Comparison Across the Reference Frame: Rotation of Galileo Spaces with Inconsistent Objects -- An Example of Comparison of Use's Perceptions and Online Legal Policies

by

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DEDICATION

I dedicate this dissertation work to my loving dad, Zan-Hwa, Hsieh, who passed away in 1998.

I dedicate this work and give special thanks to my wife, Barbara Chen and my lovely daughter Cindy Hsieh for being here for me throughout the entire doctorate program. Both of you have been my best cheerleaders. Without your support, this dissertation wouldn't have been possible.

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ABSTRACT

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Comparison across the Reference Frame:

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Clearly the choice of a reference frame has significant bearing on the result of any investigation, and choices of reference frames are of essential importance in science. But most researchers in cognitive and cultural processes have held lower expectations for the results of their work than for the work of the "physical" scientist. Woelfel (Woelfel, 1981; Woelfel, 1984; Woelfel, 1985; Woelfel, 1986; Woelfel, 1975; Woelfel, 1980; Woelfel, 1987a; Woelfel, 1987b; Woelfel, 1988) has confronted this disparity between physical and social science practice. He suggests that the apparent difference between social and physical phenomena result from differences in the procedures by which each are observed and analyzed. Based on this, Woelfel and several scholars (Woelfel & Gillham, 1977; Barnett & Woelfel, 1979; Woelfel & Woelfel, 1979; Barnett & Woelfel, 1982; Barnett & Woelfel, 1992; Barnett & Woelfel, 1992a; Woelfel, 1980; Woelfel & Danes, 1980; Woelfel & Saltiel, 1988; Woelfel & Fink, 1980) have developed a series of procedures (usually called The Galileo System

^{TM}) which standardize social science methodology in a way consistent with physical practice. This dissertation examines that comparison process and extends it to types of comparison not easily feasible with existing Galileo technologies.

This dissertation demonstrates the solution to the problem of comparing datasets with different objects or concepts. In this dissertation, a software tool named CRD[1] Converter is created and treated as a juncture between Galileo and CATPAC that is a self-organizing artificial neural network computer program for analyzing text (Terra Research and Computing, 1994). The CRD Converter does vastly simplify the re-formatting of CRD files generated by CATPAC and intended for comparison in Galileo. Furthermore, this dissertation has successfully shown the ability to compare inconsistent concept/object sets in Galileo through CATPAC, and has solved a fundamental incompatibility problem between Galileo software and CATPAC software. With an example of comparison of users' perceptions and E-retailers' online legal policy statements, the dissertation provides a model of the procedures to follow in rotating inconsistent datasets. The results from the example give ample evidence that the solution to the problem of inconsistent objects is truly workable.

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[1] CRD stands for coordinates.

CHAPTER ONE

INTRODUCTION

> By the aid of language different individuals can, to a certain extent, compare their experiences. Then it turns out that certain sense perceptions of different individuals correspond to each other, while for other sense perceptions no such correspondence can be established. We are accustomed to regard as real those sense perceptions which are common to different individuals, and which therefore are, in a measure, impersonal .... The only justification for our concepts and system of concepts is that they serve to represent the complex of our experience: beyond this they have no legitimacy. (Einstein, 1946, p.1-2)

1.1 Research Motivation

1.1.1 Social Science Versus Physical Science

Clearly the choice of a reference frame has significant bearing on the result of any investigation, and choices of reference frames are of essential importance in science. In physical science experiments in which laboratory coordinate frames are physically attached to measurement instruments, many repeated observations across time may easily be displayed within the same reference frame, and comparison of observations becomes well defined (Woelfel & Fink, 1980). Unfortunately the most commonly used social science scales are so imprecise, they are not amenable to the precise analysis procedures -- particularly differential equations --typically used by the physical sciences. The phenomena of social science are very complicated -- too complicated to be characterized by any relatively simple laws and principles such as those of the physical science. For example, attitude, conceptual beliefs, and cultural processes are usually thought to be insubstantial and abstract, too evanescent and flimsy to be caught and measured precisely. For this reason, most researchers in the area of cognitive processes have held lower expectations for the results of their work than for the work of the physical scientist (Woelfel & Fink, 1980). As a result, if any sufficiently precise rule for constructing such coordinate frames could be set up in social science, researchers can create essentially identical reference frames, and so comparisons between the observations of different observers at different times are thereby simplified. It will be a significant contribution if one could study cognitive and human behavioral phenomena based on a scientific foundation.

Woelfel (Woelfel, 1981; Woelfel, 1984; Woelfel, 1985; Woelfel, 1986; Woelfel, 1975; Woelfel, 1980; Woelfel, 1987a; Woelfel, 1987b; Woelfel, 1988) has confronted this disparity between physical and social science practice. He rejects the notion that physical and social phenomena are inherently different on a philosophical ground, since most scientists accept as a principle that there is no access to experience independent of observation. He suggests that the apparent difference between social and physical phenomena result from differences in the procedures by which each are observed and analyzed.

Based on this analysis, Woelfel and several scholars (Woelfel & Gillham, 1977; Barnett & Woelfel, 1979; Woelfel & Woelfel, 1979; Barnett & Woelfel, 1982; Barnett & Woelfel, 1992; Barnett & Woelfel, 1992a; Woelfel, 1980; Woelfel & Danes, 1980; Woelfel & Saltiel, 1988; Woelfel & Fink, 1980) have developed a series of procedures (usually called The Galileo System ™) which standardize social science methodology in a way consistent with physical practice. Among the advantages of the Galileo System is that it allows precise comparison of cognitive, cultural, and communication process on common reference frames. This dissertation examines that comparison process and extends it to types of comparison not easily feasible with existing Galileo technologies.

1.1.2 Observation Invariance

Observation is a procedure that reflects the interaction of observers and that which is observed. People agree as scientifically validated facts only those observations that are invariant across careful observations by multiple observers. Even more stringent is the qualification for scientific laws, which must be invariant across observers and across time (Woelfel, 1980).

On the other hand, if the objects (concepts) of physical space have shown a tortuous path of development, objects (concepts) of cognitive and cultural space are even less well developed. This is because sufficient data have hardly been collected by social scientists to determine unambiguously which of the complexes of cognitive or cultural objects ought to be considered rigid. Einstein (1920) stipulates that the distance between two points on any rigid body may be taken as a standard unit. One may say, the body (or configuration of objects) may be thought rigid if the distances among the objects remain invariant. In either physical or social science, people can consider the relative invariance of interpoint distance in two general cases. One is cross observer invariance. The other is over-time invariance. In order to serve as an accurate yardstick, a standard should present both of forms invariance to a high degree (Woelfel & Fink, 1980).

Thus, our goal as scientists is to set the systematic procedures to construct invariance among observations across observers via communication, and scientifically present the true differences between observations. Specifically, one must try to minimize or even rule out the possibility that variability in observations described by multiple observers is attributable to ambiguities in the communication by which observations are compared.

1.1.3 Problematic

If one drops a stone on a train, an observer on board will see the stone fall as a straight line, but an observer on the ground finds the path of the stone to be a parabola. Specifically, we are in a position to say: the stone traverses a straight line relative to a system of co-ordinates rigidly attached to the train, but relative to a system of co-ordinates rigidly attached to the ground it describes a parabola (Einstein, 1920). How does one account for these differences? Are those observers in a different event? The answer lies in a careful examination of the reference frames of each observer. The first person is compared to the train, and the second one is compared to ground. Therefore, one must evaluate the differences both in the observing system and in the observed system before being able to conclude that it is the phenomena observed which give rise to the differences in consequence (Woelfel & Fink, 1980). Attachment to different reference coordinate systems will lead to observed differences. The same thing happens in the cognitive domain. People use emotional words, for example "happy" in English, the word of "快樂" in Chinese, or the word of "heureux" in French. Do those words really mean the same thing? Unfortunately the answer is NO, and the reason is simple. They are not in a common reference system.

Specifically, one could not really compare the experiences in the precise way, because the communication symbols are not the same. Obviously this is a hardship for conceptual comparison. The unambiguous rules of correspondence need to be set. Specifically owing to a consensual and consistent symbol system, one will have an artificial coordinate system for the comparison. *But to define the concepts in one's experience for comparison is problematic.* Because the principle of objectivization is needed, reference frames are different from observer to observer. Social scientists think the problem of different reference frames is inherent and unsolvable. In physics, Halliday and Resnick (1966, p. 3) indicated the most important such frame has been the surface of the earth, which gives a convenient and commonly understood background against which the motions of other objects may be calibrated. This is similar to the procedures used in astronomy where the positions of fixed stars are treated as reference frames used to measure the motion of other stellar bodies; however, in social science Barnett and Woelfel (1992; 1992a) have successfully proved that cognitive concepts or beliefs could share with measurements of physical motions the idea of projecting "objects" (in one case physical and in the other psychological) on a mathematical coordinate system which serves as a reference frame for positioning those objects. The process by which mathematical reference frames may be attached to meaning of any objects are similar to the procedures by which coordinate reference frames are affixed to physical distances (Woelfel, Fink, 1980).

The Galileo system ™ (Woelfel & Gillham, 1977; Barnett & Woelfel, 1979; Woelfel & Woelfel, 1979; Barnett & Woelfel, 1982; Barnett & Woelfel, 1992; Barnett & Woelfel, 1992a; Woelfel, 1980; Woelfel & Danes, 1980; Woelfel & Saltiel, 1988; Woelfel & Fink, 1980) defines cognitive and cultural processes as changes in the relations among sets of cultural objects or concepts. The interrelationships among these objects are themselves measured by magnitude estimation pair comparison, and the resulting dissimilarities matrices are entered into metric multidimensional scaling programs. The result of this work is that each of the cognitive or cultural objects is represented as a point in a multidimensional Riemann Space. Cognitive and cultural processes may be defined within this framework as motions of these objects relative to the other objects within the space. Although Galileo is well developed, there is still a problem. The conformity of reference objects and orders[1] is strictly required by the default of Galileo software. But in reality objects and orders could not be constrained in the way of unanimity. This dissertation demonstrates the solution to the problem. Besides, there is a fundamental incompatible problem between Galileo software and CATPACT software that is a self-organizing artificial neural network computer

[1] Order means the arrangement of reference objects displaying in MDS space. This is the significant portion to locate the common reference frame for comparison

program for analyzing text (Terra Research and Computing, 1994). In this dissertation, a software tool named CRD[2] Converter is created and also treated as a juncture between Galileo and CATPAC. Furthermore, this dissertation predicts the capability of comparability in Galileo through CATPAC.

