

Socio-pragmatical analysis of IS actability evaluation heuristics

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Abstract

Information Systems Actability Theory is a theory based on language action theories (e.g. Searle and Habermas) and other social action theories (e.g. Weber and Schutz). In ISAT, different actors' work with (computerised) information systems is considered to be action directed towards humans. Phenomena related to human action and communication between humans are set in focus. This paper proposes a development and clarification of socio-pragmatic aspects of ISAT, based on theories of Weber and Grice.

Keywords: Actability, ISAT, Weber, social action, Grice, pragmatics

1 Introduction

There are many perspectives on information systems within IS research. ISAT, information systems actability theory, is a reaction on the focus on semantics within development of information systems (e.g. Ågerfalk, 1999). Within ISAT, the use of information systems is considered to be performance of instrumental action – the IT system is an instrument to communicate, and since communication (use of language) is a form of action, the IT system is an instrument for action. Since the action concept is central within ISAT, it is important that the theory contains a definition of action, which is consequently used.

Sjöström & Goldkuhl (2002) distinguished between three levels of analysis within IS actability: Interaction level, action level and human-to-human communication level. It was pointed out that IS actability mainly focused the interaction and action levels of action. An expanded view was presented, where communication aspects and social aspects of IT system use were emphasized. Examples from a case study illustrated that ISAT couldn't explain some communicative and social aspects of IT system use. By discussing these aspects, it was argued that action through the IT system cannot be understood without an understanding of the context. I believe that it would be a good contribution to ISAT to pursue a discussion on how social aspects can be incorporated in ISAT.

Another (potential) problem with ISAT is that pragmatic aspects of action have been developed from speech act theory, e.g. Habermas (1984) and Searle (1969). A synthesis between ISAT and other pragmatic theories might strengthen ISAT.

This paper is an attempt to synthesize ISAT with complementary theories from the field of social action and pragmatics. One special subset of ISAT, the heuristics for ideal typical evaluation of information systems, will be focused in the paper. The purpose is to make the heuristics more suitable for understanding social and pragmatic aspects of IT system use.

This paper is mainly based on theoretical discussions. Outlining the social action theory of Weber (1978), the cooperative principle (Grice 1975) and previous work on ISAT (e.g. Ågerfalk et al 2002, Sjöström & Goldkuhl 2002) gives a frame of reference for discussion on development of the ISAT heuristics.

2 A socio-pragmatic perspective on IT systems

This chapter is the frame of reference that will be used to discuss ISAT in chapter 3. A view on information systems as complex tools for communication is presented in section 2.1. Weber's notion of social action is discussed in section 2.2, and in chapter 2.3 Grice's (pragmatic) theory on the cooperative principle is discussed.

2.1 The complexity of communication through IT systems

The discussions in this paper are based on my fundamental assumption about IT systems: That they are tools, used to performed different communicative (hence social) acts. In Sjöström & Goldkuhl (2002) there is a discussion on the complexity of communication through IT systems, in relation to other forms of communication. Information systems are seen as instruments for communicative action, which means that they mediate and transform messages in some business context. Messages are seen as results of action, as well as pre-requisites for action. Based on this view, (at least) four scenarios should be taken into consideration when discussing communication aspects during design or evaluation of a CBIS:

- A 'one to one' situation, where one person intervenes, produces a message which might be automatically transformed, and which is interpreted by another person
- A 'one to many' situation: One individual could intervene using the IS, and several individuals could receive the message, or an automatically transformed version of the message
- A 'many to one' situation: Several individuals could intervene by using the IS, and one individual could receive some view of the message
- A 'many to many' situation, where several individuals intervene and several individuals receive different views of the message

These four scenarios are illustrated in figure 1 (below), which shows how different actors might be related through the actions performed using an IT system.

