

## Dealing with propositional ambiguity in business process improvement

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### Abstract

*If it is true that people express their views about organisational issues in ambiguous terms then one needs to address this ambiguity instead of the 'problems' to find an appropriate methodological approach to resolving or dissolving problem situations in the organisation. This paper highlights and discusses those issues, which therefore relate to ambiguity in relation to decision making tasks within organisations, and the related Soft Systems Methodology / Systems Thinking school of thought, which traditionally constrains such ambiguities. A model of these issues is presented in terms of the Business Process Improvement (BPI) task to highlight these interdependencies.*

*Keywords: Systems Thinking, Total Systems Intervention, Business Process Improvement*

## 1 INTRODUCTION

In 1991 Flood and Jackson published analysed intriguing questions about the choice of methodology for improving organization and management issues, in their book "Creative Problem Solving" (Flood and Jackson, 1991).

The question raised therein, namely, how can 'would-be problem improvers' attain a defensible choice for any methodology in order to improve problematic situations, is by no means trivial. From a practical as well as a theoretical point of view the issue is quite problematical. Flood and Jackson presented the Total Systems Intervention (TSI) model to discuss this issue in terms of a meta-model approach. As such, they suggested that the would-be improver – management, staff, internal or anyone involved in the debate over the problematical situation - is faced with a methodological problem. One way or another they have to make a plausible, defensible connection between the problematical situation and the actions for bringing improvement in the problematical situation. Hence, decision makers and problem solvers, have to find a methodology for relating a problem situation and the means for its improvement.

In this article it will be stated that the choice of methodology is not trivial. It will be argued that the initial approach to a problematical situation plays a decisive role with respect to the outcomes. The argument is that in the initial approach one is confronted with, involves ambiguity in the expressions of those dealing with the problem situation. The authors suggest that one has to address this ambiguity in order to handle the methodological problem of meta-modelling business process improvement (BPI)

situations and the related improvements sought. This will be achieved through discussing the intricacies involved in choosing an appropriate methodology to deal with ambiguities and uncertainties as detailed in Section 2, wherein the subjectivist and objectivist schools of thought are defined in Section 3. Section 4 highlights those factors which have a direct impact upon issues of ambiguity within organisations and as such Section 5 details how such subjective / objective points of view are included within the organisational context. In particular, focus is given to defining a model for the relationship between these aspects with respect to the Business Process Improvement (BPI) paradigm. The paper thenceforth concludes in Section 6 with a summary of the discussed issues.

## 2 THE ISSUE OF CHOICE OF METHODOLOGY

Wilson states: “Technique, method and methodology are all ways of thinking about problems and hence represent structured ways of undertaking the intellectual processes involved in analysis” (Wilson, 2001, pp.6). It is only the degree of prescription that differentiates between them, methodology being less prescriptive than either of them. For this reason Wilson describes methodology in terms of a ‘structured approach’. So for all three of them, although in different degrees, judgment is required; in terms of both its application and the structure itself. The process of acquiring judgments is by no means easy, it is problematical itself (Checkland and Casar, 1986; Vickers 1965; Weick 1969,1995). Judgements about reality and choice of methodology seem to be intertwined also. One needs a methodology to judge a situation in order to be able to make a methodological choice. This circularity makes the position of Wilson and others plausible. In fact their approach amounts to a pragmatic one in response to what is a nasty circularity problem. It is a procedure starting with a structured approach and leading to prescriptive techniques. It is obvious that at this point the initial approach to a problematic situation is of great importance.

Mingers claims, although an action-oriented methodology is valuable and relevant at this juncture, this choice of approach is embedded in what he called a ‘social theory’ (Mingers, 1984). By this he refers to the debate about the question of the difference between the social and the physical world. The core of the debate being that the physical world exists in entities and structures which are supposed to be independent of the concepts of the observer, while those are supposed to be dependent on the concept of the observer in the social world (Ackoff, 1974; Churchman, 1971; Checkland, 1981; Checkland and Howell, 1998; Eden, 1979; Rosenhead 1989). As such, the authors now highlight the contingent differences between the objectivist and subjectivist schools of thought in this light.