1.2 Organization

This dissertation consists of eight chapters (see 1.2.1 Table of Dissertation Structure). Chapter Two provides the literature review and theoretical framework. It examines relevant academic literatures on comparison. It is divided into several sections, such as observation in physical science versus in social science, magnitude scaling in social science and structure of the space. This section also reviews the meaning of Einstein's relativity. Finally, the chapter puts further the notions of the common reference frame as well as several sections regarding rotation. Chapter Three raises the research problem. It addresses the question of "How does one deal with the rotation of Galileo spaces with inconsistent objects[3] and make a comparison across the reference frames?" Chapter Four explains the idea of Galileo space. Furthermore, it defines the objects or concepts in Galileo. Finally, it offers the solution for the problem of Procrustean rotation. Chapter Five presents CATPAC: Category Package.

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[2] CRD stands for coordinates.

[3] People use concepts or attitudinal objects to define the situation for comparison in multidimensional space. However, human conceptions are particularly prone to inconsistency. That is, different people have varied numbers of concepts or objects (see section 3.1)

The chapter contains a description of CATPAC, as well as its operation. Moreover, it also defines objects or concepts in the usage of CATPAC. Finally, it explains the role of neural networks in CATPAC. Chapter Six shows the CRD Converter which is treated as a juncture between CATPAC and Galileo. It discusses the processes of comparison, rotation, and the presentation of ThoughtView and Galileo v56 as well. Chapter Seven, Assessment, works through an example which compares between customer's perceptions and online legal policy regarding online privacy and security issues. It illustrates step by step procedures for the CRD Converter, Galileo Microrot rotation, and the results presented by ThoughtView and Galileo v56.This section provides the solution for the rotation of inconsistent objects to ultimately make a meaningful comparison across the reference frames in Galileo space through CATPAC. Finally, Chapter Eight proposes future research.

1.2.1 Table of Dissertation Structure

Chapter One	Introduction
Chapter Two	Literature review and theoretical Framework
Chapter Three	Research Problem
Chapter Four	Galileo Space
Chapter Five	CATPAC

1.3 Definitions of Terms

Concepts involved in multidimensional scaling: It is not intuitive. Concepts involved in multidimensional scaling are common in theories of cognitive and cultural processes People use mathematical referènce frame to map their concept into multidimensional space. One treats a *concept* as an "attitude toward" an *object*, or have a "*position*" on a topic, and one can move toward or away from another's viewpoint. In a word, people take positions and attitudes toward the objects of their interest, and in which changes in attitudes and beliefs can be represented by motions through the space (see section 4.2 and 5.3).

Inconsistent object: People use concepts or attitudinal objects to define the situation for comparison in multidimensional space. However, human conceptions are particularly prone to inconsistency. That is, different people have varied numbers of concepts or objects (see section 3.1).

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Observation in Physical Science Versus Social Science

Einstein (1946) indicated that "the object of all science, whether natural science or psychology, is to co-ordinate our experiences and to bring them into a logical system" (p.1). In a logical system, the establishment of the reference frame is critical to the comparison of objects. The problem of dependence of observations on the frame of reference applies to physical science as well as social science. Physical scientists have solved the problem, but social scientists have not. Why? Clearly, it is because observation in social science differs from observation of physical science, particularly in three areas, measurement, analysis, and the concept of space.

2.1.1 Measurement

> On the basis of the physical interpretation of distance which has been indicated, we are also in a position to establish the distance between two points on a rigid body by means of measurements. For this purpose we require a "distance" (Rod S) which is to be used once and for all, and which we employ as a standard measure. If, now, A and B are two points on a

rigid body, we can construct the line joining then according to the routes of geometry, then, starting from A, we can mark off the distance S time after time until we reach B. The number of these operations required is the numerical measure of the distance AB, This is the basis of all measurement of length. (Einstein, 1920, P. 5)

In the physical sciences, "measurement" means "comparison to some standard," while in the social sciences it lies in conventions. Specifically, measurement in social science means "assigning numbers to observations according to some rule" (Stevens, 1951; Togerson, 1958; Suppes & Zinnes, 1963). Specifically, the basis of measurement in the social sciences lies in a classification scheme for scales of measurement given by the fourfold categorization set forth by Stevens (1951), which respectively are the *nominal, ordinal, interval* and *ratio scales*. As Torgerson (1958) notes in his classic text on scaling, Stevens' much broader definition of measurement includes a wide range of operations not considered measurement in the physical sciences and engineering, such as Likert and Likert-type scales, Guttman scales, semantic differential scales, and many more. Furthermore he indicated, "Physical scientists use the term much more restrictively" (Torgerson, 1958, p.31). In social science it is not permissible to speak of the accuracy with which phenomena are mapped onto a scale independent of an alternative mapping onto an alternative scale (Woelfel & Fink, 1980). There are those who believe the differences are mandated by the inherent differences between the subject matter of the physical and social sciences. However, such a belief is inconsistent with the most widely shared understanding of modern science. As early as the beginning of the 20th century, scientists such as Mach, Poincaré, Einstein, Lobashewski, Herz, d'Alembert and others understood that people have no access to information about the world independent of their measures of it. As Poincaré states, "The properties of time are therefore merely those of our clocks just as the properties of space are merely those of the measuring instruments" (Poincaré, Space and Time, 1963, cited in Galison, 2003, p. 301)

2.1.2 Analysis

Since the most commonly used social science scales are so imprecise, they are not amenable to precise analysis procedures -- particularly differential equations --typically used by the physical sciences. Instead, analysis of social science is based on procedures championed principally by Karl Pearson. Pearson's *correlation coefficient* eliminates from social science data all information about magnitude and preserves only direction cosines, and his *standard deviation* serves as a surrogate for physical standards such as the meter or the kilogram. The result is a science devoid of magnitude and consisting only of direction (Woelfel, 1975; Woelfel and Woelfel, 1979; Woelfel, 2004).

2.1.3 Concepts of Space

Concepts of space are not intuitive, but rather develop over long historical periods (Jammer, 1994). If the concepts of physical space have shown a tortuous path of development, concepts of cognitive and cultural space are even less well developed. Computer scientists and engineers have recently taken the notion of a high dimensional psychological space quite literally, as Kennedy and Eberhart's study of particle swarm optimization (1995) suggests: "Thus, besides moving through three-dimensional physical space, and avoiding collisions, humans change in abstract multidimensional space, collision-free. Physical space of course affects informational inputs, but it is arguably a trivial component of psychological experience. Humans learn to avoid physical collision by an early age, but navigation of n-dimensional psychosocial space requires decades of practice - and many of us never seem to acquire quite all the skills we need!" (p.2). Concepts of space are common in theories of cognitive and cultural processes, both folk and scientific. People take an "attitude toward" an object, or have a "position" on a topic, and one can move toward or away from another's viewpoint. For example, democratic presidential candidates must move toward the left to win the democratic nomination, while republican candidates must move to the right. Both must move toward the center to win the election. All these images have in common the idea of a space in which people take positions and attitudes toward the objects of their interest, and in which changes in attitudes and beliefs can be represented by motions through the space.

2.2 Magnitude Scaling in Social Science

There is a long and successful tradition of precise measurement of magnitudes in the social sciences. Early cognitive scientists, in particular L. L. Thurstone, tried to make the concept of cognitive space explicit and empirical. Fechner, Weber, Helmholtz, and early psychophysicists – even including Stevens himself – utilized the same measurement rule as physical scientists and engineers: ratio comparison to an arbitrary standard. Thurstone's work on scaling described "positions" in space in which the magnitudes of the distances among those positions were meaningful.[4] However, at this early stage of research precise empirical measurements were expensive and difficult to obtain. For example, Thurstone relied on heroic computational efforts based on relatively small amounts of data to create Thurstone scales, and dozens of graduate students labored for months to tease

[4] Likert's attempt to improve Thurstone's scaling technique by allowing a range of agreement with different positions was originally an effort to produce even more precise magnitudes. Unfortunately, the five or seven point Likert scales correlated highly with the overall Thurstone scale, and were much easier to construct, so they virtually replaced Thurstone scaling for everyday working social scientists. Because the correlation coefficient contains no information about magnitudes, but only shows whether vectors are oriented in the same direction, the magnitude information from the Thurstone scales was lost in the new quasi-ordinal Likert scales.

psychological "factors" from a few hundred paper and pencil IQ tests.

Thurstone's (1947) work on factor analysis also was based on the concept of an underlying space in which factors representing different mental abilities were arrayed, but he failed in his ambition to develop an algorithm which would precisely recover the underlying dimensions for a set of measurements (the "box problem") (Woelfel, 2004). In fact, it was Thurstone's reliance on correlation coefficients (direction cosines) that ultimately led to his failure. In 1938, Young and Householder presented an exact solution to this problem, but it required the distances among a set of points, rather than the direction cosines (correlations) among their vectors (Woelfel, 1975; Woelfel & Woelfel, 1979; Woelfel, 2004). Young and Householder (1938) showed an exact mathematical algorithm for deriving spatial coordinates from interpoint distance data, and Torgerson (1958) developed the Young and Householder method into what is now called "classical' multidimensional scaling (MDS), and several decades of research have shown that this method, particularly coupled with complete pair comparison magnitude estimation (ratio) scales, yields precise and reliable spatial representations of the items scaled in a wide variety of substantive areas. However, the Torgerson-Young-Householder procedures produced high dimensional , non-Euclidean spatial representations which troubled those psychometricians who believed , on philosophical grounds, that cognitive space ought to be low dimensional and Euclidean. As such, most psychometricians originally rejected this method. Once again, failure of measurements to correspond to social scientists preconceptions of what social phenomena *ought to be* like led to suspicions that the measurements themselves must be suspect. The result was the development of "non-metric" MDS procedures that discarded all magnitude information from data and treated them as if they were merely ordinal. In this way, results could often be manipulated to yield an outcome researchers wanted – a Euclidean space of low dimensionality. For example, Roger Shepard, one of the developers of non metric multidimensional scaling, based much of his work (such as Shepard, Romney, & Nerlove, 1972; Shepard, 1980) on the analysis of several dozen judgments made by half a dozen graduate students, and psychometricians routinely tried their particular analyses on very small datasets passed around the psychometric community, such as the famous "tea tasting data." Needless to say all magnitude information was also discarded in his work. In the non-metric multidimensional algorithms, the gradient or "steepest decent" interactive processes which intervene between data and configuration will be different all the time in some measure for each of the two (or more) analyses to be compared, and there is no ready way to eliminate this artifactual source of difference (Kruskal, 1964 b). While non-metric analysis can often produce intuitive glimpses of the larger structural features of data, they do not lend themselves to comparison among subgroups and are particularly unsuitable for time series analysis. At best, those small amounts of data led to efforts to elicit relatively small and simple cognitive structures, usually displayed in a two dimensional Euclidean map. Researchers generally concerned themselves only with the ordinality of their data, and made no efforts at precise, detailed analysis. Furthermore, plotting the trajectories of objects through a non-metric space over time is not meaningful, because each point in the time series has been transformed by a different and unknown non-linear transformation. Precise measures of structure and true studies of processes were relatively rare.

