

15. Conversations at the electronic frontier: the information systems business language (ISBL)

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Abstract

Information systems (IS) capable of acting as autonomous organisational agents are becoming prevalent in contemporary society. This paper proposes that an artificial language, designed to facilitate transactions involving at least one such system as a participant, is emerging in the world of business. The language combines English terminology with IS-style definitions, and is based on a strictly limited lexicon, a rigid syntax, and a controlled context of use. The paper argues that the language can be used as an instrument of social power, and discusses a number of possible developments in this regard.

Introduction

A new language, referred to for the purposes of this paper as the information systems business language or ISBL, is being born in the world of business. It is an artificial language (Lotman, 1990), designed to eliminate possibilities for misunderstandings in the conduct of standardised business transactions. Its primary source language is English but it incorporates information systems (IS) concepts, definitions, symbols and gestures and is therefore not a subset of English. The language has a sphere of operation restricted to interactions involving at least one autonomous IS, and is still in the very early stages of development. The development process is erratic and likely to remain so, in that the language is a by-product of pressures for rationalisation in business interactions, rather than the outcome of a conscious design activity.

Business, like other areas of human activity, is mediated by, and understood through, language. The nature of business has, however, always been such as to impose a premium on the use of literal language and the avoidance of figurative expressions (Yates, 1989). This has led over time to a reliance on strict terminology, a reliance that has been intensified by the emergence of automated systems with zero tolerance for ambiguity. In introducing systems of this type, organisations and system designers have endeavoured to eradicate the problems of meaning that can arise from different presumptions and frames of reference (Fish, 1978) by rigidly defining and controlling the context of interaction. While this has not eliminated all possibilities for misunderstandings to occur, it has for the most part substantially reduced their effects.

Most IS have a purely instrumental character in the sense that they provide support, often very sophisticated support, for a wide range of organisational activities, but cannot be construed as acting independently in a social context. Autonomous systems dealing with other autonomous entities external to an organisation are, in contrast, qualitatively different in that they effectively act as responsible agents of the organisation. These systems, of which an automatic teller machine (ATM) is perhaps the canonical example

(Dos Santos and Peffers, 1995), have been assigned responsibilities for making decisions and taking actions on the basis of information given, received and interpreted in social interactions. While the activities in which they engage are repetitive and mundane, it is the principle involved that is of interest in this paper; there is nothing intrinsic that limits their sphere of operations. If meaningful interactions occur, it seems to follow that such systems must be ascribed a form of social intelligence.

Interactions with autonomous systems take the form of conversations in which progress is achieved through the turn-taking exchange of information, and the proposal in this paper is that such systems and their interlocutors can be conceptualised as speaking a language, the ISBL. While the language is very much in its formative stages, and variations in definitions and usages are still common, there is enormous pressure for standardisation of the terms used. An easily accessible example of this process in action is provided by the progressive routinisation of autonomous payment systems, enabling organisations to use common interfaces and standard payment 'scripts'.

It is perhaps the fact that their operations are mundane that has limited the amount of theoretical interest in autonomous IS. Strategic analysts have not overlooked their competitive significance (Dos Santos and Peffers, 1995), but the systems themselves are generally not particularly complex, and have therefore been of little technical concern. The argument in this paper is, however, that they represent a social development of great potential significance, and that their emerging capacity to 'speak' a common language heralds the realisation of some of that potential.

The development of the ISBL is being fuelled in practice by a range of IS integration initiatives based on enterprise system (ERP) packages, electronic data interchange (EDI), government data-sharing, and business-to-business (B2B) procurement exchanges, all of which rely for their effectiveness on the implementation of standardised IS constructs including data and process definitions. It is these constructs, rather than the perceived interfaces, that enable systems to 'talk' both to people and to other systems. The new language is evolving at an electronic frontier where people and systems are learning how to converse meaningfully with each other, making it a kind of pidgin language (Holm, 2000; Czarniawska, 2003). Pidgin languages are compromise languages that use a restricted lexicon and a rigid syntax to facilitate trade between different cultural groups (Holm, 2000). Continuing development of the ISBL involves a compromise between English usage and the rigid prescriptions of computer systems; while English is the source for much of the terminology, definitional relations are to formal constructs and not to the flexible concepts referenced by natural language.

