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**Intuitive Judgement in the
Context of Constructivism**

**Bernhard Bierschenk
Inger Bierschenk**

2004

No. 93



Copenhagen University
Denmark



Lund University
Sweden

**KOGNITIONSVETENSKAPLIG
FORSKNING**

Cognitive Science Research

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Abstract

This report presents the fifth and last experiment in a longitudinal study of text building behaviour at the Gymnasium level of a Swedish School. The series of experiments concerns natural language production as a means for the establishment of state attractors as well as their geometric space descriptions. The hypothesis tested during three years of instruction and learning is whether the evolving attractors pertain to a descriptive dimension (analytic sensibility) or to a reflective dimension (synthetic sensibility). In the present context, it has been anticipated that a text on a utopian society can be used for the purpose to show that the produced space descriptions concern the general principles of reason. On the basis of the written responses to Huxley's "Brave New World", it is demonstrated that analytic sensibility results in state attractors, which are manifesting a focus on the dimension of right or wrong. In contrast, synthetic sensibility appears to be a source for the emergence of state attractors that concern the effects of an extreme utilisation of humans.

At least since the 1930s, the dominant model in the social sciences builds on the premise of “constructivism” (Pinker, 2002). One of the most fundamental ideas of the constructionists of all kinds is to put an end to innateness, evolutionary growth and a biological view on the development of knowledge as, for example, proposed by Lorenz (1973). Over centuries, this vision has been framed and communicated in the form of utopian societies. Since constructivism constitutes the foundation of the “Standard Social Science Model”, the constructionists in the Social Sciences imply that it is possible to manufacture “citizens” by redesigning people and changing society into perfection (e.g., Skinner, 1960). Literally speaking, societies like the “Utopia” of Platon or Galton’s “Eutopia” rest on the assumption that “nurture is reversible” (Ridley, 2003, p. 95).

But what does it mean that nurturance is reversible? One aspect appears to be that citizens would have been produced, who have the capacity for various types of intelligence. The other aspect would imply that they would be flexible enough to carry out the work they have been designed for. It seems as if the first aspect is an expression of a hope for being able to construct an isomorphism between experienced citizenship and individual change. The other appears to reflect the hope for being able to construct self-replicating copies that share everything in a sharing society. The assumed success in the cooperation of both aspects is taken as pretext for the possibility to bring up citizens, who lack self-consciousness. This condition would generate happiness for all of them and consequently a society free of competition. Moreover, to solve certain problems of complexity, the designers of utopian societies have tried hard to control the modelling of nature in the form of prescriptions, which is the constructionist’s way of looking at single individuals in the real world, i.e., his way of producing “collectivism”.

The experimental design of the present study is expected to produce multiply stable trajectories, which are binding the dynamics of reading a novel to the reader’s intentional processes and awareness of thematic actuality. At the kinetic level of text production, it is expected that the reader’s discourse will generate an effective writing style, which is assumed to result in corresponding dynamical changes at the kinematic level. In agreement with the orientation in a produced discourse, it is anticipated that the latter will generate detailed kinematic trajectory information. But from a communicative point of view, the structurally significant aspects of the meaning in a discourse can only be captured through transformations in the sequential naming of the state attractors of the resulting trajectories.

Ridley (2003) observed in his work on “Nature via Nurture” that there is no memory in the genes nor is there any self-consciousness inside the brain; there are only changing sets of brain states. Likewise, there are no ideas in produced texts and meaning appears to be a property of the underlying verbal flows. Thus, there are only changing states of strings of graphemes. Therefore, the experiment will have its focus on the dynamics in the strings of graphemes, as well as on the geometric description of string rotation and their textual movement patterns. When text is conceived of as “con-text”, the productive cooperation of the text producer’s intention and orientation is no longer the objective of physical conditions. Instead, it is the metaphysical determination of verbal flows that is made evident. Thereby, a new set of constraints is produced, which is passing the limits of reality. As a consequence of transcending physical reality, composites and abstract (hyperbolic) text spaces are evolving.

It follows that single composites are organising themselves in hyperbolic spaces which are negatively curved. By definition, negatively curved spaces are “hyperbolic at any level” and require that ordinary geometry will be replaced with what has become known as non-commutative geometry (Connes, 1994; Greene, 1999; Hestenes 1994). Corresponding characteristic properties of angular string articulation can be extracted from the dynamics of their gradients (B. Bierschenk, 2001, 2004). Finally, the process of naming the resulting states

and attractors provides the empirical basis for the proper contours of resonated judgement. However, what this kind of “contours” exactly communicates will be made evident and explained through the naming of the convolutions of a geometric space.

Some Exploratory Studies

The first kind of studies concerns the formulation of an introductory paragraph, which has the task to direct the reader’s “Einstellung”. Irrespective of the implicated order principle, “Einstellung” presupposes both a possible communicative basis for information pick-up and a way of instructing the reader in his approach to a given text material. Further, if a constructed material is to be studied with respect to the position of certain termini in its geometric space, it becomes possible to elucidate functional changes not only in the structure of a particular text material but also in the transformational change of termini within and between subject fields or disciplines. With this in mind, the following discussion concerns the functioning of the structure underlying John Broadus Watson’s (1878-1958) concept of behaviourism. Ridley (2003, p. 185) is quoting the following paragraph from Watson’s writings:

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I’ll guarantee to take any one of them at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant-chief, and yes, even beggar-men and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors.

As demonstrated previously (B. Bierschenk, 2002), the re-production of order presupposes the holophoric approach as a form of organisation within which the order of its termini can be layed out. As conceptual background to behaviourism, the given citation of Watson’s model has been modernised and contextualised with the following test item:

To a seminar in Stockholm, sometimes during the 1930’s, the Swedish “Social-engineering”-couple Myrdal had invited a certain doctor Watson to provide some inspiring ideas. Who would have been capable of reproducing his ideas in literary form?

Give me a dozen well-shaped, healthy children and I guarantee that I can take each one randomly and train it, to become just any specialist you like, doctor, lawyer, artist, yes even master thief, totally irrespective of the child’s ability, interest, race, or ancestors.

Answer: George Orwell

In the case of this test item, the focus is on the instrumental character of a constructed material. To the reader, who has some knowledge of Burrhus Frederic Skinner’s (1904-1990) “radical behaviourism”, there are some cues in the text, thought as a reply by doctor Watson, which may help to form the basis for understanding the “social engineering” approach in George Orwell’s “1984: The Famous Novel of Life in the Future”. Accordingly, the assumption is that phrases like ‘randomly’, ‘become just any... you like’ or ‘irrespective of’ are members of a class of assertions that can be conceived of as typical behaviouristic. They are types and only explainable with reference and accessibility of a particular code of constructivism. For Skinner, the method and its effects make sense only when one is construing his comprehension within the normative frame of social constructivism.

For someone, who is reading the quotation, the cues at the philosophical-semantic level of the text item are covering its structure, which means that the semantic values are

hiding the structure, which is lying in the textual depth. This is social constructivism in a nutshell. The behaviourist's "frame" should be regarded as a prescription, which is a particular way of looking at objects and events in the real world, i.e., a way of manipulating context-free, i.e., "universally valid knowledge". Just like any other animal psychologist, doctor Watson wants to enforce in a technological manner a refined behaviour, a refined species, but without any restrictions concerning human nature.