2.2.1 Precise Measurement of Magnitude

By now, with more than a century having passed since the development of the Pearson product-moment correlation, seventy-years since the Likert scale, and nearly half-a-century since the development of non-metric MDS, ample evidence has accumulated that the decision to base social science methodology solely on direction cosines and ordinal data has been inopportune and inconvenient (Woelfel, 1981; Woelfel, 1984; Woelfel, 1985; Woelfel, 1986; Woelfel, 1975; Woelfel, 1980; Woelfel, 1987a; Woelfel, 1987b; Woelfel, 1988; Woelfel & Woelfel, 1979; Woelfel, 2004). Over the same time period, evidence continues to accumulate that measurements based on the standard scientific definition of comparison to some standard can produce precise, reliable data about magnitudes for typical social science variables. For example, Barnett and Woelfel (1992; 1992a; 1982) used very precise complete paired comparison magnitude estimation scales to estimate the geometric structure of a small neighborhood of cognitive space, and found it to be reliably high dimensional and non-Euclidean. Woelfel and Gillham (1977) showed that a complete paired comparison ratio level scale not only produced reliable and apparently valid information at only 29 cases, but that it produced conservatively about 2.7 times as much reliable information as equivalent ten point semantic differential scales. Dozens of similar studies over the past 30 years have confirmed these results without exception. Fink and Kaplowitz (1997) used great ingenuity to study dozens to hundreds of points of time over very short intervals for a few hundred respondents, using the same precise measurement system as Barnett and Woelfel (1992; 1992a). Woelfel, Newton, Kincaid, Holmes, and Lee (1986) , Woelfel and Foldy (1992) , all using very precise complete paired comparison magnitude estimation scales were able to gather from half a dozen to thirty or forty data points from dozens to hundreds of respondents and examine very crude and simple examples of cognitive processes. Their precise measurements allowed for the analysis of cognitive processes in high dimensional Riemann space instead of the analysis of static structures in two or three dimensional Euclidean spaces of early psychometricians.

While these and other studies produced greatly improved precision and much valuable information about simple cognitive processes, they were nonetheless very limited. Moreover, most social scientists were reluctant to spend the extra resources necessary to implement the very precise measurements required, and preferred to use simple Likert type scales or the equivalent with crude non-metric analysis procedures to produce rough-and-ready two dimensional maps.

2.3 Structure of the Space

Space, both physical and cognitive, has no absolute character, but rather depends on the way people measure it. When different domains are measured with instruments typical of social science measurement, such as five or seven point categorical scales, or merely ordinal scales, the magnitudes of numbers lose meaning. For example, if people measure the distances among the cities of New York State on a seven point scale, and then measure the distance among countries on the same scale, analysis of the resulting data will show New York State to be about the same size as the entire earth.

However, by using a complete paired comparison magnitude estimation technique (the same scale by which physical distances are measured) it is possible to maintain a uniform metric[5] across the entire space, and the concept of the

[5] While it may seem impossible to confirm that the size of a measuring rod remains invariant in all

overall size of the space becomes meaningful, as do questions about whether it is growing, shrinking, or remaining constant. Comparisons among developing, developed, and aboriginal cultures might lend insights in to the process of development of the spatial manifold, and may even allow speculations about future developments, serving as the beginning of a primitive "cultural cosmology" (Woelfel, 2004).

Similarly, the number of dimensions which span the space is not independent of the measurement rule, but, when the measurement rule -- in this case, complete paired comparison ratio level scales -- remains constant, the concept of dimensionality becomes meaningful, as does the question of the geometry of space (Woelfel, 1975; Woelfel and Woelfel, 1979; Woelfel, 2004). So far, the geometry of cognitive space using a ratio scaled paired comparison measurement model has shown itself to be reliably Riemannian, but only small neighborhoods have so far been described, and these on generally small samples. The availability of large numbers of precisely measured distances among many objects in many domains of meaning opens up new possibilities for the understanding of the underlying geometry of cognitive space (Woelfel, 1981; Woelfel, 1984; Woelfel, 1985; Woelfel, 1986; Woelfel, 1975; Woelfel, 1980; Woelfel, 1987a; Woelfel, 1987b; Woelfel, 1988; Woelfel, 2004).

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parts of the space, this is no different in physical space.

2.4 The Meaning of Einstein's Relativity

2.4.1 Relative VS. Absolute

In physical research, arbitrary but conventional reference frames are often advised by the character of the situation under study, and particularly for terrestrial motions. The surface of the earth frequently serves as a suitable choice. Hence for most practical terrestrial motions, the surface of the earth may be treated as fixed, and motions of other objects may be calculated relative to the earth's surface (Woelfel et al., 1979). In this case, the notions of absolute motion and absolute change have no meanings; any motion must be estimated relative to some arbitrary reference frame (Woelfel et al., 1979).

Among quantitative researchers, the problem of reference frames has been dealt with most precisely by psychometricians and communication scientists within the area of multidimensional scaling (MDS). Within MDS, measurements made on arbitrary scales are re-expressed on (generally orthogonal) coordinate reference axes which serve as a frame of reference within which the objects gauged may be arrayed. . However, when measurements have been made at multiple times or on multiple objects, the orientations of the reference axes are generally arbitrary with regard to each of the others. This is equal to the well-known mechanical issue of comparison of events and procedures across reference frames which are in **relative** motion with regard to each other (Woelfel et al., 1979)

If one agrees to call the set of symbols, and rules for combining symbols to describe his observation, then people might agree with Einstein (Heisenberg, 1971). In Einstein's concepts, **interval** has significant meaning in either physical or cognitive world.

2.4.2 The Concept of Interval: Time and Space

Einstein (1920) indicated, "If instead of 'body of reference' we insert 'system of co-ordinates,' which is useful idea for mathematical description." (p.10) Moreover, he also mentioned that "An interval has a physical meaning which is independent of the choice of co-ordinates" (Einstein, 1946, p.5). As such, the concept of interval is important in his measurement. Here is the definition of interval as defined by Einstein. He (1946) said,

> Two points marked on a rigid body form an *interval.* Such an interval can be oriented at rest, relatively to our space of reference, in a multiplicity of ways. If, now, the points of this space can be referenced to co-ordinates x_1, x_2, x_3, in such a way that the differences of the co-ordinates, Δx_1, Δx_2, Δx_3, of the two ends of the interval furnish the same sum of squares,
>
> $$S^2=\Delta x_1^2+\Delta x_2^2+\Delta x_3^2$$

For every orientation of the interval, then the space of reference is called Euclidean, and the co-ordinates Cartesian. (p.4)

People's perceptions of distance (space) and time are very rough and will differ substantially from person to person and from culture to culture. There are two major components in Einstein's concept of interval, which respectively are, *space* and *time*. He showed, "The theory of relativity is intimately connected with the theory of space and time " (Einstein, 1946, p.1). That is, in order to have a complete description of the motion of an object (concept), one must specify how the body alters its position (space) with time.

<u>2.4.3 Riemann (Non-Euclidean) Space</u>

In general principle of relativity is the space-time continuum cannot be treated as Euclidean (Einstein, 1920). Furthermore, "Gauss indicated the principles according to which we can treat the geometrical relationships in the surface, and this pointed out the way to the method of Riemann of treating multidimensional, non-Euclidean continua" (Einstein, 1920, p.102). Moreover, "the development of non-Euclidean geometry led to the recognition of the fact, that we can cast doubt on the infiniteness of our space without coming into conflict with the laws of thought or with experience (Riemann, Helmholtz)" (Einstein, 1920, p.128) As a result, scientists have developed a number of procedures for handing non-Euclidean relations in cognitive data

(Woelfel & Barnett, 1982).

2.4.4 Einstein's Measurement

There are two main concepts in Einstein's measurement procedure. The first of these is an arbitrary *distance* (or *difference*, in the general case) which is stipulated by the scientist. Einstein's conception gives us a description of the measurement of distance, which may be seen as a special case of difference, that is, difference in spatial location. It is essential to note that rules for the perception or measurement of this initial measurement distance or difference are not stated (Woelfel, 1980); rather the scientist must suppose the observer shares with him/her a common referent for the ordinary language symbol "distance"' or "difference," and that the observer can make this initial recognition unaided by further definition (Woelfel, 1980). When the selection of the unit of measure is arbitrary, the choice of different standards will have consequences for the patterns of measurements made with the system.

The second primitive, inextricably bound up with the notion of distance, is *time* (Woelfel & Fink, 1980). Choosing as Rod S some ordinary language symbol whose relation to other such symbols is stable over time might make results of the measurement more clearly interpretable in terms of the ordinary language system, than would a Rod S defined by a symbol whose meaning fluctuates in the colloquial system (Woelfel & Fink, 1980). Moreover, the laying end-to-end of rods is a process which is extended in time, that is, it needs the transport or motion of rods, and motion suggests change of distance over time (Woelfel & Fink, 1980). The interrelation between time and motion was known in antiquity. Mckeon (1941) referred to Aristotle's words and mentioned that "Not only do we measure the movement by the time, but also the time by the movement, for they define each other" (Physics, IV. II, 220^b 15-15). Woelfel and Fink (1980) said that the interdependence of time and distance was reconfirmed by Einstein's relativity theory, which led in turn to the new idea of space and time. As Einstein (1952) said,

> Henceforth space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality. (p.75)

Similarly, Michels, Malcolm, and Patterson (1968) description of time as that which is measured by a clock, they indicated, "'a clock is' any device which emits signals such that the interval between any two signal is the same" (p.23) where the "interval between signals" serves the functions of Einstein's Rod S; as such, this explanation could be treated as being logically identical to Einstein's definition of distance. Furthermore, the scientist indicated a rule by which other instances of distance or difference are to be compared to this unit. In this case, observers are requested to make ratio comparisons of all other distances or differences to this arbitrary standard (Woelfel & Fink, 1980).

In Einstein's conception, distance or difference can only be measured in relation to some other standard of measure (Rod S) which itself is undefined and unmeasured (Woelfel, 1980). A measurement system that uses, at its core, an unmeasured standard is usually referred to as fundamental measurement (Ellis, 1966; Hays, 1967; Campbell, 1928; Suppes & Zinnes, 1963). On the fundamental measurement of length or distance, Hays (1967) indicated, "Length is measured in terms of length. One need not define length in reference to other quantities" (p. 15). Woelfel and Fink (1980) showed the difference incidents are called different insofar as they appear separated in space-time for some observer. When people separate time and space for analytic intention, they need to emphasize the organized unity of the two concepts in human perception and they do so by adopting as a fundamental concept the idea of separation (Whitehead & Veblen, 1932).

