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ABSTRACT

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# The Angle of Articulation in Textual Movement

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KOGNITIONSVETENSKAPLIG FORSKNING

Cognitive Science Research

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**Abstract**

Natural systems are self-organising and stratify according to the angular articulation of their movements. In particular, movement is relative to the levels that define its behaviour space. As natural phenomenon, text production is self-referential. In generating information, the intention of the producer of a text becomes specified. Specifying of intention is dependent on phase and phase transitions. In agreement with realised phase values, spanning over 360 degrees, co-ordination and co-operation among parts is of significance. Joints and links are channelling textual elements. A mapping procedure is locating the discontinuities by keeping track of changes, flows and rhythms. This is a more elastic and fluid strategy, compared to former approaches. The discontinuities are used in the description of states and state changes across the kinetic and kinematic levels of verbal flow fields. It is shown that novel properties have emerged along the adiabatic paths of the investigated text. This means that attractors of points and attractors of states have manifested informational structures that are more elaborated than the previous studies could show.

Most fundamental of all operations studied in cognitive psychology, perception and language, is the classification of syntactic and semantic features. Moreover, a great number of separate and independent developments of content analysis procedures have shown that their basic orientation is rooted in the phenomenological tradition (e. g., Bos & Tarnai, 1989; 1996). In applying feature analyses and the assumptions of association to fragmented text, systems of classes are developed. Clearly, the classification of instances of text fragments may be illustrative of a point of view, but cannot capture the crucial quality of text. On the contrary, capturing its quality is dependent on the location of discontinuities, and on making use of phase and phase transitions.

What is achieved on the basis of mediating variables, such as syntactic or semantic cues and the conventions of classifying incidents, are single exposures. Exposing means computational accessibility of a "cut". In this sense, cutting text means the categorisation of a verbalisation or textual expression. At the moment of the cut, text is transformed into a frozen accident. Their systematisation has always required the investment of great amounts of energy. Maximising similarity between co-incidents has been in focus of the conventional studies of perception and language. Instances have been successful equating with sense impressions. Their classification has produced highly consistent systems. Hence, internal consistency and philosophical coherence have been made the basis on which elaborated logical, mathematical and statistical models were raised over class membership.

A reanalysis of the main assumptions underlying the processes of categorising and classifying has led to the development of a novel approach, named "Scanator", and a number of entirely new investigations. As a consequence, joints and links and their functioning in the control of verbal flow, carrying information, have been studied recently (B. Bierschenk, 1996). The Appendix gives an account of how these elements have participated in textual movements. As depicted in Table 1 of the Appendix, participating in these processes are individuals. These are the textual agents and textual objectives that are definitely located in space and time, and are characterised through wholeness. Furthermore, they are joined by potential forces operating in the verbal flows. Displacement of any individual contributes to the process of dynamic patterning, and phase transition. Through reversible and irreversible transport processes, units of action are rhythmically assembled.

*The Agent-Objective Involvement*

That points of observation and points of view can be treated differentially, is a necessity in the analysis of textual movements. For example, it is important to note that affinity relates certain textual agents with particular viewpoints. In the work space, these points correspond closely in space and time. When their discontinuities are made accessible, they show a curvature, characteristic of viewpoints. On the other hand, if points from adjacent sub-components, for example, standpoints are joint, different characteristics are obtainable. This implies a coupling of at least two oscillators.

A coupling of viewpoints with standpoints is indicative of a rhythmic pendular movement that shifts the movement of a single point into the locomotion of couple. In generating differentiated trajectories, it has been possible to show in what way their behavioural information is contributing to a complex dynamic of pattern. With a partitioned co-operation of viewpoints and standpoints, it has been possible to examine the effects of their coupled rhythmic movements. In attracting the points toward certain goals in pattern formation, the whole-part relation of the AaO unity seems to constrain individual points of a certain type to specific amplitudes. Moreover, to a determinable degree, their frequency is contributing to a topographic description.

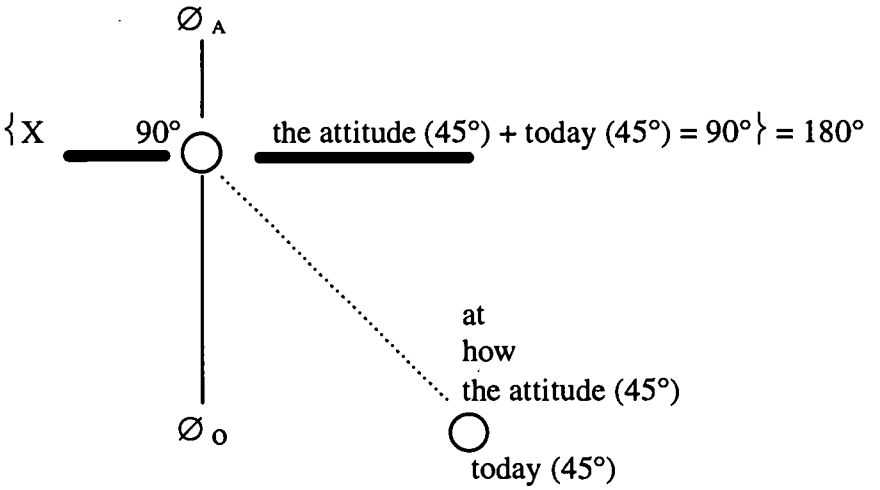
Multiply integrated textual strings constitute the basis of a matching procedure. Matching uniquely nested strings of graphemes in (1-0)-fashion implies that similarity between individual points may be corrupted by homologous strings of graphemes. Observed distances between patterns of strings had a decisive influence on the operating clustering algorithm. Because a ring of lexical ambiguity is still present, its outcome is to some degree influenced by individual similarity relations. Furthermore, strings of graphemes have been treated as if they were part of parallel production lines, running on equidistant footing.

