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The 'polycronic' effects of Management by Objectives - a system theoretical approach

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Abstract
This article expands the hypothesis proposed by Peter F. Drücker and Dirk Baecker, that is, how the evolution of computer communication manifests and presses ahead the detemporization and poly-contextuality of information and therefore is said to be the driver for an unmanageable complexity within modern organizations. In order to do so, the article uses an illustrative case of Management by Objectives as it appears within the governmental programmes in Denmark associated with New Public Management. This case shows how this technology enables the production of a diversity of antagonistic images of the organization relative to its environment (polycontextuality) and in particular how these effects emerge due to different timebindings within organizations (organized temporality). As such the hypothesis is expanded in three ways: first of all, the hypothesis is expanded as polycontextuality is comprehended within the temporal dimension, that is, as the differences between timebindings. Second of all, the article renders probable these identity-problems of modern organizations but due to another technology which mediates communication: Management by Objectives. Thus, identity problems should be associated with other media of communication too, than the one of the computer communication. Third of all, the implications of identity problems of modern organizations are often associated with the impossibility of management or with a need for more complex ways of managing. The article is an attempt to specify this approach suggesting 2. order management as a matter of observing the observations enabled by management technologies. To these ends the article draws upon Luhmann´s system theory in order to direct attention to these organizational identity problems. This contribution is not conclusive. It is an attempt to expand a strong hypothesis in the need of further investigation.

1. Introduction

New Public Management (NPM) has established itself as the paradigm to watch when it comes to understanding changes in the public sector. It is generally agreed that the normative purpose of NPM is to improve the market orientation, public choice, competition, and cost efficiency of public administration (Lane 2003; Ferlie et al. 1996;

Dunleavy and Hood 1994; Bozeman 1993). In order to achieve this purpose, NPM normally emphasize new steering technologies, largely adapted from the private sector and guided by the tautological maxim that "managers must manage" (Ferlie et al. 1996, p. 9). What is called New Public Management, then, is the meeting of a particular set of normative ends with a specific set of technical means handled by managers who know how to manage. This causal set-up has undoubtly contributed to the general acceptance of both means and ends since overcoming the obstacles can now be conceived of as relatively straightforward matters of implementing efficient technologies. The constitutive effects of these technologies upon the organization, however, are not adequately addressed in this causal set-up. This is only reinforced by the prevalent belief that technologies cause a strong unification in terms of, e.g., an increased correspondence between task and structure, linear structures of parliamentary lines of control, and an increased degree of common adaptability in terms of market orientation. As noted by Scheytt (2005, p. 388) technologies are seen as neutral tools in the hands of strong managers which neither distort an organization's reality nor intervene in the context in which they are applied. What must be recovered is the sense in which the constitutive effects of these steering technologies – specifically the array of technologies that travel under the banner 'Management by Objectives' (MBO) – pose new challenges for management, rather than being simply a set of technical means of achieving normative ends.

The main problem is that the technical conception provided by NPM, fails to address emerging identity problems as an effect of the new technologies. More specifically, MBO is conceived of as a unifying technology, based on unambiguous grounds of 'goal' (monocontextuality). Thus, what is too easily glossed over is the way in which this technology enables the production of a diversity of antagonistic images of the organization relative to its environment (polycontextuality) and in particular how these effects emerge due to different timebindings within organizations (detemporization).

Following this ambition the article expands the hypothesis proposed by Peter F. Drücker and Dirk Baecker, that is, how the evolution of computer communication manifests and presses ahead the detemporization and poly-contextuality of information and therefore is said to be the driver for an unmanageable complexity within modern organizations. This case shows how MBO enables the production of a diversity of antagonistic images of the organization relative to its environment (polycontextuality) and in particular how these effects emerge due to different timebindings within organizations (organized temporality). As such the hypothesis is expanded in three ways: first of all, the hypothesis is expanded as polycontextuality is comprehended within the temporal dimension, that is, as the differences between timebindings. Second of all, the article renders probable these identity-problems of modern organizations but due to another technology which mediates communication: Management by Objectives. Thus, identity problems should be associated with other media of communication too, than the one of the computer communication. Third of all, the implications of identity problems of modern organizations are often associated with the impossibility of management or with a need for more complex ways of managing. The article is an attempt to specify this approach suggesting 2. order management as a matter of observing the observations enabled by management technologies.