The general justification for the proposal in this paper resides in the explanatory power of the linguistic perspective. The ISBL concept facilitates the understanding and analysis of a range of IS-related phenomena, particularly organisational issues arising from systems integration initiatives. Several of these relate to social power, and the possibilities for autonomous systems to be used to entrench and extend existing power differentials affecting consumers, and organisations in dependent positions within major supply chains. These aspects are discussed in detail later in the paper.

Language and power

Following the work of theorists including Mead (1962), Goffman (1981), Foucault (1972) and Bourdieu (1991), it has come to be accepted that language plays a number of crucial roles in the establishment and maintenance of social relations. The types of mechanisms involved include the capacity to define a particular language as standard, to vocalise in a certain way, to control the vocabulary in use, and to control turn-taking and the dir-

ection of discourse (Bourdieu, 1991). The use of language for control purposes is simultaneously a reflection of existing power relationships, and an exercise in extending and entrenching them (Fairclough, 1989).

There are some qualitative differences between the ISBL and natural languages, and these tend to intensify power effects. The ISBL is essentially an artificial language designed to eliminate the possibility of misconstructions: 'for a total guarantee of adequacy between the transmitted and received message there has to be an artificial (simplified) language ... the universalism inherent to natural language is in principle alien to it' (Lotman, 1990, p. 13). The precision of the ISBL enables conversational mechanisms such as turn-taking to be applied as controls rather than to check understandings. This is consistent with the ways in which prescribed turn-taking is used to control the sequence of events and responses that occur during rituals (Wolf, 1999, p. 128).

Issues of efficiency and convenience can be so compelling that questions concerning autonomous IS can naturally reduce to issues of technology adoption, rates of diffusion, and trust (Gefen et al., 2003). The linguistic perspective provides an antidote to this in the form of an analytical platform from which to show that there can be losers as well as winners, and that there is a fine line between encouragement and coercion where technology adoption is concerned.

Conversations at the electronic frontier

The term 'electronic frontier' is used here to refer to the virtual space in which people and automated systems interact as autonomous agents, with the use of 'frontier' justified on the grounds that the two cultural groups (people and autonomous systems) are still in the early stages of meeting, interacting with, and understanding each other (Holm, 2000). The driving force behind development of the ISBL is the problem of finding a vehicle that will enable people, who speak a natural language with all the inbuilt vagaries and inconsistencies of such languages, and systems that speak a conceptually limited but highly precise language of their own, to converse with each other. The emerging language is in this regard English-like, but is not English.

Three types of interaction involving autonomous IS can occur as follows:

1. between an autonomous individual and an organisation represented by an automated system;
2. between an organisation represented by a person and an organisation represented by an automated system;
3. between two organisations each represented by an automated system (in some types of B2B procurement exchanges for instance).

For the purposes of this paper, the focus will continue to be on interactions between a person acting individually and an autonomous system representing an organisation, although it is assumed that the logic is equally applicable to the other two cases. Figure 15.1 shows the basic logic of interactions mediated by the ISBL in schematic form.

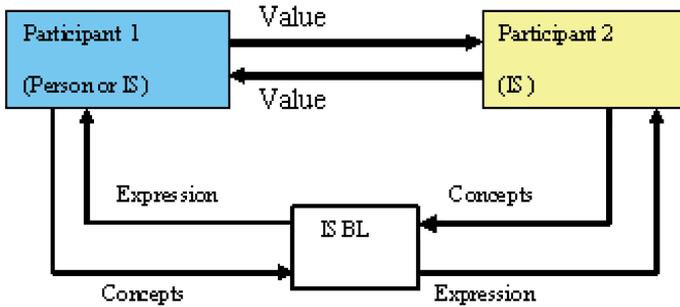
Figure 15.1. Business transaction mediated by the ISBL.

Figure 15.1 shows a standard type of transaction proceeding in parallel at two generic levels. At the action level, it involves an exchange of values, for example the provision of cash in return for the right to debit a bank account. At the second level, the exchange of information supports and enables the completion of first level action. It is axiomatic that genuine communication can only occur on the basis of shared understandings (Gibbs, 1999); in this situation the shared understandings are represented in terminology sourced from the language the participants have in common, conceptualised here as the ISBL.

