has to do with the message’s relation to the language used.

Jakobson has also identified the principle of multi-functionality in language use: “Although we distinguish six basic functions of language, we would, however hardly find verbal messages that would fulfil only one function” (ibid).

Halliday (1994) has differentiated between three basic functions of linguistic clauses: The clause as *message*, *exchange* and *representation* respectively. When analysing the clause as exchange he differentiates four primary speech functions building on 1) the role in exchange and 2) the object type exchanged:

- Offer
- Command

- Statement
- Question

These speech types are matched by possible responses. Halliday's conceptualisations are thus *interactional* in character. Linell (1998) describes language use mainly as a dialogic endeavour. Linell describes an utterance to be usually both a *response* to earlier utterance and an *initiative* for further communication; confer also Shiffrin (1994). This builds to a large extent on insights from conversation analysis (Sacks, 1992).

Several IS scholars has discussed speech act theory vs conversation analysis and possibilities to combine these two line of thoughts; e.g. Holm & Ljungberg (1996), Steuten (1998), Goldkuhl (2003) and Aakhus (2004).

This brief exposition of language and communication theories has shown different possible language functions. These different language functions form an inspirational source for the communicative framework in the next section.

# 3 Nine facets of communication – a socio-pragmatic framework

## 3.1 An introductory example

One important insight from the exposition above is the principle of multi-functionality of messages. A message does not only serve one purpose or function. Let me use one ordinary message from business process and IS settings; that of a customer order. A customer directs an order to a supplier for delivery of products. The order is a message produced by the locutor and directed towards the addressee (figure 2). The customer order can be an oral utterance or a written message. Information systems can be used as an mediator in this communication.

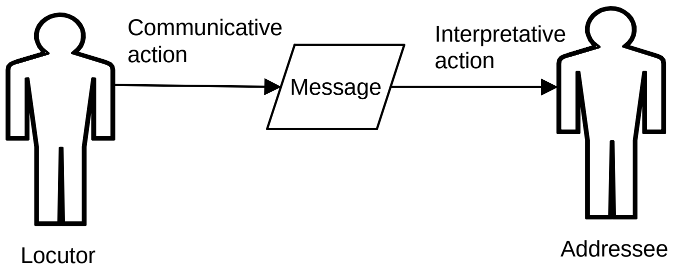


**Figure 2:** A basic model of communication

What different functions do this message have? If one would follow speech act theory and make a classification of the message, this would probably be characterized as a directive. The order has clearly an appellative function. The order is intended to lead to delivery of products. However, this is not the only function (or illocutionary class) of the message. When issuing an order, the customer clearly also expresses a commitment to pay for the delivery. This means that the message also is to be seen as a commissive according to Searle's (1979) taxonomy (Goldkuhl, 1996). Through this order, certain relations between the customer and the supplier are established. Commitments and expectations are created.

The order contains information about what should be delivered. It says hence something about objects in the world. But it must also be clear from the message who (the customer) says something to someone (the supplier). There must be a relation from the message to the locutor and a relation to the addressee. This order message is explicitly related with future actions. In this case, expected actions of delivery by the supplier. This means relations to a projected future.

What is said must be comprehensible by the addressee. If the order is mediated through a commercial web site, it must be possible to identify the sender of the message. Is there a sincere buyer behind this order? This is an important part of the message being accountable. The transfer through a web site means usage of one type of channel (media). A message is always produced through some kind media (mediational means).

The order is probably not produced out of nothing. There is some kind of history that anticipates the order. If the customer (represented by a purchaser) uses a web site, he might first study the product catalogue. These offers will then function as initiatives to the order. The order is a response to these offers. The web site and its content can be seen as situational impetus for the message. There will probably be other grounds for this communicative action; grounds that lie outside this distinct communicative situation. There can be rules and regulations concerning purchase at the customer company. The purchaser will also be governed by other job expectations. He has perhaps got a distinct request from someone in the company to order the products. He will bring these different norms and expectations into the communication situation and try to comply with them.