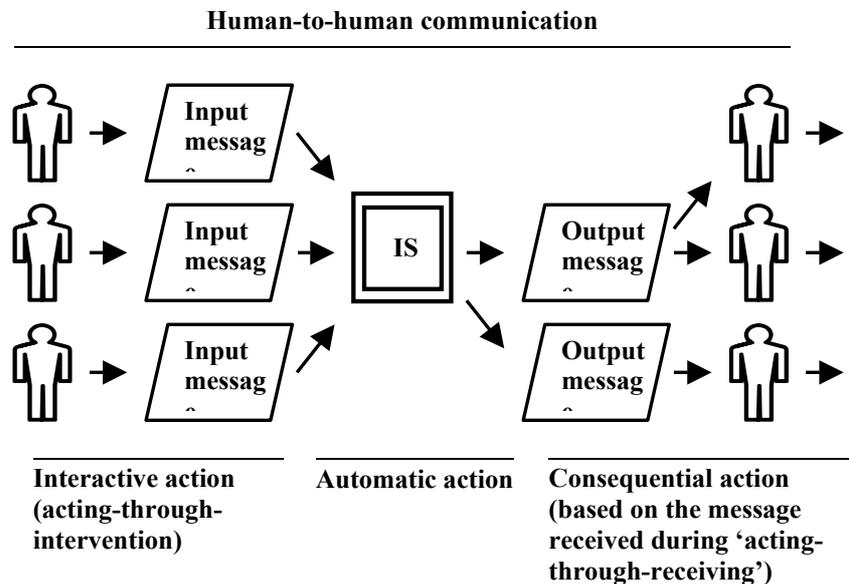


Figure 1 - Types of actions related to three usage situations (from Sjöström and Goldkuhl 2002)

The figure is not supposed to give a ‘full’ picture of human-to-human communication – it is only meant to illustrate that communication through IT systems is complex, and that there can be several senders and interpreters of messages. This situation, with multiple senders and interpreters, requires special attention when discussing communication.

Figure 1 inspires to many discussions on potential problems with IT systems. One of the problems identified is that senders’ and interpreters of messages can be anonymous. This might be desired in some situations, but there is also a risk that anonymity without reflection causes problems – actors who send messages (acting through intervention) through the IT system do not know who they are communicating with, and actors who act based on messages through the system (acting through receiving) are not aware of the source of their information, or the senders’ intentions.

2.2 A social action perspective on IS use

The concept of ‘social action’ has been discussed a lot within social sciences, and it is a hard work to select and present the relevant parts of these theories within one paper. Sjöström & Goldkuhl (2002) pointed out that speech act theory has been an important foundation for ISAT, but that social action theories have not influenced ISAT a lot. In Sjöström & Goldkuhl (2002), Max Weber’s original work on social action (1978) was used to analyse social aspects of IT system use, as a complement to actability evaluation. Weber’s theories proved useful to highlight aspects of action that were not focused within ISAT. Therefore, it seems interesting to continue using Weber as a major influence in the development of actability.

Weber (1978, page unknown at this time) distinguishes action from behaviour by stating “Human behavior - be it external or internal, activity, omission or acquiescence – will be called ‘action’ if and insofar as the actor attaches a subjective meaning to it”. Weber separates

behaviour from action by saying that *if I attach a subjective meaning to what I do (or don't do), it should be called action.*

Social action is a specialization of the action concept. Weber (1978 p 4) defines social action as follows: "That action will be called 'social' which in its meaning as intended by the actor or actors, takes account of the behaviour of others and is thereby oriented in its course". My interpretation of this definition is that action is to be defined as 'social', if it is performed in a certain way because other people are taken into consideration. This also means that the social aspect of action lies within the actor – we would have to know what influenced the actor in order to determine whether to classify his/her action as social or not.

Weber (1978) discusses a typology including four different orientations of social action. These are *goal rationality* (instrumental rationality), *value rationality*, *affectually oriented actions* and *traditionally oriented actions*. Weber states that this typology is not a means for classifying actions, but a sociological tool that can be useful to discuss and understand human action. A social action can be oriented different ways with regards to its goals and the other sociological circumstances that affect the way the actor performs the action (ibid).

Weber (1978) also points out that a social action seldom can be said to belong to one of the orientations. An action can, for instance, be goal rational to some degree and value rational to some degree. Weber also points out that these orientations can contradict each other. From now on, I will not use the orientations presented by Weber in my discussions. I will concentrate on the different elements that humans attach meaning to when performing social action: *Means, ends, consequences* and *values*.