A second kind of studies has been directed towards the way in which a test item can be apprehended through its underlying order principle. This kind of studies has been exemplified within the context of some 20th century classics. The aim of reading was to give the reader the opportunity to transfer his/her analysis of the test item into a literary context. In giving a proper answer to the posed question, the reader is asked to integrate the concept of behaviourism into prose. In its entirety, the comprehension test contained 15 items, which required the reader to make shifts between various paradigms and to digest various degrees of abstraction (I. Bierschenk, 1997). The reader's experiences of shifts between conceptual relations and dimensions in a novel have been elicited through the differences in conceptual depth. Thereby, it has been expected that the made reading experiences lead to an understanding of the meaning of a certain function.

The functions of behaviourism, as expressed in prose, can be discerned in George Orwell's "1984", which is a compelling example of a description of a societal machinery, whose working method contains all the objectives of radical behaviourism as well as the expression of empowerment of the subjects. Since the purpose of "Big Government", represented by the intention of "Big Brother", is the manifestation of expertness in the refinement of the individuals, their social lives and thinking, so that only one overall idea will be accepted, namely that the ignorance of the collective gives strength to the system. The explicitness of this intention is expressed as qualification and compelling full functioning of the subject. Embodiment of uncritical acceptance and serving of the new social technology is the implied manifestation. Yes, even to the extent that the subject collaborates in the extinction of history, emotions, instincts, experience, the influence of other people and the redesign of language. No actions and thoughts, that may be a mark of individualism, have a place in a society based on the powerfulness of the behaviouristic machinery.

The society, of which Orwell warned us, existed as the real dystopia in Alexander Solzjenitsyn's description of the way the dissidents of the Soviet epoch were deported to Siberia. In the short novel with the original title "Odnin den Ivana Denisovitja" for example in the first part of "Archipelag GULAG" (original title), which is called "Prison Industry", experiences with the intention of the qualification and powerfulness of embodiment can be made. Furthermore, the embodiment of the behaviouristic function as well as its radical expression in the totalitarian system is clearly expressed. The implied objective is the manifestation of the model in the form of a prison, where the radius, physically and mentally, is practically none, the humble community members struggle for life. For example, implied is the objective to make people unsusceptible to impression by putting them in prison: The way of correction is implied by refinement.

A Swedish example of the same basic idea is to be found in the frightening novel "Kalloccain", written by Karin Boye. She describes expertness in the embodiment of a system's powerful technological controls. The intention is explicitly attributed to the supervision of the citizens so that their private sphere can be minimised. Boye contrasts the radical expression of society with the organic, and how immorality and deception will be the necessary consequence of the assiduous officials' actions. Thus, the "kalloccain", the truth serum, the utmost means for refining thoughts, represents the qualification in the form of a scientific experiment and its collapse when used in the service of a political system.

Depending on the way in which the concept of “refinement” has been transformed in the material, the degree of depth becomes deepened in the operation of the behaviouristic idea. In Orwell’s ”1984”, it is the implied objective and may be discussed within the context of social texture, i.e. a social surface, that is its organisation of administrative steering and control functions as well as oppressive networks. The citizens are acting against the regime in the story, which means that the reader is expected to get a broad view through an outside perspective on the social mechanisms. To the last the model is stronger than the individual.

The story of Ivan Denisovitch pinpoints human self-refinement in the shade of a system’s destruction efforts. Implied in the powerfulness of the correction method is an intention to extinct from the system side. The citizen, going into internal exile, shows, however, that this intention comes to nought, because here the single individual is the stronger part. It seems as if the refinement concept becomes more faceted in the hands of Solsjenitsyn through the fact that it can be discussed in the interplay between intention and the objective of intention.

To an even higher degree, the discussion in ”Kallocain” concerns the effects of an organisation on the structure, that is, on the relation between the individuals. The reader is expected to get a perspective from inside by following an official’s “intentions” and mental preparedness as well as his stepwise changing. Of import is not the unravelling of the story, but the moral disorder, which follows the implied refinement objective. In this way, the novel causes questions of the kind that the creator himself is posing to the scientific model. For example, Skinner in his utopian world is answering in the following way: Aren’t freedom and dignity constructions, which are irrelevant in the light of a secularised world’s civilisation efforts?

In the process of reading, experiences of shifts between various functions and types of prose have been provided and expected to lead to the comprehension of the meaning behind a particular function. Therefore, it can be concluded that “grasping” the meaning of a function is integrated in the specificity of the function. Novels, pertaining to the same paradigm, may vary in the layout of the explicit and implicit termini of the paradigm. But seen in the perspective of growing competence, the reader appears to pick up the bearing idea in relation to the events that have been produced. Hence, temporal function-value integrations are dependent on the dynamic interaction between type of prose and the presented model. In advancing the hypothesis that “intuitive judgement” can be approached only on the basis of the Agent-action-Objective (AaO) paradigm, it will be anticipated that the [AaO] model is producing detailed trajectory information. But the structurally significant aspects of this information will be captured conceptually in the naming of the resulting kinematic states. What kind of constraints may appear will be communicated through the naming of the folds in the obtained landscapes. The process of naming has been shown to provide a sound theoretical basis.

Method

The evolution of informational dimensions through the generation of text presupposes the presence of a bio-kinematic mechanism, which is governing information synthesising processes during text production. Since it is required that this mechanism works with absolute precision, most of the kinetic realisation of the individual’s production potential is manifesting itself as transformed kinetic energy at the textual surface level. Thus, it is the single individual, which has the capability to produce a discourse on a given subject. It follows that only the individual text producer can provide the unique physical space-time context, which is the condition that allows for the application of Perspective Text Analysis (PTA). Through the bookkeeping programs of PTA, the individually defined coordinates of

space and time can be identified. Moreover, PTA accounts for “singularity” and “meaning”. This capacity is contributing to the fact that the present approach is binding intentional dynamics to the production of textual movement patterns. Finally, the conception that structure cannot be imposed a priori, but can only be discovered through PTA is the fundamental precondition for the PTA-approach. How the transformation of coordinated A- and O-spaces is achieved over the individual as well as over time has recently been illustrated in a longitudinal layout of the five experiments (I. Bierschenk, 2004).

Participants

The participants in the present text production task have been specified according to the experiments, previously carried out. The present study was conducted during the academic year 2003/04. In agreement with the previous studies, the same 30 students participated. They were enrolled in a gymnasium at the city of Lund in Sweden and came from the social science program. At the time of the study the students were between 18 and 19 years of age and in their third and last year. The two students in focus of the present study have been selected according to the design and procedure described in Bierschenk and Bierschenk (2003, pp. 6-9). The instructional program, which preceded the present test, has been described in B. Bierschenk and I. Bierschenk (2004).

Materials

Aldous Huxley’s novel “Brave New World” from 1932 was introduced after the study period of modernism in poetry and prose. As a typical document of the time between the two world wars, the novel is concerned with the scientific progress at the beginning of the 20th century. Huxley is presenting his vision of the consequences of this progress in the form of a science fiction novel. This novel will serve as test material in the present study and a more detailed description of the teaching period before the introduction of the novel will be given under the heading “Design and Procedure”. However, the following description may support an understanding of the critical factors of the novel.