## 3 OBJECTIVISTS AND SUBJECTIVISTS

The authors suggest that the problematic situation itself is decisive in the sense that it determines the judgement about the situation and consequently the choice of methodology. We can label this as the ‘*object*’ approach meaning firstly that the situation is independent of the concepts of the observer and secondly that this situation can be known objectively. In other words, different observers can describe the situation identically. If we take this position then our ‘would-be problem improver’ is basically an outsider who is looking at a situation. The situation expresses itself in his judgment and choice of methodology. The process unfolds in a gradually more and more prescriptive trajectory from methodology to method to techniques for implementing a resolution with an achievable level of consensus.

Hence, if we take this position then in the end the professional qualities of the observer are of great importance. The professionals, i.e. the experts, possess assets that the layman does not. They are able, in principle independent of the individual professional, to judge and address the situation. So basically the choice of methodology does not seem to be problematical at all. What can be problematical are the

professional qualities in general or the qualities of a specific individual. In contrast to this '*objective*' approach one can argue for a '*subjective*' approach meaning that one claims that a problematical situation is subject related. In other words dependent on the concepts of the observer or more generally on the concepts of those involved in that situation. The situation can only be known through the eyes of the beholder and cannot be described identically by different observers. It is obvious that if one takes this position that in that case neither the situation nor the qualities of the professional will produce unambiguous answers.

The issue of the choice of methodology can be illustrated in terms of the 19<sup>th</sup> century distinction about Knowledge. In the object approach one claims that the facts speak, although not necessarily for themselves. The outsider, to be more precise, makes the facts speak and thus resolves the choice of methodology to methods and ultimately to techniques. It is the expertise of this outsider that enables him to let the facts speak as if he were not there. In the subject approach it is not the facts but the people involved, that are speaking. The outsider cannot solve the issue in any other way than by letting the involved speak. The outsider can only facilitate this process of enquiry, by getting involved and becoming an insider. The object and subject approach are presented here as extremes and one may wonder; if they are incongruous or how they may relate (Mingers, 1984).

Wilson defines the difference between 'hard' and 'soft' approaches – here understood as equivalent to 'object' and 'subject' – in terms of "the degree of agreement about what the problem is among the particular population of individuals to whom 'the problem' is of concern" (Wilson, 2001, pp.6). This seems to imply that the two approaches are not incongruous. If the problematical becomes unproblematic, if the ambiguity becomes unambiguous then the two meet. So in principle it seems, according to Wilson, it is possible to switch from for example Soft Systems Methodology to Systems Engineering and vice versa during a process of improving a problematical situation. The authors therefore pose the question as to whether, if Wilson's conjecture is correct, is it possible for the ambiguous (the problematical) to become unambiguous (unproblematic) and vice versa? And above all, what makes ambiguity so common in social affairs? The authors now present arguments for viewing these concepts in more detail in the following section.

#### **4 THE INEVITABLE AMBIGUITY; ATTRIBUTION OF MOTIVES, CAUSAL FANTASIES AND NORMS**

In order to discuss the nature of ambiguities in relation to objective / subjective problem solving methodologies, it is important to consider those modifiers and relationships which define or declare levels of implied ambiguity based within an organisational context. To say that organisational issues are based on people's feelings of uneasiness may be a true statement but would not in itself resolve anything. Not all feelings of discomfort translate themselves into organizational issues. They need expression and a network of carriers in order to rise from the 'underworld' of the organization to become an organisational issue which needs to be addressed (Gabriel, 2000; Latour, 1987; van den Belt, 1997). Maybe one should look at the process of expressing in order to understand the existence of ambiguity in the expressing of organizational issues. The phenomenon of multiple realities in that people attribute different meanings to incidents, persons and objects, has been studied for many years. Sociologists have claimed that the production of meaning, as it were, is related to one's position in the social structure, to the variety in ends and to the personal biographies of the producers (Berger and Luckmann, 1966; Lyman and Scott, 1970; McHugh, 1968). They put an emphasis on the specific relation between meaning and behavior. The famous statement of Thomas: "If men define situations as real, they are real in their consequences", describes very clearly their point (Thomas, 1928). For understanding the behaviour of a person one needs to understand how this person defines reality rather than how reality 'is' in an objective sense. This relationship between meaning and behaviour is explained by what sociologists called the phenomenon of 'self-fulfilling prophecies' (Becker, 1964; Merton, 1968).