Permitted interactions are of course tightly scripted by the designers of autonomous systems. An ATM will, for example, work according to a fully defined job description (Dos Santos and Peffers, 1995), but must have the authorisation, the basic intelligence, and the conversational competence to complete transactions on behalf of the organisation(s) represented. That the level of transactional complexity is low is essentially irrelevant to the argument being developed; the practical implication of an effective interaction is that two entities acting autonomously have been able to communicate successfully. The linguistic foundations will in practice usually be sufficiently unproblematic to stay below the threshold of attention, but they can become salient under conditions of breakdown. Thus, for example, the lack of conversational repair mechanisms when dealing with an ATM quickly become apparent when it returns an incorrect amount of money or refuses to recognise a credit card.

Propositions

The following lists twelve theoretical propositions that are discussed as a group in subsequent sections. The propositions are framed in descriptive terms as topics susceptible to empirical research. It is important to note that they were developed on the assumption that a positive perspective on the ISBL is embedded in current thinking about systems and standardisation. The view that autonomous IS provide great benefits of convenience to consumers is not contested, and it is in fact impossible to see how the ever increasing volumes of business transactions could be effectively handled without them (Weizenbaum, 1984, p. 28). The argument is, however, that the increasing spread of ISBL-mediated activity creates possibilities for the exercise of power and the exploitation of consumers that warrant empirical research.

The propositions are as follows:

1. Autonomous IS have been installed as organisational agents.
2. The business behaviour of autonomous IS can be analysed in linguistic terms.

3. To the extent that autonomous IS share basic IS concepts with standardised definitions, they can be conceptualised as speaking a specific language. The language is referred to in this paper as the information systems business language or ISBL.
4. Organisational customers interacting with autonomous IS must use the ISBL for communication purposes.
5. The continuing standardisation of IS definitions in data, process structures and objects, is contributing to the further development of the ISBL.
6. Implementation of the ISBL has social effects on relationships between organisations and their customers; the ISBL can therefore function as an instrument of social power.
7. The emergence of the ISBL as an instrument of social power will tend to encourage its wider adoption.
8. The wider adoption of the ISBL will tend to inhibit possibilities of structural change, by lengthening change management cycles and making change management processes more complex.

The following propositions relate specifically to social power effects:

9. The efficiency gains facilitated by adoption of the ISBL will encourage attempts to impose it as the standard language for conducting some types of business transactions.
10. General adoption of the ISBL will tend to marginalise some people, and create new types of 'outsiders'.
11. Adoption of the ISBL will exacerbate organisations' difficulties in dealing with exceptional cases.
12. Adoption of the ISBL will tend to impede people with unusual or exceptional requirements in the pursuit of their transactional interests.

Information systems with social autonomy

The first computer-based IS were essentially data processing systems designed to assist organisations with the processing and storage of the vast amount of data generated in the course of contemporary business activity (Somogyi and Galliers, 1987). The extension of the scope of IS implementations to encompass the installation of systems capable of acting as autonomous organisational agents has been so gradual as to be almost imperceptible. It has, however, been the case at least since the introduction of ATMs, that some IS directly substitute for, rather than simply support, humans in selected interactive organisational roles. The extent to which this type of substitution has occurred is probably much greater than is obvious on the surface, for it is surely correct to say that there are many organisations in which front-of-house staff are supporting the systems that are actually taking the decisions, rather than the reverse. As might be expected during the early stages of what is in effect a quiet revolution, many situations where systems and humans share the decision-making powers can be somewhat ambiguous. This ambiguity can have awkward consequences, as in the case of Australia's Centrelink, an agency responsible for managing unemployment matters where, during the course of a recent furor over errors, some were blamed on systems taking decisions, and others on systems not taking decisions (McKinnon, 2004).

An autonomous IS is postulated as showing three behavioural characteristics that have traditionally been associated with the possession of intelligence and the capacity to use language effectively; it can understand meaningful input, it can be meaningfully responsive to that input, and it can take socially significant decisions that are responsive to the meanings developed in the interaction. The fact that one party may believe that the

other party does not in any sense 'understand' what is going on does not seem to invalidate the perspective taken since the interaction occurs despite this. The effect is the same as if the transaction had involved two people, a meaningful conversation had taken place, and a mutually satisfactory outcome achieved.