Clustering, applied to the parallel production lines, means that composite wholes on either side are agglomerated into natural groups. These are the groups of textual agents and textual objectives respectively. Those groups are larger functional units of a multiplicity of patterns formed at the lexical level. They are species. A species constitutes an individual. At the thermodynamic level, individual states are developing out of the Eigenvalue of a text. Despite their dependency on lexical similarity, they are in no way arbitrary. Corresponding cluster trees evolve as text is maturing. The branches of such trees are analogous to the evolutionary history of the involved textual agents and objectives.

However, this is a somewhat insufficient procedure for inquiring into cyclic overlapping of textual movements. With reference to the procedure followed thus far, it has been observed that certain points of observation and particular viewpoints appear as undifferentiated clusters. When strings of graphemes are treated as if they were fixed on parallel production lines, running on equidistant footing, resulting trajectories can reproduce movements only in their planar shape. In order to obtain a depth relation, and consequently an articulation, the AaO machine must use the angular displacement of individual agents and objectives. Thus, articulation of their behaviour is observable in the three-dimensional work space of Figure 1.

**Figure 1.**

*Angular Excursion*




*Angular displacement.* When a transformational displacement competes for spatial and temporal boundaries, a pendular change must involve some angular degree in the movement. As illustrated in Figure 1, at the horizontal axis, angular displacement

is achieved on the basis of the AaO mechanism. The vertical axis represents potential force. The length of a given pendular swing and the velocity with which the length of the pendulum changes over time determines the amount of work invested in order to reach a certain conceptual depth.

As indicated in Figure 1, changing source-sink relations are immediately responsible for its elastic conditions. Displaced points on either side of the solid lines must digress with at least 45° from the origin. Moreover, as the steps of a period are increasing, conceptual depth reflects increasing order. Directly related to length is its pendular mode. Hence, the degree of tension in an AaO is apparent when the process has reached a steady state. The end of pendular movement is evident when the angular displacement has resulted in a rotation either 180° or 360°.

How a concentration in the form of a steady state can be reached, is shown in Figure 1. Along the solid lines, angular articulation is zero (0°). In the beginning of a process, zero displacement is the initial position. In order to get a measure of zero, it is necessary to add a positive number ( $\geq 1$) to the angular degree (Rosenbaum, Loukopoulos, Meulenbroek, Vaughan, and Engelbrecht (1995, p.33). Its calculation is based on the natural logarithm of zero angular displacement. This sets the critical flow of energy from source (X) to sink (Y) equal to zero.

Independent of the involved type of dummy, inclination turns 90° counter-clockwise every time a dummy is supplemented. If a link is present, the potential flows from source to sink and the involved axis turns a quarter counter-clockwise (45°). For example, at the pointer (at) such a turn is initiated. Whenever a substantial string of graphemes is present on both sides of a joint, the clock turns immediately 45°. This is the special case where $ESS_n = ESS_{n+1}$. It indicates that the source-sink relation remains the same between the strings of graphemes participating in the process of concentration.

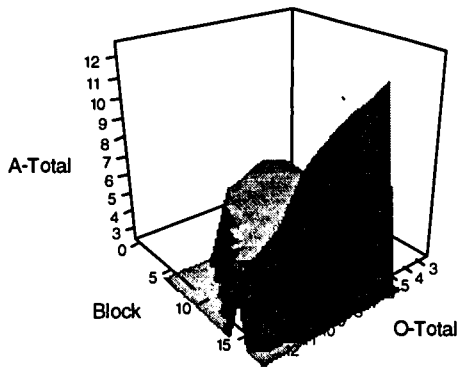
In Figure 1, this is indicated for the agent part by 45° and for the part of the objective by 45°. If changing source-sink relations occur over successive cycles, the points at either side are floating to the opposing diagonal. Hence, the resulting trajectory is typical of a dramatic change in the verbal flow. Its inspection makes clear that joints are changing the direction quite dramatically, while links are representing prolonged action. Channelling achievements cumulate when the process of integration has reached 90°. Within the AaO, this is a relative phase value. As such it indicates a jump from one side to the other that may suggest a bifurcation to a limit cycle behaviour.