I have used the order example above to, rather tacitly, introduce the nine functions in the communication framework. Let me now make these facets or functions explicit. The customer order should at the same time be:

- Trans-situationally compliant, i.e. complying to general purchase regulations and contingent requests preceding the order situation
- Situationally responsive, i.e. responsive to what has been said earlier in the actual situation (e.g. offers) and other decisive features
- Expressive, i.e. to be a sincere expression of the desire and intention to buy products and hence to be an obligation for future payment
- Referential, i.e. specifying the products and quantities to be delivered
- Accountable, i.e. being comprehensible to the communication parties in the contracting process
- Directed, i.e. the recipient (the supplier) is made explicit through the order and the order is expressed in ways that it is probable that it will reach the supplier
- Relational, i.e. a clear order relation between customer and supplier is established
- Projected, i.e. expected future delivery actions are accounted for
- Mediational, i.e. utilising the features of the web site for its formulation and handling

### 3.2 Categories of the framework

The communication framework consists of the above mentioned functions. These functions will be further described below. I will visualize these functions in a communication model (figure 3). The meaning of each function is also explained in table 1.

Figure 3 is an expansion of the introductory communication model in figure 2. I have brought in several other factors in the expanded model. I have delineated a communication situation with two actors. One is locutor at the moment and the other is an addressee. The roles will be continually switched in a dialogue process. This is a principal model which is scalable and can include more participants. The message has relations to different phenomena; many in the communication situation but also some outside the situation. The message is expressed by someone, the locutor. The relation to the locutor is called expressive. The message is intended for an addressee. This means that it has a relation of directedness to the addressee. Through the message a specific relation is created between locutor and addressee. This aspect of the message is called relational. Something is talked about in the message. In linguistic terms this is often called the referent. This relation is called referential.

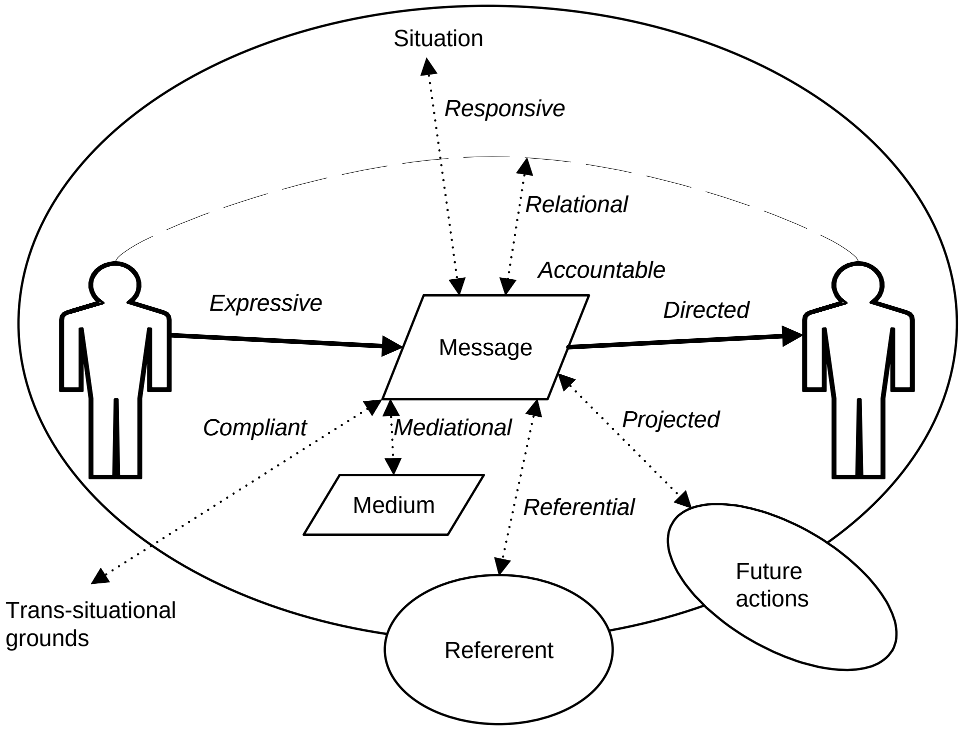


**Figure 3:** Nine facets of communication - a socio-pragmatic model

The communication situation takes place at some time and place; many times with a face-to-face setting (Clark, 1996). The time and place can however be extended beyond a limited “here and now”. There can be distances in place as well as time. It is also important to add that the communication situation often is intertwined with other types of actions; for example aiming at material changes. Vološinov (1985) says: ”Verbal communication can never be understood and explained outside of this connection with a concrete situation.” ”In its concrete connection to a situation, verbal communication is always accompanied by social acts of a nonverbal character, and is often only an accessory to these acts, merely carrying out an auxiliary role”. Confer also e.g. Wittgenstein (1958), Andersen (1990) and Goldkuhl (2001).

