



## On the Potential of some Pragmatic Concepts for the Web

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### Abstract

Within the IS-field the notion of a speech act has been used as a point of departure by many scholars in the analysis of computer-mediated communication. This pragmatic concept has turned out to be very useful in the development of the field. However, the notion of speech acts is too restricted for continued exploration of the full potential of the pragmatic web. In this paper we examine some pragmatic concepts that we believe have potential in relation to three core activities of the IS-field; 1) description and understanding, 2) evaluation, and 3) design. The concepts that we will examine are “social activity”, “communicative act”, “sequences of communicative acts” or “exchange types”, “communicative feedback” and “turn management”. We describe the concepts and then exemplify how they can be used to analyze web services by examining e-mail and Wikipedia as two activities currently on the web. Our analysis leads to a partly new description of both IS-artifacts. It also leads to a number of open questions concerning the functionalities of both IS-artifacts.

**Keywords:** Social Activity, purpose, role, artifacts/instruments, environment, communicative act, commitments, obligations, subactivity, exchange unit, feedback, turn management

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## 1 Introduction

### 1.1 The origins of pragmatics

The term “pragmatics” was proposed by Charles Morris (1938) as a tribute to the philosophy of pragmatism suggested by C. S. Peirce, to designate the study of signs and their relationship to interpreters. The concept was proposed as a part of the study of “semiotics”, or the study of human sign systems, which Morris suggested should be subdivided into the three parts of syntactics (syntax), semantics and pragmatics. In 1946, Morris slightly changed the definition from 1938 to make pragmatics the study of the origin, use and effect of signs. One of the main differences between the two versions is that in the second version the term “use” also includes the production of

signs.

The term “semantics” in 1938 was used to designate the more abstract study of the relationship between signs and the objects they signify (leaving out the interpreter). In 1946 this was changed to the study of signification in all modes of signifying. The second version again widens the definition given in the 1938-version. “Syntax” (or “syntactics” (Morris (1938)) in both the 1938 and the 1946 version was to designate the even more abstract study of the relationship between signs without taking either of their signification, origin, use or effect into account.

In the trichotomy proposed by Morris, syntax, semantics and pragmatics are seen as successively more abstract levels of enquiry. Thus, as far as the distinction between syntax and semantics goes, syntax disregards meaning in favor of the study of “purely formal phenomena”. When it comes to the distinction between semantics and pragmatics this seems mostly to be seen as an abstraction of meaning along the dimension of context and situation dependence. But it has also been argued that it concerns an abstraction of the cognitive aspects of meaning from those of emotion and attitude or of normative aspects of meaning from descriptive.

In any case, the most common way of viewing the distinction between semantics and pragmatics is in terms of situation or context dependence of meaning. Semantics is supposed to be concerned with those aspects of meaning that are situation independent while pragmatics deals with those aspects of meaning which are dependent on situational factors. In pure semantics, situational independence has mostly been achieved through normative, stipulative definitions of such notions as truth, reference and logical form, while in descriptive semantics one has wanted to attain situational independence either by importing notions of pure semantics, claiming that there is no essential difference between a formal language and a natural language (Montague (1968)) or by claiming that meaning which is “literal” or “conventional” can be studied independently of context of use.

Both of these alternate conceptions of situation independent meaning are supposed to differentiate the so-called inherent meaning of linguistic expressions from phenomena such as vagueness, ambiguity, metaphor, suggestion, implicature, emotional and attitudinal associations which all are seen as more fleeting, accidental and dependent on situation and not characteristic of the “real” meaning of linguistic expressions.

## 1.2 The influence of pragmatics on information systems

When the term “pragmatics” in the 1970:s became adopted as a term not only by semioticians and philosophers of language but also by linguists and eventually by researchers working on information systems (c.f. e.g. Dietz, 1999; Goldkuhl, 2002; 2005), the various approaches to the study of language as use advocated by philosophers like Wittgenstein (1953), Austin (1962), Searle (1969) and Grice (1975) also became part of what was regarded as pragmatics.

Pragmatic concepts, taken mostly from Austin (1962), Searle (1969) and the adaptation of these in Winograd and Flores (1986), have been used as a foundation for the conception of essential communication patterns as a basis for requirements elicitation for information systems by some scholars in IS. The probably most active approach within the IS field is the language/action approach in which speech acts have been

used as the basis for conceiving of what people do when they speak. This basis has then served as a point of departure for a number of questions concerning the limitations of the speech act as a basic unit of analysis.