Brave New World happens to come into existence at the year 600 A. F., that is, “After Ford”. Portrayed is a society in which everything is completely controlled. Each and every individual comes into existence with the aid of an egg-hatching machine. By means of biological programming, every individual becomes completely determined at the beginning of his life. Medical injections to the embryo are after delivery supplemented with tightly controlled imprinting programs in nurseries and schools. In this society, the concept of family is unknown, since neither fathers nor mothers do exist. Those properties like old-fashioned sex and love are therefore conceived of as uncivilised behaviour of men and women. This kind of traits is made fun of and outdated as irrational, since children now are the products of scientific-technical practices. Expressions of love are simply not allowed and judged to be disgraceful behaviour. The device of the Government is solidarity, unity, constancy, i.e., the stable paradise comes about through the means of collectivism. In order to avoid psychological inconveniences, the well-functioning but unlucky individuals get somatic medicine, i.e., a drug, which has been designed to balance out differences between some in the development resistant personality traits and the mentality of the collectivist, desired by the Government. Everybody has to be happy and the goal is that total happiness has to be reached in all areas of life. The psychologist and scientist, Bernard Marx (in the original edition called Sigmund, an unequivocal allusion) get the permission to visit a national park (reserve) for savages, where the individuals are living according to the days in the old world. In the reserve, he is

meeting a woman, who has been forced to return together with her son, the result of an impermissible love affair. Bernard is allowed to take the woman back to the civilisation for scientific purposes. The son is accompanying and exhibited as savage, i.e., an attraction. Lenina becomes fond of him. This attraction is reciprocal, but when she tries to seduce him, he is responding with disgust and is pushing her away. When his mother dies as a consequence of a too high dosage of somatic drugs, he is taking this event as an opportunity to announce publicly that what he had understood for a long time, namely that he cannot live as collectivised individual, since he has both freedom and a soul, i.e., dignity. He tries to get people into the spirit of revolt against their lack of freedom, which however is squeezed and Bernard, who tried to help the savage, is removed from his position. The savage tries to get away in order to find loneliness. He is scourging himself with the purpose to become free from his thought about Lenina and is devoting himself to contemplation. And when Lenina tries to secure him from a furious crowd's intrusion into his world, he is insulting her and is slashing her with his scourge. Thereafter, he is becoming despaired about what he has done and is committing suicide.

There should be no doubt about Huxley's irony, when he is naming this future new world as "brave". In the same spirit as George Orwell's "1984" and Karin Boye's "Kalloccain" the Government is applying a devilish means of control in order to be able to steer the citizens and to prevent individual discharges of tension. But where Orwell and Boye are picturing the horrific world of a totalitarian society, Huxley's and McKibben's world is manipulated biologically, i.e., not from above but from the inside.

Hence, when the citizens in the projected society are confronted with the savage, a conflict is arising out of the inequality between the naturally developing individual with all his faults and deficiencies and the perfectly manufactured human being, who cannot become conscious of what is human in the other. The conflict ends with the victory of the civilised world over nature. Of course, the fundamental idea of the novel refers to the possibility (danger) that the progress natural science has made can be applied by a political system with the purpose to rectify our biological prerequisites. Thereby, it is also implied that our psyche can be manipulated towards obedience and independent of what kind of crime against basic human rights has been committed.

Huxley perhaps had a presentiment that the modern biology of the 1930's with its racial prejudices were potentially dangerous in the hands of the fascistic leadership of Europe. Possibly is the scientist Bernard symbolising the moral shortcomings in the presence of political Power. He is portrayed as someone, who, because of a mistake, becomes an individualist and his attempt to take responsibility in emergency is a misfortune. The savage's effort to justify his right to liberty by quoting Shakespeare has no effect, since nobody any longer believes in God, i.e., religion and culture are officially declared dead factors in the light of the power of scientific progress and technological advancement. But the projected future is dark compared with the projection of the rationalists of the 18th century. Huxley has produced a dreadful "dystopia" and made the worst of all conclusions concerning the achievements that had generated during the naturalistic era of the 19th century.

What a young reader of the present can be expected to get out from reading the novel is in focus and will be studied according to the following two dimensions:

- (1) The reader may be expected to attend to the functionalistic idea behind the described society, which implies a stress on the absence of natural properties as well as on the Government's suppression of unstable psychic states.

(2) Since the course of events is developing in the context of the primitivism of a natural reserve and a civilised society, the reader may turn his focus towards the conflict between citizenship and the savage. Here, instability or tension is produced on the basis of individual affection and love.

Both worlds are characterised by features of abnormality and both describe those problems, which the scientist and the politician are confronted with, namely the envisaged outcome. By evaluating all options in terms of their utility for attaining the “greatest happiness (or least displeasure) of the greatest possible number” (Reich, 2002. p. 265), the problem to be resolved is to get people to love their slavery. As a consequence, the novel is presenting methods for creating security, but which have been driven to absurdity. Consequently the reader’s attention may be expected to concentrate on the tension producing functions.

Design and Procedure. After the exam on “Miss Julie” (by Strindberg), the study course on 19th century literature was completed with going through the main aspects of the turn of the century. Reading was concentrated on a study of Gustaf Fröding (poetry) and Hjalmar Söderberg (short story). The latter was selected, because of his symbolism, which projected into the prose of the new century. The entire course on the 19th century as an epoch was finalised with the reading of a classic novel, Swedish or foreign. For guidance, the students were provided with a broad list of selections, ranging from Jane Austen to Hjalmar Söderberg. The task of the students was to make their choice, which thereafter was made the starting point for the organisation of a plan for reading and preparation of a statement. This plan was carried out in 2003 during the weeks (42-46). The aim with this curriculum was to give the students the possibility to read novels on their own conditions and to reflect about a novel of the scientific and secularised time of the 19th century. Since the time of the “great novels” naturally embraces a pushing forward of the scientific perspective on text, it was hoped that the students on their own would come to this insight and incorporate this new aspect into their analysis and interpretation of the novel’s “mental dimensions”.

After the end of the 19th century study period, a new phase was initiated, which included the weeks (47-51). During this period, the students’ task was to write an essay, which was modelled on the simulation of the national exam. Concerning Swedish, this exam has been scheduled for (April, 2004). This training period comprises preparations in the form of reading thematically (a prepared booklet) and to discuss its content. Thereafter, the students have been confronted with the task to prepare a minor summary of their reading and writing. Furthermore, work with student essays within a given theme, taken from an authentic collection of essays, was assigned with the purpose to train the students in the application of criteria for judgement. Handling in a finished proposal for the resolution of an extended essay writing task was judged and discussed by the teacher as well as the students. Important for this writing task was that the treated theme would be extraneous to the literary subject.

After termination of the writing phase, the modern “ism” of fine arts and literacy were introduced, and worked through after the Christmas holidays. Poems of Artur Lundquist and Elmer Diktonius (futurism), Pär Lagerkvist and Edith Södergran (expressionism) together with André Breton and Gunnar Ekelöf (surrealism) did represent modern poetry. This section was ended with a minor exam, where the students had to analyse and determine the most obvious “isms” of a poem of Karin Boye, “I rörelse” (“In motion”) written in 1927. Furthermore, prose of Marcel Proust, Franz Kafka, James Joyce, Virginia Woolf and Ernest Hemingway were studied with particular focus on the psychological ideas of that time and the way in which these ideas were pronounced linguistically by these renovators of the novel. This section on the modernism was ended in February 2004 (week 7).

A new period was started with an elucidation of the 20th century literary texts, however now in the perspective of the appearance of the “modern society” and its

manifestation through some authorship. For the purpose of presentation, the students were made aware of a number of thematically organised Swedish, Nordic and internationally known authors, together with their central works, which were put into a time perspective. Typical groups presented were the middle class novels, working class literature, the critics of the world wars, the critics of society, existentialism, modern escapism, such as the beatnik movement and magic realism, as well as documentary novels. Thereafter, the students were asked to complete two reading tasks: One should be selected from the novels concerning societal criticism, more narrowly defined, the students' attention was directed towards Aldous Huxley's work "Brave New World", which all students had to read. This novel was selected, since the class consisted of students interested in the social sciences. But these students were also going through a compulsory study course on "science". The other reading task was identical with the students' choice. Since Huxley's novel was published in 1932, hence, before the Second World War, the teacher together with the students decided that the other novel should be selected from the literature that appeared after the World War. On the other hand, from what kind of group the other novel was selected, was of no import for the dispersion of the reading experiences.