The issue of meaning needs to be explicitly addressed, if only because it is difficult to see who or what within the organisation 'knows' what has happened once the transaction has been completed. To argue that the organisation itself is what 'understands' in effect simply shifts the problem up a level. Yet the conclusion that the actions taken have been socially meaningful seems inescapable; value has been exchanged in consequence of entering into the transaction, and the outcomes are fully binding on both parties. Clearly the original system designers would once have understood the process, and it is certain that company accountants and others will understand the nature of the relevant transactions in general terms, but this is not the same as having direct knowledge or an unmediated understanding of actual events. In a contemporary organisation it is in any case quite possible that the original programmers will have left or forgotten the details of the system. In a downsizing world there is no guarantee that anybody still working in the company will know any more about an autonomous system's activities than they would about those of any other colleague carrying out responsible work. The possibility that an autonomous system will carry on doing business on behalf of an organisation long after the last person to leave has turned off the lights is a real one.

It is notable that it is precisely the issue of understanding, or rather what or who understands, that has been at the heart of many an esoteric, acerbic debate in the cognitive science and artificial intelligence (AI) arenas (Rey, 1997). In his now famous 'Chinese Room' thought experiment, the philosopher John Searle postulates a system comprising various entities including people (who cannot speak Chinese) that is able to reliably and instantaneously translate English into Chinese by applying a set of categorical rules; Searle asks who or what it is that understands Chinese (Searle 1980, p. 422). No definitive answer (i.e. satisfactory to both proponents and critics of AI) has been forthcoming (Rey, 1997, p. 271). Alan Turing fell back on a purely behaviourist perspective when proposing the 'Turing test' (Turing, 1950), taking the view that if a system is able to fool its interlocutors about whether or not it is a person, then it should be taken as being able to think, but that was an approach that has caused more debates than it has resolved (Rey, 1997, p. 153).

Autonomous IS are small fry in comparison with the kind of complex and often threatening entity that is usually postulated when AI is discussed (Crevier, 1993). Yet the issue seems to be the same in principle, a view that is strengthened by the clear possibility that the interactional capacities of autonomous systems will continue to increase. With this in mind, the theoretical approach followed here is to adhere to a precedent from cognitive science, and for analytical purposes to ascribe the capacity to understand to the system – '[this] does not say that intentional systems *really* have beliefs and desires, but that one can explain and predict their behaviour by *ascribing* beliefs and desires to them ... the decision to adopt [this] strategy is pragmatic and not intrinsically right or wrong' (Dennett, 1978, p. 7 – emphases in original). The surrounding context makes it quite clear that ATMs were not the type of entity that Dennett had in mind when making his argument, but the logic seems equally applicable.

The information systems business language (ISBL)

It is now generally accepted that a language embeds a world view, or theory of the world (Gadamer, 1989; Pinker 1994), in that the concepts available within it limit what can

and cannot be said in that language. The strong form of this idea is the Sapir-Whorf hypothesis, which states it is impossible to conceptualise something in the absence of the appropriate linguistic constructs, and that genuinely new ideas are therefore dependent for their adoption and survival on the progressive extension of the language (Aronoff and Rees-Miller, 2003, p. 99). This extreme view still has support from some philosophers and linguists, but even those who do not accept it in totality concede that the idea contains a critical insight – that possibilities of social interaction are constrained by the language available to the parties concerned (Pinker, 1994).

The ISBL shows this with unusual clarity in that the underlying content reflects both a very specific way of doing business, and a very restricted conceptual universe. It is important to note that a key distinction is drawn between the ‘content’ and ‘expression’ planes of a language (Eco, 1997), and that discussion in this paper is limited to the content plane. ISBL expression, which can involve combinations of mouse clicks, key presses, symbols and verbal statements, has some extremely interesting implications, particularly from the perspective of the social disadvantages for people who are unable to ‘speak’ the language, but these are left for subsequent investigation.

In basic terms, ISBL content is conceptualised as comprising a set of data, process and object definitions that:

1. enable communication between systems and people;
2. enable reference to basic business concepts;
3. enable meanings to be attributed to actions occurring in business transactions;
4. represent the rationalisation and standardisation of business terminology relevant to defined types of business transactions.