The language/action approach built upon the pioneering work of Winograd and Flores (1986) by initiating the language/action perspective in communication modeling (LAP) (e.g. Dignum et al, 1996). In the attempt to regard information systems as communication systems, communication became the key concept for the understanding and modelling of organisations, and therefore required a theory explaining communication and its functions. Speech act theory inspired from Austin (1962), Searle (1969), and Searle and Vanderveken (1985) formed the basis for an understanding of communicative action used as the unit of analysis. Some scholars active in the language/action tradition however claimed that the restrictive view on communicative acts, as spoken or written communication, was not enough for perceiving what happens within and between organizations (e.g. Lind and Goldkuhl, 2003). A need for a broader notion of social acts as the basic unit of analysis was proposed.

One example of a framework relying on such a broader notion of social act as the basic unit of analysis is presented by Goldkuhl (2001) and Goldkuhl & Röstlinger (2003) under the name Socio-Instrumental Pragmatism (SIP). In this approach, speech acts (or communicative acts) are seen as a special case of "social acts", a notion that also includes other actions that are social and therefore could be informative, e. g. a subcase of social acts, directed at "material change" are called "material acts". In the approach, there is a special focus on the instrumental support for different types of technology mediated social action.

Inspired by the widened focus, the work done by the LAP community and by the community focusing on organisational semiotics (in its turn, inspired primarily by the work of Stamper (2001)) formed the basis for the ALOIS (Action in language, organisations, and information systems) conference series (e.g. Goldkuhl et al, 2003).

Parallel to this development the LAP community felt a need to, after 10 years of successful workshops/conferences, go beyond the focus on the foundations of communicative action to rather concentrate on its application in order to attract more scholars within the IS-community. As a reaction to the semantic web a forum for the pragmatic web was formed in 2006 (Schoop et al, 2006) emphasising what you can do (and should be able to do) on and with the web.

Another stream of research has been the development of ISAT, a pragmatic theory on information systems (e.g. Cronholm et al, 1999). This theory is based on a particular perspective, i.e. "information systems actability". The "actability" notion is central in the theory and is defined in the following way: "An information system's ability to perform actions, and to permit, promote and facilitate the performance of actions by users, both through the system and based on information from the system, in some business context" (Cronholm et al, 1999). In this perspective, a computerised information system is to be considered as an "action system". It is both an instrument for the performance of action and a support tool for humans to perform their actions (Goldkuhl & Röstlinger, 2003).

In 2008, this then formed the basis for establishing SIGPrag – an AIS special interest group on pragmatist IS research ([www.sigprag.org](http://www.sigprag.org)). All other conference series were

closed down having engaged researchers to put all emphasis on work related to this community for getting greater attention for pragmatic IS research within the IS community.

Within different areas of the IS-field pragmatics as a foundation has been brought into attention. Even more recently, the notion of “design science research” has been brought into the IS-field (c.f. Hevner et al, 2004). As a reflection Lee & Nickerson (2010) claim that the philosophy of pragmatism provides a “more solid base” than logical positivism from which to launch research about design.

It thus seems as if pragmatics by many researchers in IS is seen as having a potential for development of the IS area. One of the core arguments for pragmatic approaches in the IS-field is that a pragmatic outlook implies an interest in change and how people bring about and respond to change. To engage with the action character of the empirical field is at the core of pragmatism. More interest is directed to utility and usefulness than in an abstract notion of truth (Goles & Hirschheim, 2000). The true value of knowledge is claimed to lie in its practical usefulness and its ability to bring about informed change (Ågerfalk, 2010). As central to human activity and life, the core is the belief that the true value of information technology and IS lies in their potential to support human communication and collaboration. As pointed out by Goldkuhl (2008), this leads to an interest in the development of (1) knowledge that can be used for action, change and improvement and (2) knowledge about actions, activities and practices. As identified in LAP-based (communication) modelling approaches (such as e.g. DEMO and Action Workflow) the identification of actions as essentials of human activity becomes the core in the quest of designing and evaluating information systems.

### 1.3 Exploring an alternative pragmatic framework for IS-research

There are however other frameworks relying on pragmatic foundations, used in other disciplines than IS. In Lind (2007) a comparison is made between Socio-Instrumental Pragmatism (SIP) and Activity-based Communication Analysis (ACA) (Allwood, 2000). ACA is a more general framework for the analysis of communication in a social context. Using ACA means that more non-IS-dependent characteristics can be brought forward for the conception of human interaction (also in an IS context). ACA is rich in the sense that different concepts are clearly distinguished in relation to each other and that different nuances of relevant phenomena are identified (e.g. different notions of collaboration). ACA builds upon the notion of social activity, and in this way transcends the notion of speech act, which is too restricted for continued exploration of the full potential of the pragmatic web.