The second task was also the last, given to the students in the literary part of the study course on Swedish as subject. This task was finished with an exam at the end of May 2004. The exam was composed of a number of analysis and synthesising tasks about what the students had been able to learn during their time at the Gymnasium. During the time between reporting on Huxley's novel and the other novel the students had to prepare for and write the National essay exam. The latter was followed by some weeks of verbal presentations, which were part of the National exam. Moreover, various presentations of their "project" work, which is a compulsory part of study at the Gymnasium and which had involved several teachers from other subjects, were sandwiched in, but it is the reporting of the "Brave New World" novel, which was made the test material that was of import for the present experiment.

Reporting on the novel was initiated in the beginning of the month of March and lasted during three lessons. During the initial lesson, the entire class was asked to complete the following writing task:

Huxley's novel about a future world has in English been described with "brave". This word can among other thing mean 'challenging'. Ponder over what you think is particularly challenging in the story and give cause for why.

Discussion about the novel followed in small groups and lasted during the rest of the lesson and the next following lesson hour. Based on a number of prepared questions, the students did concentrate primarily on an analysis of the atmosphere of the society, the control methods of the Government, the relation between fiction and reality, as well as on the bearing ideas, their formation and their relevance for our time. A third lesson was preserved for a summary discussion in which the class participated in its entirety.

Results

Throughout various studies (e.g. Bierschenk, I. & Bierschenk, B., 2004) the Agent-action-Objective (AaO) paradigm has been shown to have the capacity to fuse strings of graphemes that are temporarily fitting into the structure, developed for a particular task. Although covered by textual surface properties, the space of a text is approachable with VERTEX, which is a new version of Perspective Text Analysis (PTA). As a result, this

condition will make it possible to demonstrate dynamical behaviour through the discovered [AaO] mechanism and to establish orientation and direction in the identified patterns of string movements. By necessity, this implies the assumption that a language structure is coupled with the behaviour of complex [AaO] systems. Looking more closely on their organised complexity, the dynamics and kinetics of the behaviour of these systems, their rings, and their richness in structure may lead to the appearance of a deeply ingrained commonalty, that is, order. The reproduced order parameters are the result of the strict dependency, which is characteristic of the componential entanglement of bonded A-O pairs. Relative phase stability in the autonomous development of corresponding alfa and beta strands has the capacity to reveal their overall symmetry. Since this symmetry is the consequence of processing, apparent A- and O-space disparity has important theoretical implications for the extraction of the roots of intention and orientation.

Hence, the present account of the experimental results is necessarily dependent on the text producer's intention and orientation. Both can be discovered through the non-linearly working language mechanisms, which are embodying corresponding textual spaces. In establishing the language spaces, the discourses on the novel have been assigned the labels (A5) for the analytic-descriptive style of approach and (B5) for the synthetic-reflective, which is in agreement with the previously applied convention:

A5. Original Swedish Text Production

[X] finner jag särskilt utmanande. En (...) som trots sin mindre utvecklade fysik och dåliga självkänsla ändå vågar utmana överheten, vågar vara en individ i en i mina ögon hemsk verklighet. Även i vår verklighet krävs ett visst mod för att stå upp och utmana världen och säga det här är jag. [X] är en (...) som jag hade beundrat om (...) vore sann.

A5. Literal English Translation

[X], I find (...) especially brave. A (...), who despite (...) minor developed physique and bad self-esteem nevertheless dares to challenge the authorities, dares to be an individual in a in my view horrible reality. Likewise, in our reality is a certain degree of courage required for standing up and to challenge the world and to say this here is me. [X] is a (...), who I would have admired if (...) were true.

B5. Original Swedish Text Production

Jag kommer först att tänka på den fria sexualiteten och promiskuiteten. Tankarna om att familjen är något negativt. Jag vet inte så mycket om 30-talet, men jag kan verkligen tänka mig att detta var tankar som skilde mycket från verkligheten. Även saknaden att sträva efter någonting, oftast lyckan, kan nog ha uppfattats som ny. # Jag tror också att porträtten över människors sensationslystnad och hur man för nyhetens behag inte känner någon empati. För så som vilden blir behandlad i slutet, det är ju så vi faktiskt behandlar personer i vår värld, t.ex. kändisar. Så behandlas även brottsoffer. Alla som kan skapa ett par stora rubriker på första sidan av en skvaller- eller kvällstidning. Det är sorgligt och Huxleys beskrivning utmanar oss än idag att ta en titt på oss själva nu. Ingen har empati. Ingen bryr sig om något, det är bara soma och egoism. Ett avskärmat sinne från verkligheten. Är det så vi vill vara? Är det så vi vill att vår värld ska se ut? # Alla är lyckliga men ingen bryr sig. Alla är nöjda och kan inte se bakom något eller kritisera. Alla är som hjärntvättade utan mening i livet. Vill vi också bli sådana, avtrubbade? Det är dit vi är på väg med vår mobbningstrend och dylikt. Empatin tar slut. Kvar är bara ett fånigt soma-leende på läpparna och allt blir meningslöst, världen får stagnera.

A5. Literal English Translation

I come first to think about the free sexuality and the promiscuity. The thoughts about that the family is something negative. I do not know much about the 30's, but I can really imagine that this were thoughts, which differed much from the reality. Also the loss to strive for something, very often pleasure, may probably have been conceived as new. # I believe also that the portrait over people's carving for sensations and how one for the pleasure of the latest fashion's appeal is unable to feel any empathy. For, how the savage is being treated at the end, this is, you know, in fact how we are treating persons in our world, e.g., famous people. Infringed persons dealt with in the same way. Everyone, who can contribute with some big headlines on the first page of a gossip- or evening paper. This is sadly and Huxley's description is challenging us even today to take a look on ourselves now. Nobody has empathy. No one takes care for anyone. It is only soma and egoism. A screened off sensation from reality. Is it so we wish to be? Is it so we wish that our world shall look like? # Everybody is happy but nobody worries. Everyone is satisfied and cannot look behind something or criticise. Everybody is like being brainwashed without meaning in life. Do we also wish to become like that, blunted? It is in this direction we are on the way with our mobbing trends and the like. Empathy is drawing to an end. Remaining is only a stupid soma-smile on the lips and everything becomes meaningless, the world may stagnate.

The Shapes of the Unfolded Phase Spaces

As outlined in the reports on the previous four experiments, a very simple principle is governing the unfolding of the phase spaces. When the kinetic processes are regularised by means of a transformed and interpolated mesh system, the X-axis of the mesh is representing the sliding in a progression, while the Y-axis carries the periods and fractions of a period, governing the progress. As an organising device the parameter of the Y-axis plays an important role in connecting the direction of time with dynamic processes. The acceleration of a particular rotational progress is expressed through the radians, involved in changing the dynamical processes. Thus, the functional relation between the radians and the intervals, which are internally organising the dynamical processes in the layering of the composites, is decisive in establishing the shape of a space. The transitional step from the text productions (A5 and B5) to the re-production of their spaces and representation in the form of shapes can be identified with the borderlines, where the physical basis of a particular text transforms into virtuality. As foundation for plotting, the coordinated grid has been generated with the SigmaPlot (2002, version 8) for Windows. Its inverse distance method has been used for the conversion of the corresponding plots, which means that the coordinated grids have been interpolated (i.e., smoothed) with the weighted average of the values at neighbouring points. In computing the applied weight function ($1/u^p$) to the (X, Y) coordinates, the function has been set to the standard ($p=3$).