In effect, the ISBL is a language that mediates conversations at the electronic frontier; that is to say, at the point of intersection between people and automated systems. The terminology for use is strictly controlled. To take a specific example, the concept ‘customer’ may be instantiated in the ISBL as an entity characterised by a set of mandatory attributes including a name, address, and telephone number, and associated with a recorded history of one or more purchases from a relevant organisation. In a new transaction entered into by the customer and an IS, both implicitly agree to the use of ISBL terminology and concepts. The system presents itself at a venue at which interactions can occur, the putative customer identifies him- or herself, the system enquires as to the nature and scope of the transaction envisaged, the customer provides this additional information, the system responds, and so on through to an exchange of values and transactional closure. Communication has occurred, and has been mediated through a closely defined language.

Generally speaking the ISBL deals with concepts for which there are approximately equivalent expressions in natural languages. In English, these would include ‘customer’, ‘product’, ‘service’, ‘account’, ‘asset’, and ‘invoice’ among many others. The formality and rigour of ISBL definitions suggest that, while it might be a pidgin language at the moment, it could also be seen as a prototypical ‘perfect language’ (Eco, 1997) of business. As indicated earlier, there are fundamental differences between the ISBL and English, despite the superficial similarities, and these are summarised in Table 15.1.

Table 15.1. ISBL-English comparison

<i>Language aspect</i>	<i>English</i>	<i>ISBL</i>
Lexicon	Open-ended, additive	Restricted, predefined
Syntax	Enculturated, variable	Prescribed, rigid
Context	Uncontrolled	Controlled
Semantics	Variable in context	Invariant
Pragmatics	Intrinsic to use	None

A reasonable natural language definition of a customer is ‘one who currently purchases anywhere; a buyer, purchaser’ (Onions, 1973). Within this broad interpretation, the extension of the concept to encompass specific individuals can occur in a variety of ways, which can include personal familiarity, face recognition, showing a receipt from a previous transaction, or a conversation in which the person simply reveals an intention to buy. Both the customer and the vendor have the full resources of natural language to use in their attempt to establish a workable relationship. Such interactions are intrinsically messy, even in a highly structured bureaucracy, where the use of natural language provides a means by which the participants can, if they so choose, step outside any predefined scripts.

The definition of customer in the ISBL is quite different, being in practice something like ‘an entity characterised by the following mandatory attributes’, where the mandatory attributes might include identification number (valid) + account number (valid) + credit card number (valid) + credit status (valid). More to the point, the adopted definition is designed to leave no room for debate on terminological grounds; a person wishing to be identified as a customer must satisfy the validity requirements no matter what the previous status of his or her relationship with the organisation behind the autonomous system. It may seem redundant to stress the differences in the two conceptions in this way, but the free use of terms like ‘customer’ or ‘client’ or ‘product’ in published literature can help to conceal the full implications of the distinction being drawn here.

A major factor propelling development of the ISBL is that many business activities are supported by information content that tends to be broadly similar across organisations, and it has been recognised that very real gains in efficiency can be made through the general adoption of standardised definitions (Threlkel and Kavan, 1999). Thus, although there may be subtle differences in how different organisations interpret the meaning of the various business concepts involved, the generic assumption is that there should be sufficient commonality of interpretation to make the prospect of coming up with a standard definition feasible as well as economically appealing. It is, in fact, the possibilities for standardisation that have driven a range of systems integration initiatives including B2B procurement exchanges, EDI-based inter-organisational systems, and various types of data sharing arrangements. Progress can be difficult to achieve in practice (Goodhue et al., 1992), but is nevertheless being made on several fronts (Wyzalek, 2000) to the extent that the emergence of a standard or ‘authorised’ version of the ISBL is becoming probable rather than possible.

Actor network theory

The closest parallel to the ISBL concept is to be found in what is now generally termed actor network theory (or ANT), where both human and non-human entities are assigned roles in the constitution and functioning of a network (Callon and Latour, 1981; Callon, 1989). Callon (1989), for instance, includes the Renault car-making firm, a new kind of fuel cell, consumers and engineers as components of a network concerned with the proposed introduction of an electric car into the French car market. ANT has itself been proposed as a promising theoretical perspective for IS researchers (Underwood, 2002).

There are, however, some basic differences in concept. The proposal in this paper is that autonomous IS be themselves considered as social actors, whereas it is the network that is the actor in ANT. Non-human entities may wholly or partly constitute such a network, but they are held to contribute to the actions of the network by virtue of their position and their associations, not because they act autonomously themselves (Callon, 1989, p. 93). The ANT concept is therefore an important conceptual precedent for the proposal in this paper, but is applicable in a radically different analytical context.