To our knowledge ACA has never been used to analyze IS phenomena. In this paper we will therefore examine some pragmatic concepts from ACA that we believe have a potential in relation to three core activities of the IS-field; 1) description and understanding, 2) evaluation, and 3) design. The concepts are used also in other pragmatic approaches but here we will use the characterization given to them in ACA. The concepts we will examine are “social activity”, “communicative act”, “sequences of communicative acts” or “exchange types”, “communicative feedback” and “turn management”.

First, inspired by the Wittgenstein's (1953) notion of "language games", we introduce the concept of "social activity" as a convenient mid-range concept of social organization to capture variation in communicative practice on a level that we believe is significant for the description and understanding, evaluation, and design of information systems. We then introduce the concept of "communicative act" as a generalization of the concept of "speech act" that historically (relying on Austin (1962), Searle (1969) and Habermas (1981)) has influenced the IS-field. As described above, starting with the pioneering work by Flores & Ludlow (1980) followed by the work of Winograd & Flores (1986) speech acts as the basic unit of analysis was introduced in the language/action (L/A) approaches for communication modeling within the IS-field. The L/A-framework has been a strong source of inspiration in several methods for communication modelling such as Action Workflow (Medina-Mora et al, 1992), DEMO (Dynamic Essential Modelling of Organisations) (Dietz, 1999), and BAT (Business interAction and Transaction model) (Goldkuhl & Lind, 2004). Building on the L/A-tradition a new movement towards a pragmatic web (Schoop et al, 2006) was introduced as a means for extending the semantic, web emphasising human collaboration supported by appropriate technologies.

By introducing the concept of "communicative act", we go back to the pragmatic foundations of the communicative act, where we take communication to include not only speech, but also other modes of production, such as gestures, pictures, writing, and electronically mediated versions of these. We adopt an analysis of communicative acts that has been developed as a criticism of Austin's (1962) analysis of speech acts, (which is also the analysis adopted by Searle and Habermas) in terms of locutionary, illocutionary, and perlocutionary acts (for a criticism of this c.f. e.g. Allwood, 1977; 1978). This analysis enables us in a new way to describe and understand why there are sequential patterns of communicative acts (see below). Another goal is to focus on the interactive aspect of communication more strongly than has been done in traditional pragmatics, and as a part of this give a better analysis of the recipient's active role in communication. This role can be clarified by examining the phenomenon of communicative feedback. Besides communicative feedback, we also consider turn management, (cf. Sacks et. al. 1974), i.e. ways in which the right to communicate is distributed among participants (e.g. who can communicate about what and how long). This is a prominent feature of any communicative interaction.

Using the concepts included above, we will examine two examples of Web related use. The examples are *user-driven content generation in Wikipedia* and *written communication via e-mail*. Our examination reveals that the use of the mentioned pragmatic concepts allows us to describe and understand the two mentioned examples and probably other web-related applications to a greater extent than previously. The concepts not only allow us to describe and understand. They also allow us to evaluate web related (and other) information systems so that we can discuss if the present Web-support for an activity and a related IS-system allows the activity to be optimally realized, and if specific aspects of the activity, such as sequential patterns, feedback, and turn management are designed in a good way. By "good" we roughly mean "a manner which allows an efficient and ethical way of achieving the purpose of the activity."

This paper, therefore, explores a number of pragmatic concepts lying outside of the established L/A-framework (and other pragmatic approaches prominent in the IS-field). Below, we first give a short description of these concepts and then, in the second part of the paper, discuss how they could be applied to phenomena that are to be found on the pragmatic web. In this discussion we also raise a number of questions that is to be seen as concerns related to the IS-artifact studied while using ACA. In the final remarks of the paper, the insights based on these pragmatic concepts are then used for some discussion of the role of pragmatic concepts for analyzing, designing, and evaluating technologies related to web use. The concepts that are discussed all have a pragmatic motivation in the sense that they are rooted in ideas concerning action and interaction.

## 2 Some core concepts in Activity based Communication Analysis

### 2.1 Social Activities

Taking the notion of “social activity” as our point of departure, we will now briefly describe the concepts introduced above. Social activities provide a natural grounding for the idea of “language games” introduced by Wittgenstein (c.f. Wittgenstein, 1953; Allwood, 2000). They are a natural mid range unit of social life. Social activities together constitute the dynamic aspect of an organization. Thus, an organization like a university is the host of several social activities like lectures, seminars, tests, gossip, and job interviews, which together constitute its dynamic side.