It's hard to generalize what people attach meaning to in a work situation. Assuming that they attach meaning to all four elements, they would all be important for the actor in a given situation. If one (or more) of them is unclear, this could explain why the actor has a lack of motivation or is frustrated when acting. The point of these elements, within this paper, is that they can help us direct attention towards social aspects of IS use. The meaning of the elements is shortly discussed below.

Weber (1978) states that in order to perform goal-rational actions, the actor must attach subjective meaning to the expectations of other people. This is the element *means* in Weber's typology. Actually, 'means' would include not only expectations, but also all considerations to other people, whatsoever, that the actor attaches subjective meaning to. An actor performs action in a certain way because he/she is expected to do by other humans. In an IT system use situation, when the communication situation (e.g. the people involved) might be unclear, there is a risk that the actor does not understand the possible consequences of his/her action, expectations might be unclear and hence the 'means' for performing the action to achieve the desired ends aren't optimal. As far as I can see, this is the situation both when performing action-through-intervention and action-through-receiving. This problem seems to be related to a possible lack of knowledge about the sender(s)/interpreter(s) of a message sent – both their identity and a lack of some personal relation.

The *ends* are the objectives the actor wishes to achieve when performing the act (Weber 1978). When using an IS, it might be unclear what I actually do (in a social action sense) – it might be clear that I updated a schedule or some database, but how are other human beings affected by the action performed using the IT system? What is achieved on a human-to-human communication level? The actor probably attaches some meaning to the objectives of

his/her action, but it is not certain that he/she will find out whether he/she reached the objective.

Weber's view on *consequences* is that these are effects, except from the ends, which will be a result of the action. In a complex communication situation, e.g. when working with an IT system, we are not always aware of the side effects of our actions, since they might be very hard to predict. Once again, it seems as if visible actors in the IT system could be of valuable help for the users, in order to make it possible to predict the consequences of action. My point is not to generalize – it is merely to observe that it might be interesting to see if the way users regard consequences might affect the way they work with an IT system.

The last element that we might attach meaning to is our *values* (Weber 1978). They are important features of the social context (e.g. norms), that affect the way we act. My own view on this is that we might act differently to reach some goal in different social contexts. If I, for instance, consistently use a manual for the mail application when working from home, but I choose not to do it at work, it would indicate that I attach meaning to the values. As an informatics lecturer at my university you're not supposed to need a manual to use the e-mail application. I consider this element to be very important when it comes to IT system use, but I also consider it to be very hard to understand and study. This is a hypothetical example. It should not be interpreted as an actual description of Jönköping International Business School.

I consider Weber's typology to be problematic – it seems hard or impossible to estimate or judge exactly what is considered meaningful by humans in different action situations. However, these elements may be used to understand human action, in this case in relation to IT system use.

Habermas (1984) directs criticism towards Weber's typology, claiming that “other action-theoretical foundations are required to fully assess processes of societal rationalization” (Habermas 1984, p 284). I do not attempt to fully “assess processes of societal rationalization”, but I agree with Habermas that the typology has a limited focus on human action.

2.3 Grice's cooperative principle and conversational maxims

As mentioned in the introduction, pragmatics plays an important role within ISAT. Sjöström & Goldkuhl (2002) distinguished between three levels of ‘action analysis’ within IS actability theory: Interaction level, action level and human-to-human communication level. One of the conclusions were that the two first levels, interaction and action, were dominating in actability publications. Based on this, I find it worthwhile to include a discussion on pragmatic aspects of IS use in this paper.

There are many pragmatic theories, which makes it hard to decide which one(s) to use as a starting point to analyse pragmatic aspects of IS use. I have chosen Grice's theory about the cooperative principle of conversations and the four maxims of quality, quantity, relation and manner (Grice 1975). The reason for choosing this particular theory is that I find it interesting as a contrast to the pragmatics that have had a major impact on ISAT so far (e.g. Searle 1969, Habermas 1984). There will be a need for more thorough theoretical pragmatic discussions on ISAT in future research – consider this paper as one step in the evolutionary process.