2.5 Common Reference Frame

In the common situation of social science where the required transformation rules are not known or poorly understood, artifactual or spurious differences in outcomes cannot be eliminated, differences in outcome cannot be accounted for in a precise way, and the principle of objectivization cannot be completely comprehended (Woelfel & Fink, 1980). As a result, in the event that reference frames differ from observer to observer, some transformation of results is needed by the principle of objectivization (Woelfel & Fink, 1980). Obviously "the absence of a standard reference frame for social and cultural research has made comparisons of research findings across observers and times problematic, and without doubt has complicated the development of kinematics and dynamic theory within the human disciplines to a great degree" (Woelfel et al., 1979, p.1). However, in most examples of cognitive or cultural change, conventional reference frames are seldom obvious. One who, at one time, is treated as at one time conservative by his or her reference group might be regarded at another time as radical by the same group. Nevertheless, one may regard his or her position as unchanged, but view the reference group as increasingly conservative (Woelfel et al., 1979).

In a word, the procedure to establish a common reference frame consists of setting the principle axes of the points of the rigid body within each group and then projecting the non-rigid or variable concepts onto these coordinates. In this way, the invariant substructures or rigid bodies are used as fixed constellations against which the changes in position of the free or variable concepts may be judged (Woelfel & Fink, 1980).

2.5.1 Establishing Reference Frames for Meaning

As mentioned earlier, the process by which mathematical reference frames may be attached to meanings of any objects are similar to the procedures by which coordinate reference frames are affixed to physical distances. This can be applied to cultural aspect, also. The procedures for setting a coordinate reference frame on a set of reference objects are identical whether the objects are physical or cultural (Woelfel & Fink, 1980).

According to Woelfel and Fink (1980), there are six steps in the procedure:

1. The set of reference objects for the frame are identified. (These may be accidental or contrived according to the circumstances and goals of the analysis.)
2. Any arbitrary pair of objects from within the set is chosen, and the separation between them is designated as a standard measure.
3. The separations among all pairs of the remaining objects are estimated as ratios of this standard separation.
4. The matrix of interpoint distances obtained from these steps is converted to a deviation matrix with origin at either an arbitrary point (Young and Householder method) or the centroid of all the points (Torgerson method).
5. The deviation matrix is converted into a scalar products matrix by multiplying it through by its transpose. (Since the scalar products matrix is symmetric, it

does not matter whether we pre- or post- multiply.)

6. The resulting scalar products matrix is then transformed to principle axes and the result is the desired matrix **R**, within which each point A is represented as the end point of a position vector $R^{\mu}_{(A)}$ ($\mu = 1, 2, \ldots r$) from the origin projected on a set of r orthonormal basis vectors e_i. (Woelfel & Fink, 1980, p.66)

2.6 Rotation (Transformation)

2.6.1 Arbitrary Rotation

In multidimensional analyses, the locations of points in a cognitive space are usually associated by some theory with the "meanings" of the concepts they demonstrate. Thus, changes in the locations of these points over time disclose changes in meanings over time. Since the location of the points are themselves linear functions of their coordinates, transformations, such as rotations, on these coordinates display theories of meaning and change of meaning. Therefore, decisions about which transformations (rotations) to apply cannot be done on completely mathematical grounds, but must rest on an analysis of the theories of change of meaning implicit in the various transformations (Woelfel et al., 1975).

2.6.2 Rotation Algorithms

Rotations to congruence (such as, "Procrustean" rotations and other related rotations) that have been advised, (Cliff, 1962, 1966; Green, 1952; Gibson, 1963;

Horst, 1956; 1962; Hurley & Cattell, 1962; Mosier, 1939; Schönemann, 1966; Schönemann & Carroll, 1970; Tucker, 1958) when applied to time-ordered sets of multidimensional scaling data, suggest theories of meaning and change of meaning which may often be too simple to correspond to substantive notions of cognitive change now held by most psychologists (Woelfel et al., 1975). Specifically, applications of currently available rotation algorithms may often yield obvious motions too complicated to discover ready substantive theoretical interpretations.

There are two well known rotation algorithms which will be discussed in the following section. The first one is called the canonical or Procrustes solution, and the second is the least square best fit.

2.6.2.1 Canonical or Procrustes Solution

The Procrustes approach tries to minimize the angles between corresponding pairs of coordinate axes over time. The general solution was represented independently by Cliff (1966) and Schönemann (1966). It distinguishes two transformation matrices $\mathbf{A_F}$ and $\mathbf{A_A}$ which, when applied to two multidimensional spaces F and A, give two transformed matrices $\mathbf{P_F}$ and $\mathbf{P_A}$. $\mathbf{A_F}$ and $\mathbf{A_A}$ are selected such that the scalar products of $\mathbf{P_F}$ and $\mathbf{P_A}$ are at a maximum; i.e.,

$$\Phi = \sum_{i=1}^{n} P_{ikA}P_{ikF} = \text{Maximum}$$

Since this solution maximizes the scalar product of corresponding reference axes, individual data points are weighted into the solution as a function of their projections on these axes; thus, points will differentially oppose motion over time as a function of their distance from the origin of the space (Woelfel et al., 1975). Moreover, since the origin of the multidimensional space is itself arbitrary, this rotation algorithm may result in apparent point motions which are artifactually very complex. Unfortunately, there is a problem. If the spaces are set one atop the other, with origins and axes corresponding, the correlation of corresponding axes will be less than unity because the orders of points along the axes are different. A non-unity correlation would disclose some non-zero angle of rotation, which would in this case reduce the fit between the spaces and complicate the apparent motion. A canonical solution applied to patterns like this has been discovered to yield apparent motion involving all concepts in the space (Woelfel et al., 1975).

2.6.2.1 Least Square Best Fit

Least square best fit solution minimizes the squared distance between matching concept-points. Such a solution uniformly attributes resistance to motion to all the data points regardless of position in the space. However, this way is unfavorable because it renders highly complex the apparent change in situations where relatively simple laws could describe the "actual" change, given a more insightful rotation (Woelfel et al., 1975; Barnett et al., 1976; Barnett, 1988c).

In the two solutions, the "extra" information required to fit the simplest apparent motions to the data may be found to be information about the points that is independent of their coordinate values -- information about how they were treated by the experimenter (Woelfel et al., 1975). Since this information is independent of the coordinate values, its value can be observed to be invariant under rotation and translation of the coordinates (Woelfel et al., 1975). Woelfel and Saltiel (1974) postulated that the stability of the meanings of concepts is directly proportional to the amount of information about those concepts to which the individual has been exposed. Such a notion is similar to assigning an inertial mass, represented by a scalar invariant, to each concept (Woelfel et al., 1975; Barnett, 1988c). Many other theories which attach a scalar invariant to the concepts can be revealed, including those theories which attribute differential stability to concepts on the grounds of affect, familiarity, and social desirability. More complex theories, which ascribe differential stability to concepts as a function of several variables, can of course also be written (Woelfel & Saltiel, 1974). As a result, the specification of such invariants under transformation is generally considered the primary task of scientific theory (Einstein, 1920; Reichenbach, 1958; Kramer, 1970; Pieszko, 1970).

Chapter Three

Research Problem

3.1 Research Problem

People use spoken words and text to express what they are thinking. Spoken words and text embody our conceptual thought. Textual data can be analyzed from many sources, in-depth interviews, focus groups, comment cards, online data retrieval, slice-of-life recordings, and many other sources. When reading text from any source, the reader must interpret what the author means by identifying main ideas and concepts and come to a conclusion as to what the text means and what the main ideas and concepts in the text might be. How can one compare two different concepts from textual data? To compare the differentiated concepts between the varied sources of textual data often leads to difficulties which are seldom overcome in practice. The question becomes, how does one compare two or more reference frames that have different objects as well as different orders in Galileo space? Specifically, how does one deal with the rotation of Galileo space with inconsistent objects and make a comparison across the reference frames?

As noted earlier, CATPAC is a self-organizing artificial neural network computer program for analyzing text (Terra Research and Computing, 1994). CATPAC (**CAT**egory **PAC**kage) is one of the pioneers in the rapidly growing field of artificial neural network applications (Woelfel, 1993). CATPAC identifies the most frequently occurring words in a text and establishes the pattern of similarity based on their co-occurrence. Since CATPAC reads through the text and recognizes when specified words occur together, there is no need for preconceived categories and tests of inter-coder reliability (Barnett & Doerfel, 1999). As a result, CATPAC is a good tool for the analysis of textual information. CATPAC, while optimized for reading text, concept recognition and analysis is based on people input (Doerfel, 1994). Unfortunately, human conceptions are particularly prone to inconsistency and illogic (Heider, 1958; Festinger, 1957; Newcomb, 1953). Because of these inconsistencies, CATPAC becomes constrained when dealing with comparisons from several sources of textual data. This is another problem that has not been solved. How do people compare two or more reference frames that have different objects in Galileo space? How might we predict the ability to compare spaces in Galileo through CATPAC? As well, there is a fundamental incompatibility problem between Galileo and CATPAC that must be overcome. These are the questions and problems to be addressed in this research.

Chapter Four

Galileo Space

4.1 Galileo space

"A Galileo space is a space within which objects and attributes are arrayed in such a way that the differences in meaning between any two objects in the space is given by the distances between those objects"(Woelfel, Newton, Holmes, Kincaid & Lee, 1986, p.133). Furthermore, in Galileo space, attributes that are similar are located close to each other, and objects which are seen to embody a given attribute are positioned close to that attribute. Likewise, objects thought to be similar to each other are located close to each other. (Woelfel et al., 1986)

When complete magnitude estimation pair-comparison data are entered into Galileo (Woelfel & Fink, 1980), the result is a spatial coordinate system in which the elements scaled are represented as points. Galileo spaces differ from typical multidimensional scaling (MDS) solutions in several important aspects. First, they are very precisely measured and therefore highly detailed, usually high dimensional and non-Euclidean. Secondly, they are an exact representation of the data – the data can be reproduced exactly from the Galileo coordinates – rather than a monotonic transformation of the original distances, as is the case with conventional non-metric MDS. Third, Galileo spaces are not meant as a simple visualization of the data as is the case with conventional MDS, but rather the coordinates are meant to serve as a convenient mathematical basis for further analyses, like computation of maximally effective strategies for altering the structure of the data to bring about stated goals. Finally, Galileo has procedures for conversion across reference frames, so that the artifactual differences due to different reference frames can be eliminated. This last capability makes it possible to compare data over time on a common coordinate system so that it is possible to observe not only structures, but processes (Woelfel & Gillham, 1977; Barnett & Woelfel, 1979; Woelfel & Woelfel, 1979; Barnett & Woelfel, 1982; Barnett & Woelfel, 1992; Barnett & Woelfel, 1992a; Woelfel, 1980; Woelfel & Danes, 1980; Woelfel & Saltiel, 1988; Woelfel & Fink, 1980).

Several studies have shown that Galileo spaces are precise and reliable enough to represent process, including attitude change over time (Woelfel & Foldy, 1992; Woelfel et. al., 1986; Woelfel & Barnett, 1992), election campaigns (Barnett, Serota & Taylor, 1976), changes in perception by day of week (Barnett & Woelfel, 1992), socialization of immigrant groups (Kincaid, Yum, Woelfel, & Barnett, 1983) and other topics.