#### 4.1 Attribution of motives

Although the sociological approach is of interest, for the would-be improver the focus is on the individual expressions as such. These individual expressions result in multiple-realities between the involved and thus in a clash between meanings. The multiple-realities as a product of sensemaking are difficult to address. Not only because they are conflicting but also because of their ambiguity. Research on sensemaking in organizations seems to reveal that ambiguity is not an accidental but a systemic feature. According to Burke it is the enigma of motives which causes inevitable ambiguities and inconsistencies (Burke, 1945/1969, pp. xviii-xix). Weick claims that cognitive theorists repeatedly have demonstrated that when people try to make sense out of events, they are aided most in doing this if they can establish motivational reasons for the actions (Weick, 1969, pp.10). Gabriel goes further by claiming that attribution of motive is central to any interpretation (Gabriel, 2000, pp.37).

#### 4.2 Causal fantasies

Related to attribution of motive is the attribution of causal connections by which phenomena are connected as cause and effect. In this attribution of causes and effects it seems to be inevitable that the richness in terms of multi-causality, probabilistic causation, distinction between sufficient and necessary conditions gets lost in simple chains of causes and effects in 'causal fantasies', produced in what Goffman calls 'the causal fabric of experience' (Goffman, 1974, pp.503).

#### 4.3 Norms

The related ambiguity in articulation appears to be a systemic feature of social systems. People can and will express themselves in ambiguous statements when they make judgments. This seems not only to be the case when they make Reality Judgments - judgments about what they see as reality - but also regarding Value Judgments – judgments in terms of good and bad, acceptable and unacceptable and more so for judgments about what to do to improve problematic situations. The last being the problem solving judgments, finding the best means of achieving a given end. Value judgments are critical as far as they reflect the feelings of uneasiness which trigger potential organizational issues. For Vickers the concept of a standard is crucial in the process of judgment. Vickers criticized the emphasis on management as an exercise in goal-seeking and problem solving: "*I, on the other hand, am concerned with the setting of the norms to be followed and hence of the problems to be solved. The norms which men pursue, and hence the problems which they try to solve, are, I suggest, largely self-set by a partly conscious process which merits and is susceptible of more study than it has yet received...*" (Vickers, 1984, pp.305).

Attribution of motive, articulating oneself in causal fantasies and applying norms, partly implicit set, seems to create ambiguity in the addressing of organizational issues. For that reason it is no wonder that in the organisational discourse about problematic issues one can notice that it is not the questions that are in search of answers, rather, it is the answers that are looking for questions and solutions that are seeking problems (Latour, 1999). This may appear to be irrational but if, as Burke and others have shown, this ambiguity is a systemic feature of the process of articulation then it is pointless to attempt to get rid of it but one should relate to it. Of course the intriguing question would then be; is it possible during a process of improving problematic situations to manage ambiguity?

## 5 UNRAVELING AND ACCOMMODATING AMBIGUITY

If it is to be stated that ambiguity is a systemic feature of social reality, then one cannot solve it or get

rid of it. We can approach the issue from a different angle and say it in the words of Wilson: is it possible to improve the degree of agreement about what the problem among the particular population of individuals to whom 'the problem' is of concern? Can we describe and manage the degree of agreement in terms of agreement to disagree, of consensus building or accommodation?

### 5.1 Ambiguity and Involvement

Although improving the degree of agreement is not the same as decreasing ambiguity, the two seem to be strongly related. Ambiguity of organizational issues can be expressed along two dimensions. The first one being ambiguity about problems or issues (by this is meant ambiguity about 'what' and 'how' questions). The second one is about the Involved, about questions 'for' whom and 'by' whom. If on the one hand both the problem and the involved are well defined and it is clear *what* needs to be done, *how* it needs to be done and by *whom* it needs to be done, then one could say that the degree of agreement is high. And possibly but not necessarily that ambiguity is minimal. If on the other hand it is neither clear *what* the problem is nor *who* the involved parties are, but nevertheless the situation precipitates in managerial action (or deliberation), one may speak of 'wicked problems' (Rittle and Webber, 1973) or a 'messy management situation' (Ackoff, 1981) of high ambiguity. And possibly but not necessarily the degree of disagreement may be high. For reaching agreement about 'what', 'how', and, 'for' and 'by' whom questions one may address the three aforementioned issues, the attribution of motive, the manifestation of causal fantasies and the application of norms.