A social activity can be defined as a collective interaction with a purpose and often has socially regulated means and roles. Communication is seen as the basic force of social cohesion and joint social action and is the primary means through which social activities are pursued. The fact that communication is the primary instrument for social activities provides an explanation for why features of communication vary with social activity. Compare the differences and similarities between communication in activities like informal conversation, enquiries in a travel agency, love making, police interrogation and teaching. Social activities can be described by the following factors (and possibly others), (i) the **purpose** of the activity (e.g. buying and selling), (ii) the typical **roles** of the activity (e.g. shop clerk and customer). Roles can often be further analyzed by describing the rights, obligations and competence requirements that are connected with the role, (iii) the typical **artifacts** (instruments) of the activity (e.g. money, counter, cash register) and (iv) the **environment** (e.g. a shop). These 4 factors have turned out to be very useful as a background for description, explanation and evaluation of the communication in the activity. Analyzing the relation between activity and communication thus, allows not only for description and explanation but also for improvement of the communication in the activity.

Social activities often have internal structure, e.g. they may have characteristic openings and closings. Getting a meal at a restaurant might have the following phases or **subactivities** (i) Greeting, (ii) receiving a menu, (iii) making a selection, (iv) placing an order, (v) waiting for the meal, (vi) receiving the meal, (vii) eating, (viii) asking for the bill, (ix) paying, (x) thanking and farewell. Typically each subactivity will also exhibit a specific structure of communication.

This structure will to some extent consist of typical “**exchange types**”, where one important special case consists of “**sequences of communicative contributions/communicative acts**”. The structure is predicated on the fact that both activities and subactivities, require a specific order in which communication proceeds, e.g. a greeting is normally followed by a greeting, a question by an answer, a statement by an acknowledgement or an agreement etc.

## 2.2 Contributions, Communicative Acts, Turn management and Feedback

Dialog proceeds by speaker and listener, through their utterances and gestures, making **contributions** to a successively shared content. Each contribution can consist of one or more communicative acts. **Communicative acts** are the smallest action units of communication. However, the relation between behavior and action is complex and is in general characterized by **multifunctionality** (c.f. Allwood, 1978;2000), i.e. instances of communicative behavior (the contributions) can often express more than one communicative act and thus have more than one meaning or function. For example, if A in a worried voice says to B *It's slippery outside*, this utterance at the same time expresses A's worry, A's belief about weather and could be an attempt by A to warn B. The multifunctionality of communicative contributions is related to the fact that we, in communicating, have many contextual relations and usually communicate multimodally *i.e. involving several productive (e.g. voice, gesture, touch, smell and taste) and sensory (e.g. hearing, sight, touch, smell and taste) modalities*, so that our behavior can express several types of information at the same time.

Both speaker and listener in dialog, through their contributions, make commitments and contract obligations. The sender contracts commitments concerning his/her grounding and sincerity and the listener is put under the obligation to evaluate and respond to what the speaker contributes.

In order to ensure that communication is going to be successful, i.e. lead to shared understanding, there is a system of **communicative feedback**. This system has evolved in order to allow dialog partners to check whether they are able and/or willing to continue communicating, perceive, understand and accept the information being communicated. The feedback system also allows the mainly sending party to get information about what emotions the recipient is experiencing (c.f. Allwood et al, 1992).

Most dialogs involve speakers taking turns holding the floor. There are therefore a number of mechanisms and processes to aid this process. We will refer to these mechanisms and processes as **turn management** (cf. Sacks et al, 1974). These routines are essential when we have two-way interactive communication. They are somewhat less important when we have one-way (or broadcasting) communication.

## 3 Two examples of Internet practices

In this section two examples of how the concepts introduced above can be used to describe internet practices is put forward. These are Wikipedia and e-mail. Each of the two IS-artifacts is described as a social activity, using the concepts mentioned above, i.e. social activity (characterized by purpose, roles, artifacts/instruments, environment) and exchange type, turn taking and feedback.

### 3.1 User-driven content generation – the case of Wikipedia

**Purpose:** To enable volunteers to collaboratively create encyclopedic content at a web site. The idea behind Wikipedia is that someone wants to say something about a certain topic to others that care. The content in Wikipedia is continuously being built by contributors, in patterns of proposals and counter-proposals

**Roles:** There are users taking two roles as well as bots (Internet robots): First of all, volunteers take the role of being *contributors* who bring up new subjects (articles) as well as adding/refining existing content by editing. These contributors are called *editors*. Contributors need to identify themselves. Secondly, there are *readers* of the content put forward on Wikipedia. There are also *bots* (Internet-robots) that help make sure that the content is appropriate and act as regulators of the content. In the task of doing this articles might become subject to deletion by having them tagged. Contributors have the right to contribute with content, but it might be disregarded, changed or deleted.