Social impacts of the ISBL

The positive benefits of transaction standardisation have been too well canvassed to need much discussion here. They include streamlined business operations, efficiency gains in dealing with customers, improved data accuracy and reliability, reduced infrastructure, and inter-organisational links for the transmission and sharing of data (Weill and Broadbent, 1998; Parker and Benson, 1988). When standardisation is coupled with the installation of autonomous systems that can be operational around the clock, further benefits come from the reduction or elimination of time dependencies. As the technical problems inhibiting systems integration are progressively solved, there seems no reason to doubt that further efficiency benefits will continue to materialise.

The instrumental impacts of the ISBL on power relations are, however, more problematic and await empirical research. While the range of possibilities is extensive, the linguistic perspective suggests at least two directions for analysis that are likely to be fruitful. These are, first, the consequences of attempts to extend the compass of the ISBL as a standard language of interaction and, second, the implications of limiting the vocabulary available to people wishing to conduct various types of transaction. Each of these appears to have some negative social implications.

A further issue is the possibility that the use of the ISBL as an instrument in support of power-seeking behaviour carries with it some hidden risks to the adopting organisations. These arise essentially from the loss of flexibility that is entailed. The extent of this risk is not easily assessed; what is argued here is that the widespread adoption of the ISBL would represent a commitment to stability tending to inhibit systems change.

Imposing the ISBL

The imposition of a standard version of the ISBL as the language for conducting some types of business transactions is a likely outcome on the basis of existing trends. One approach already in use is to use pricing policies and other strategies to ensure that business partners, including customers and suppliers, find it economically desirable to interact with autonomous systems. Organisations with an interest in imposing the ISBL in this way logically include all those working to an efficiency-oriented business model such as government departments and agencies, banks, utilities, and other organisations with highly routinised modes of doing business.

Examples of the approach can be found with the installation of B2B procurement exchanges, where purchasers combine to develop a large transaction-processing vehicle based on standard definitions of goods and services (Hammer, 1996). What has quickly become apparent is that large companies can in this way put themselves in a position to dictate to their suppliers on modes of interaction, often at great expense to those other companies. The failure of a number of major B2B projects has somewhat slowed the pace of change in this area, but the innate potential for the exercise of control is evident.

Other examples on a smaller scale can also be found. One such is provided by the organisation Tabcorp, one of the major players in the Australian gambling industry. Despite

public concern with the level of gambling in Australia, Tabcorp has consistently raised the level of the minimum bets that can be placed by telephone bettors through a human operator. This has been accompanied by an extension of the gambling period and a lowering of the betting minimum for gamblers willing to use online and voice recognition services that interface with autonomous systems. Punters have in effect been forced to decide whether to increase the size of their minimum bets, or use a service that anecdotal evidence suggests is widely disliked.

Vocabulary control

As discussed earlier, the installation and effective operation of an autonomous IS depends in practice on tight vocabulary control through the use of a rigid syntax and restricted lexicon. The effect this has is to very tightly constrain the range of possible directions a conversation can take, and to limit the scope of what a customer can do in the course of any interaction. This is efficient, convenient, and cost-effective.

The power implications are subtle but significant, in that the more people come to depend on the use of ISBL-based modes of interaction, either through economic incentives or the lure of convenience, the more accustomed they become to reduced possibilities for questioning and negotiating with organisations. What happens, in effect, is that the difficulties of dealing with exceptional or unusual issues become greater when the customer has to step outside the normal mode of interaction, use a different language of interaction, and rely on finding an organisational representative able to understand the problem. Given the focus on efficiency that an ISBL installation represents, one of the side effects is that the organisation itself also has a reduced capacity to talk about and understand exceptional circumstances. It seems likely that this type of issue will become increasingly problematic in relation to government agencies, where special cases can in any circumstances be difficult to resolve given the opacity of many rules and regulations (Herzfeld, 1992). A typical example is where a person seeking some form of social support is unable to satisfy an autonomous system that she or he has the attributes required of one of the organisation's clients, and is therefore implicitly defined as an 'outsider'. The challenge, often a discouraging one in practice, is for the person concerned to find another avenue into the organisation through which to change its perception of the situation.