### 5.2 Objectivists and subjectivists in trouble

If we now take the objectivistic (outsider) position then the attribution of motives and the setting of norms may be interesting in a sociological or psychological sense but they are basically perceived as being within the managerial and not the professional domain - the domain of the 'would-be' improver. The motives and the norms, and accordingly the *what* questions, are basically issues to be resolved by the management. Of course in creating agreement about the problem and possibly clarifying some of the ambiguity, the three issues of motivation, causal fantasies and norms come to the fore and the 'weak-objectivist' will be interested also to assess the possible relevance and efficacy of his own efforts. But for the objectivistic professional the most important issue will be the clarification of the causal fantasies. His chief contribution will be in unraveling, on empirical and or logical grounds, the basis of causal fantasies. So in a sense he is trying to decrease ambiguity and enhance agreement by letting the facts 'speak'. In the end he may be right in the sense that he may be convincing, but this is not up to him to decide but up to those involved in the situation.

In the subject position the outsider becomes an insider and with that, all the above three issues come to the fore. So here, motives, causal fantasies and norms are all important and all three need to be addressed. Basically the contribution of the subjectivist will be that he creates time and a setting for reflection. The 'weak-subjectivist' in Minger's terms will be interested in the logic, consistency and plausibility of arguments. And by doing this the involved may be able to decrease ambiguity and enhance agreement. In the end, both approaches need to organise a process of accommodation to promote the scope for an agreement. The problem of the objectivist is that the facts hardly ever speak for themselves and so he cannot be convincing through the facts. The subjectivist's problem on the other hand is that in the end, in seeking to promote agreement he has to avoid the kind of paralysing total relativism that concludes that all motives, causal fantasies and norms are equally true and above all equally relevant. Both approaches can be seen as different strategies for creating a kind of inter-subjective agreement about 'what', 'how', 'by' and 'for' whom questions. Ambiguity may still be apparent, but people are able to accommodate through debate or even coercion- hence the agreement is provisional. Therefore social interaction may result in a provisional unproblematising of the

problematic or problematising of the unproblematic. Increase of agreement as a product of accommodation seems to be possible.

Thus, according to Wilson, one can classify two types of problems. “Thus the design of a piece of software to meet a given specification is a hard problem (as long as the specification is ‘a given’) whereas the specification of information requirements to meet business needs is a soft problem particularly if the needs as specified are at odds with those required to support the business, or if indeed the business requirements themselves are problematical” (Wilson 2001, p7). So soft problems can become hard ones and vice versa and in this way by a switch of method becomes possible. But actually one is not classifying types of problems but the spectrum of agreement and disagreement about issues. It is the agreement or disagreement between the involved about the problem, and, not the *problem*, that induces a possible method(ology) switch.

The authors therefore present a model for understanding these concepts of ambiguity within the context of Business Process Improvement (BPI). The basis of any BPI initiative is to incrementally improve existing processes, such as via quality-based approaches such as Total Quality Management (TQM) (Lahke, 1995; Mann, 1995), Six Sigma (Stamatis, 2003) and Kaizen (Imai, 1996). These approaches also focus not on the problem but on the intrinsic processes, stakeholders (customers), owners, standards and metrics (benchmarks). Thus, linking the issues of ambiguity and involvement with concepts centred around improvement, it can be seen that BPI is best when there is low ambiguity and high involvement (and vice versa), as shown in Figure 1. This precludes the fact that at its heart BPI requires a high degree of involvement of all those concerned in changing and adapting processes (Allen and Brady, 1997; Calingao, 1996).