In conclusion, as the pendular movements become longer and heavier, spacing and timing is changing. Such a process can be equated with growing, based on the mechanical transformation at the kinetic level (Kugler & Turvey 1987; Jeka & Kelso, 1989). At the kinetic level, dimensionality of the work space is determined by the number of participating joints. Typical of the joints is the number of links they support. Depending on their number, particular movements can be realised. If the AaO mechanism can register what has moved or changed, movements can be apprehended.
As shown in Figure 1, each joint backs up a fixed number of links and each link connects to a specific textual segment. Further, a fixed range of angles determines their movements in depth. Examining depth of an AaO unity requires changes in all of its parameters. Figure 2 illustrates the generated response surface of the verbal flows. Obviously, accuracy in co-ordination is directly related to the distance between two textual agents representing two points of observation. Their points in the work space can be fixed over the two centres of joints and must involve at least two links to an objective, i. e., at least two viewpoints. With reference to its methodological signifi-

cance, the consequences of this measure will now be studied on the basis of Table 1 in the Appendix.

**Figure 2.**

*Angular Displacement of Agents and Objectives*




It is important to note that everything is identical with former studies of response surfaces, except the numerical measures of angular displacement. In the present context, the channelling of potential energy is studied with respect to the angular articulation of the kinetic flow fields that carry ecological significant information. Through elaborated joining and linking of textual elements, elastic and viscous composites of patterns are achieved. It is the degree of change in the rhythmic working on the graphemes and strings of graphemes that matters in the first place.

Consequently, verbal flow fields are identical neither with textual agents nor with textual objectives. Yet, these individuals are localisable in the flow fields and satisfy a great number of transformations. Figure 2 shows how the rotations of textual agents and objectives have operated across the entire work space. A redistribution of potential energy is indicated by that part of the space that is occupied by the total, average over the textual agents. The height of the energy distribution over the part that is of interest to the localisation of textual objectives represents the degree of reached conceptual depth. Any point in the space is a mark of differences, signalling important structural variations. The entire response surface is the result of rolls and long series of diagonally adjacent flow fields. These are forming a prolonged saddle through which the rolls are channelled. It follows that the AaO mechanism takes care of verbal flow achievements.

*Perceptual Processing*

A number of psychologists have recognised how important cognitive models are to classification. In perception, Bundesen (1990), may be taken as an example. He has proposed a model of selection that is fundamentally based on the calculation of subjective probabilities and the manipulation of unspecified numbers of features. It is an attempt to explain feature identification and classification of perceptual objects. Logan (1996) found this theory valuable in his clustering of spaces and the integration of perceptual feature within these spaces. Clusters of features are conceived of as a collection of distinct objects, called the elements or members. Operations, such as set in-

clusion are carried out. Further, procedures that determine whether a feature belongs to the collection are applied. Together, they imply that feature processing introduces vagueness into the quantitative account of clustering. Despite Logan's reference to regions, points, lines and volumes his measures are related to the effects of proximity and distance between items on reaction time and accuracy data. Moreover, that Logan and Bundesen have been transiting from classical to Bayesian methods of inference (see Novick & Jackson, 1974) is of limited usefulness. Their approach to the study of perception cannot overcome the control rules that govern their operations (Pattee, 1977). Unfortunately, Bundesen and Logan have advanced a model within the Newtonian paradigm. It seems quite proper to state that their standard account of causation cannot deal with mental events, because mental events are self-referential and thus, are causing their own conditions of satisfaction (Heiden & Roth, 1986). As Kugler and Turvey (1987, p. 420) observe:

"... information in the indicational/injunctional sense and information in the specificational sense may not only differ in the degree to which they constrain activity but they may also differ in their causal relation to dynamics".

Threshold manipulation and hierarchisation are affecting the abstraction of attributes or instances typical of a class. Ghiselin (1981) has proposed a way of distinguishing classes from individuals. Certainly both allow for the same kind of logical manipulations. According to Ghiselin (1981, pp. 271-272), "both have relations of particularity and generality". Though, it can be tested, if a whole-part or class-inclusion hierarchy is the root of a study. Ghiselin gives an example by applying Venn diagrams in his analysis. One important difference of treating individuals as if they were classes instead of treating them as parts and wholes has been noticed. The qualitative difference between classifying and specifying an individual is that the latter depends on an evolutionary process.

As discussed previously, studying flow processes requires a focus on perceptual depth. A processing of elements must deal with homographs that have their origin in the problem of homology. It is a source that produces inaccuracy in any operationalisation. Uniformity of this kind is a regress toward conventional feature processing. A guard against such a development implies that parts of a string or groups are pointed out as helpful in the naming of a state. Defining a system state this way, can be likened to an ostentation which means a proto-typing. Further, clustering terminal states makes evident a system's Eigenvalue or dynamic. This is producing the processes that are operating in the work space. In string transformation, certain strings have been designated as a type specimen of terminal states.