A contribution is not connected to commitments and obligations since contributions might be disregarded, changed or deleted. The whole idea relies on whether a topic (described as an article) becomes interesting enough. The procedure raises many questions for future research like: What mechanisms are there for getting enough attention to a new article? Which criteria need to be met for the creation of sustainable articles? What possibilities does an editor have to refine the content of an article? Are there articles that are “locked” for further contributions and what criteria determine when this happens? How is cumulative content-building assured if there are no contributors, editors, or readers obliged to read what has been said? Why does it work without having receivers with an obligation to read and comment? Are there blind spots in the content that are overlooked and how can the trustworthiness be assured for the readers of the content?

**Artifacts/instruments:** The major instruments both enabling and restricting the interaction is electronic communication and the internet. There are also bots continuously scanning the content and thereby surveying the interaction going on between different contributors. There are possibilities to track revisions as well as having watch lists. Users can design and implement their own bots. Another important instrument is storage capacity in the form of a distributed database to be accessed by Wikipedia as well as the functionality provided in Wikipedia as a web-application.

**Environment:** The articles in Wikipedia provide an environment or context for each other. The content of one article is related to other articles through key words and hyper-links. In order to achieve this, key words can be added to both new and old articles. In this way, article dependencies are created in a networked structure. This means that the already existing articles are part of an environment where people are acting (and reacting) based on both new and old articles. From a wider perspective, Wikipedia is based on the idea of an open society, i.e. open collaboration, open access etc., in which it is possible for everyone to contribute. However, there are norms and rules regulating who can contribute and what contributions that can count.

**Exchange types, turn taking and feedback:** Wikipedia provides a structured environment for communication regarding article content. Sequences of contributions are logged in historical records describing the evolution of the content. When it comes to



turn management, Wikipedia is asynchronous, so interaction can be slow. Quick responses are, however, possible, e.g. a BOT finding out that the content is not appropriate for inclusion in Wikipedia. There are also facilities for managing several contributors acting on, i.e. editing, the same article simultaneously. Again our examination raises many questions for future research like: What types of exchange are most fruitful for content building? What types of exchange lead to decline in content building? What determines when responses are no longer necessary? How does the turn management system of Wikipedia handle this? How does the system keep track of which articles that are read and acted upon? What feedback is given at the different stages of development of an article?

### 3.2 Enabling written communication via e-Mail

**Purpose:** To enable written electronic communication.

**Roles:** There are two roles: A. The sender, the person/agent who sends the message and B. the recipient or the reader(s), the person(s)/agent(s) who read the message. If we analyze the two roles in terms of rights and obligation, often the sender's rights correspond to the reader's obligations. However, given the facts of spam and information overload, a general observation is that there are not many rights and obligations that can be generally associated with e-mail. However, some open issues are the following:

- 1) When does a sender have the right to have his/her message read and when is a recipient of e-mail obliged to read a received mail? This normative question corresponds to the more descriptive question of which of all sent messages are actually read. How do senders' priorities correspond to readers' priorities? Some factors that probably have an influence on what happens are (i) the interests of the recipient and (ii) the kind of relationship that exists between sender and recipient (family, friends, lovers, boss-employee, business, topic etc.). Some of these factors help create rights and obligations, while others create expectations, but are perhaps not so easily relatable to norms.
- 2) What messages require a response and how long can the time be before the response is sent? Again, there seems to be no clear rules, but only tendencies based on the same factors as those mentioned above in relation to what we called open issue 1 (i.e. interests and relationship).
- 3) What is the influence of information on the identity of the sender and recipient? E-mail normally requires overt identity of the sender and recipient. This places restrictions on what information can be put in the messages. Under special circumstances, identity can be hidden, e.g. spam. Hidden identity allows for greater freedom both in relation to what is expressed and in relation to how this information is received. Revealing or not revealing who else will get the same message will in some cases enable positive collective action but often simultaneously put restrictions on what responses become possible from the primary recipient(s). Because of the influence of information about the sender's and the recipient's identity, most e-mail programs allow the sender a strategic use of disclosure of the recipient's identity. There is also the possibility of not revealing who the recipients are by using blind-carbon-copy ("bcc") or just simply forwarding a sent mail in retrospect. Thus, in e-mail, distinctions between primary (bona fide) recipients, other recipients, secret

recipients and possibly also eaves droppers (persons/agents who read the mail without the sender being aware of this) have taken on a new importance.

In general, we might therefore conclude that e-mail is an activity that on the generic level is very open, but that specific topics, activities and relationships create expectations about readership and interactivity. In certain relationships and activities, these expectations will be related to rights and obligations connected to the roles of the sender and the recipient.