A prediction such as this is not based on any assumption of cynical intent on the part of organisations. What the ISBL perspective suggests, however, is that the very convenience and efficiency of interactions based on a simplified language used in a fully controlled environment creates new possibilities for the exertion of 'bottom-line' pressures by organisational stakeholders (Lavery, 1996). The mere existence of a streamlined mode of operation is a threat to customers or clients who need a larger vocabulary than the one available with which to state or negotiate their requirements. It is also conceivable that some loss of in-depth organisational knowledge will occur. Once the 'understanding' of an interaction is totally devolved to an autonomous IS, the temptation is to adopt the system's interpretation of what can and cannot be done as defining the limits of possibility (Herzfeld, 1992).

The scope of the ISBL

The temptation to widen the use of the ISBL through the further standardisation of IS structures and definitions is great. The efficiency benefits that have effectively fuelled IS developments since the 1950s have derived directly from processes of routinisation and standardisation, and further benefits are clearly to be gained by extending these

processes to the societal level. It is in any case generally accepted that it is logical to attempt to impose whatever degree of stability is possible on a favourable set of control relationships (Beniger, 1986), which implies that the more tightly the language of business can be controlled, the better. There is thus a strong argument in favor of standardising the language of interaction as far as possible and to maintain strict controls over the definitions in place. It can be assumed that organisations including government departments and agencies already have the power to achieve a lot in this direction.

If there is an organisational downside to this it must be that some loss of flexibility is entailed in adopting a highly standardised approach. Put another way, the more widely that integrated IS structures are adopted, the more a form of interdependence is created in which agreements on change will become hard to reach. While there are no real precedents for this type of situation, it can be noted that past attempts to 'freeze' a language in the interests of control have tended to create an element of ritual, in which original intentions and meanings have been wholly or partially lost (Crystal, 1987, p. 405).

Overall, the most definite conclusions that can be drawn in this regard stem from the fact that the strong control of vocabulary equates to a rigid formalism of interaction. If there is a practical risk to the adopting organisations, as distinct from the risks to customers and client organisations identified in previous sections, it is one that is difficult to represent in economic terms. The literature on IT economics suggests, for instance, that it is difficult if not impossible to identify any clear loss of organisational flexibility from within the context of a single investment decision (Ryan, 2000; Willcocks and Lester, 1996; Parker and Benson, 1988) and the broader implications of cumulative losses of flexibility are as yet unresearched. What the language perspective suggests is that there must be some loss of flexibility and that this could be problematic if business strategies concerning customers become more volatile.

Conclusion

One of the most complex characteristics of contemporary life has been held to be the simultaneous progress of trends to greater bureaucratisation and rationalisation in some areas, with equally pervasive trends towards greater fragmentation and uncertainty in others (Turner 1996, p. 15). The ISBL is clearly a rationalising concept, and is primarily relevant to those areas of social and business activity already subject to some degree of routinisation. The second trend Turner identifies helps, however, to disguise the potential for the exercise of power based on ISBL implementations for two reasons. The first is that the undoubted convenience of ISBL-based business arrangements is a boon for people under pressure elsewhere in their lives, and second because the volatility evident in other areas of consumption tends to create a sense of drama and excitement likely to counteract any feelings of powerlessness elsewhere.

It has been argued in this paper that the ISBL concept is much more than a 'mere' metaphor, and that it provides an analytically powerful perspective from which to see that the spread of autonomous IS represents some potentially troubling developments in power relations. Autonomous systems and people do, in this formulation, talk to each other, and the way they converse can lead to the creation of a new class of outsiders, as well as possibilities for consumers and organisations to be coerced into arrangements they find undesirable. In a sense, the ISBL represents almost the apotheosis of business rationalisation. It eliminates people as organisational representatives in a range of business dealings, and imposes a linguistic structure that ensures that the vast majority of basic transactions proceed according to a strict formula. Despite the improvements in efficiency

this can generate, and despite the convenience it provides to many consumers, not all the implications are positive.

The theoretical propositions listed earlier in the paper could be used as the foundation for a program of empirical research designed to explore these issues. As an outcome of systems integration trends, the ISBL is already in existence, albeit in a limited form. It is the argument in this paper that the impacts of its further development and more widespread adoption are issues that warrant concentrated attention.