In previous studies, hierarchical grouping of binary string relations has been fundamental to the establishment of system states. As a consequence, their structural analysis has been restricted by the limits homographs have put on the processing of agents and objectives. In connection with their topological presentation, a number of problems have been discussed. For example, structural separation becomes unclear when changing the boundary in grouping individual agents or viewpoints is partially dependent on the presence or absence of homographs. Though, some important observations concerning conceptual depth were beyond the horizon of previous analyses.

*Potential Energy of the Figure-Component*

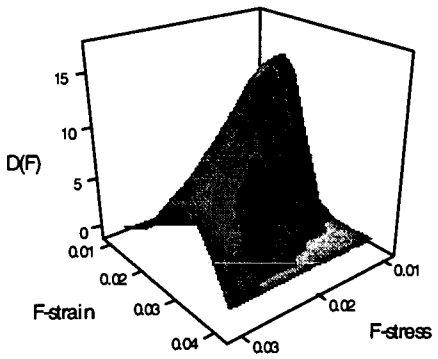
The previously analysed work space contained work cycles of limit-cycle character. How various types of points are diffused within a local area and over several regions has a determinate impact on the dynamics of a work cycle. In the preceding

analyses (B. Bierschenk, 1996, Figs. 5-8) more emphasis has been placed upon the uniqueness of individual strings as end product of integrating processes, than on a gradual development in their articulation. Degree in angular displacements of textual elements is a measure of channelled flows. It is producing results that are qualitatively different.

In the metric of the Holophor, it is manifest how channelling processes connect and develop natural groups of strings of graphemes. The Holophor of Figure 3 makes visible that, structuring can vary from place to place. By inspecting it surface it

**Figure 3.**

*Holophor of the Viewpoints of the Figure-Component*



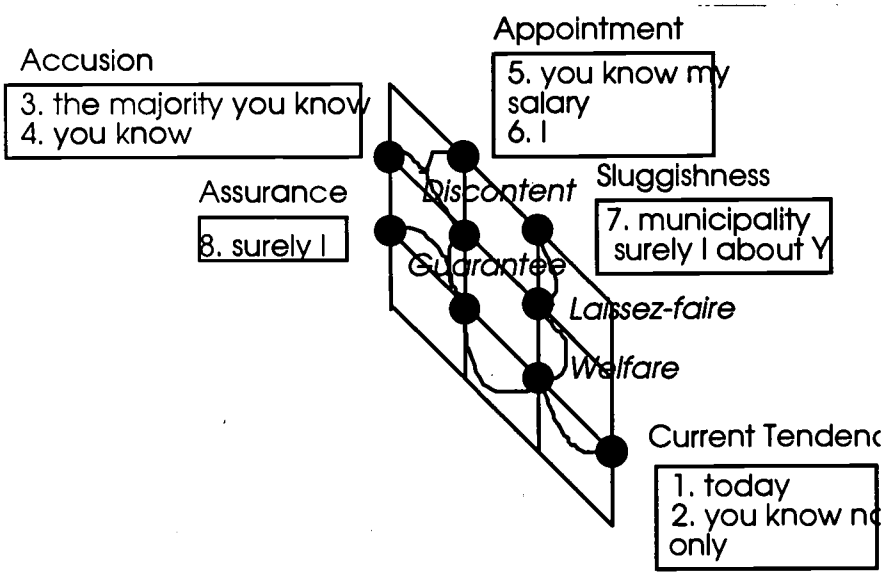

becomes apparent that the shadings are indicative of an elaborated structure of viewpoints. Thus, changing angular displacements gives rise to changes in the defining geometry of the response surface. This is a function of spatial variations, manifesting details of structure in the curved surface. Moreover, this metric varies also over time. Hence, temporal variations are likewise reflected in the same curved surface. Obviously, the distinction between the clusters is orderly and thus law-based. Since they are scaled on the basis of both mechanical and thermodynamic properties of the AaO machine, they are stable with respect to fluctuations. It follows that the basis for clustering is determined by the nature of the surface.

The configurational relations among the strings of graphemes are given in more detail in Figure 4. Identification of their original form serves as a starting point in the clustering process. In turning to the clusters, it becomes evident that the strings of graphemes are involved differentially. Identification of their functional aspect in the previous study (B. Bierschenk, 1996) has shown a very simple geometric structure. A singularity had defined this same component. Thus, dramatic changes in their configuration have become apparent. Relative heaviness of the viewpoints is influencing the development into singularities differently. From a mathematical point of view, the combined layout of singularities comprises the domains of attraction and the regions of separation (Turvey, 1990).

In expressing receipt of permanent payment upon "Appointment", this condition becomes evaluated in the second terminal state. As second terminal state, it introduces an "Accusation" of the work force. Through its impact, a costly distance to the task of work is emerging in the terminus *"Discontent"*.

**Figure 4.**

*Holotop: Cluster configuration of Viewpoints of the Figure-Component*




The next step is underlining this situation. Constrained by "Assurance", the process continues smoothly and settles in the second state attractor which manifests *"Guarantee"* or security as basis of existence. Constrained by "Current Tendency", behaviour at work is at the third state attractor transformed into *"Welfare"*. A further deviation from the expectation of achievement concerns "Sluggishness". This state is constraining the developing process toward *"Laissez-faire"*. It is the final state attractor of the Figure-component and makes apparent the concurrent behaviour style of the workers. In short, they behave adapted to the utilitarian's principle of least action in maximising benefit.