In order to arrive at these contributions, the structure of the article runs as follows: First, the limitation of NPM as a unifying governmental program is addressed. Second, it specifies the contribution of a research strategy based on Luhmann's system theory, and in so doing, stresses the (relation between the) system theoretical concepts of 'technology' and 'steering'. And third, the article illustrates the potential of systems theory by providing a provisional analysis of the use of MBO in a Danish context in order to show the timebinding effects as the one of 'polycroni'. Conclusively, the article sum up on the temporal perspective.

Before proceeding into this structure, it is important to note that the concept of organizational polyphony is not entirely new, and is related to other appeals to the variety of social experience. As such, modern living is often described as 'polyvocal', 'polycontextual' and 'polycentrical'. In particular, these concepts have been referred to within a body of post-modern studies that derive largely from the work of Lyotard (1984), Bakhtin (1984), Ricoeur (1983) and Deleuze (1988). These rich contributions have been emphasizing polyphony as formation and fragmentation of power and knowledge (e.g. Miller and Rose 1990), as multi-voices (e.g. Rhodes 2000), as different narratives (e.g. Boje 2002) and as the polyphony of polyphonies (Deleuze 1988). But little has been done to relate polycontextuality within organizations to the presence of steering technologies. Nor have we seen many attempts to unfold this constitutive relation with reference to systems theoryi. And finally, the way in which 'Poly' relates to different timebindings, has not yet been specified either.

2. MBO as a unifying governmental program

Government comprises the tradition of present political science (e.g. Hague and Harrop, 2004) and administrative law (e.g. Peters 2001) which draws upon the strong ideological principles of Montesquieu and Tocqueville. In this context the function of steering technologies in general and MBO in particular is believed to serve an integrative function. Especially

the steering aspect of MBO draws upon the predictability of the calculus, which in recent administrative and political terms has been conceptualized as the parliamentary chains of control ensuring the unity of a strong political body. As such, the effect of MBO upon the governmental set up is expected to manifest either as a consolidation or an improvement of the chains of control in which managers on different political, administrative and institutional levels are firmly positioned. The overall challenge of management, then, has been construed as a matter of prediction and control or, more specifically, as the connecting point between 'chains of causality'. This set up is not compromised by the recent celebration of liberalization through means of decentralization. It is merely extended, as management takes on a purpose so as to ensure a regulation of deregulation.

When shifting to science, one should think that a critical opposition to this integrative, and in principle monocontextual idea based on causality would emphasize polyphony as a strong alternative as this opposition focuses strongly on resistance and emancipation from totalizing technologies, concepts and beliefs on behalf of a deeper human rationality (Adorno and Horkheimer 1969; Marx 1962/1966; Marcuse 1991; Habermas 1982). This critique (of modernity) is foremost represented by Adorno and Horkheimer on the discussion of the dialectics between human technification; by Karl Marx on the discussion of exploitation, by Herbert Marcuse on the discussion of (one dimensional) subjectification, and by Habermas on the discussion of the liberation process away from a world of colonizing systems.

Despite the fact that these grand analyses neither deal with the manager nor management technologies like MBO they have surely had a tremendous impact on politics and power holders, and have even been used to develop normative principles of public management (e.g. Eriksson, 1999). The cost, however, seems to be a strong reification of the government approach bordering on paradox: in the act of constructing the critique, this body of critical literature acknowledges the object of criticism. As such, a strong unity based on prediction and control enabled by an instrumental regime of technologies and ensured by managerial authorities is only reified. Hence polycontextuality only plays a minor role and by sure not recognized as a matter of different time-bindings. An approach based on systems theory is an attempt to do so.

What follows, then, is a brief account of Luhmann's theory of social systems theory. This account draws on Social Systems (1995) and the concept of 'differentiation' (1982, 1990a), but it inscribes itself in, as well as draws upon, existing introductions recently offered by Seidl (2005), Seidl and Becker (2005), Bakken and Hernes (2002) and Kneer and Nassehi (1993). Furthermore, it makes use of examples based on technology and steering in order to angle the system approach more specifically to the aim and scope of the article. This brief account is followed by an introduction of two system theoretical concept which makes op the research strategy: the one of 'technology' and 'steering'.

3. A Systems Approach

Systems theory perceives the differentiation of social formation in terms of systems and hence offers a way to observe the nature of polyphony. Within this context, polyphony is defined as the co-existence of systems within organizations that remain closed to each other, and the concept of technology and steering is defined in order to observe the way in which the formation of differentiation emerge due to different timebindings (polycroni).