A communication situation comprises often sequences of messages (Sacks, 1992; Linell, 1998). This means that the message will have relations to prior messages. It can be a direct response to some earlier message, but it can also more generally rely on what has said earlier in the on-going communication. The relation to prior messages and other circumstantial factors is called situationally responsive.

The message is one “move” in the interaction sequence. Future actions may follow from the actual communication of the message. The message can function as an initiative for future communicative and/or other actions. The relation to these expected, anticipated or just possible future actions is called projected. This means that something might be projected through the message. This projected is sometimes very clear; in e.g. a request or a question, but otherwise it might be unenclosed. The projected actions can be performed within the delineated situation or they can be performed in other situations. This possible multi-situational character is also valid for the referent. What is talked about can be within the situation or outside it. If future actions are explicitly referred to; they will be part of both categories of referent and future actions.

The communicator is not only influenced by situational factors. He will be influenced by trans-situational social grounds. This can be of general character as social institutions and norms, but it can also be specific initiatives for this communicative action. The message’s relation to these external social grounds is called trans-situationally compliant. What is said is expected to be compliant with social institutions and expectations external to the situation.

**Table 1:** Explanations of communicative functions

| **Communication function** | **Explanation** | **Corresponding question** |
|---|---|---|
| Trans-situationally compliant | The message is in accordance with general institutions and norms and specific trans-situational grounds, which may be brought into the situation as a social background for the communication. | Why? What reasons there? |
| Situationally responsive | The message may be a response to prior messages in the communication situation and other situational features. | Why? What reasons here? |
| Expressive | The message is an expression of the locutor’s subjectivity (intentions, desires, skills, emotions, values, understandings, commitments etc). | By whom? |
| Referential | The message says something about something in the world; objects and processes talked about. | About what? |
| Accountable | The message needs to be comprehensible, which means that it must to some degree be self-contained and include sufficient self-references and arguments to explain its role in the communication process. | What is meant? |
| Directed | The message is directed towards one or more addressees. There may also be secondary recipients (an audience). | To whom? |
| Relational | The message establishes certain action relations (expectations, commitments, states) between locutor and addressee, and sometimes socially broader. | What is done? |
| Projected | The message may be an initiative for further actions. | For what? |
| Mediational | The message is expressed in some medium (channel, carrier) and thus utilising the particular features of this medium. | How? By what means? |

## 3.3 Relations to communication theories

This socio-pragmatic model has emerged through research on different issues in the IS field. It is clearly influenced by my reading of theoretical literature; some were briefly exposed in section 2 above. I will quickly go through the categories and relate them to the discussed theories.

The framework as such is influenced by the basic functions of Bühler (1934). The *referential* function corresponds to the symbol function; the *expressive* function corresponds to the symptom function; and the *directed* function corresponds (partially) to the signal function. The referential function is of course described in many theories. It corresponds to the propositional dimension by Searle (1969) and the representational dimension by Halliday (1994). This comes also close to the class of assertives in speech act theory (Searle, 1979). This will be commented further below.

In speech act theory; Searle (ibid) has a class of expressives, which can be said to correspond to the *expressive* function in the socio-pragmatic framework. The message is an expression of the locutor's psychological state. In the expressive function not only emotions are included, other action dispositions (intentions, conceptions etc) are also included. In a commissive (of speech act theory; typically a promise), the locutor expresses his intentions for future actions. This means that the expressive function also includes aspects of commissives from speech act theory. The expressive function also relates to the aspect of sincerity treated by Habermas (1984).

The *responsive* function corresponds exactly to what Linell (1998) describes under the same label; confer also Sacks (1992) and Halliday (1994). Linell (1998) uses the term 'initiative' to describe that a message can lead to subsequent messages. This is what is called *projected* in the socio-pragmatic framework. Projected covers also aspects from classes in speech act theory (Searle, 1979). The class 'directives' aims explicitly to future actions by the addressee. The class 'commissives' aims at expressing intended future actions of the locutor. Such possible actions should also be covered by the projected function. The perlocutionary effects (as described in speech act theory) correspond partially to the subsequential (projected) actions. The function of signal in Bühler's (1934) framework covers both the addressee (directed function) and the expexted actions (projected function) as I understand it.