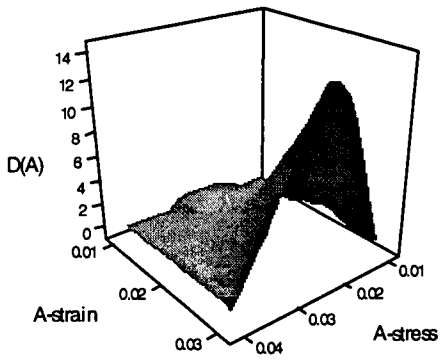
As demonstrated throughout, information of import for the text producer's general orientation is extractable, but dependent on his spacing and timing of points. In the process of agglomeration, individual textual viewpoints become specified. Hence a name is quite independent of typical attributes or instances. Its evolutionary momentum is rather more dependent on the lawful interactions governing and controlling the flow of text elements.

*Potential Energy of the Agent-Component*

A perspectivation of multi-joint movements brings the Agent component into focus. The response surface produced through the activated Agent-component is shown in Figure 5. This component allows the co-ordination of textual movements despite differences in their timing. The process of perspectivation is possible, because a redistribution of energy is dependent on the textual agents, participating in the dissipation.

**Figure 5.**

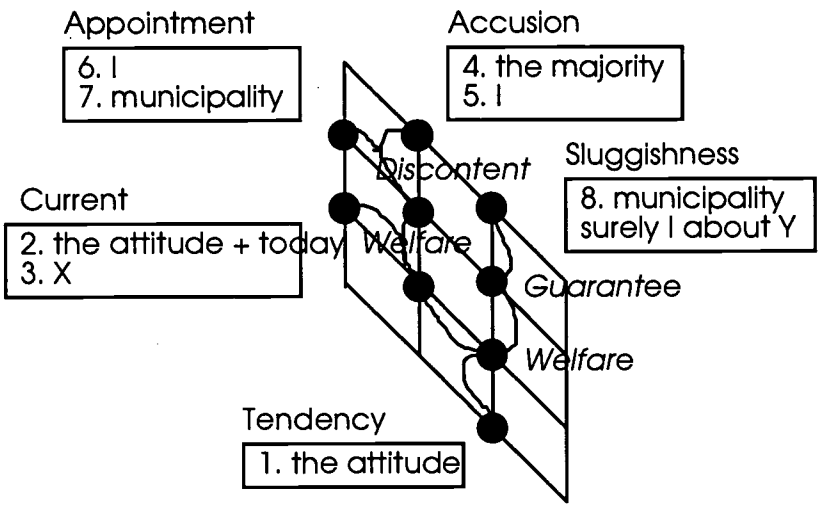
*Holophor of the Agent-Component of the Figure*




Hence, an alternative conservation of the involved verbal flows is initiated or terminated by timing. Along the path, each textual agent can take on a variety of angular positions. In relation to the focused objective, any of the clusters concerns the degree of angular displacement. While the joint angles determine the depth of the Agent-component, its specification is dependent on clustered viewpoints. In the particular case of the present text, source and sink resemble each other at certain points in time. The resulting concentration of textual agents is acting circularly. Self-similarity becomes evident by focusing on the *"Welfare"* dimension of Figure 6.

**Figure 6.**

*Holotop: Articulation of the Agent Component of the Figure*



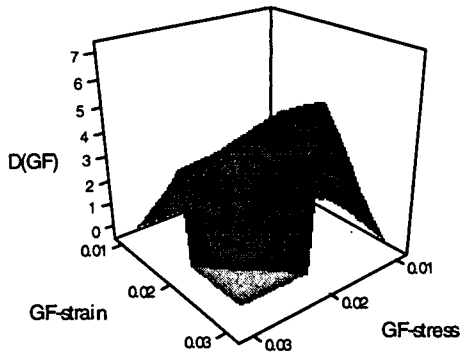
At least two independent point attractors are involved, namely "Current" and "Tendency". Both are specific parts of the fractional structure and are rooted in *"Welfare"*. The identification of this invariant is guiding the discussion toward a concentration on the Welfare-dimension. The conclusion is that the central cause of difficulty in planning and controlling the work force of the community has to be attributed to the extra-personal space, i. e., to the Swedish Model.

*Potential Energy of the Ground-Component*

The transformations make clear that only relative phase can reflect the co-operativity between the A's and O's and the kind of circular causality they embody. Apparently, comparing Figure 4 with Figure 6, makes definite that instability in the angle of articulation opens a new path to the study of time-dependent text building behaviour. Figure 7 gives an example of a dynamic transformation that maps equivalent patterns on attractors with different basins and differences in their stability. A shift in the patterning of Figure 7 is the result of greater losses in stability.