3.1 Systems theory

Luhmann makes a sharp distinction between social systems and psychic systems: social systems reproduce themselves on the basis of communication while psychic systems refer to human beings and reproduce themselves on the basis of thoughts. This, however, does not exclude concepts such as 'mind', 'person' and 'action', but exactly allow these constructs to emerge as different ascriptions performed by the communication of systems. Luhmann also suggests that we speak of autopoiesis whenever the communication of a social system is reproduced by communication itself. This is done in either of two ways: on an operational level, communications obtain their relevance only through following communications that refer to them, or on the level of reflection, when communication according to the same logic addresses the communicative premises on which the communication rests. This construction forms the de-ontic basis of social systems theory: Communications does not represent facts, as if facts are something which exists outside the communication itself. Both time,

objects and sociality becomes factual due to communication. The implication of this approach directs attention toward communication itself. Communication refers to communication. This is not to say that social systems are mysterious flows of communication detached anything else. As Luhmann put is, communication communicates but demands are put on individuals to communicate in ways that are guided by social expectations of structures (in terms of programs) and semantics (in terms of generalized differences). This is not to say, that system theory claims a deterministic relation between communication and action. Lots of organizational practices, as thematized within communication, do not

correspond with the expectations set out by programs. But expectations are what enable the recognition of accepted behavior as opposed to deviating behavior and hence allow mechanisms of steering, sanctions and evaluations to take place within organizations.

Communication itself is an act of observation as any communication is the indication within a distinction. Communication is, so to speak, not able to communicate without this basic operation, thus systems are operationally closed but cognitively open. This leads to the recognition of how systems construct their own environment in the act of communication. This is to say, that the environment is not an ontologically given state of affairs outside the system. On the contrary, systems each in their own way indicate the environment according to a distinction, which could have been different. In relation to the concept of differentiation, one might state, there are as many environments as there are systems including systems observing (the (self-)observations of) systems.

When focusing on organization, it is a particular system consisting of decision communication of which the general function is the ability to decide upon the premises for further decisions. It will exceed the aim of this article to further expand the concept of organization and to proceed with the consequences to be drawn from this definition of organization. What is important to note is how the function of decisions allows for the observation of technologies in two ways and that this article looks at the latter. Either the observation of how decisions organize the appearance of various technologies. Or how present technologies, and the related programmes, works as highly different premises for further decisions. This has become a familiar distinction (Scheytt 2005, p. 18), i.e., how technologies can be considered as constitutive of, as well as constituted by, the decisions of the organization.

3.2 Technology and steering

Drawing on these basic notions of a systems-oriented approach, two concepts are proposed in order to observe the polyphonic organization: 'technology' and 'steering'. These were originally proposed by Niklas Luhmann, who defined 'steering' and 'technology' in relation to observation and suggested a strong interconnectedness between the two concepts.

From the perspective of second order observation, technology is a selection of specific causes and effects. These considerations strongly suggests reformulating the concept of steering. It cannot mean to produce the intended state of the system, certainly not in the long run. Instead, it means (in the sense of cybernetic control) to reduce the difference between a real and a preferred state of specific variables (for example, the rate of unemployment) ([Luhmann 1989]). But reducing differences also means producing differences. You never get a system which no longer deviates from expected values … In this sense, steering seems to be a selfsustaining business. (Luhmann 1990a, p. 228, emphasis modified)

Systems theory can help us to understand technology because it gives an account of how the causal relation between system and environment emerge on the basis of technologies. When it comes to steering, systems theory provides us with an account of how to observe the reproductive closure of systems by guiding observation toward the reduction of deviations from the calculus provided through the systemic mechanisms of feedback. That is, the concepts of technology and steering enable the observation of multiple systems caused by the presence of multiple technologies, hence the formation

of polycontextuality. What follows is a brief account of 'technology' and 'steering' and how these concept allow for the observation of how management emerge due to different timebindings.