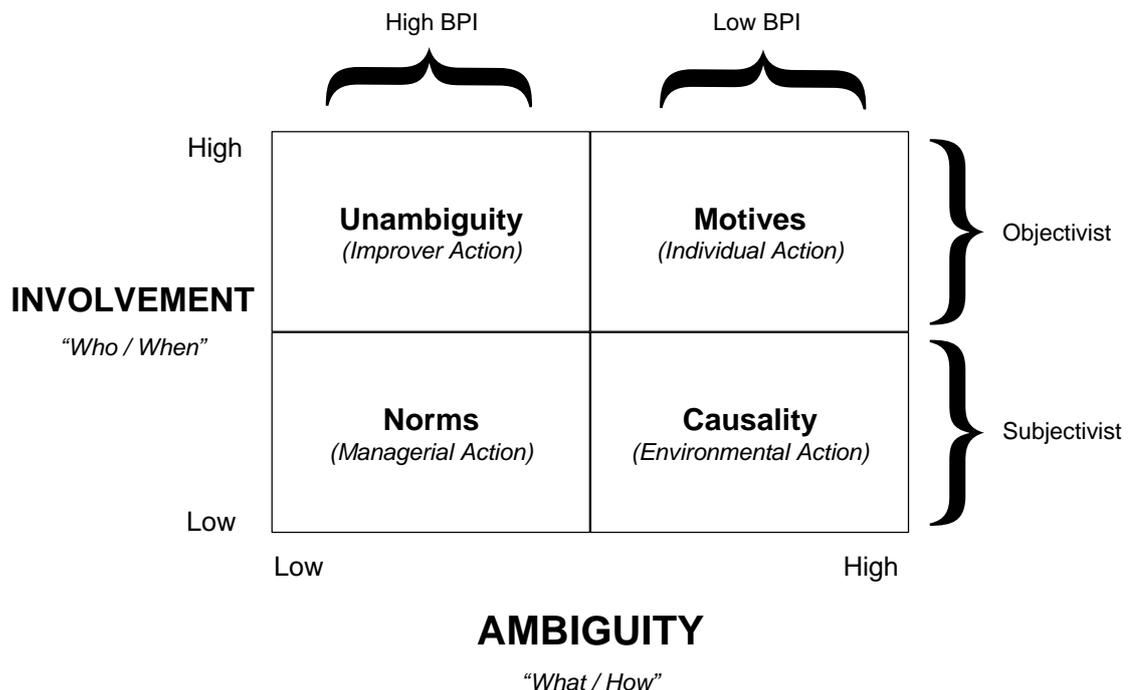


Figure 1. Ambiguity and Involvement factors affecting BPI

## 6 CONCLUSION

The main aim of this paper has been to contribute to the question of methodological choice. This question is set in the context of the choice of action-methodologies for improving organizational issues. First of all methodology is defined as a 'structured approach' and the relationship between methodology, method and technique is perceived in terms of a difference in degree of prescriptiveness.

The application of any methodology requires judgment in terms of both its application and its structure. The argument is that judgment is about something, this being the expressions of the organizational issues by the involved. The claim is that in the expression of the organizational issues, ambiguity is a common and probably even a systemic feature. For the would-be problem improver the consequence is that he needs to address this ambiguity. It is dealing with this ambiguity that is actually the key issue regarding the choice of methodology. So in line with our argument the judgments one has to make in order to choose a methodology, presuppose that one has attained a kind of clarification of the ambiguity. One needs a methodology to clarify or even understand ambiguity in order to be able to choose a methodology to improve a situation. And the problem is that one is confronted with circularity. The choice of methodology understood in terms of a structured approach to address this ambiguity, may be decided based on personal preference. Actually would-be improvers do have these kinds of preferences (Weick, 1969). Another procedure may be based on a meta-methodology like the one of Flood and Jackson. In Total Systems Intervention (TSI) they claim that the choice of methodology should be taken based on the two dimensions these being the complexity of the situation, being simple or complex, and, the nature of the relationships between the involved, i.e. unitarian, pluralistic or coercive (Flood and Jackson, 1991).

Although there seems to be a flaw in TSI, this being that the above two dimensions are not independent. A model like Flood and Jackson's does attempt to address the ambiguity. Where Flood and Jackson make the choice partly dependent on the nature of the situation, so object oriented, a third procedure could be based on the nature of the problem expression by the involved. The involved can be seen and classified in terms of objectivism and subjectivism. Some will express themselves about organisational issue in an objective language and style others in a subjective fashion.

The would-be improver should then be able to recognize these styles and behave accordingly. Although it may be difficult to classify types of articulation and styles in terms of objectivistic and subjectivistic, actually there are methods, which may be helpful. One may use methods like the drawing of Rich Pictures as is done in Soft Systems Methodology (SSM, Checkland and Scholes 1990, Lewis, 1992) or forms of cognitive mapping as in Strategic Options Development and Analysis (SODA, Eden, 1999) or the assumption surfacing method of Strategic Assumption Surfacing and Testing (SAST, Mason and Mitroff, 1981). Methods like these and combinations of such methods can be used for the above classification because they enable one to address ambiguity and analyze the expression of people in terms of attributed motives, causal fantasies and norms (Kirk, 2002). As such the authors also showed the application of these ideas in terms of modelling the Business Process Improvement (BPI) task through the mapping of causal, normative and motivational-led aspects of ambiguity.

In summary, such procedures involve the would-be improver making a choice of methodology based on the style of articulation by the involved, and not on the nature of the problematical situation, whether it may be simple in the eyes of the one or complex for the other. If decrease in ambiguity and increase in agreement about the situation is to be attained then one could say that a methodological accommodation to the involved seems to be relevant.

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