Grice's cooperative principle is based on that participants have some common, immediate goal during a conversation. I find this useful when analysing IS use, since we often use an IS to perform some action that is part of a business process. We could, for instance, place an order in the system. The production manager will receive the message we sent and base his production planning on its contents. This could be considered as an ongoing conversation, with the common immediate goal to deliver a product to a customer. Different actors, within and outside the organization, somehow share this goal. Note that this is of course a simplified description of reality. My intention is to discuss how a theory on conversations is applicable in an IS use context. In order to reach this common goal, we need to communicate. By default, as I interpret Grice, we tend to have certain expectations on other participants in the conversation. Grice classifies these expectations as his four maxims of conversation: Quality, quantity, relation and manners.

Table 1 - My interpretation of Grice's (1975) maxims

Maxim	Description
<i>Quality</i>	One is expected to say the truth, or what is able to argue for with valid arguments
<i>Quantity</i>	One is expected to be as informative as required (that is; neither to supply too much or too little information)
<i>Relation</i>	One is expected to stay in context; not to change the topic of the conversation
<i>Manner</i>	One is expected to be polite and clear

Grice claims that we should act according to the maxims in order to reach the common goal efficiently. The maxims are not distinct (sometimes it can be hard to define which maxim that has been violated; if you break the maxim of manner I could argue that you broke the maxim of quality and/or the maxim of quantity).

Grice (1975) also pursues a thorough discussion on when the maxims are not valid (e.g. when joking, using irony etc.). I consider these exceptions to be outside the scope of this paper.

There are several opportunities to discuss the impact of these maxims on the design of information systems. I will try to present a few points that I find relevant to this paper.

The maxim of quality seems to depend on how you are allowed to express yourself. When using an IT system, there might be several restrictions on how you may express yourself, e.g. when filling out a form in some application. This maxim is also related to trust. When interpreting information from an IT system, the *source* of the information might be of importance in order to evaluate the value of the information.

The relation between the maxim of quantity and IT system use can be discussed from several perspectives. According to Grice, we should not use more information than needed in a certain situation.

The maxim of relation is also clearly related to IT system use – in order to continue a conversation; we need to understand what we are supposed to say. When looking at a screen document, it seems fair to state that it should make us aware of what we are supposed to do. This might be especially interesting in modern work environments, where we need to handle many ongoing conversations simultaneously.

The maxim of manner also seems to have a relation to IT system use. When messages are formalised to a large extent, we are bound to express ourselves in certain ways. However, the concept of manner also includes other aspects, e.g. if we use the IT system at all, or if we use it at the right time.

3 Socio-pragmatic discussions on ISAT

The main purpose of this chapter is to discuss ISAT evaluation heuristics from a socio-pragmatical perspective. Section 3.1 discusses the evaluation heuristics that are presented within ISAT. Section 3.2 contains a suggestion on how these heuristics could be re-structured in order to clarify which aspects of action that are analysed, and why.

An important aspect of this chapter is that there is a difference between *evaluation of IT system use* and *evaluation of IT system artefacts*. I realize that it is impossible to make a full analysis of social action when studying an IT system artefact – the discussions below are based on that IT systems may have characteristics that affect social and pragmatic aspects of action.

3.1 Socio-pragmatic analysis of actability heuristics

ISAT contains a set of heuristics used for actability evaluation of information systems. This section presents each of those heuristics, and discusses their relation to the previously presented socio-pragmatic aspects of IS use.

Table 3 – Actability heuristics as presented in Ågerfalk et al (2002)¹

<p>1. Situational context awareness Performers should ultimately always know what they are doing and what they are supposed to do, only by looking at the interactive screen documents available.</p> <p>2. Good conditions for action in shown information Information shown to performers should be adequate (necessary and sufficient) so that actions can be intuitively based on it. This accounts for both information from developer-to-user (labels, captions, help texts, <i>et cetera</i>) and information involved in user-to-user communication.</p> <p>3. Good conditions for action in required information Information that the system requires from performers shall be meaningful and easily provided to the system. That is, the performer shall understand why the information is required and the information shall be convenient to provide.</p> <p>4. Easily accessible and adequate action memory Information about previously performed actions and other action prerequisites shall be easy to access.</p> <p>5. Action-legible IT-systems A) Expressive interactive user interface components (icons, labels, <i>et cetera</i>) should be used. B) The language used should be in correspondence with users' professional language. C) Known and understandable consequences of possible actions. D) Propositional content, signifier of action mode and information about communicator should be visible and kept together. E) Separate messages should be kept separate (one thing at a time).</p>

¹ I did alter the table by inserting letters in heuristic 5 (a, b, c etc.), which makes it possible to refer to segments of the description.