Jakobson (1960) described the phatic function to comprise two sub-functions: Psychological connection (corresponding to relational function) and physical channel corresponding to *mediational* function. In several communication theories (cf e.g. Fiske, 1990), there are distinctions made between medium and channel. These are for the time being grouped together under the label of mediational function. The *relational* function can be said to correspond to the basic illocutionary function in speech act theory (Austin, 1962; Searle, 1969); that a message means that something is done by a locutor in relation to an addressee. This has been stressed by Habermas (1984) in his communicative action theory. A message creates certain interpersonal relationships between locutor and addressee. A good description of this aspect is made by the ethnometodologist Heritage (1984 p 106) where the example of greeting is used: "Moreover, this first greeting transforms the scene for both parties – for the greeter (who moves from a circumstance of disengagement to one of engagement which he or she proposes, via the norm, will be reciprocated) and the recipient of the greeting (who must deal with this reconstituted circumstance)." (ibid). In Searle's (1979) taxonomy of illocutionary actions, the class of declarations can be seen to correspond to this relational function. In an act of declaration, the locutor explicitly changes some social relation; e.g. an act of employment makes the applicant an employed member of the organisation. More comments will be made on this issue below.

In the communication framework, a distinction is made between the *situational* and the *trans-situational* influence. What is said can be both a response to prior messages in the situation and to messages belonging to other contexts, distant in time and place. In this sense trans-situational compliance might correspond to the responsive function of Linell (1998), even if Linell seems to treat this aspect in relation to distinct communication situations. The function of a message being trans-situationally compliant corresponds partially to Habermas' (1984) validity claim of normative rightness. What is said should be in accordance with accepted and general social norms.

The message should be *accountable*. The concept of accountability is borrowed from ethnomethodology (Garfinkel, 1967). Actions that are "visibly-rational-and-reportable-for-all-practical-purposes" are considered accountable (ibid). This is close to the validity claim of comprehensibility by Habermas (1984). The function of accountability involves also that the message should contain the necessary arguments (Toulmin, 1958). People make their actions accountable by explicating reasons for them.

A concluding comment on the relation between the socio-pragmatic framework and speech act theory. Searle (1969) has made a general characterization of speech acts to comprise two aspects: Propositional and illocutionary. The proposition of the message is what is talked about, i.e. what is described through the message. The illocutionary part is what is done by the locutor in relation to the addressee. This can be seen to be the explicit action mode of the message. The classification of illocutionary acts (Searle, 1979) comprises five classes (see section 2 above). Two of them are assertives and declarations. The class of assertives is typically a class of descriptive acts. The propositional aspect is here thematized. In the socio-pragmatic framework these aspects are placed under the label of referential function. The declaration means that a change in social relations is established through the message. However, the claim in several theories (e.g. Habermas, 1984; Heritage, 1984) is that this is a foundational aspect of interpersonal communication. Social relations are not only changed through one type of speech act (declarations) but through most speech acts. The declarative character seems actually to be rather close to the idea of an illocution. As said above, this corresponds to the relational function in the socio-pragmatic framework.

These types of resemblances (propositions and assertives; illocutions and declarations) can be seen to be a kind of anomaly in speech act theory. In the socio-pragmatic framework this kind of anomaly is abandoned through the different communication functions.

# 4 An empirical illustration: IT-mediated messages in an eldercare practice

In section 3.1 above a simple illustration was shown of a communicative analysis based on the socio-pragmatic framework. In this section I will give another example. It is based on real-life case study: an information system in an eldercare setting. I am using two IT-mediated messages from the eldercare system. The case study was an action research project consisting of an integrated workpractice and information systems development. A new IS was developed in a participatory design setting, where researchers and eldercare personnel participated in a co-design endeavour. Data generation in the case study has been pursued with different qualitative research methods: Interviewing directors and nursing assistants, observation of their work, collection and analysis of several documents, participation in development seminars. A closeness to the empirical phenomena was necessary in order to gain reliable data. Experiences from the IS development has earlier been reported e.g. in Cronholm & Goldkuhl (2002; 2004) and Goldkuhl et al (2004).