3.2.1 Technology

"Seen from the point of view of second order observation," Luhmann notes, "technology rests on the attribution of causality, on the selection of some out of many causes and some out of many effects" (Luhmann 1990a, p. 228). This selection and connection forms a causal setup that is basic to management, and highly dependent on which technology is being used. If we consider the widely recognized technology of applied values which in a Danish context has been realized under the heading 'value-based steering', the ambition is to a great extent to establish a causal connection between the inner character of employees and their external performance (e.g. McKinlay and Taylor 1998; Townley 1998). This is why character and motivation become so important. The interesting issue, however, is not to what extent it happens or not. The inside of the employee is unobservable anyway. The important contribution of systems theory is the insight that this particular technology structures the observation, and hence communication, as it transforms the inside of subjects into subjects of communication and as such visible as objects of outside control. A comparison with the overall function of Business Process Reengineering (BPR) provides another example. It seeks to compute the worker as a function of movements, while, as seen, value-based management seeks to investigate the opposite question: What moves the worker? *As such, technology is the mechanism that not only offers a distinction of possible indications, but also relates expectations to the calculation so as to guide the communication of management.*

As Luhmann notes, technology does not point to a verifiable relation between cause and effect (Luhmann 1990b, p. 223). Rather, technology dissolves the distinction between reality and fiction, so far as the fiction of cause and effect constitute what appears as 'real', that is, non-contingent, on the level of first order observation. As such, technology work to heighten expectations by reducing complexity into forms that are seemingly manageable. This happens when technology narrows down cause and effect to the point that they can be attributed to the function of a person as opposed to ecological changes, which until recently has not been attributed to persons, but to other causes, which by far extends the influence of humans (Luhmann 1993). Therefore we often see management celebrate itself as the cause of success - of organizational success - resulting in a self-inflicted sense of indispensability. As Luhmann points out, technology in particular shapes expectations about strong personal vigor. This provides the opportunity to observe management as a function that, by referring to a given technology addresses itself as management by ascribing to itself the status of cause of specific effects. As such, the technology opens up for the observation of management as a function which is shaped by expectations about the mastership of the organizations. In sum, *technology is a media of communication which generally organize management's systems-internal relations to the organization as the environment to be managed.*

Technology neither exposes a proven relation between cause and effect nor is the repetition of the calculus proven. Instead, technologies relate to expectations of communications (Luhmann, 1990a, 1993). It is for the very same reason, that technologies simplify the complexity in ways that seem manageable. The point is, that the repetition of technologies, and the calculus provided, works as an enhancer of expectations into solid premises of communication. In that sense, management technologies provide universal principles so that management may approach every unique problem with the same formula. As such, technology works as a relief function. As such, the trait of repeatability represents one of the key characteristics of technology, which also specifies which kind of causal relations can be observed, namely those repeated. This relief function points to the inherit paradox of technology as the one of universality and particularity. In the case of Management by Objectives a goal remains a goal (universal) but goals are simultaneously different from each other (particular). As such, technologies offer the possibilities (for management) to both maintain and change the organization; to both stick to the wellknown as well as approach the unknown; and to be able to recognize the organization in terms of unity while creating differences. The function is the one of complexity reduction, that is, management does not become overwhelmed by complexity. *This means that the constitutive effect technology is a trivial one because it allows management to subscribe to universal solutions in order to approach unique problems.*

The calculus, as offered by technology, offers the possibility of relating present effects to previous decisions or present decisions to future effects. The point is that in order for management to master time, it has to also secure its own technology. For example, goal management hardly leaves any doubt as to goal fulfillment, especially as goals are often broken down into intermediate goals and anticipated means. It is a question, therefore, of controlling the uncertainty of time by means of causality. The uncertainty that time naturally represents is transformed into certainty when future effects are expected to materialize as a result of specific causes. Hence, technology organizes the temporality of management. This heightened level of temporal abstraction possesses the important quality of extending the manager's latitude into the area of the future. Thus, technologies not only supply the possibility of anticipated causality, they also extend causality by means of knowing what cannot be known and calculate what cannot be calculated. Without this level of abstraction it is not possible to treat a problem as a matter of routine or outside the 'present' where it occurs. *In short, as technology organizes the temporality of management it renders the inaccessible accessible.*

This organized temporality, offers at least to vital functions of management to be observed First, technology works as a time-compressor, as it appoints a limited timespand in terms of the calculus in which actions is expected to cause other actions. Organizations cannot afford to calculate with a thousand years of natural selection in order to become fit. Success needs to be met faster in order to be ascribed to persons. This might be one of the reasons why management so often celebrates itself as the cause of organizational success achieved within 'no time'. And furthermore, this might be the reason why management needs speed as well as sometimes appear to be 'on speed'. In fact, without such time mastery, which is provided by technologies, the beginning and end, the present and future, of any initiative could not be defined and would also entail the absence of subsequent calculations, adjustment, and optimization. *In sum, as technology organizes the temporality of management in terms of compression and completion. .*