6. Legible and relevant feedback

Description and explanation of the system's performed and scheduled future action(s) should be readily available. Effects of these actions should be shown. Alternative future user actions should be visible and choice of course of action to take should be informed by the system.

7. Visible actors

Information about performer, communicator and intended interpreter(s) should be easily accessible – both role and person.

8. Restrictions and opportunities in navigation utilized

Admit focus and work task changes. Sometimes sequence restrictions are necessary and desirable.

9. Accurate timing

Messages should reach intended interpreters in due time. If not, resulting delays may cause problems for the organisation (such as additional actions for the performer).

10. Interpretation initiative

Receiving and interpretation of messages should be possible to perform at desired places and in desirable ways. This may be affected by technological solution in terms of, for example, transmission strategy (push or pull, synchronous or asynchronous, *et cetera*) and types of devices (mobile phones, PCs, PDAs, *et cetera*).

11. Distribution of actions

The performance of actions should be allocated to human actors and information systems so that users gain maximal support in terms of, for example, decision support vs. automated actions.

Heuristic 1, 'situational context awareness', is related to Grice's maxim of relation. The heuristic states that the relation should be understood 'only by looking at the interactive screen documents available'. I believe that the IS could be 'actable', even if some complementary source of information (e.g. a note on the billboard) is needed. I consider this heuristic to be pragmatic, following Grice's theory.

Heuristics 2 and 3 are in line with Grice's maxim of quantity and quantity. Actually, Grice's theory strengthens the argumentation for the prescriptiveness of these heuristics. I consider these two heuristics to be strictly in line with Grice's theory; hence I call them pragmatic. Heuristic 3 also treats a cognitive phenomenon: 'the information shall be convenient to provide'.

In heuristic 4, 'easily accessible and adequate action memory', I can see relations to Grice's maxims of relevance and quality. In order to understand what to do; we might need to see what has been done (maxim of relevance). In order to say something with adequate evidence, we might also need information on previously performed actions (maxim of quality). There is a cognitive part in this heuristic as well, '...shall be easy to access'.

Heuristic 5, 'action-legible IT-systems', is intriguing, since it treats a number of phenomena. I will try to clarify what I mean by dissecting the heuristic:

- 5A could be considered from a pragmatic point of view (the maxims of quality and quantity), but its formulation indicates that it is based on cognitive psychology.
- 5B is related to language use. It could be motivated using Goldkuhl's (2001) discussions on language as an instrument for communication. If we do not share the instrument, it is problematic to use it to communicate. Another theoretical basis for this would be Wittgenstein's discussions on language games – the people talking need to share the context in order to understand each other (c.f. Arens 1994).

- 5C can be seen from a social perspective; however I do not see how the social consequences of some action could be visible in an IT system. This heuristic would be more interesting if there were a discussion on characteristics in IT systems that make it possible for users to judge the consequences of using the system. 5C can also be seen from another perspective; that the user should understand how the *information in the IT system* is changed. I consider these two perspectives on the heuristics to be radically different.
- 5D is clearly based on speech act theory (e.g. Searle 1969). It deals with the separation of propositional content (semantic aspects; descriptions of the world), illocutionary force (what the user is doing in relation to others), and visible actors. Illocution is related to pragmatics, but not to Grice's pragmatics.
- 5E prescribes that one thing should be done at a time. This seems to be related to cognitive psychology.

Heuristic 6, 'legible and relevant feedback', prescribes that descriptions and explanations of the *system's* performed and scheduled future actions should be shown. If the theoretical root for this heuristic had been social theory or pragmatic theory, it would have emphasized feedback from one user to another as part of an ongoing conversation. From a social perspective, it would also be interesting to understand how my use of the IT system affects people, e.g. how I contribute to an on-going process in the organization.

Heuristic 7 prescribes that actors should be visible (one user should be able to understand the source of some message in the system). This is clearly related to pragmatic and social aspects. From a social perspective, this heuristic can be related to all four of Weber's elements (the means, the goals, the consequences and the values). From a pragmatic perspective, visible actors would certainly involve the maxims of quality (can the source be trusted?) and quantity (where can I get more information?).