The experimental significance of a particular style of writing concerns the notation of the text. What sets the present text (A5) apart from the previously produced texts (A1 to A4) is a somewhat higher degree of depth in the relational processing of textual objectives and textual agents. As demonstrated in the Figures 1 and 2, shadowing below sea level is the result of a certain degree of acceleration.

When a layered beta variable below sea level is inspected with respect to the corresponding text patterns, it appears that the layering effects are the result of an implied "risk-taking" with unknown (Y) outcome. On the other hand, prismatic variations in the surface of a textual segment are speeding up the process and are thereby producing the upper most parts of the shapes.

Figure 1.

Text A5. Analytic – Descriptive Approach to Huxley's Brave New World

Angular Articulation in the Unfolded Orientation Space

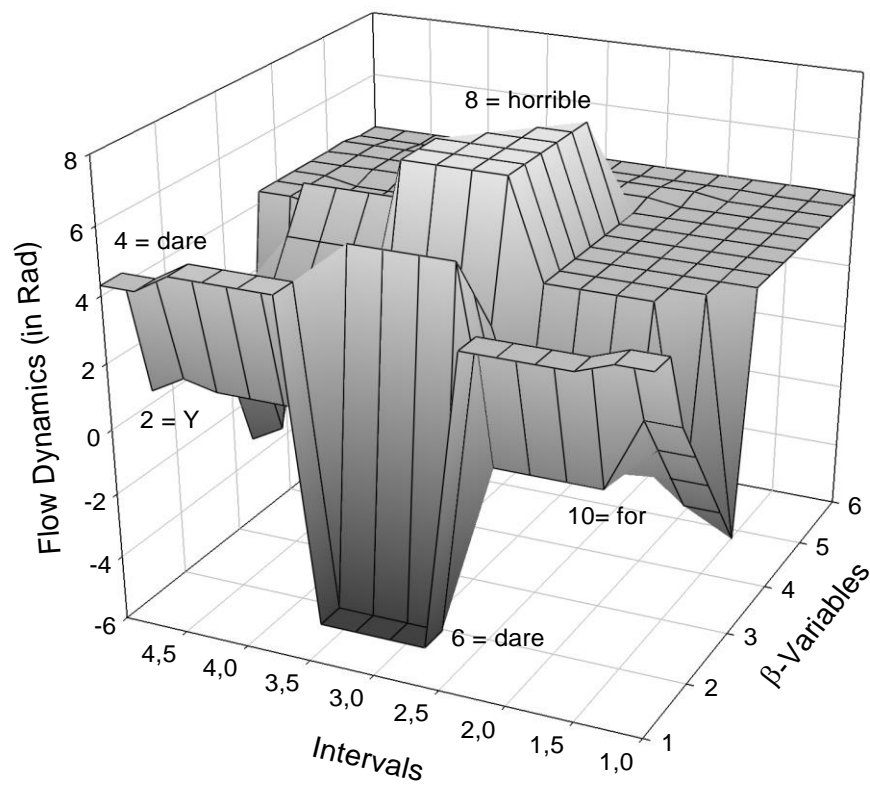


Figure 2.

Text A5. Analytic – Descriptive Approach to Huxley's Brave New World

Angular Articulation in the Unfolded Intention Space

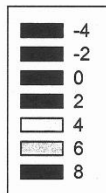
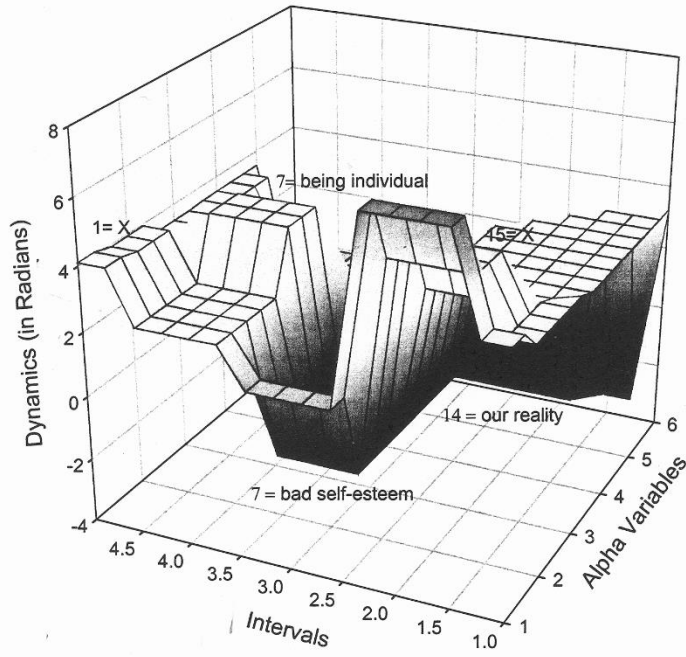


Figure 3.

Text A5. Synthetic – Reflective Approach to Huxley's Brave New World

Angular Articulation in the Unfolded Orientation Space

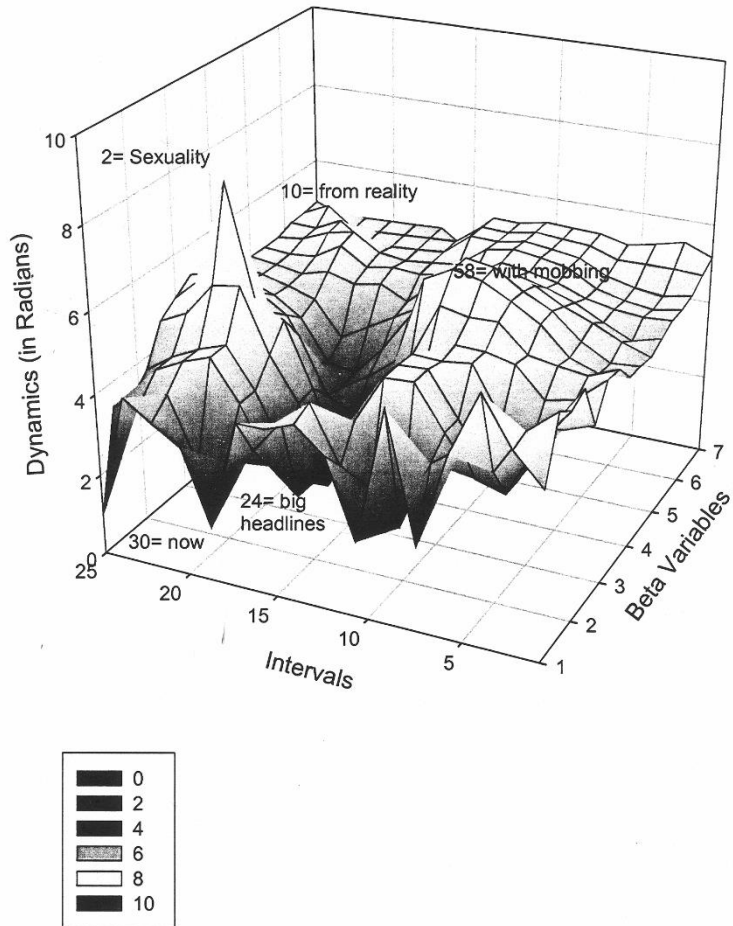
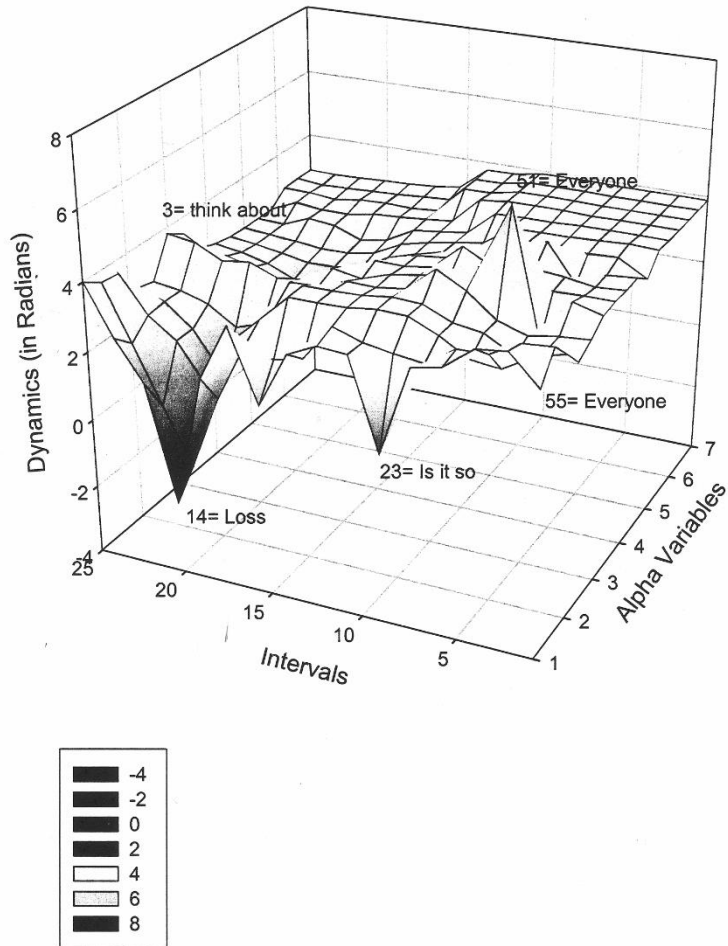