**Figure 7.**

*Holophor of the Standpoints of the Ground-Component*

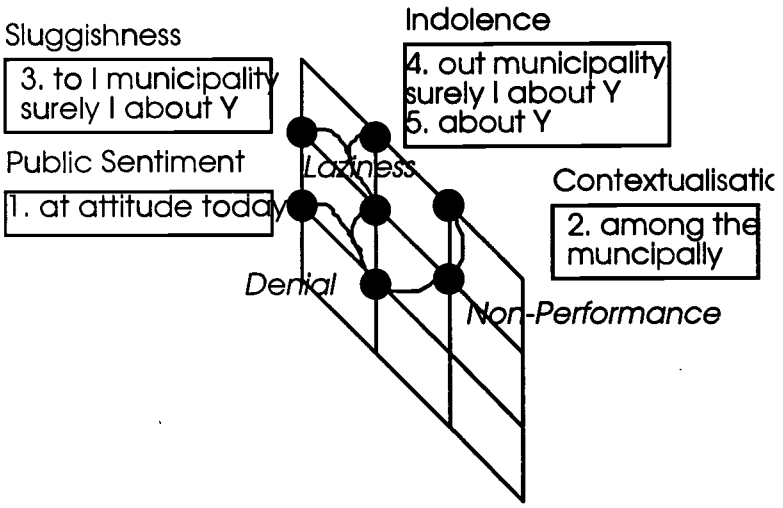



When one and the same pattern does converge on two or more different components, this means an individual preference for one or the other stable state. Pattern switching is dependent on the direction in textual movements, as a comparison of Figure 7 with Figure 5 shows. Spacing of the points on the trajectories suggests a concurrent mutual influence which von Holst (1973) called "superposition" (see Kugler & Turvey, 1987, pp 2-3). The state variables of the two components are marks of multistability.

The critical properties of the preferred stable states are resulting from the interaction between viewpoints and standpoints. This activity generates the common basis for cyclic clustering. Both are abstractions of kinetic processes, but are developing at different scales in space and time. Even though, perfect co-ordination may have been achieved between the two, there is a co-operative-competitive struggle at work. In addition both are lawfully related and thus participating in the specification of perspective transformations. The Holotop of the Ground component is given in Figure 8. By studying the singularities of this component individually, its degree of stability can lead to the identification of their mutual influences. Examination of the coupled rhythmic

**Figure 8.**

*Holotop: Articulation of the Standpoints of the Ground Component*




movements of the strings of graphemes led to the identification of two ways in using them functionally. But changes of direction at the joints have higher priority in the determination of states and changes of states. The configuration of the standpoints gives the stated reason. It is based on the judged effectiveness of the workers in achieving a task assignment. Hence, the Eigen-dynamic of the Ground component controls the information that is specifying reasoning in the text.

*Potential Energy of the Agent-Component*

Self-reference, as defined over the textual agents, is originating from information that implies intentional causation. Moreover, self-reference provides for exceptional boundary conditions. Compared to the agent clusters of the Figure-component, the same or very similar strings of graphemes are involved in the clustering. In contrast to preferred combinations of strings of graphemes at the kinetic level, stability of coordination is determined by their multifunctional use. In Figure 9, the focus is on the peak of what can be reasonable and realised verbally. A comparison of Figure 9 with Figure 7 reveals a marked dynamic transformation. Changes in the point attractors are the result of changes in perspective articulation. They produce the kinematics of the observed configuration that supports the outcome of the Figure-component. Couplings of viewpoints and standpoints are obviously of significance to text building. It seems to constitute a natural part in perspective transformation.

It is also possible to separate and to treat differently functionally changing view- and standpoints. If separation is achieved, textual agents, related to the Ground, can be treated differentially. This is an important step in establishing the point attractors. All strings of graphemes, remaining invariant under a certain pointer function and the same angular transformation, belong to the same symmetry group, e. g., the cluster "Laziness" in Figure 10. Forced into the same basin of attraction, despite differences in their texture layout or dynamics, they are specifying the state of Figure 9.

**Figure 9.**

*Holophor of the Textual Agents of the Ground-Component*

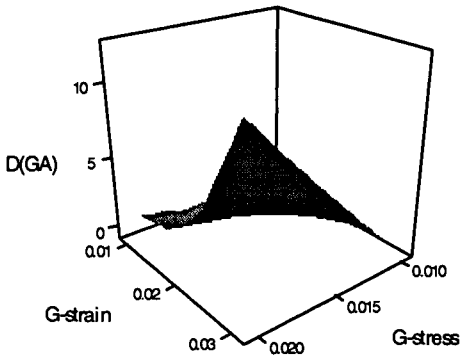
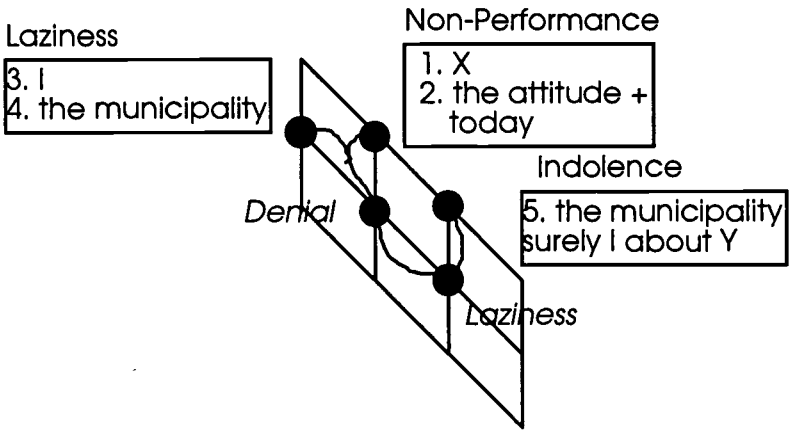