Heuristic 8, 'restrictions and opportunities in navigation utilized', concerns the design of the navigation in the user interface. There are connections to the user's work situation, in the sense that the user should be able to change focus in the system if it's needed. This could be related to Grice's maxim of relation – the system should support the user to do relevant things in relation to the work situation, rather than restricting the user from doing things.

Heuristic 9, 'accurate timing', is clearly related to human-to-human communication aspects. This could be seen on the social level, where the goals of the actor could involve communicating something to someone *within a given time limit*. Note that this heuristic is focused on that messages that are sent through the system should reach the receivers in due time – another way of studying the timing would be to investigate if a user acts through the IT system at a proper time. However, that is a way of studying the user instead of the artefact.

Heuristic 10, 'interpretation initiative', is also related to human-human communication. It involves the fact that some forms of communication alerts the intended interpreters of a message instantaneously (e.g. SMS), whereas some forms of communication requires the intended interpreters to take the initiative in order to take part of the message (e.g. e-mail). Just like heuristic 9, I consider this heuristic to be important on the social level, where it might be in the interest of an actor to make sure that someone else received a message without delay (and independent of location).

Table 1 –Relations between Weber’s elements and ISAT heuristics

Element	Heuristic
Means	7
Ends	7, 9
Consequences	7, 9, 5C
Values	7

Heuristic 11 is also related to social matters (see the discussion in section 3.1), however I cannot relate it to the table at this time.

This table is far from ‘complete’ – the point is that Weber’s theory on social action could explain why users choose not to use the IS to perform some action, because they attach more meaning to the consequences of the action than they attach to the formal goal (which might be their work task). If the social level of action is not paid enough attention, this type of ‘action related phenomena’ might not be identified.

Based on the discussion above, I would say that heuristic 7 (*visible actors*) is the most important heuristic from a social point of view. If the actors are visible, the person using the IS has a chance to understand the social context; to have some understanding of the consequences of his/her action. It also shows if the actor will reach his objectives (fully or partly). Other human-to-human communication aspects within the set of heuristics are heuristics 9 and 10 (*accurate timing* and *interpretation initiative*) also have a clear social character. I consider these things to be important parts of a person’s objectives in modern society: When we say something, we need to know when the message is received and whether the interpreter receives it immediately or when he/she chooses to look for new messages. One way of clarifying the heuristics would be to deepen the discussion on the concept of goals, hence identifying and clarifying important social aspects of IS use.

Moving on to the pragmatic issues, a number of relations between Grice’s maxims and actability heuristics were identified in section 3.1. I will sum this up in the table below (the discussions on each heuristic can be found in section 3.1).

Table 2 - Relations between Grice's maxims and ISAT heuristics

Maxim	Heuristic
Quality	2, 3, 4, (5A), 7
Quantity	2, 3, (5A), 7
Relation	1, 4, 8, 5A
Manner	-

There are other pragmatic issues involved in the heuristics; Heuristic 5D treats the matter of illocutionary force, which is a pragmatic aspect of messages (e.g. Searle 1969, Habermas 1984).

Several heuristics treat phenomena at different levels, e.g. prescribing that some kind of information should be available and that it should be easy to access it. I believe that the pragmatic part of the analysis should prescribe how the IT system can help the user understand the context. Other aspects of the IT system, related to cognitive psychology, are related to the ease of use.

An important thing is that I haven't attempted to generate new heuristics based on Weber and Grice – I only studied the existing ones, and how they are related to these socio-pragmatic theories.

Finally, cognitive aspects of IT system should also be recognized as important within actability. I believe that it would be fruitful to clearly accept the work done within the usability field as a complement to the social and pragmatic issues that are addressed within ISAT.

Within the usability field, there is a separation between the perceived ease of use and the perceived usefulness (Davis 1989). The current actability heuristics are mainly directed towards socio-pragmatic aspects, which seem to correspond mostly to the usefulness of an IT system. I believe that the usefulness of ISAT would increase, if certain usability aspects were incorporated, especially the ones treating the ease of use matters. There are several examples, e.g. Nielsen's ten usability heuristics (Nielsen 1994). Some of these directly focus ease of use, and they are not to be found in the current actability heuristics (e.g. 'consistency and standards', 'error prevention', 'Recognition rather than recall' and 'help and documentation'). These influences from usability would bring knowledge from usability research into actability; hence strengthen the evaluation method empirically.