Figure 4.

Text A5. Synthetic – Reflective Approach to Huxley's Brave New World

Angular Articulation in the Unfolded Intention Space



The top of the third interval illustrates the effect of a beta variable, which carries the explicit textual expression of the producer's awareness of a "horrible reality". Furthermore, Figure 1 confirms the same kind of timing and spacing in the development as the previously produced trajectories. However, on the kinetic level of verbalisation, an increase in depth has become observable, which implies increasing implicitness. This observation is accentuated further in Figure 2. Increased angular displacement in the Intention space marks a higher degree of acceleration. In communicating the appearing depth articulation, the layered alpha variables below sea level are carrying textual segments, which give expression to the implied bad self-esteem as well as to the implied defective physical conditions. In contrast, the upper most parts of Figure 2 are the result of those alpha variables that carry explicit descriptions of a person and naming of the circumstances, e.g., our environmental reality as well as the physical and mental appearance of the person, named 'X'.

The Figures 3 and 4 are the result of dynamical properties that have produced significant differences. As indexed with the same kind of layered text segments, contextual differences have appeared and pronounced deviations have influenced the resulting view. Figure 3 is mirroring sensibility towards actual sensations in the real world and its translation into mobbing. Figure 4 is complementary and manifests the corresponding properties of intention. The designated peaks below sea level are all concerned with a general loss of human values that must concern all of us. Thus, shifts of shading around some preferred phase relations have been determined and designated in order to demonstrate the kind of change that can be observed within and between the periods and the fractions of a period that are critical in the production of a particular space. In comparison, it has been made evident that the shapes have their own specific layout. Specificity in shape is producing the geometric properties that carry information and communicate the characteristics of each single person's writing style.

The Shapes of the Concentration Spaces

The meaning of a concentration space appears in the folds of its surface layout. The basic condition of the procedures for establishing the folds rests on the progressive development of the spherical dependencies in the mono- and multi-layered composites. Hence, the meaning of a shape, as defined by the alpha and beta variables of the Figures 1 to 4, can be abstracted through the transformation of the involved textual segments. Thus, transformational processes are generating the meaning of a shape through the processing of the termini of its state attractors. A first step in this process implies that a mesh system is ruled on the magnitudes resulting from the foliation process. A second step concerns the expression of the magnitudes in the microstructures while the third step of the procedure is decisive for the establishment of the overall import of the expressed thematic convolutions.

Systems of co-ordinates (or mesh-systems) have the capacity to describe the functional relation between the produced quantities and the development of an information profile. When the structure of a particular configuration is regularised according to the Figures 5 to 8, it becomes open for the inspection on the basis of its shape. However, Connes' (1994) fusion principle has been a prerequisite for the configurational development of the presented shapes.

As long as the differences (ω) in a pair of variables within a given interval does not deviate from the stated criterion ($0 < \omega/2 < 1$), foliation is reflecting the "virtual states" of the attractors of a continuously developing thermodynamic trajectory. An informational account of the continuously convoluted termini of the underlying lines of reasoning and their translation into an evolving theme is generating the kind of mountains and valleys as shown in the Figures 5 to 8.

Figure 5.

Text A5. Analytic – Descriptive Approach to Huxley's Brave New World

Resonance in the Folded Orientation Space

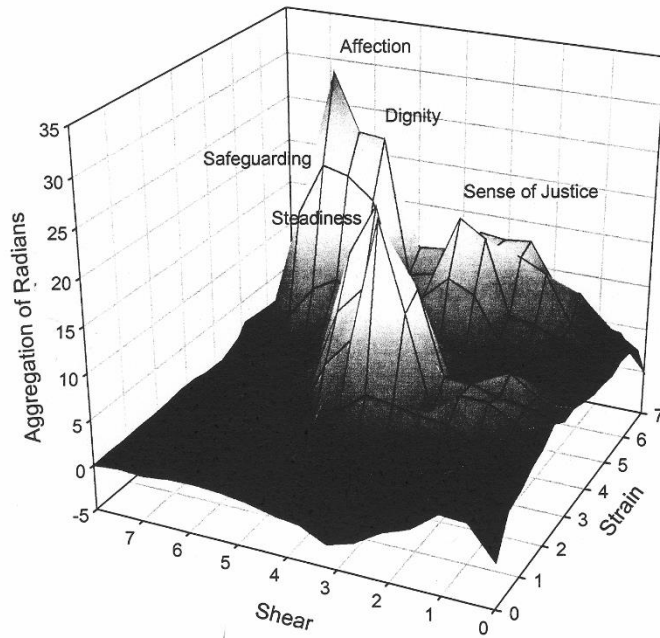


Figure 6.

Text A5. Analytic – Descriptive Approach to Huxley's Brave New World

Resonance in the Folded Intention Space

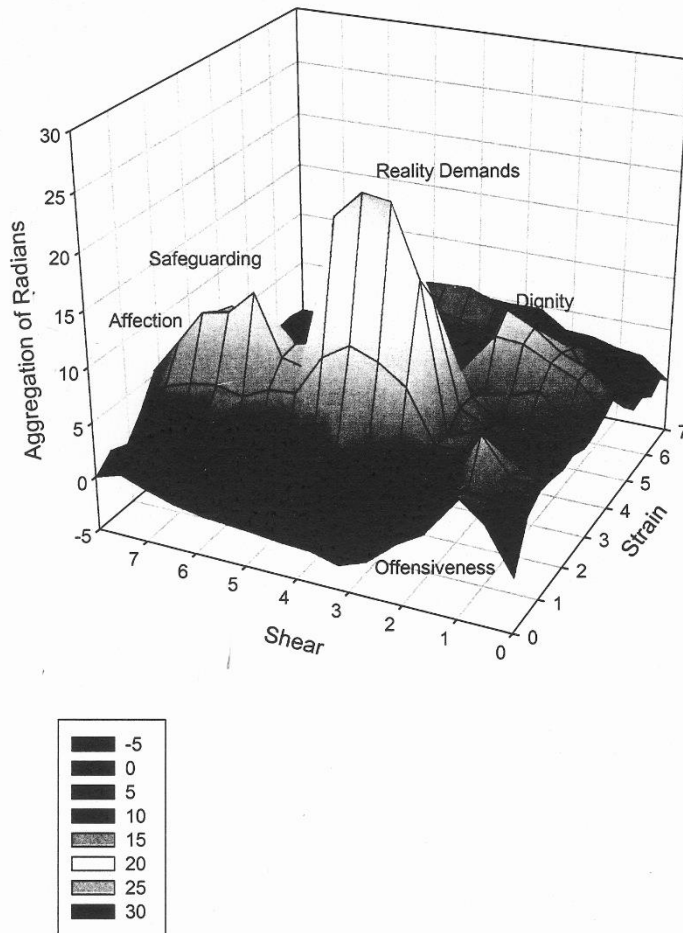


Figure 7.