**Artifacts/instruments:** A third factor influencing an activity is the artifacts and instruments used in the activity. In this case, electronic communication and the internet are the major instruments enabling and restricting the interaction. In fact, one might say that it is these factors that have constituted e-mail as a specific type of activity. It is an essential condition for the existence of e-mail. This is shown in the continuous dependence of electronic written communication on new features made available in the programs that enable communication. Compare, for example, the use of smileys pictures and voice. The more easily combinable with written message, such features will be, the more they will probably be used.

**Environment:** The influence of the environment of e-mail overlaps to a great deal with the influence of the instruments mentioned above, i.e. it is the internet which makes possible asynchronous or very rapid exchange between persons separated spatially all over Earth. Two of the features of this environment have been the rapid increase in messages information overflow and the speed of responses. Both of these have created a pressure toward informality, brevity and perhaps superficiality. It has also created a situation where many persons are forced to find principles for prioritizing or slowing down of communication. There is just too much mail all the time. The amount of mail and interchange is also having an effect on commitments and obligations, making them harder to determine and keep track of.

Many of the other concepts introduced above can also be used as a kind of checklist to understand the nature of e-mail exchange. Such concepts are “subactivities” and “exchange types”, which can be used to do a sequential analysis of an e-mail exchange. Other concepts, like “communicative act” with “orientations”, can also be used to make a closer content analysis of the messages in e-mail and how this content is dependent on being responsive to previous mail or evocative in relation to expected responses. Mail can also be analyzed from the point of view of its cognitive and emotive expressivity and what phenomena are referred to.

**Exchange types, turn taking and feedback:** Finally, e-mail can be looked at from the point of view of turn management and feedback. When it comes to turn management, e-mail is asynchronous, so interaction can be slow. It can also vary from consisting of very long messages to very short messages. Overlap can exist in the sense that a contribution can arrive while another contribution is being written, but because of the current restrictions on the medium, two incoming messages do not overlap for the recipient. In two party exchange, the situation is fairly uncomplicated, but when a topic concerns several persons, keeping track of what is a response to which contribution becomes more complicated, especially since mail from other interchanges, unrelated to the given one can be interspersed in the interaction.

When it comes to “feedback”, the needs of the sender are to find out whether the intended recipient has received the message, whether he/she has read/understood and how he/she reacts to the main evocative function of the message. Since, among other things, spam has made the various recipient related reactions very uncertain, some mail programs today have started to support the need for feedback by requiring that the sender be notified if the recipient has received the mail. However, much more thought could be given to how feedback processes could be integrated in e-mail systems.

### 3.3 Differences and similarities between the two cases

Below, we will use the same features as above to highlight some differences between the Wikipedia and e-mail. We start by first looking at the activity factors.

**Purpose:** Beyond enablement of asynchronous, electronic, written, interactive communication, e-mail has few restrictions. Wikipedia, on the other hand, is set up with a very specific purpose, i.e. the cooperative collective authorship of an encyclopedia. Interaction is possible but not primarily supported.

**Roles:** In e-mail, the two primary roles are sender and recipient. In the Wikipedia case, roles are more complicated, i.e. contributor to encyclopedia, regulator of contributions etc. The rights and obligations of these roles are more closely regulated than in e-mail. But again the factor of anonymity of the contribution probably creates more freedom of expression than would have been the case if the contributors had not been anonymous.

**Artifacts/instruments:** E-mail is enabled by the general features of electronic communication. Wikipedia is enabled by a much more specific communicative environment, including a well functioning and easily accessible database.

**Environment:** Both activities exist in the environment of the world wide web, which increasingly is characterized by such features as open access, open collaboration and open source. However, since Wikipedia is helping to create this environment these features are more closely related to the Wikipedia effort than to e-mail in general.

**Exchange types, turn taking and feedback:** Since Wikipedia is a much more structured environment for communication than e-mail in general is, exchange types, turn taking, and feedback are more regulated and adapted to the specific purpose of enabling the collective creation of a high quality encyclopedia.

## 4 Concluding remarks

In this paper, we have argued that pragmatic theory offers a number of concepts that could enrich web use. To illustrate this, we have adopted a pragmatic framework - activity based communication analysis (ACA) – that has been developed for applications outside the IS-field. This framework offers a somewhat richer conceptual apparatus for categorizing human communication and interaction than other pragmatically inspired IS approaches. In a similar way, other approaches, e.g. SIP offer a more elaborated view on the use of instruments in social interaction.

In fact, an issue for further research we would like to explore is whether the concerns that have been raised during our analysis would be the same if the more traditional

pragmatic approaches within the IS-field (e.g. LAP, SIP etc.) would have been applied.