**Figure 10.**

*Holotop: Articulation of the Textual Agents of the Ground-Component*




In the same manner as noticed previously, the names of the terminal states of Figure 8 are specifying the clusters of Figure 10. Pendular cycling between the established states of Figure 8 extracts the perspective out of the Ground component. Evidently, the text building behaviour of the producer both contribute and is constraint by the structural property of the perspective. The topological layout of its singularities is associated with a qualitatively distinct mode that differs from the previous study. The perceptual system of the text producer seems to rely on indicational information as well as on cyclic movements causally tied to their dynamics. The forces of *"Denial"* and *"Laziness"* put their stress on the guiding intentional dimension, resulting in a deformation of the uprightness of the community worker.

## Discussion

From a theoretical point of view, the presented analysis consists of a formal approach. It concerns the characterisation of the changes that are typical of dynamic movement patterns. As text building behaviour is progressing through its evolutionary stages, text is becoming. From a methodological point of view, this means a mediation of information about some significant characteristics, typical of interview text. Great difficulties have always been connected with attempts of using feature analysis and reaction time measures in defining the mental structure of a text. As shown previously, text is a product of the second law of thermodynamics. Hence, its structural coherence is highly dependent on movement oscillations and dissipative processes. The qualitative dynamics of textual movement is an emergent property of the internally generated constraints of text building

A beginning was made in connection with the analysis of affinity relations between textual agents and objectives. Evidence on the validity of studying a number of source-sink relations in a discrete all or none (1-0) fashion has been presented. They have been evaluated on the basis of the affinity hypothesis. This hypothesis is assumed to govern the bonding of agents and objectives. However, the involved thermodynamic control processes were studied on the basis of variance analyses. In agglomerating strings of graphemes, loss of information has been calculated on the basis of estimated the Error Sums of Squares (ESS). This measure is a scalar quantity that builds on the outcome of both mechanical and thermodynamic processes. Their origin and character are dependent on the number of textual agents introduced and their functional involvement with attended viewpoints.

It has been shown that kinetic couplings between agents on one hand and agents and objectives on the other make possible mechanical interactions within and over the flow fields where they are located. Thereby, thermodynamic control processes are generated that govern the kinematic couplings between clusters of viewpoints and standpoints as well as points of observation. Thus, a conversion of energy input through mechanical work generates a time independent structure that can be made visible in the form of a Holophor.

In an important sense, the structures of the viewpoints and standpoints have generated information specific invariants, whose extraction is essential for an explanatory account of perspective transformation. It means that textual agents live in a phase space that is defined by dynamic forces that differ in their capacity of patterning points. The crucial impact of the present approach concerns an analysis of pattern formation and pattern dynamic (Kelso, 1995). In previous studies, references were made to discrete moves and their significance for the development of a point attractor. The process by which it does organise itself, is illustrative of the restrictions forced upon this process, when texture plays a decisive roll in patterning. An illustrative example of the results of texture restrictions can be found in B. Bierschenk (1996, Tables 9 and 10).

It is noteworthy that a point attractor develops into a different form when the dynamic of variables are allowed to operate in the patterning process. Clearly, it is surpassing the mechanical restrictions of the former. As the process of patterning grows, energy input is conversed into mechanical work that generates local minima or "saddle points". In the course of angular displacement, a continuous succession of point attractors comes into existence. These constitute singularities that are characteristic of certain dissipative fields in the verbal flows.

In the process of verbalisation, a singularity functions as a constraint. Hence, pattern formation has nothing to do with contents. Verbal reporting is independent of content but dependent on the dynamics that generates content at a particular point in time and in a certain way. Compared to the former analyses, where both aspects still

were undifferentiated, the present analysis builds on a rigorous separation. Hence, point attractors are the result of structural transformations. With an emphasis on angular displacement, depth is defined in the geometry of the dynamic shifting flow fields.

However, numerical values of angles, prescribing movements, have only insubstantial influence on movements outside the region of transition. In strict thermodynamical terms, phases and phase transitions are generating qualitative changes. Hence singularities are appropriate control parameter in a state space. When they are specifying virtual states conceptual depth becomes accessible. The significance of conceptual depth is rooted in the heaviness of its underlying clusters. Heaviness is defined over the articulation of strings of graphemes. It follows that singularity refers to stable properties of otherwise constantly changing flow fields. Fluctuations below a certain ESS value are considered to be background noise.