Text B5. Synthetic – Reflective Approach to Huxley's Brave New World

Resonance in the Folded Orientation Space

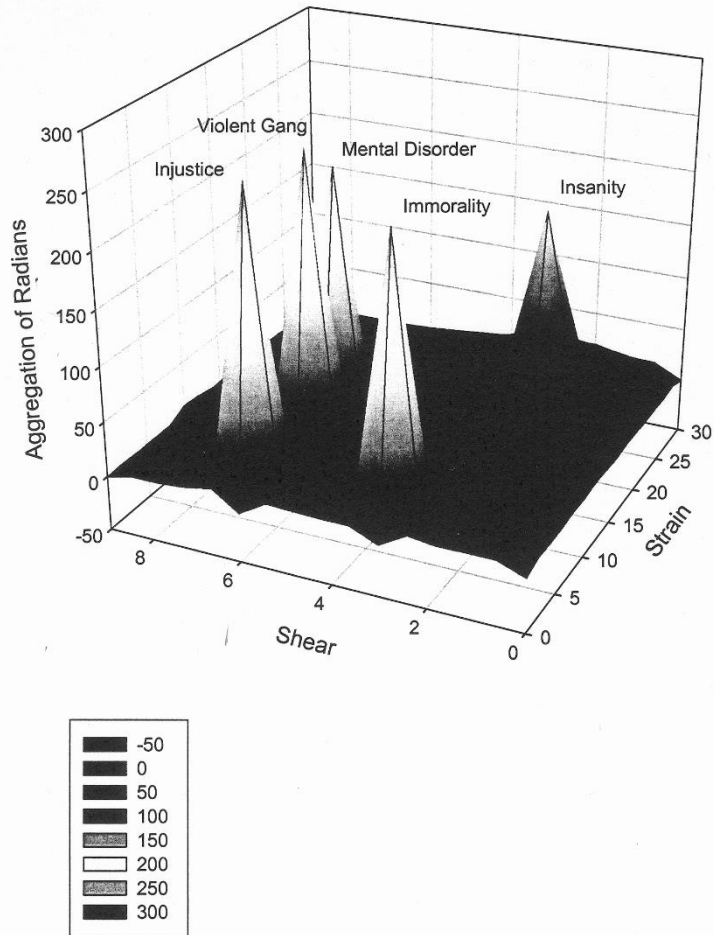
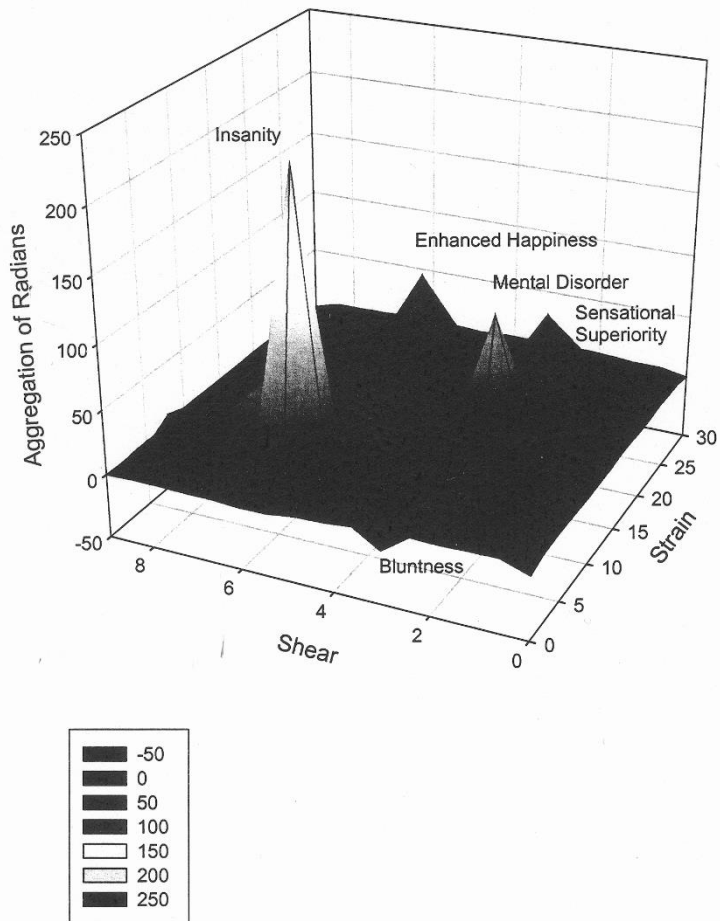


Figure 8.

Text B5. Synthetic – Reflective Approach to Huxley's Brave New World

Resonance in the Folded Intention Space



As a matter of fact, an unstable path is always reflecting a relationship at a local level and may be taken as pretext for the development of a configuration that rests on insignificant changes in the states of a system. On the other hand, whenever the folding operations appear to be dependent on a discontinuously developing path, folding makes evident that a hysteresis is arising in the progression from one state to the next following. This implies furthermore that a significant change in direction becomes observable. In the present context, a progressively developing path very quickly is producing folds that are adapted to different con-textual conditions.

The X-axis of the plots is representing the straining in the progressive translation and manifestation of a theme, while the Y-axis of the plots is depicting the shear in the progressing of a thematic expression. Furthermore in passing the terminal states, their magnitudes become involved in the fusion process. As long as the fusion develops on the basis of positive values (+) they are added. However, every time the process is encountering a negative value (-), the corresponding magnitude is taken as an indication for a fusion that is deflating explicitness. As a result, the corresponding quantity is subtracted.

Therefore, evolutionary time is always irreversible and prescribes the implicitness of the course of a thematic translation. In this respect, the steep of a mountain is the outcome of maximising the increase in positive values. In contrast, a course, which is a function of “implicitness”, corresponds operationally with a translation course, developing steeps through the increase of negative values. Thus, increasing and decreasing values are defining the gradients of explicitness and implicitness and imply elaborations of a thematic translation. To restate, the notion “depth” in a thematic translation refers to manifested structural distances.

A first measure of the difficulties posed in the text producer’s comprehension of conceived environmental properties and their explanation is the degree to which a dimensional transformation of generated depth-relations has taken place. As a consequence, the naming of the folds and the transformations involved in the process of naming is an expression of evolving substructures. In this sense, a substructure is manifesting the degree of adaptation to the con-textual condition. As expected, naming a substructure is an expression of an attitude change and consequently contributing to a changing direction in focus.