In order to explore the potential of ACA in the IS-field, we have presented a number of these pragmatic concepts, as they are used in ACA, and illustrated their use by looking more closely at the activities of e-mail and Wikipedia. We hope to have given some evidence that such a broadened view of what could be relevant for the “pragmatic web” will lead to better description and understanding/explanation of how electronic communication works and that this in turn will enable continued development of more pragmatically sensitive forms of communication. Some other examples for further study that could be considered here are: What functionalities should a personal agent helping us to overcome information overload have? What forms of feedback connected with readership would be desirable? How can we build in different forms of quality assurance on the web?

During the last few years the topic of social network analysis related to web use (c.f. e.g. Garton et al, 1997) has gained interest from researchers within the IS-field. Another area of further research would therefore be to explore how social network analysis could gain from adopting pragmatic concepts like the ones explored in this paper. Related to this, we see a trend of moving the focus of attention with regard to web use away from only considering text messages to the use of photos, videos and embodied communicative agents (ECAs). Due to the development of Internet capacity (e.g. accessibility, speed, and an almost limitless storage capacity) all of these have become common. This new use of photo, video and ECAs related to web communication would probably benefit from the use of pragmatic concepts, maybe not so far explored in the IS-field but in other areas where human action and communication have been studied. The pragmatic concepts we have introduced and used above have been chosen to sharpen our understanding of the two applications analysed in this paper, but given applications related to e.g. photos, videos and ECAs, the potential of pragmatically relevant concepts, such as feedback, gesture, interaction strategy and cultural difference, would also be fruitful to explore. This is however an issue for further research.

One of our long term goals is to formulate a “practical theory” (c.f. Cronen, 1995) with the purpose of describing and giving advice on how to conduct analysis, design, and evaluation of web use based on pragmatic concepts. Such a framework for directing focus towards human action and interaction, conceived of as a “practical theory”, is both descriptive and prescriptive and can therefore be categorized as a descriptively grounded theory for design and action in the scheme of Gregor (2006).

## References

- Ågerfalk P. J. (2010) “Editorial: Getting pragmatic” in *European Journal of Information Systems* (19), pp. 251 - 256
- Allwood J. (1977) “A Critical Look at Speech Act Theory” in Dahl, Ö (Ed.) *Logic, Pragmatics and Grammar*, Lund, Studentlitteratur, pp. 53-69.
- Allwood, J. (1978) "On the Analysis of Communicative Action" in Brenner (Ed.) *The Structure of Action*, Basil Blackwell, Oxford, pp. 168-191.

- Allwood, J. (2000) "An Activity Based Approach to Pragmatics" in Bunt, H., & Black, B. (Eds.) *Abduction, Belief and Context in Dialogue: Studies in Computational Pragmatics*. Amsterdam, John Benjamins, pp. 47-80
- Allwood, J., Nivre, J., & Ahlsén, E. (1992) "On the Semantics and Pragmatics of Linguistic Feedback" in *Journal of Semantics*, pp. 1-26.
- Austin J. (1962). *How to do things with words: The William James Lectures delivered at Harvard University in 1955*. Ed. J. O. Urmson. Oxford: Clarendon.
- Cronen V. (1995) "Practical theory and the tasks ahead for social approaches to communication" in Leeds-Hurwitz W (Eds.) *Social approaches to communication*, Guildford Press, New York
- Cronholm S, Ågerfalk P J, Goldkuhl G. (1999) "From Usability to Actability" in *Proceedings of the 8<sup>th</sup> Intl. Conference on Human-Computer Interaction (HCI International'99)*, München
- Dignum F., Dietz J. L. G., Verharen E., Weigand H. (Eds., 1996) *Communication Modeling - The Language/Action Perspective*, *Proceedings of the First International Workshop on Communication Modeling, Electronic Workshops in Computing* Springer. <http://www.springer.co.uk/eWiC/Workshops/CM96.html>
- Flores F., Ludlow J. J (1980) "Doing and speaking in the office. Decision Support Systems: Issues and Challenges" in *proceedings of an International Task Force Meeting*, June 23-25
- Dietz J.L.G. (1999) "Understanding and Modelling Business Processes with DEMO" in *proceedings of the 18th International Conference on Conceptual Modeling (ER'99)*, Paris.
- Garton L., Haythornthwaite C., Wellman B. (1997) "Studying Online Social Networks" in *Journal of Computer-Mediated Communication*, Vol 3., No. 1
- Goldkuhl G. (2001) "Communicative vs material actions: Instrumentality, sociality and comprehensibility" in *Proceedings of the 6th Int Workshop on the Language Action Perspective (LAP2001)*, RWTH, Aachen
- Goldkuhl, G. (2002) "Anchoring scientific abstractions – Ontological and linguistic determination following socio-instrumental pragmatism" in *European Conference on Research Methods in Business*, Reading
- Goldkuhl, G. (2005) "Socio-instrumental pragmatism: A theoretical synthesis for pragmatic conceptualization in information systems" in *proceedings of The 3rd Intl Conf on Action in Language, Organizations and Information Systems (ALOIS)*, University of Limerick
- Goldkuhl G. (2008) "What kind of pragmatism in information systems research?", presented at the AIS SIGPrag Inaugural Meeting at ICIS in Paris, 14 December 2008 [WWW document] <http://www.vits.org/>
- Goldkuhl G., Lind M. (2004) "Developing e-interactions – a framework for business capabilities and exchanges" in *proceedings of the 12th European Conference on Information Systems*, June 14-16 2004, Turku, Finland
- Goldkuhl G., Lind M., Ågerfalk P. (Eds., 2003) "Proceedings of the 1st International Conference on Action in Language, Organisations and Information Systems", Linköping University, Sweden
- Goldkuhl G., Röstlinger A. (2003) "Towards an integral understanding of organizations and information systems: Convergence of three theories" in Gatzendam H.V.M., Jorna, R. J., Cijssouw R.S. (Eds.) *Dynamics and change in organizations: Studies in organizational semiotics*, Kluwer Academic Press, Boston, USA, pp 132-162