3.2.2 Steering

So far it has been emphasized how technology organizes the temporal order of management by means of causality. This leaves the environment of management to be observed, and thus spoken and acted upon, in a manner that is guided by expectations of interventions and anticipated effects. But how does technology enable management to continue on its own terms? In other words, how does the reproduction of management take place? As we will propose, the system

theoretical concept of steering helps us to observe this self enforcing feature of technologies. "All steering," Luhmann tells us, "uses distinctions admittedly with the specific intention of reducing differences that are themselves distinguished" (Luhmann 1997a, p. 45). Inasmuch as steering consists in the reduction of differences, it can be understood as a communication process and even one that seeks its own closure by means of self-reproduction. The ideals inherent in the (perfect) calculation of actions within managerial technologies work as a motor in the steering process because the nature of the ideal enhances the production of deviations along with various beliefs in its corrections. *Steering, then, is the minimizing of a difference between calculation and deviation.*

Since the context is produced within the system, by means of causality, the observation of inevitable deviances underscores the need for further steering. Recognized resistance, miscalculations, disappointments, bummers etc. is not a failure of steering. On the contrary, they feed management, as they provide the basis of further reproduction. And in fact, still more refined feedback procedures such as control, evaluation and monitoring surely add to this reproductive process. They enforce the fiction of the calculation while in fact producing observations of deviations that push the steering process into ever more refined reproductive loops. Steering, in other words, takes us deep into the reality of management and shows us one of the core reproductive features of this discipline. *Steering, then, is the reproductive process of managerial communication.*

This reproduction is not arbitrary. It takes place due to particular distinction of observation. This might be the code of right/wrong within the legal system; the code between pay/no pay within the economic system etc. Thus, steering becomes a self-effecting mechanism or, as Luhmann puts it, "steering is always selfsteering" (Luhmann 1997a, p. 46). If we recall the way in which technology organize the timebinding in terms of causality, the basic distinction provided is the one of present /future but sometimes with great effects on what might be recognized as the past. As such, Management by Objectives should not be anticipated as a natural or pre given string of events. Instead, what is observed is the way time emerges by the ways present and future are selected and connected in terms of casual constructs. Hence, time might appear as 'present futures', 'future presents' or even hyper reflexive notions of 'futures future' (Luhmann 1982, p. 272). As time is far from given, but emerges in terms of organized temporalities, this has two implications. The first is the one of order. What becomes future and what becomes present has to be observed within the communication as well as the way this relation might be established in terms of causality. The other is the one of disorder. What might appear within management as disorder should be observed in terms of steering, that is, how these deviances are sought to be minimized when compared to the timebindings of the calculus.

3.2.3 Observing timebinding

The article now addresses how the concepts of technology and steering together add to the observation of the formation and differentiation of timebindings together with the different reproductive closures.

This observation takes place in a very concrete manner, which is the way MBO appears within the governmental programmes in Denmark. As the case shows, MBO works contrary to the presumptions of New Public Management, that is, it does not work as a unifying governmental program but constitutes multiple systems guided by different temporal rationalities. The suggested program of observation, which leads to this conclusion, is displayed in the following table:

Concept	**Technology**	**Steering**
Function	Selection and connection of cause and effect (causality)	Reduction of a difference
Observation	Timebinding (before/after)	Deviations to timebindings (Calculus/deviance)

The *concepts* of technology and steering can ground the observation of the reproductive effects of different timebindings. The status of the concepts, along with the definition is crucial as the observed phenomenon is co-constructed through the concepts that are being put to use. This has at least two implications: The first implication refers to the blind spot of any observation, that is, any observation must leave out other observations, which could possibly offer other insights. In this case one important matter has been left out that would nevertheless change the object of analysis and the scope of the article. This is the issue of how systems of management act as co-constructers of time deciding upon the variety of technological premises for further decisions. This reflexive or strategic capacity is left out of the picture in order to specifically follow the lead of Management by Objectives. The second implication is the one between first and second order observation: if one observes in the first order mode, one puts oneself in the position of the organization and tries to observe what it observes while observing. In contrast to that, the mode of second order observation implies a critically distanced position towards the organizational observations. The researcher observes the way in which the observational,

and hence communicational premises are programmed due to the presence of (various) technologies. The aim, the, is to observe what management cannot observe.