4.2 Define "Objects" or "Concepts"

"In the absence of concepts, there is no experience at all- at least no experience we can remember from moment to moment. When concepts have been ill chosen, the resulting experiences will be inconsistent and unpredictable" (Woelfel, 1980, p.89). People may see how important it is to define the objects because one is able to view "reality" through the mediation of concepts in Galileo space (Woelfel, 1980). As noted above, it is apparent that the initial criterion pair provided to start the comparison process is a crucial operation. Woelfel (1974) recommends certain criteria for selection of a comparative standard,

> First, the standard should be relatively stable. Changes in the standard over time can confound time-series measurements and prevent meaningful comparisons of measurements made at different times. Secondly, the standard should be the same for all observers regardless of reference point, i.e. two independent observers must both agree on the length, for example, of a meter or a kilometer. Less important, but nonetheless worthy of consideration, good practice for minimum error suggests using a standard approximately midway between the largest and smallest measurement likely to be encountered, (measurement of astronomical distances in miles, for examples, is cumbersome, as would be measurement of terrestrial

> distances in fractions of light-years) (p.16).

Furthermore, Woelfel and Fink (1980) strengthened the thought regarding the definition of the objects,

> For in fact the definition of any object or concept is given by its relationship with a set of other concepts according to the principle of relativization. This means, therefore, that a set of concepts is the same across two groups or across several time periods to the extent that the set of distances among those concepts remains invariant across the groups or times. Such relatively invariant structures or "rigid bodies" provide the basis for establishing cross-frame transformations, since they may be used as anchors for the coordinate system across groups or times (p.112-113).

Viewed in this light, in Galileo objects are not defined by being placed in categories, but rather by their patterns of similarities and dissimilarities with other objects (Woelfel, 1990). Obviously one may differentiate the concepts changes by the distance moving of the objects. More specifically, Galileo provides a more precise description about relationships among objects by showing concept movements as well as changes among the objects, as positioned on the MDS coordinates.

4.3 Make Comparison in Riemann Space

As earlier noted, the dissimilarity judgments made by the subject for entry into Galileo take the form of pair comparisons. To set a base from which comparisons are made, a criterion pair is defined as being a specified number of units apart (Gordon & De Leo, 1975). Woelfel (1974) and Barnett et al. (1976) suggest the following to begin the comparison process: "If x and y are u units apart, how far apart are a and b?" The key benefits of the pair comparison are shown by Woelfel (1974) as: (1) the resultant scale is continuous over its entire range and is unbounded at its high end; (2) the scale is a ratio measure and as such permits the social scientist the use of all standard arithmetic operations; (3) the experimenter gives the basis of measurement and may maintain the use of that basis across samples and across time (Gordon & De Leo, 1975).

Galileo space is a multidimensional space (Barnett, 1988; Barnett & Rice, 1985; Barnett & Woelfel, 1982), and "Gauss indicated the principles according to which we can treat the geometrical relationships in the surface, and this pointed out the way to the method of Riemann of treating multidimensional, non-Euclidean continua" (Einstein, 1920, p.102). There is considerable research that demonstrates that Galileo makes concept comparisons in Riemann space rather than Euclidean (Barnett & Woelfel, 1982; Barnett, 1988; Woelfel et al., 1979).

"The development of non-Euclidean geometry led to the recognition of the fact, that we can cast doubt on the infiniteness of our space without coming into conflict with the laws of thought or with experience (Riemann, Helmholtz)" (Einstein, 1920, p.128). Scientists have engaged a number of procedures for handing non-Euclidean relations in cognitive data (Woelfel & Barnett, 1982), but most are unacceptable because they distort the data in order to force the data into a Euclidean configuration or lower the dimensionality so that it complies with constraints of physical space (Barnett,1988). On the other hand, computational procedures are frustrated in the comparison of time series or multiple sample data sets by the arbitrary orientation of the eigenvectors across data sets. When the elimination of these arbitrary differences in orientation are achieved, by sequences of rotations and translations, special difficulties arise because the hyperspaces spanned by the eigenvectors are usually Riemannia rather than Euclidean (Woelfel et al., 1979).

In a word, the Galilean algorithm that is for the multidimensional scaling of indefinite matrices allows for the analysis of all the dimensions in a Euclidean manifold, including those with negative roots (Woelfel, et, al., 1977; Woelfel, & Fink, 1980). It takes ratio level measurements of distances or dissimilarities for comparison, such as matrix S, and converts then to an adjusted scalar products matrix following Torgerson (1958).

4.4 The problem of Procrustean Rotation

Conceptual differences in the comparison of varied reference frames may be examined by repeating the measurement phase and transforming the data for each object (point or concept) into a multidimensional space. Several researchers have known the problems of arbitrary orientation in repeated measures multidimensional scaling, and proposed various algorithms for rotating multiple datasets to "best fit" one on the other (Cliff, 1966 ; Lissetz,, Schönemann & Lingoes, 1976). But the typical "Procrustes" rotation problem requires finding a (generally orthogonal) transformation which minimizes some "difference" function between two data matrices (Cliff, 1966; Schönemann, 1966). More specifically, within psychometrics, many solutions to the problem of arbitrary orientations have been proposed, all of which include at some stage rotations and usually translations, while some allow as well for change of scale (central dilation) (Cliff, 1966; Schönemann, 1966; Lissitz, Schönemann, Lingoes, 1978). However, when psychometricians have studied for decades, the problem of comparison of multiple MDS spaces from a mathematical point of view, ordinary "Procrustes" rotation seem not to completely solve the problem of artifactual orientations (Barnett & Woelfel, 1992), and even after the application of Procrustes rotations, artifactual effects of orientation can still be as large as the effects of the processes themselves (Barnett & Woelfel, 1992).

In the study "Orthogonal Rotation of Congruence" Norman Cliff (1966) shows there are two concerns for comparison. The first involves rotating two factor solutions orthogonally to a position where corresponding factors should be as similar as possible. The second concern involves of rotating a factor matrix orthogonally to a specified target matrix. After that, a least-squares solution for transformations of the two factor matrices has been developed (Cliff, 1966). To use a Procrustean rotation which first dilates or contracts the spaces to a common size and performs a least-squares rotation to minimize departure from congruence is a so-called typical solution (Schönemann & Caroll, 1970). Schönemann (1966) showed the least-squares problem of transforming a given matrix **A** into a given matrix **B** by an orthogonal transformation matrix **T** which usually consists of a set of pairwise rotations of axes, so that the sums of squares of the residual matrix $\mathbf{E} = \mathbf{AT} - \mathbf{B}$ is a minimum, will be called an "orthogonal Procrustes problem". But actually the Procrustean rotation is unacceptable. When the stretching and shrinking of one or more of the MDS spaces along with the rotation is permitted, the change in the size of the space may represent true change (Barnett, 1988). The space may change in density (or connectedness), and this information would be lost by standardizing the volume of the MDS space (Barnett, 1988). On the other hand, Procrustes rotation must be in real, Euclidean and low, small dimensionality.

4.4.1 The Solution: A Galilean Rotation

Woelfel et al., (1979) and Barnett (1988) found that when no additional information about the relative stability of the objects exists, the ordinary least squared Procrustes rotations provide a best attempt at such a solution. However, when objects' stability, or when it is known that the position of certain ones have changed, alternative rotational algorithms (or weighted solutions) exit. That is to say, the least squared Procrustes rotations have the effect of overestimating some changes while underestimating others. This may lead to erroneous conclusions.

The alternative rotational algorithm rotates only the theoretically stable objects to a least squares best fit and then incorporates the dynamic ones into the new coordinate system. This is similar to the procedures used in astronomy where the positions of fixed stars are used to measure the motion of other stellar bodies (Barnett, 1988). Another procedure weighs the individual objects and then rotates to a weighted solution. One of these algorithms may be used when an object's or set of objects' relations have been manipulated (Barnett, 1988). In this case, the manipulated objects are treated dynamic and the unmanipulated ones are regarded as theoretically stable reference objects (Woelfel, Cody, Gillham, & Holmes, 1980; Barnett, 1988). The algorithms necessary to perform the analysis described here are unique to the Galilean rotation which is from the Galileo system and make it possible to compare the differences in varied MDS space. Undoubtedly, the problem of Procrustes rotation has been solved. However, there are still two main concerns in Galilean rotation waiting to be solved.

4.4.1.1The Concept of Commutation in Rotation

As with the rotation process in Galileo, the first problem to be solved is that the rotation is not commutative either in Riemann or Euclidean space. How does one solve this problem?

The transformations are only commutative when the rotations are infinitesimal in complex space (Goldstein, 1951). According to Woelfel et al., (1979), since truly infinitesimal rotations are not possible, in practice it is necessary to carry out a succession of iterations with a small finite angle of rotation. Hence, such a routine would adjust all possible pairs of coordinate axes by a small amount, check the value of the difference function between the (now adjusted) data matrices, then repeat the operation again through all pairs of axes, verify again, and so on, until the difference function can no longer be diminished (Woelfel et al., 1979). (Attempts to minimize the difference function for each pair of axes in succession will not generally achieve a global minimum.) In Galileo, a given pair of axes is rotated one degree, the difference function is evaluated and compared to the starting value of the difference function. If this new value is higher than the old value, the original matrix of data is restored and the same pair of axes is rotated one degree in the opposite direction. If it results in a reduction of the difference function the operation is not repeated, but rather a second pair of axes is selected and the operation is performed for this second pair. Only after all pairs of axes have been adapted in this way does the routine pass through the set of pairs of axes again (Woelfel et al., 1979). With the solution suggested above, we may solve the problem of commutation.

4.4.1.2 Distance With Invariant

The second problem is that distance is not invariant when dealing with rotation in complex space. The problem to be solved is as followes:

Riemann space is a space with high dimensionality (Barnett & Woelfel, 1979, 1982; Barnett, 1985). In a Galileo configuration the Riemannian space can be represented easily as a flat Cartesian space with imaginary and real eigenvectors (Woelfel & Fink, 1980). The reason why distance is not invariant when dealing with rotation in complex space is because a mixed rotation is the rotation of real and imaginary axes through any angle does not, in general, leave distances within the complex plane invariant. One may confirm this quickly by considering any rotation of the vector x = (1, i) through an arbitrary angle. Since the length is $\sqrt{1^2 + i^2} = 0$, general rotations obviously leave the length in the rotated coordinate system non-zero (Woelfel, Holmes, & Kincaid, 1979).

However, this problem is easily solved. In Woelfel and Fink (1980), the coordinate reference frames underlying pair-comparison data taken by means of the ratio comparison rule usually have both real and imaginary coordinates. By definition, this does not cause any serious difficulty since each coordinate axis of the reference frame is orthogonal to all other such axes. Taken as a set, all the imaginary coordinate axes are independent of all the real axes. Obviously this makes it easy to partition the coordinate system into its real and imaginary parts and to carry out the rotation scheme within each parts, treating the imaginary components as if they were real. Moreover, Cushing (1975) suggests any complex function may be separated into its real and imaginary part, so that people may partition the datasets into their real parts and their imaginary parts, carry out the pairwise rotations separately within each part, then rejoin the parts after the arbitrarily oriented datasets have been minimized (Woelfel et al., 1979).