- Goles T., Hirschheim R. (2000) "The paradigm is dead, the paradigm is dead y long live the paradigm: the legacy of Burrell and Morgan" in *Omega – The International Journal of Management Science* 28(3), 249–268.
- Gregor S. (2006) "The Nature of Theory in Information Systems" in *MIS Quarterly* Vol. 30 (3), pp. 611-642
- Grice H.P. (1975) "Logic and conversation" in Cole P., Morgan J. L. (Eds.) *Syntax and Semantics Vol 3: Speech acts*. New York: Seminar Press, 41-58.
- Habermas J. (1981) *Theorie des kommunikativen Handelns*. Vol. 1: Handlungsrationalität und gesellschaftliche Rationalisierung. Vol. 2: Zur Kritik der funktionalistischen Vernunft. Frankfurt am Main: Suhrkamp.
- Hevner A, R., March S. T., Park J., Ram S. (2004) "Design science in information systems research" in *MIS Quarterly* 28(1), 75–105.
- Lee A. S., Nickerson J. F. (2010) "Theory as a Case of Design: Lessons for Design from the Philosophy of Science" in proceedings of the 43rd Hawaii International Conference on Systems Sciences
- Lind M. (2007) "The Role of Pragmatic Frameworks in Information Systems Research" in Ahlsén et al (Eds.) *Communication - Action - Meaning*. A Festschrift to Jens Allwood, Department of Linguistics, Göteborg University, Sweden, pp. 173-190
- Lind M., Goldkuhl G. (2003) "The constituents of business interaction – generic layered patterns" in *Data & Knowledge Engineering*, 47, 327-348
- Medina-Mora R., Winograd T., Flores R., Flores F. (1992) "The action workflow approach to workflow management technology" in Turner J., Kraut R. (Eds), *Proceedings of the Conference on Computer-Supported Cooperative Work, CSCW'92*, ACM Press, New York, NY.
- Montague R. (1968) "Pragmatics" in Thomason, R. H. (ed.), *Formal Philosophy*, Yale University Press, (1974).
- Morris C. (ed., 1938) *Foundations of the Theory of Signs*. Chicago and London, University of Chicago Press
- Sacks H., Schegloff E.A., Jefferson G. (1974) "A simplest systematics for the organization of turn-taking for conversation" in *Language* 50:696-735.
- Searle J (1969) *Speech acts*, Cambridge, Cambridge University Press
- Searle J., Vanderveken D. (1985) *Foundations of Illocutionary Logic*. Cambridge University Press, Cambridge.
- Schoop M., de Moor A., Dietz J. L. G. (2006) "The Pragmatic Web: A Manifesto" in *Communications of the ACM*, Vol. 49, No. 5, pp. 75-76
- Stamper R. K. (2001) "Organisational semiotics: informatics without the computer?" in *Information, Organisation and Technology: Studies in Organisational Semiotics* (Liu K., Clarke R. J., Andersen P. B., and Stamper R. K., Ed.), pp 115–171, Kluwer Academic Publishers, Boston.
- Winograd T., Flores F. (1986) *Understanding Computes and Cognition. A new foundation for design*. Ablex, Norwood
- Wittgenstein L. (1953) *Philosophical Investigations*. Oxford: Basil Blackwell.

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