Agglomeration of strings into certain cluster implies clustering at a certain distance above the base line value of ESS. By averaging the numerical values of their angular displacements, virtual kinetic properties, lying between such clusters, promote the emergence of a state attractor. Its emergence is associated with an overthrowing of its constituting clusters. The significance of the present analysis lies in the fact, that even their saddle point is transformed through the emergence of new point attractors. Thus, new singularities are interacting with other local singularities. As shown, a new intricate pattern of saddle points has occurred. Evidently, these points are lying on an adiabatic trajectory that provides for an alternative and more refined description in the form of a domed roof.

The angular rotation of view- and standpoints has contributed to smoothly developing response surfaces. Their rounded corners are a function of successive stabilities and instabilities. In turn, these are resulting from oscillating kinetic trajectories and clustering cycles. Of particular concern to the present analysis is the functional closure of the standpoints, because these are associated with sparse dissipation and higher escaping rates. The produced adiabatic trajectory allows for the discovery of the text producer's reasoning, because functional closure is associated with a rediscovery of initial textual conditions. Thus, the configurational constraints in the Ground have produced a path that is anchoring the Figure of the text in reality.

From a methodological point of view, it should be noted that both structures are interdependent. To a certain degree, their macroscopic evolution functions as source of those constraints that are absorbing intentionality. Hence, in reference to perspective articulation, angular displacement, and the formation of movement patterns, it has been shown that the initial conditions have been rediscovered in greater structural detail, compared to previous achievements.

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## Appendix

**Table 1.**

*Unfolded Interactive Relationship: Reproduced from B. Bierschenk (1996, Tables 3-8)*

| Codes | Swedish | English | ln(θ + 1) |
|---|---|---|---|
| 01 Block 1 | [att] | [that] | |
| 30 | $\varnothing_A$ | *X* | 4.49981 |
| 40 | Titta | Look | |
| 60 | på $\varnothing_O$ | *(the attitude + today)* | 8.08476 |
| 01 Block 2 | hur | how | |
| 30 | inställningen | the attitude | 3.80666 |
| 40 | är | is | |
| 50 | idag | today | 3.80666 |
| 01 Block 3 | och | and | |
| 30 | det | it *(the attitude + today)* | 4.49981 |
| 40 | är | is | |
| 50 | ju | you know | 3.80666 |
| 50 | inte | not | |
| 50 | bara | only | |
| 60 | bland | among | 3.80666 |
| 60 | de | the | |
| 60 | kommunalt | municipally | |
| 01 Block 4 | [att ] | [that] | |
| 30 | $\varnothing_A$ | *(X)* | 4.49981 |
| 40P | anställda | employed | |
| 50 | $\varnothing_O$ | *(the majority + you know)** | 4.49981 |
| 01 Block 5 | , | , | |
| 30 | de | the | 3.80666 |
| 30 | flesta | majority | |
| 40 | tycker | thinks | |
| 50 | ju | you know | 3.80666 |
| 01 Block 6 | att | that | |
| 30 | jag | I | 3.80666 |
| 40 | har | have | |
| 50 | ju | you know | 3.80666 |
| 50 | min | my | |
| 50 | lön | salary | |
| 01 Block 7 | , | , | |
| 01 | varför | why | |
| 30 | $\varnothing_A$ | *(I)* | 4.49981 |
| 40 | ska | shall | |
| 50 | jag | I | 3.80666 |
| 01 Block 8 | då | then | |
| 30 | $\varnothing_A$ | *(I)* | 4.49981 |
| 40 | hjälpa | help | |
| 60 | till $\varnothing_O$ | to *(I + with municipality + surely I+ about Y)* | 8.08476 |

**Table 1.**

*Cont.*

| Codes | Swedish | English | ln(θ + 1) |
|---|---|---|---|
| 70 | med $\varnothing_O$ | with *(I + with municipality + surely I+ about Y)* | 8.08476 |
| 01 Block 9 | att | that | |
| 30 | $\varnothing_A$ | *(I)* | 4.49981 |
| 40 | komma | finding | |
| 60 | på $\varnothing_O$ | out *(municipality + surely I + about Y)* | 8.08476 |
| 01 Block 10 | hur | how | |
| 30 | kommunen | municipality | 3.80666 |
| 40 | ska | shall | |
| 50 | $\varnothing_O$ | *(municipality + I surely + about Y)* | 11.89142 |
| 01 Block 11 | [att ] | [that] | |
| 30 | $\varnothing_A$ | *(municipality)* | 4.49981 |
| 40 | spara | safe | |
| 50 | $\varnothing_O$ | *(municipality + surely I + about Y)* | 11.89142 |
| 01 Block 12 | [att ] | [that] | |
| 30 | $\varnothing_A$ | *(municipality + surely I + about Y)* | 11.89142 |
| 40 | skiter | don't care a damn | |
| 50 | väl | surely | 3.80666 |
| 50 | jag | I | |
| 60 | i $\varnothing_O$ | about *(Y)* | 8.08476 |
| 00 | . | . | |

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