I will only present a small portion of this case study here. Two IT-mediated messages (journal note and daily schedule) are picked out for illustrating different communicative functions. The purpose is to test and demonstrate the use of the framework in a typical IS setting. I will apply the communication framework in a typical IS research situation. For description, design, evaluation and explanation of information systems, there are needs for creating an understanding of messages which are mediated by an IS. Traditionally, such analysis has been made with a referential emphasis (cf classical references as Codd, 1970; Chen, 1976; Booch, 1994). Steps have been taken by several scholars to adopt a more communication and action oriented analysis of messages/information (cf e.g. Ågerfalk & Eriksson, 2004).

The eldercare service consists of different kinds of support for the elders in their homes. The nursing assistants help the elders with dressing, daily hygiene, food, minor medical tasks, cleaning, laundry, shopping etc. Normally, an elder is visited by a nursing assistant several times each day. One main objective for the home care service is the individualisation of the home care. The performance of home care is not a standardised service. Each client has individual needs and therefore the tasks that will be performed for the different clients varies. The needs for each client will also vary over time. The eldercare unit strives for maximum individualisation. The elders should be able to live their lives in their own desired ways. The nursing assistants should support the clients in their living.

The two message types chosen for characterization are journal note and daily schedule. A communicative classification of these messages can be found in table 2.

**Table 2:** Communicative characterizations of two types of IT-mediated messages in an eldercare setting

| **Communication function** | **Message: Journal note** | **Message: Daily schedule** |
|---|---|---|
| Trans-situationally compliant | The journal notes are made in accordance to the eldercare regulations. | The daily schedule is made based on the individual care plan for the particular elder and also based on anticipated contingent needs. |
| Situationally responsive (created by locutor) | The journal note is registered by a nursing assistant based on her recollection of an incident and the system's interaction repertoire. | A desired task for an elder is registered by the planning assistant based on her notes and the system's interaction repertoire (including existing task information). |
| Situationally responsive (generation by addressee) | The journal note is exposed when a nursing assistant makes a query to the IS. | The daily schedule is exposed when a nursing assistant on duty makes a query to the IS. |
| Expressive | Documentation made by a nursing assistant of important observations concerning an elder; what the nursing assistant has found worth to document. | An addition/change to daily schedules is made by a nursing assistant (planning responsible); what care tasks that the eldercare unit has found important to pursue. |
| Accountable | Structured description made by a staff member; an incident possible to understand afterwards. | Structured description made by the planning responsible person; a task possible to perform by any nursing assistant. |
| Directed | The journal notes are aimed for nursing staff dealing with the particular elder. | The daily schedule is aimed for the nursing assistant on duty visiting a particular elder at a particular occasion. |
| Referential | Something that has occurred to an elder. | Something that should be done for an elder by a nursing assistant. |
| Relational | Descriptive with intent that the addressee should be specifically attentive. | Explicitly directive: Task to be performed |
| Projected | Something that a nursing assistant should be attentive about during visits to the elder. | Actions that a nursing assistant should perform during visit to the elder. |
| Mediational | Message expressed in a structured way on a screen document; part of the care journal. | Message expressed in a structured way on a screen document; part of the schedules. |

Journal notes are made by a nursing assistant concerning a particular elder. Something has occurred which is judged to be worth documenting in the care journal. The daily schedule tells the nursing assistants on duty which elders to visit and what tasks to perform. The task list in the daily schedules for each elder is recurrent. Most tasks recur every day. There are however also tasks with a limited period of performance. There are for example tasks that are demanded just once. The nursing assistant responsible for planning will go through the daily schedules and if necessary she adds more tasks to the schedule for a particular elder. When a nursing assistant on duty reads the daily schedule for a particular elder she can also retrieve the care journal and see if there are any new journal notes concerning this elder. It is important that the nursing assistant is knowledgeable concerning those elders who she will visit in order to get an individualised care.