After the rotation has been completed, the space may be "reassembled" by simply joining the (now rotated) real and imaginary components (Cushing, 1975, p.262). All the distances (in physical) or conceptual dissimilarities (in psychological) in the rotated coordinates' files are still identical with those in the unrotated ones. But all artifactual differences of orientation have been removed, enabling us to see the true differences between the coordinate files which are ready for comparison.

In a word, to compare several objects in different reference frames, the spaces must be translated to a common origin and rotated to a least squares fit which minimizes the departure from congruence among the reference frames. Difference in the position of the objects may be calculated by subtracting the coordinate values. From those contrast values, trajectories of motion can be determined to describe the relative differences in the comparison of varied spaces (Barnett, 1988). With these measured velocities (the rate of change over time) and accelerations, future space structures can be predicted (Barnett, 1984; Barnett & Rice, 1985; Barnett, 1988).

CHAPTER FIVE

CATPAC

5.1 CATPAC: Category Package

CATPAC is a self-organizing artificial neural network computer program for analyzing text (Terra Research and Computing, 1994). CATPAC stands for **CAT**egory **PAC**kage and is one of the pioneers in the rapidly growing of artificial neural networks applications (Woelfel, 1993). It begins at the category level, the level of human language. However unlike a traditional text analysis programs, CATPAC does not require any precoding of the text, nor is it necessary for the researcher to precode or determine what categories of information (or even how many categories) might lie in the text in advance. CATPAC simply reads the textual data, and locates the main concepts which the text embodies, along with the interrelationships among those main concepts (Woelfel, 1993).

CATPAC identifies the most frequently occurring words in a text and establishes the pattern of similarity based on their co-occurrence. The program discovers clusters of groups of words that frequently occur together. It recognizes those groupings or clusters of words that best represent their meanings based on relations with other words (Woelfel, 1990, 1998).

5.2 CAPAC Operation

The text is read using a sliding window in CATPAC. One specifies the number of words CATPAC should look at, and moves through the text according to the size of the slide. If window size is seven and the slide size is one, the software will locate the first seven words, move one word over and look at words two through eight, three through nine, etc., until the entire text has been read (Doerfel, 1994). Specifically, in CATPAC, the neural network is constructed by reading a window with *k*-words long that determines if any of the most frequently occurring words co-occur. The tool then reads the next group of *k* words, depending on the slide size. If the slide is 1, the program moves one word further in the text and reads the next *k* words. This process is repeated until the entire text is read (Barnett & Doerfel, 1999). Meanwhile, CATPAC has the ability to eliminate "stop words," such as articles, prepositions, conjunctions, and transitive verbs that do not contribute to the meaning of the text (e.g. if, and, that, the, to, is) specified with an exclude file (see Appendix A). In addition, any words that distort the description of the text or have been shown to be problematic may be removed (Barnett & Doerfel, 1999).

CATPAC makes a word-by-word matrix with each cell having the likelihood that the occurrence of one word will trigger the occurrence of another word. This matrix is then cluster analyzed and creates a "dendogram[6]". The dendogram displays where the clusters are divided and how strong the clusters are (dips in the dendogram disclose the divisions between groups of concepts, and the height of the "hills" made by the stacked arrow-heads shows the strengths of the relationships among concepts) (Doerfel, 1994). It displays the pattern of relations between key words and further helps identify clusters of main concepts. Meanwhile, it also discloses where the clusters are divided as well as the strength of the clusters (Woelfel, 1998). Viewed in this light, this reflects the information in the textual data set, and represents the relationship among the words (concepts). Similar objects or concepts get clustered, and the stronger the link between concepts, the closer together they are set (Doerfel, 1994). In this case, the meaning of the words can be inferred (Barnett & Freeman, 1994; Barnett, 1988b). Finally, the findings can be used to plot the concepts in a three-dimensional space, hence visualizing the relationships among the concepts analyzed by CATPAC.

5.3 Define "Objects" or "Concepts"

According to Woelfel and Frank (1980), "the definition of an object of perception is given by comparison of the object with other objects associated with it

[6] dendogram is from the Greek word for root

in experience" (p.53). In Barnett and Doerfel's (1999) research, CATPAC distinguished the most frequently occurring words in a text and decided the pattern of similarity based on their co-occurrence. When running CATPAC, it demands people to specify the number of unique words they want. CATPAC reads the text and decides what concepts (words) occur the most (Doerfel, 1994). Hence, "there is no need for pre-conceived categories and tests of intercoder reliability" (Barnett & Doerfel, 1999; Sung, 2000).

When one listens to a speech, or reads an article, it is virtually impossible to retain every single word iterated from the source. But in this case, CAPAC works like a human brain, it remembers the n most frequent concepts or objects of the textual data set, with n being an appropriate amount assigned by the researcher (Doerfel, 1994). As such, with CATPAC the number of words (concepts or objects) and their relationships to each other define the situation for a further analysis.

In CATPAC, attributes that seem to be similar are located close to each other, and objects which are seen to embody a given attribute are positioned close to that attribute. Similarly, objects thought to be similar to each other are located close to each other (Woelfel et al., 1986). Specifically, concepts or objects are assumed to be defined by their dissimilarity relations with the members of a set of "nearby" objects. Together, these objects make up a "domain" or "neighborhood" or "cluster" (Woelfel et al., 1986).

CATPAC is a neural network program which has been created to read and understand text of any kind. CATPAC works by learning the interrelationships among words (concepts) in the textual data set, and can identifying concepts in a text after only single reading (Woelfel, 1993).

5.4 CATPAC: Neural Network

A natural neural network (like the brain) comprises neurons, each of which may be connected to other neurons. In a human brain, there are about 100 billion neurons (Moravec, 1998), each of which is connected, on the average, to about a thousand other neurons. When a neuron is stimulated, it "fires", and sends a signal to other neurons to which it is connected (Woelfel, 1990b). This happening is like a switch can be either "on", or "off". Although the actual functioning of a neural network like the human brain can be so complicated as to be beyond comprehension, basically the way computer a neural network works is very simple and easy to follow. A neural network learns by connecting together the neurons that describe any particular pattern. Since they are connected together, when some of them are activated, they spread their activation to others connected to them, which turns on the rest of the pattern. Therefore, when a network sees part of a pattern, it can recall the rest of the pattern, even in spite of incomplete or erroneous information, as long as enough of the pattern is there to activate the rest (Woelfel, 1990b).

Similarly, CATPAC begins with a set of artificial neurons, one for each word in the text it is reading. CATPAC starts by passing a "scanning window" through the text. This scanning window reads *n* consecutive words (CATPAC's default *n* is 7, which is about as many words as a good human reader looks at in one glance) (Miller, 1956). This windows slides to the right through the text (usually one word at a time) so that, for an *n* of 7, the window will first contain words 1 through 7, then 2 through 8, then 3 through 9, and so forth, until it has scanned the entire text (Woelfel, 1993). Each word that CATPAC sees is associated with an artificial "neuron" in CATPAC's simulated brain. "Whenever a word is in the scanning window, its neuron is activated." (Woelfel, 1993, p.6) As such, for a scanning window of 7, seven neurons will be activated in the first window. However, unlike a biological brain, none of CATPAC's neurons are connected to any other at the beginning of a text, so the activation of the initial neurons will not spread to any of the neurons not in the window.

But Woelfel (1993) mentioned, after CATPAC has read a few more words, this will no longer be like that, because the program forms connections among neurons as a result of its experience, in a way that simulates the actions of biological neural systems. Whenever two or more neurons are simultaneously active, the connection between them is reinforced by a small amount. The more active the neurons are, the more their connection is fortified (Woelfel, 1993). Then CATPAC reads a second window. Any neurons that were in the first window but are not in the second will now lose part of their activation value (default is 90%), and neurons connected with words in the second window will become active (Woelfel, 1993).

When the neurons in the first window constructs connections with each other, the activations of the neurons now active proceeds across these connections to activate those neurons as well, so more neurons in the window might (or might not) become active. The connections among all the neurons now active will be reinforced, and the program will read the third window (Woelfel, 1993). In this case, if allowed to go on indefinitely, all or nearly all of the neurons in CATPAC's artificial brain would change into positively connected. However, again simulating biological processes, between each cycle of reading a window and fortifying the connections of the active nodes, the strength of every connection is reduced by a small constant (Woelfel, 1993). This simulates the force of forgetting in biological systems, and is fundamental to developing a stable system. Woelfel (1993) showed, "What this 'forgetting force' means is that only connections that are frequently reinforced will grow very strong, while those that are only infrequently or never reinforces will actually become negative" (p.7). This procedure keeps on until the scanning window has passed through the entire textual data set.

Viewed in this light, because of the learning and forgetting rules, CATPAC will generate a "brain" consisting of a network of interconnected neurons, each of which describes a word in the text. Some of these neurons will be tightly and positively connected, indicating that they are closely associated. Whenever one of them is activated, the likelihood is great that the other will also be called to mind (Woelfel, 1993). Other neurons will be strongly negatively connected, indicating that one is very unlikely to be active when the other is active. Such neurons actually suppress each other, so that activating a node will tend to de-activate other nodes to which it is negatively connected (Woelfel, 1993). As a result, the structure of this computer generated brain can be represented by a square matrix of numbers, where each row and column of the matrix describes a neuron or word, and each number represents the strength of connection of the neurons (words) which correspond to the row and column of the number. This matrix is strongly similar to a typical covariance or correlation matrix, and can be used as the input to powerful statistical analysis programs. CATPAC automatically brings two statistical models, cluster analysis and perceptual mapping in MDS (Woelfel, 1993).

CHAPTER SIX

DISCUSSION

6.1 Practical Problems

The real world population resides in an n-dimensional space distributed at varying social distances from each other (Barnett, 1988). This n-dimensional space is not Euclidean, but Riemann space (Barnett & Woelfel, 1982). As discussed in the previous section, the software of Galileo takes ratio-level measurements of discrepancies (distances or dissimilarities) for comparison. It has evolved through a collaborative, scientific process, which demands maintaining *unanimity*. As a result of this process, unanimity by nature requires conformity on the part of scientists. However, scientists offer seek to expand their analysis through the comparison of seemingly different objects. Can Galileo multi-dimensional space be manipulated to apply unanimity to such objects? More specifically, Galileo is a set of procedures which model thought processes (Woelfel, 1990). If researchers would like to get conceptual differences from varied reference frames which will be precisely presented by Galileo, the conformity of objects and orders is also required by defaults in the Galileo software. But in reality objects and orders could not be constrained by way of unanimity. In order to predict the capability of comparability in Galileo through CATPAC, the file format of CATPAC must be modified to meet the demand of unanimity, and also fundamental incompatibility problems between Galileo software and CATPACT software.