The *function* serves as the operational definition of these two concepts. As touched upon, timebinding is observed as a matter of systems relating to their own environments by means of technology. This situation is observed as MBO offers a distinct calculus related to goals (universal) but the organized temporality is different (particular) with great effects on the formation of different environments. And the steering aspect inherent in timebinding offers the mechanisms of reproductive closure though registration and minimization of deviances from this calculus.

Observation is a condensation of the concept as an indication within a distinction. Technology offers the observation of how cause/effect are related and hence point out the way in which management relates to its own environment to be effected. Steering operates with the distinction calculus/deviation and hence points out the way in which the system reproduces itself.

4. MBO – a case of managerial 'polycroni'

We have now arrived at a more systematic and empirical illustration of the proposed approach, that is, how steering and technology direct attention toward managerial 'polycroni' as an effect of MBO and which oppose the anticipated function that is promoted by the NPM paradigm. This case of goal steering draws upon the Danish PhD case study conducted by Thygesen (2002), a recent anthology on the development of the public sector (Pedersen 2004) as well as the work of Andersen (2003, 2005, 2006) and Renninson (2007).

4.1 Three stages of goal steering

Goal steering has developed in three stages in Denmark since the 1980s: first-order goalsteering, reflexive goal steering and second-order goal steering. The two first stages represents the transition from managing others to modes of self-management, hence turning public organizations and related institutions into an collection of self-managing enterprises acting strategically while determining their own cause/effect relationship. The third stage is meant to set out binding premises for the choice, configuration and use of technologies, that is, an attempt at re-unification to support a present effort toward a common future. At this third stages MBO gained in popularity being the supreme unifying attempt.

What is referred to as the third stage has gained in speed since the new millennium throughout Scandinavia and England and was sustained by the ideal of a public sector showing adaptability on all levels. This 'enforced liberation' was a matter of defining means according to own goals. In fact, this change into MBO provided a shift in the very semantics of communication as 'institutions' became 'firms' now stressing the strategic capability of each; as 'meeting' turned into 'dialogue' maintaining freedom on each side and as 'coordination' became 'vision' now being considered the prime principle of transformation. The environment, now seen from the perspective of each 'firm', changed from the overall and encompassing sectors toward causing oneself as an effect. This shift toward extreme self-reference is what Mitchell Dean (1995) also calls "the obligation to freedom".

4.2 The schizo-dynamic of management

This change of technology into second order goal steering – an order of self-ordering - sets out new conditions for causality and steering, and hence reproduction of management. Before the reform, the notion of causality was linear. But the 'self' of the technologies has turned causality into a circular matter as the organization, or any other actor performing the art of management, is expected to take responsibility for own future goals, own present as well as one´s own history. In effect, the common organizational division between authority and authorized, or formulation of goals and execution of means, has vanished and now evolved into an integrated matter within the notion of self management. This introduces what might be called the schizo-dynamic of management, in which management is now both expected to imagine what is in the light of what to become, and to become what it will become in the light of what is. Steering, then, became linked primarily to time. In fact, steering is a matter of observing the present in the light of the future and visa versa and hence minimizes these differences. What follows can be seen as reproductive mechanisms. The accelerating number of future-telling technologies to MBO – e.g. statistical and emphatically techniques uncovering future needs – all turning the contingency of futures into a believable/fixed reality causing the demand for immediate action and new goals to follow. One might term this reproduction the 'self-postponed organization', as management mirrors itself within the organization-to-come.

4.3 'Polychroni'

This leads us to the way in which 'polycroni' must be further specified as the reflexive application of time leads to an internal temporal differentiation of management. This differentiation is the one between different time modalities, that is,

the simultaneous presence of future/past, present/future and future/present. However, before entering into these multiple modalities it appeared, that these dynamics takes place within a particular time configuration, namely the one of *metric time*. Logically, once the distinction between the "present future" (setting the goal) and a "future present" (anticipated fulfilment) has been established, metrical time is also established, as a temporal space to be filled in a calculative way in order to arrive at the terminus. This temporal dynamic shows within the differentiation of management due to the presence of three modalities of time.