A nursing assistant on duty will use the eldercare IS to read the daily schedules and journal notes before she embark on care visits. She will probably do this in solitude. The messages she reads will be generated by the IS on her demand. This IS usage situation can be seen as one communication situation, where the user (the nursing assistant on duty) and the IS interacts. This communication situation is delineated based on present time and local place; a ‘here and now’. The messages to the nursing assistant on duty are however originally created by other nursing assistants at previous occasions. These occasions form other communicative situations, where a nursing assistant interacts with IS with the purpose to create messages for others in the staff. These two types of communication situations can be seen to be sub-situations in a larger communication situation, distant in time, but meaningfully delineated as a human-to-human IT-mediated communication (Sjöström & Goldkuhl 2002; Goldkuhl et al, 2004). In figure 4 this hierarchization of communication situations has been depicted.

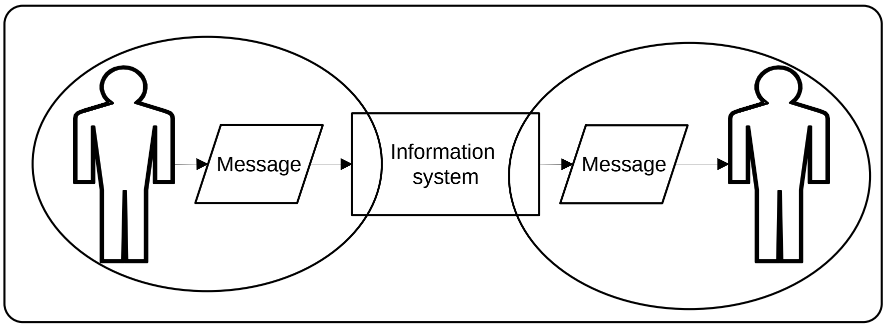


**Figure 1:** IT-mediated human-to-human communication
as a communication situation consisting of related communication sub-situations

What kinds of messages have been communicatively characterized in table 2? Input messages to the system or output messages from the system? The content of the journal note is the same as input and output message. The daily schedule (output) is based on a standard schedule modified by “change messages” (input) created by the planning responsible person. This means that a specific scheduling message (input) will be part of the compound output message (the daily schedule).

The main perspective taken for communicative characterization is output messages aimed for the nursing assistant on duty. The awareness of these two related communicative sub-situations has however lead me to differentiate between two types of situational responsiveness. In the output situation, the message is generated by the IS based on a request from the user (the nursing assistant on duty). In the input situation the message is created by the user and entered into the system. It is adequate to differentiate between these two sub-situations in regard to situational responsiveness. Since they are separated in time, they can be seen and partially analysed as different communicative situations although they are related in the over-all human-to-human communication situation. This means that the communicative analysis of IT mediated messages must take into account this kind hierachization of communication situations.

What has been done through this small example? Has the case shown the truth of a communication theory? No, this has not been done and that was not the intention behind the use of this case illustration. The socio-pragmatic communication framework is a categorical model, that goes beyond limited truth claims. The validity claim is rather *adequacy*. Are the categories (the communicative functions) adequate to apply when trying to understand communication? So far, the framework has proven to be useful and contribute to a deeper understanding, but much future work remains.

When studying the result of the characterization (table 2), one can see that some statements (functional characterizations) are rather close to each other. One objection might be that some functions overlap, and this can be seen as a flaw in the framework. I doubt that it possible to present a model where there are no close links between some communicative functions. So far, I claim that there is a need for all of these functions. Future applications will reveal if these functions should be restructured in one way or the other. It should however be noted that all functional categories are probably not necessary to apply in all inquiry situations. It depends of course on the purpose of the particular inquiry.

I claim, that we as inquirers can learn something when applying the socio-pragmatic framework. An analysis of this kind means to pose and answer a set of fundamental questions (cf table 1 above). The application of this framework shall lead to improved understanding of messages and communication.

## 5 Conclusions

A socio-pragmatic communication framework has been presented in this paper. This framework has been developed to be used in different IS studies; both for empirical studies and as an aid for theory development. Some theoretical background has been presented. The framework has been illustrated through the uses of some examples.

The framework should be seen as an evolving *practical theory* (Cronen, 2001). It should be used in different types of settings with one purpose to evaluate if it has a *broad applicability*. This is actually one of the claims behind this framework. It is aimed to be a *generic framework* to be used as a *theoretical catalyst* in many different type of IS studies. This follows the ideal of *seamless theorizing* in IS (Goldkuhl, 2005). Future research will reveal the applicability of the framework. Of course, future applications will also contribute to a continual evolution of the framework.

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