6.2 The Tool Development of CRD Converter

CATPAC reads the text from any individual conceptual expression, and determines what words (concepts; objects) occur the most often. As mentioned in the previous chapter, CATPAC does not demand any precoding of the text, nor is it necessary for the analyst to precode or define categories of information (or even how many categories) in the text, in advance. It discovers the main concepts which the text embodies, along with the interrelationships among those concepts (Woelfel, 1993). Thus, the thought has been strengthened, that is, the words will serve as the personal "concepts" and mapped to the coordinated system as the "objects" or "points." CATPAC recognizes the n-most frequent concepts[7] of the data set, with n being an appropriate amount assigned by the analyst (Doerfel, 1994). For extended prediction of capability of comparability in Galileo through CATPAC, the format of **.CRD (coordinate)** file which is generated by CATPAC must be modified to meet the readable format requirement of Galileo software.

[7] means most frequent mentioning words in the result of CATPAC analysis

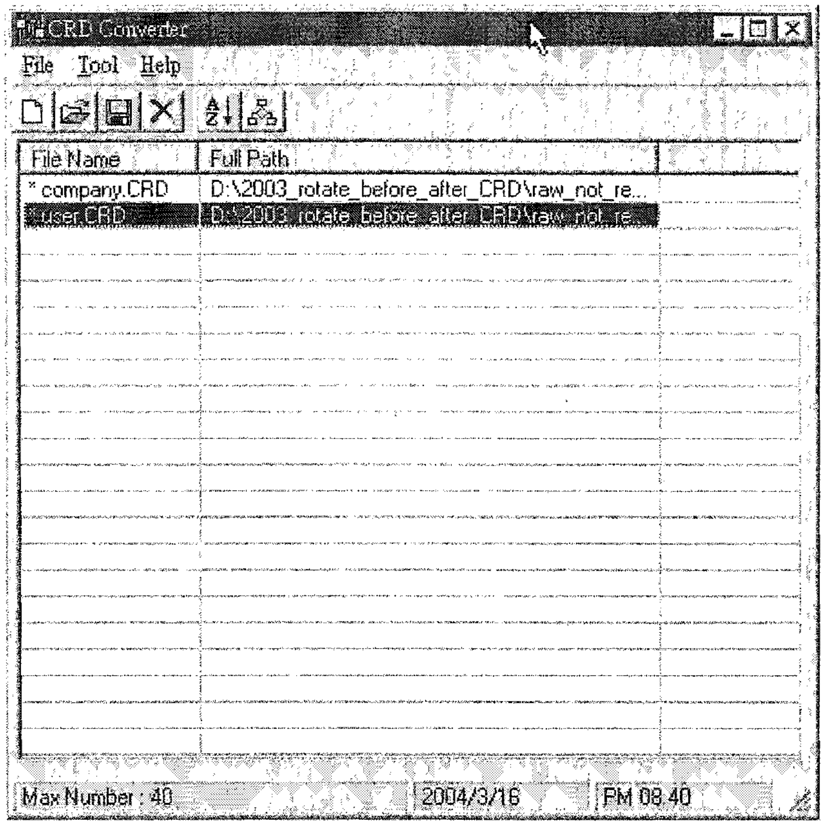
CATPAC produces .CRD (coordinate) files that contain Galileo coordinates. These .CRD files can be plotted as conceptual maps by the software *ThoughtView* (Woelfel, 1998). There are four elements in a .CRD (coordinate) file, which are the format header, the coordinates, the concept labels, and the standard errors. In order to comply with Galileo's multi-dimensional space, the format header is followed by three 3-digit integers which indicate the number of concepts, the number of real dimensions, and the total number of dimensions. The .CRD file must also follow Galileo's coordinate file format precisely. Therefore, one must first manually edit the .CRD files that have been created in CATPAC. Unfortunately, human errors increase as a result of this time consuming process. Moreover, since we have different objects for comparison, it leads to a different number of concepts in the format header in varied .CRD files. How can one solve this problem? As well, relating to concept labels in file format, every label should remain attached to its own coordinates, which are shown in the submatrices of the coordinates' .CRD files. At present, requesting different comparisons, can result in different arrangement of the labels as well as coordinates? This research project will addressed these difficulties and provide solutions.

To meet the problems of unanimity (e.g. the number of objects differing across all observations of comparison), it will usually be necessary to augment the sets of lower rank by increasing the number to the same amount as the highest one; meanwhile, add vectors of zeros for missing values of the submatrices. This operation does not affect the outcome in any way, even though it is fairly tedious to accomplish in Visual C++ (first version which is only good for two files) and Visual Basic (second version which is good for n files). (Appendix B)

To solve the problem of having objects in a different order, in every .CRD file, one must remove the same label, as well as it's coordinates, to the most likely front portion position of the element of conceptual label and the component of coordinates as well before comparison. Woelfel et al., (1979) examined the rotation to congruence among different sets of coordinates and showed that one can take a subset of measured objects as a frame of reference rather than the entire set. As such, this step will help to resolve the need for a similar order in every .CRD comparison file. Meanwhile, the purpose of this operation is insure that object labels are consistent across reference frames, and then treat them as a set of stable concepts to serve as anchoring reference objects for controlling the orientation of the individual "frames" (Barnett & Woelfel, 1992; Woelfel & Fink, 1980). The idea is simple; however, the process is annoying and time-consuming (Appendix C: Visual Basic source code for comparison).

Finally, a CRD Converter (see Figure 6-2-1) has been created to deal with this tiresome task and automatically accomplish the tasks all at once. It uses Visual Basic to handle the n objects in multidimensional space. CRD Converter is now treated as a juncture between CATPAC and Galileo for the process of comparison of n- objects. Moreover, no measuring instrument is perfectly accurate. In CATPAC, there is not currently a way of estimating the standard error which indicates the amount of error that surrounds the concepts (uncertainty of location of the concepts) in a space. However, the Galileo software is capable of making such estimates (Woelfel, 1998). As such, for further comparison in Galileo through CATPAC, the CRD Converter will provide an option to manual input standard error, and also will provide a default standard error.

Figure 6-2-1: CRD Converter



6.3 Rotation

An earlier section has discussed the rotation in detail (see section 2.4). "Modern multidimensional scaling representations of attitudes, beliefs, and concepts share with measurements of physical motions, the idea of projecting 'objects' (in one case physical and in the other psychological) on a mathematical coordinate system which serves as a reference frame for locating those objects" (Barnett & Woelfel, 1992, p.367). Since the process by which mathematical reference frames may be attached to meaning of any objects are similar to the procedures by which coordinate reference frames are affixed to physical distances (Woelfel & Fink, 1980). When concepts and beliefs change, their measured location on multidimensional scaling coordinate systems also changes (Barnett & Woelfel, 1992). As such, the procedures for setting a coordinate frame on a set of "reference objects" are identical whether the objects are physical or psychological (Woelfel & Fink, 1980). Besides, changes from one coordinate system to another ("Galilean transformations") are well known in the study of physical motion which consist entirely rotations and translations. Thus, the comparison of different textual data will lead to varied coordinates' in .CRD files, which will project to different orientations of the mathematical reference frames. Specifically, when comparing multiple coordinate files, people must be careful that they share a common orientation; that is, they are all pointing in the same direction. Remember that the orientation of all coordinates' files is essentially arbitrary, and rotation needs to be done to assure they are the same orientation from one to another (Woelfel, 1998). As discussed in the section 4.4.2.1 and 4.4.2.2, there are two different types of problems needing to be solved for elimination of the arbitrary differences in orientation. They are the problems of commutation in rotation, and invariant distance.

Again, before comparing two or more spaces, one should run the coordinates through Rotation which lines them up in a common orientation. Specifically, comparing two sets or more of arbitrary orientation spaces is difficult because the spaces have their own coordinates and don't share a common orientation. To overcome this hurdle, fortunately there is a "rotator" called, Microrot in Galileo. It takes a series of sets of coordinates as input and rotates them until they share a common orientation. In this case, the software will be used to rotate one of the spaces until the location of all of the concepts in one space is as close to the location of the same concepts in the target space as possible, without changing any distances in either space. This rotation will not distort the space or change it in any substantial way. All the distances or dissimilarities in the rotated space are identical with those in the unrotated space (Woelfel, 1990). When the rotation has been completed, then the rotated coordinates are output for display with a viewer like ThoughtView (Woelfel, 1998). The detailed procedures will be shown in the next chapter.

6.4 Comparison

Two comparisons will be made for comparison, one by ThoughtView; another by running Galileo V56.

6.4.1 ThoughtView

For comparison, one might want to look at conceptual maps which will provide a better picture of the concepts. ThoughtView (Woelfel, 1998) is a viewing tool which displays conceptual maps from coordinate files or .CRD files. The rotated .CRD files in multidimensional space, the first three coordinate values stand for the first three dimensions which will be plotted in ThoughtView. Each concept is represented as a sphere (circle) whose size is a function of uncertainty measurement. ThoughtView shows the overall relations among the conceptual clusters and words, and projects them into a 3-dimensional space. The "grid" in the figure represents a transparent "floor", each word's "position" in the space is given by a tiny circle, and a label. Each word has a "stem" which drops from the ball to the floor and ends in a crosshair, "foot", which shows where on the floor the concept is located. Concepts can be beneath the floor, too, and their stems go upward to the floor. Whether the concepts are above or below the floor plane, left, right, or center, is of no significance-only the relative positions matter. (Woelfel, 1993)

Like CATPAC, ThoughtView uses a multiple document interface. This is especially useful if the data are split into different demographic groups for comparison (Woelfel, 1998). This function makes visual comparison of perceptual maps possible. Figure 7-5-1 shows a comparison of perceptual maps of the issues of online privacy and security, for online user's conception verses E-commerce retailer.

6.4.2 Galileo* V56

Details of the Galileo software were discussed in Chapter Four. In Galileo, the software takes ratio-level measurements of discrepancies (distances or dissimilarities) for comparison (Woelfel & Fink, 1980; Barnett & Rice, 1985; Barnett, 1988) and converts then to an adjusted scalar products matrix following Torgerson (1958). Galileo version 5.6 (V56) is the current version of the original mainframe Galileo program. It is an integrated programming package for metric multidimensional scaling utilizing paired distance judgment data. A runstream file is needed to make V56 work. Specifically, it accepts data in the form of raw distance scores, aggregates means scores in the form of a square symmetric matrix, or a centroid scalar products matrix (Woelfel & Fink, 1980). V56 is a powerful tool and sophisticated program for the advanced user. The typical user will use it for three primary functions: to provide comprehensive statistical analysis of the raw data, to generate unweighted message strategies, and to compare multiple Galileo spaces. In a Galileo analysis, the dissimilarities among all possible pairs of a set of concepts (typically products and their attributes) are measured. For n objects, this will produce n(n-1)/2 paired comparisons. V56 will compute the mean, standard deviation, standard error, index of skewness, index of kurtosis, maximum value, minimum value, count and percent relative error (Woelfel, 1990).