4.3.1 'No brake' [future/past]

When pursuing goals, future appears in ways that shed light on the present, with the latter being recognized as a state already belonging to the past. In this process 'past' emerges in two ways, generally speaking, which both shows that no brake is available to stop the practice from its strong orientation toward the future. First of all, loss becomes the present. The present is creatively destructed when measured by the yardstick of the future. Thus destruction became the other side of creation, even though this is frequently glossed over by references to "learning" as a means of transforming loss into contentment. Second of all, the future is presented in such a strong fashion that the past only appear relevant as something which repeatedly is referred to as irrelevant. At least one could anticipate that a history, a certain path, or a specific set of experiences may be invoked against visions of the future and goal orientation. However, to management enabled by MBO there are no such brakes. In other words, management is a communicative practice capable of immuminizing itself from questions from the past. As an alternative, however, the brake become the one of metrics, that is, the way in which time is 'braked down' into sequential steps which then appears complete-able in the present. The mechanisms of 'braking down', then, avoids references to the past as the present is indicated as the year zero and from where actions can depart and move forward the indicated future with its completion of a better corporate life. However, as each sequential step provides a relief, each step taken is also recognized as incomplete when measured by the yardstick of the future and future steps to be taken. This points to the two other temporal dynamics which might be said to provide the passage of organizational transformation.

4.3.2 'Gotta catch up' [present/future]

As initially implied, what is conceived of as 'the present' follows as a deviation to be minimized when compared to the future. But the present appears not only as an error or a situation of being behind. It also appears as a situation in which 'we gotta catch up' and as such the locus of preparation toward a better world to come. As such, the present becomes a potentiality of possible activities which ensures that the future appear within reach; an existing possibility in the present. One might think, then, that future goals face a natural self-elimination when achieved. The future, so to speak, has an end. From a purely logical perspective, however, this is nonsense, as the future, then, will become the present and thus cancel the temporal difference. But observed empirically, this elimination is prevented as the goal-directed practices among the institutions set out an orientation toward goals, that is, towards utopias which never becomes and therefore ceases to exist. The practice enters into a fate, so to speak, constituted by an everlasting but self-inflicted struggle toward the unreachable, a permanent position between departing and not yet arriving which calls for an endless effort. The temporal dynamic, then, is not about achievement. Rather it points toward reproduction as a matter of non-achievement; about producing its own reason for continuous reaching for the unreachable.

4.3.3 'Ahead of time' [future/present]

While the notion of present/future produces situations in which 'we gotta catch up', it is equally important to note the emergence of the opposite temporal dynamic. This situation is best captured, due to the super-semantic of being "proactive", which is ultimately manifested in the strong idea of creating a present that is considered to be 'ahead of the future'. This process covers attempts to anticipate and suppress present mistakes, errors and deviations before they appear. It requires the capacity to anticipate the future and adjust the present accordingly. However, as it turns out, the side effects become a recent multiplication of errors, because none of the communicative anticipations in the present has the ability to be ahead of the future. In other words, what accelerates management systems is a multiplication of disappointments to be compensated for in a quest to be error free. Again, from a purely logical perspective the attempt to be 'ahead of time' is, of course, a logical paradox. One might be ahead of others (social dimension) or ahead of something (object dimension). But one cannot be ahead of time itself (temporal dimension). This does, however, not cause management to freeze, but turns it into a constant time struggle; struggles which cannot be won and, for this reason, continues and accelerates in order to pass time itself. Thus, what seeks to be minimized is not the lapse between present/future, but the distance between future/present.

In concluding this part of the analysis, it shows that management becomes internally differentiated due to the presence of three modalities of time. And the self inflicted pressures generated by these communicative practices is what distinguishes reproduction, that is, the pressure of being able to 'catch up', to be 'one step ahead' and in each case having 'no brake'.

4.4 'Polycroni' as polycontextuality

However, 'polycroni' must be further specified as the use of MBO showed how the differentiation of temporal dynamics are related to different – and often incommensurable - identity formations as well. It would exceed the aim and scope of the article to give a thorough account of all identities emerging in relation to MBO. Therefore, two of the most common formations of identities will be mentioned.

However, before exceeding into this part of the analysis, it is important to mention, that the concept of identity does not imply an essential figure. This would compromise a system theoretical approach on one of its most basic foundations. Identity is conceived of as a distinction; namely the one between system and environment as it is distinguished within the system.

4.4.1 Subtechnification

What is interesting in regard to development of different temporalities, is the fact that this variety of self transformations is perceived of by management as an incalculable complexity which has to be reduced by means of the same technology; MBO. In other words, the complexity generated by goal seeks to be reduced by goals. This has caused a technology (MBO) of the second order to emerge that displays attempts to construct a unifying technology for the use of a diversity of technologies. However, as opposed to this initial purpose, this only adds to the growing of identity problems. As different technologies now refer to the supremacy of goals, they have successfully materialized into the goal-assessed configurations of a diversity of sub-technologies.