4 Conclusions

I will summarize the discussions in chapter three by proposing a structure for the actability evaluation heuristics, based on socio-pragmatical categories complemented by cognitive aspects of IT systems. Consider this structure as an initial proposal, which needs to be developed further using other theories and empirical data. The major contribution of the new structure is that it is clear *why* we analyse certain aspects of an IT system.

Socially related heuristics for IT system evaluation

The social context should be made visible for the user, in order to make it possible to understand the means, the ends, the consequences and the values in a use situation. These heuristics will provide the users of the system with some understanding of the social context in which they are acting, hence make the use of the IT system more meaningful.

- Make the users understand the social context by making the actors visible in the IT system. This way, the users will be aware of the origin of messages, and whom they are sending messages to.
- Allow the users to understand *when* other actors will interpret their messages. This can be done by making it transparent when messages reach their intended interpreters, and if messages are pushed to them or pulled by them.

Pragmatically related heuristics for IT system evaluation

The pragmatic context should be clarified for the user, in order for the user to be able to act efficiently to reach a goal that is shared with others.

- Promote qualitative utterances by 1) making information about previous actions available in the action memory and 2) making the actors visible in the IT system in order to make clarifications possible and promote users to trust the information.

- Promote a suitable quantity of information handling by 1) displaying and requesting an adequate amount of information in screen documents and 2) making the actors visible in order to allow users to retrieve more information if needed.
- Promote users to understand what they are supposed to do by 1) using expressive user interface components, 2) making information about previous actions available in the action memory and 3) allow focus and work task changes.

Cognitively related heuristics for IT system evaluation

The IT systems interaction should be design in line with theories of cognitive psychology to make it easy to use. I will not present any particular heuristics here, since the previous discussions have not focused on this matter. However, an important conclusion to be made is that ISAT could be developed through theoretical influences from usability.

I want to add that I do not believe in a strict separation between socio-pragmatical aspects and ‘ease of use’ aspects of the IT system. However, at this point it seems relevant to point out that today, socio-pragmatical aspects of the system are interwoven with ‘ease of use’ aspects in the actability heuristics. This matter needs further discussion.

My final remark concerns the fact that only heuristics have been discussed in this paper. When studying actual users working with the system, theories on social action can provide valuable insights. This topic will be discussed in future research.

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Heuristic 11, ‘distribution of actions’, can be implicitly linked to social aspects of action – there are actions *we do not want to perform*, since they can be performed automatically. There might possibly be negative consequences as well, e.g. that people in an organization for different reasons might disagree that it is a good thing to automate certain actions.

3.2 Socio-pragmatic re-structuring of actability heuristics

In one sense it is unfair to discuss the ISAT evaluation heuristics without discussing the entire evaluation concept within ISAT, since they only constitute a subset of the theory. In order to work with ISAT heuristics for evaluation or design, one should understand the underlying theory of ISAT. However, the heuristics are meant to direct the attention of developers or evaluators towards action related aspects of an IT system. This implies that the heuristics should be formulated clearly in order to be a useful tool for evaluation. Based on this, I identified two problems with the heuristics:

- 1) Social and pragmatic aspects are interwoven in the heuristics, but the purpose of each heuristic is not explicit. I believe that these aspects of action are important, and that the structure and the formulation of the heuristics should be explicit and visible.
- 2) There is no theoretical or empirical reasoning behind the structure of the heuristics. They are presented as an unordered list (although they are numbered). ISAT would gain from a thorough discussion on which dimension of action we are directing our attention towards when using a particular heuristic. By categorizing the heuristics, there is also a better opportunity to understand how different theories can be related to different aspects of actability evaluation.

Of course, these problems will not be solved within this paper. However, I might be able to provide an initial idea on how to solve them. My thought is that a suggestion on how to solve the second problem, the structure of the heuristics, also would help solve the first problem.

Based on my earlier discussions on Weber’s concept of social action, I will try to relate Weber’s elements (means, ends, consequences and values) to the heuristics. This requires some clarifications, which can be found below the table.

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