Relative to some line of reference, the significance in the inclination towards a certain direction is increasing with time. Thus the stepwise transformation of textual segments is simultaneously generating a path that is adaptively climbing a specific peak. Thus, in the process of transforming contextual conditions, the naming of the layered composites implies that the emerging attractors become named. From an evolutionary point of view it can be stated that each singularity is characterising a state that is manifesting a difference in acceleration. Hence, the singularities of the states are marking differences in a particular attraction. Moreover, strong bottlenecks are the result of strong dynamical speed and acceleration, which implies firmness in progression and the establishment of a singularity. As a result, all the variability observed at the end of a transformation process has been named and the number of possible folds is declining with time.

The distinctness of a microstructure follows from the direction of influence, which is building up a “rugged landscape”. Morphological substructures are matching its mountains and valleys. The description of a given region in the landscape is the outcome of trajectories that form small folding lines, which move towards neighbouring peaks. Thus, at the initial stage, the kind of textual segments, illustrated in the Figures 1 to 4, become layered and the involved strings of graphemes are generating matching landscapes. However, once the participating variables have moved the transformation process in the realm of a particular

peak, only those textual elements that move the spiralling process towards a singularity are beneficial.

Since the meaning of this evolutionary process implies a focus on reassurance, the process of fusing strings of graphemes into a developing attractor has the function of twining together intention with an awareness of actuality or meaning. This phenomenon becomes increasingly concentrated as the transformation process climbs the peak of the final singularity. Once the total configuration has settled at the final singularity, only one single terminus is expected to be the name of the emerging global invariant. The latter signifies the character of the entire fusion process.

The concentration in the Orientation space of (A5). As a result of the analytic-descriptive approach, the termini are denoting affection towards anyone, who can behave in a respectable way. This space encircles the importance of conscience, which concerns the steadiness of a person. It follows that reality demands from the text producer's point of view have a crucial function in forming a strategy of ethic communication and the expression of what is right and to act correspondingly. The resonance in the Orientation space of (A5) concerns a common sense of justness. It follows that the producer of (A5) has focused on the person, who rebels against conformity. Balancing against the development of a harnessed society, human dignity appears to be the key notion that would prevent society from becoming a horrific world. Further, that a sense of justice is emerging means that this kind of sensibility cannot be discharged. The idea of improvement through environmental influences, exercised upon the development of body and brain is obviously an injustice and represents the ultimate assault on human dignity (McKibben, 2003, p. 43; Reich, 2002, p. 265; Ridley, 2003, p. 150). Ethics and a common sense of promoting steadiness would safeguard human life, support affection and secure uniqueness of the human mind.

The concentration in the Intention space of (A5). Figure 6 shows an Intention space, which comfortably fits the Orientation space of Figure 5. Reality demands are explicitly supported, since a constructive approach to human life is implicitly arousing offensiveness, which occurs below sea level. Hence, implicit disagreeableness is raising doubts about carefully developed regimes for harnessing human life and possibly a psychological barrier that is not easily overcome by a mix of technological progress and brainwashing. Hence, the space resonates intuitive judgement. Moreover, the implicitness, underlying the configuration of the Intention space of (A5), makes evident a particular sense of disagreeableness, which may be conceived of as a certain kind of aggressiveness towards the implied lack of responsibility and required sensibility to reality demands.

The concentration in the Orientation space of (B5). As expected, the text producer of (B5) has taken a reflective approach, which is complementary and consequently resonating the atmosphere of an "incubating society" (Ridley, 2003, p. 149). This space, as a matter of fact, makes explicit, what happens if one is not critical enough, but takes harnessing individual life as solution to worldwide problems. Figure 7 is resonating the constructionist's unjust exercise of power, which obviously has profound effects on the meaning of life. Thus, the attempt to turn people into products implies that the line between what is real and what is the artificial result of "a careful regime of nutrients and drugs" (Ridley, 2003, p. 149) becomes blurred. On the other hand, in the process of transiting from naturalness to constructiveness, something in the fabric may go wrong and generate tension. As a result, violent gangs are conceived to contribute to a de-humanisation of society. However, once the constructivist may have succeeded, the line between the real and the artificial becomes fully blurred. When compared with the character of a naturally developing human being, the difference in self-awareness concern anticipated mental disorder.

The concentration in the Intention space of (B5). Ignorance of the insane and enhancement of happiness appears in the Intention space of Figure 8. Conceived intentionally,

physical and existential meaning is left behind when mental disorder takes over. What matters is utility and sensational superiority, which is on the other side of the moral line of conduct and a meaningful life. Implied in the perceived kind of constructivism seems to be the conception of an acceleration towards bluntness and a world that no longer asks questions, whose answers involve moral decisions. Hence, compared to the human mind, which is self-conscious, insanity is the outcome of the idea that conditioning can, as Skinner (1960) stated, go beyond freedom and dignity. Therefore, it would not only be insane to take the risks of unlimited constructivism, merging reality with an imaginary world would be immoral and lead to a society without meaning.

Discussion

The meaning of the configurations of the Intention spaces is the result of an important demarcation: The distinction between a “point of observation” and the corresponding “points of view” is effectively contributing to the extraction of the characteristic quality of the landscapes of an Intention space. Just as a structural expression of a viewpoint is representing a specific orientation so is a point of observation structurally representing the expression of a particular intention. The dependency between the resulting spaces makes full use of the text producers’ articulation capacity, which is reflected in the resonance of the spaces.

The landscapes of the Intention spaces give expression to an ordered sequence of singularities that differ to a certain extent from the specification order of the singularities of the Orientation spaces. In prescribing wholeness and the order, which determines the informational invariants contained in text (A) and (B), their meaning can be represented through the shapes of the mountains and valleys. Informational coherence is the crucial new dimension, which has emerged through the evolving landscapes. It follows that a landscape makes evident perspective translations as well as the incorporation of the formation of intention and orientation into a single harmonious framework. Moreover, emerging is an informational configuration, which provides for a strictly unified presentation of the pattern dynamics of the texts under consideration.

At the textual level of communication, it means that words are the constituents of a verbal expression, and words are made up of syllables, while the elements of syllables are the strings of graphemes. Besides their composition, no further input is required for their pattern to resonate meaningfully. As a consequence, differently layered textual elements have been shown to support the variables that are the producers of informational coherence. What appears to be different at the textual input level is actually a difference in “notes” on the same fundamental line of reasoning. Psychologically conceived, the notes are carrying the differences in the meaning, which are evolving during language production. Variation in meaning involves variations concerning the transformation as well as the conditions of perspective rotation.

The results of the presented study draw attention to the problem of human autonomy and consequently “the right to determine one’s free will and act correspondingly” (Reich, 2002, p. 265). In the context of constructivism, dignity seems to appear at the edge of “morality” and “utility”. As the landscapes of (A5) have demonstrated, by accident, an organism has developed into a “strong-will” person, whose behaviour has turned out of hand of the constructionists. In contrast, the landscapes of (B5) concern the effects of extreme constructivism. Together, both provide the most basic requirement for the emergence of a “moral domain” and a clear challenge for making “intuitive judgement” evident. Like any other, Huxley’s utopia is representing the effects of an extreme utilisation of humans and thus, is going beyond what any society in the real world would be able to offer, namely a society

that is free of tension (McKibben, 2003, p. 55; Ridley, 2003, p. 230). Thus Huxley's utopia has produced two kinds of perspectives: One perspective is concerned with personal growth and development. Hence, the outcome of the analytic-descriptive approach concerns the personal view and a common sense of justness. In contrast, the other perspective is focused on the use of human beings, which means that they are used as means for purposes that are foreign to the individual itself. Hence, within the context of the synthetic-reflective strategy, the effects of de-humanisation appear as the result of a society, which leaves no room for individual growth and development.

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