This includes, among many other things, the use of goal-based benchmarking and goal-based SWOT. Taken these two technologies into consideration, two different environments emerge on behalf of an observation that values each side of the distinction collective/unique, that is, one observation decoding the environment as matter of achieving collective acceptance and another one as a matter of engaging into a battle among uniquely marked positions. Futures, then, relate to such opposing ideas as achieving collective acceptance among friends (logic of appropriateness) and being distinct among enemies (logic of competitiveness). The figuration between system and environment, and not at least the reproduction performed by mechanisms of steering, in each case construes the relation between the organization and environment mono-contextually and therefore, taken together, constitutes and reproduce a diversity of antagonistic images of the organization and its relation to environment. In effect, poly contextuality presently seems to accelerate in the name of unity as the desire of one achievable future not only multiplies into futures but also relates to further system differentiation caused by the multiple technologies offering different distinctions of observation, different causal configurations between system/environments, and different ways of reproductions. However, this quest for unity neither causes management nor the organization to freeze when faced with differentiation. On the contrary, the productivity of this dilemma becomes evident in the way it leads managers to believe in the image of unity and one universal context while temporal differentiation along with an inevitable production of antagonistic images is all the while rapidly growing.

5. Conclusion

The analysis shows, how a systems theoretical approach allows for the observation of the polycronic effects of technologies upon organizations, rather than presuming a formation of unity. This became evident in the way the penetration of a single technology (MBO) constitutes and diversifies the organization to such an extent, that it leads to the emergence and differentiation of managerial systems reproducing itself by means of highly different temporal rationalities. From the brief analysis of MBO that has been offered, we can draw two general conclusions.

First, the strong notion of poly - polycontextuality, polyvocal, polycentrical, polyphony, etc. - has been developed in terms of 'polycroni', that is, as the differentiation of timebindings. The concept of 'poly' has often been treated within the social dimensions and in particular as a matter of multiple identities. The article has added to these rich conceptions by suggesting a temporal perspective to identity formations. As such, the hypothesis of Drücker and Baecker has been expanded by the concept of 'polycroni', and by suggesting, that other technologies than the one of computer mediation should be investigated too.

Second, this analysis set out the need for a more complex ways of managing. To this end, the article suggests 2. order management as a matter of observing the observations enabled by management technologies. This is not meant as a general solution, but as a concluding remark which question the pursuit of unity and integration, by means of management technologies, within NPM. In other words, how is it possible to manage as 'polycroni' sets out the conditions for management? In this context, this would at least force NPM to consider a managerial leap away from 'management *by* technologies toward 'management *of* technologies. The latter referring to the observation of how the observations (and reproductions) of different management systems, and their relation to their environment, is made possible by MBO. This should not be confused with a critique of NPM. The proposed approach is meant as a feedback loop as it observes the constitutive effects of MBO upon management and is thus meant to feed implications of 'polycroni' into this paradigm as a crucial challenge for management. In principle this ambition is stressing the need for organizations to interpret themselves. In this case a system theoretical approach has specified 'how' in at least two ways. On a structural level neither past nor future, and neither environment nor organization, should be treated as the ultimate point of reference. Instead, what needs to be observed is how MBO-related technologies constitute as well as enable the reproduction of these distinctions, hence offers a clue for subsequent 'informed' action about the 'polycronic' order of the organization. On an operational level this approach provides comprehensive insights in how MBO affects patterns of communications within management and hence, how reality emerge contingent to the presence of MBO into multi factual areas of communication. Despite Luhmanns dismissal of the function of management perhaps we should take into account what Vos notes (2005, chapter 17), that is, that despite the fact that social systems fail to see through their existence does not imply that self knowledge is impossible. It merely indicates that self-observation is a highly contingent affair, in the sense that the identity of social systems is something that appears to be entirely dependent on the way the system identifies itself. In this case technology has been proposed as the point of entry.

Finally, these contributions are not conclusive. They are merely attempts at the articulation of an system theoretical approach in order to expand a strong hypothesis in the need of further investigation; namely how polycontextuality might be observed in terms of 'polycroni' and how this poses new challenges for management.

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[i] One exception is Andersen (2003), which develops the hypothesis of polyphony in regard to system differentiation