For comparison of spaces, V56 is able to do away with artificial differences due solely to the arbitrary orientation. When V56 matches two or more

Galileo conceptual maps, it rotates one of them until the location of all of the concepts in one map is as close to the location of the same concept in the target map as possible without altering any distances in either map. V56 writes out the complete eigenstructure of the spaces after rotation. In addition to the coordinates, V56 also gives extensive information about the difference between pairs of spaces, including the correlations among the concepts' position (row) vectors, correlations among the dimensions themselves (column vectors), various lengths and angles, and each concept in one space to its counterpart in the other (see Figure 7-6-3: Output of Galileo * V56).

Given original coordinate dataset .CRD files, which are generated by CATPAC, one step is crucial for the running V56, that is, one must append the unrotated coordinate's dataset from CRD Converter directly into the runstream file. This is needed because V56 cannot read coordinate files made by CATPAC without editing. People may use any text editor to copy the coordinates into the runstream file of V56, and then must also change the first "1" on the Options line of the runstream file to "3", which is for coordinate input (Woelfel, 1990) (see Figure 7-6-1: An Example of Runstream File Named as "run.rs").

CHAPTER SEVEN

ASSESSMENT

7.1 An Example

The question to be addressed is, how does one deal with the rotation of Galileo space with inconsistent sets of objects and make a comparison across the reference frames? It is worthwhile to work through an example to establish the procedures. This example deals with the conceptual thoughts whether there is any discrepancy between online users' perceived and legitimate online privacy and security policies, by comparing the users' conceptual opinion (from open-ended questions textual data) and E-retailers' published policies online.

Most customers do not read privacy and securities policy at all or, at best, only glance at them. Even if some customers read these polices, they are often full of legal jargon and one hard to comprehend. On the other hand, E-retailers collect pertinent customer information without the consent of customers, and they lack of support adjustments to their online policies. Given the dearth of perceived online customer privacy and security, this example will help companies realize just how critical privacy and security issues are. It will also reveal the discrepancy between users' perceived and actual online privacy and security policies. Furthermore, the study will support adjustments to online companies' efforts to adapt to the concerns of online users (Hsieh, Tutzauer, & Tutzauer, 2004).

7.2 Data Collection

7.2.1 Online Survey for User's Perception

The sample for this study was drawn from a population of online users who access the Internet for personal use. Since the study focused on concerns of current online users, it was not necessary to address the concerns of those persons who do not use online services. The volunteer sample group consisted of online student users from COM 101 at the University at Buffalo. The respondents were mostly young students, and therefore a selection bias might have affected the findings. Even though this approach may impose a self-selected social desirability bias, the variance in the responses for the principal constructs gives us adequate information at an exploratory level.

The respondents expressed their perception of online privacy or security policy on two open ended questions. Since the research was administered by E-surveys (electronic surveys), the response rate was better than with conventional mail surveys. There were 387 respondents in this survey, response rate is about 87%. The turnaround time was rapid, and data validity is nearly identical to mail surveys (Wygant & Lindorf, 1999; Henderson, et al., 2002).

7.2.2 Online Policy

There were 500 online privacy and security policies, which were collected by Web Ferret[8] and the Google search engine. The assembling of privacy or security policies of E-retailers was conducted in February and March 2003.

7.3 The Procedures of CRD Converter

Regarding the issues of online security and privacy, there were two groups of textual data for analysis. One is the online users' perspective, the other is from online policy statements. CATPAC was used to analyze the data and generate .CRD files on each (See Appendix D: Original CRD files. Figure 7-3-1 is for users' perception; Figure 7-3-2 is for E-retailer policy.)The number of the most frequently mentioned concepts was set to 40, and then CRD Converter was employed to address the inconsistencies discussed in previous sections, and prepared for further comparison in Galileo.

Figure 7-3-1, Figure 7-3-2 About Here

Before comparing files, the CRD Converter queries whether to add old files which were originally created by CATPAC (Add function is under File selection

[8] WebFerret (http://www.ferretsoft.com/index.html) is a free software utility for searching the Web. It uses the Internet connection to query popular search engines and returns an unlimited number of hits. You can validate selected results, save your search history, and filter out pornography and foul language.

in the menu bar. See Figure 7-3-3: Function of Add file in CRD Converter and Figure 7-3-4 Add More Files to Compare).

Figure 7-3-3: Function of Add File in CRD Converter

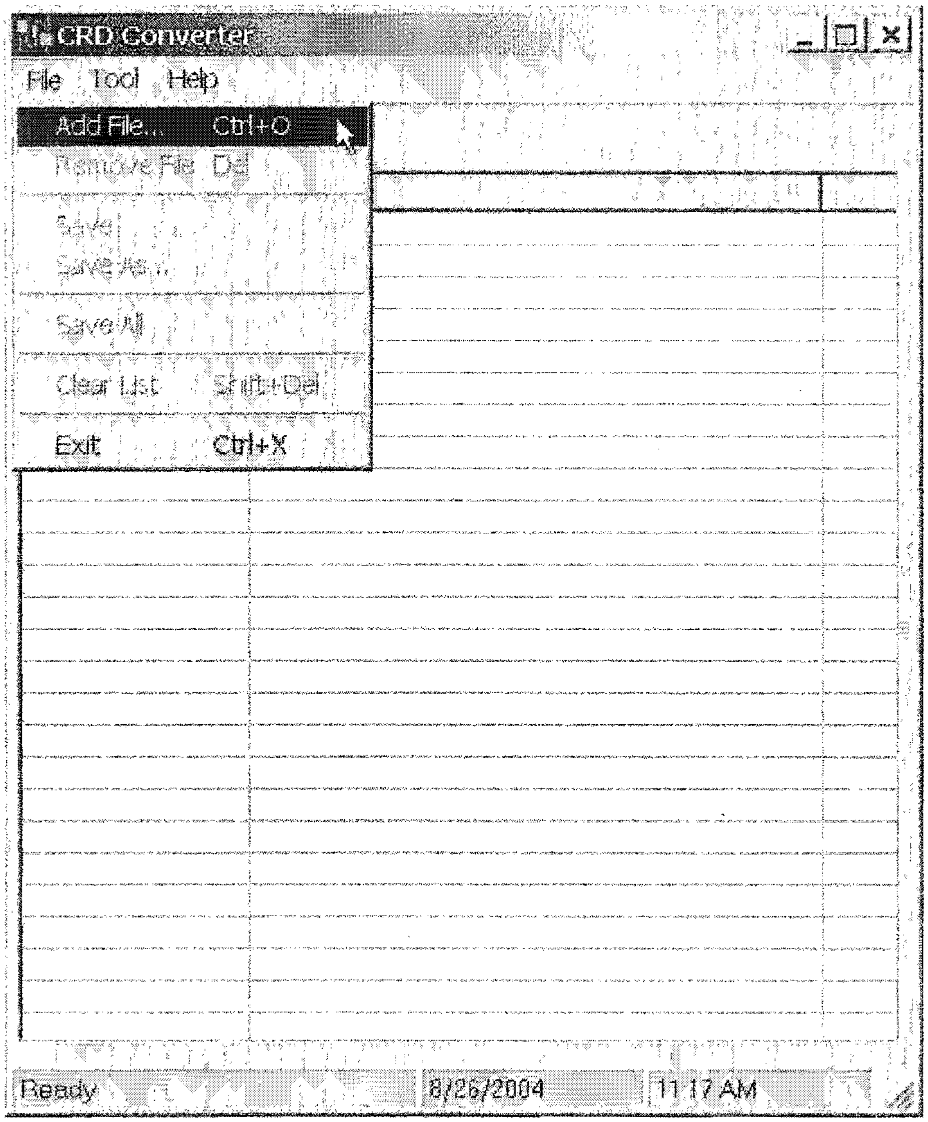
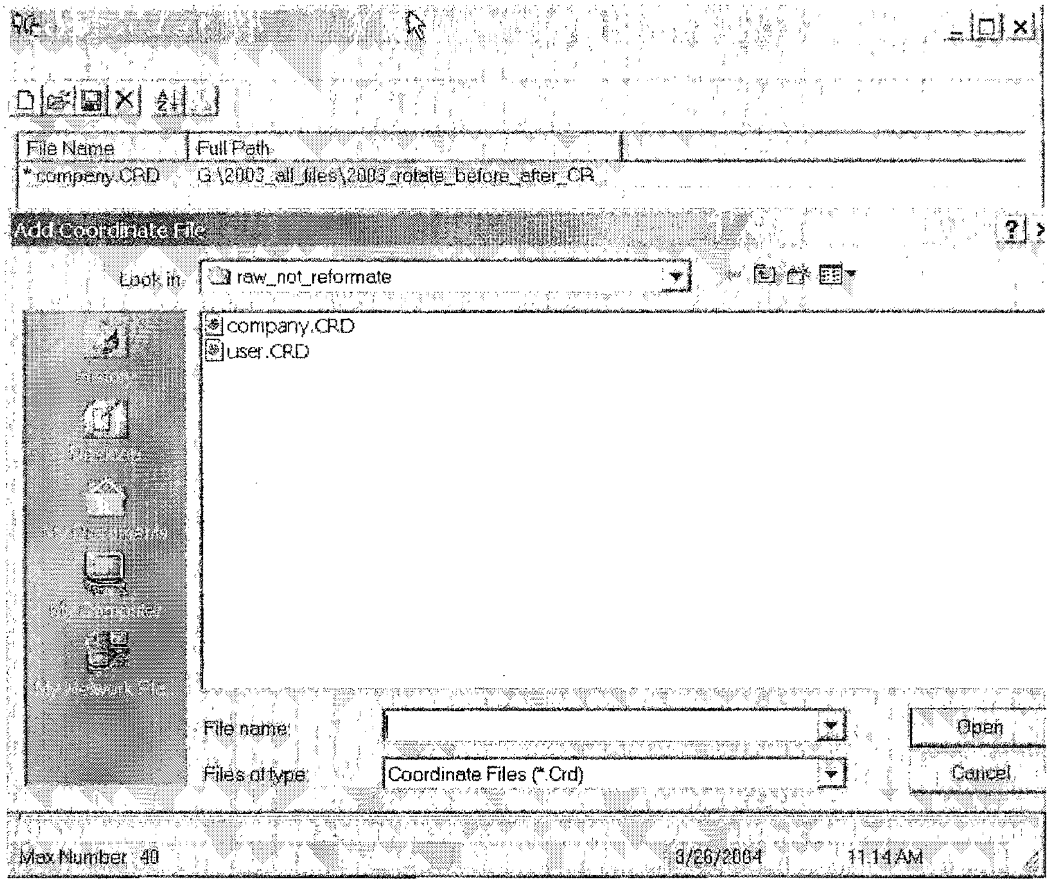
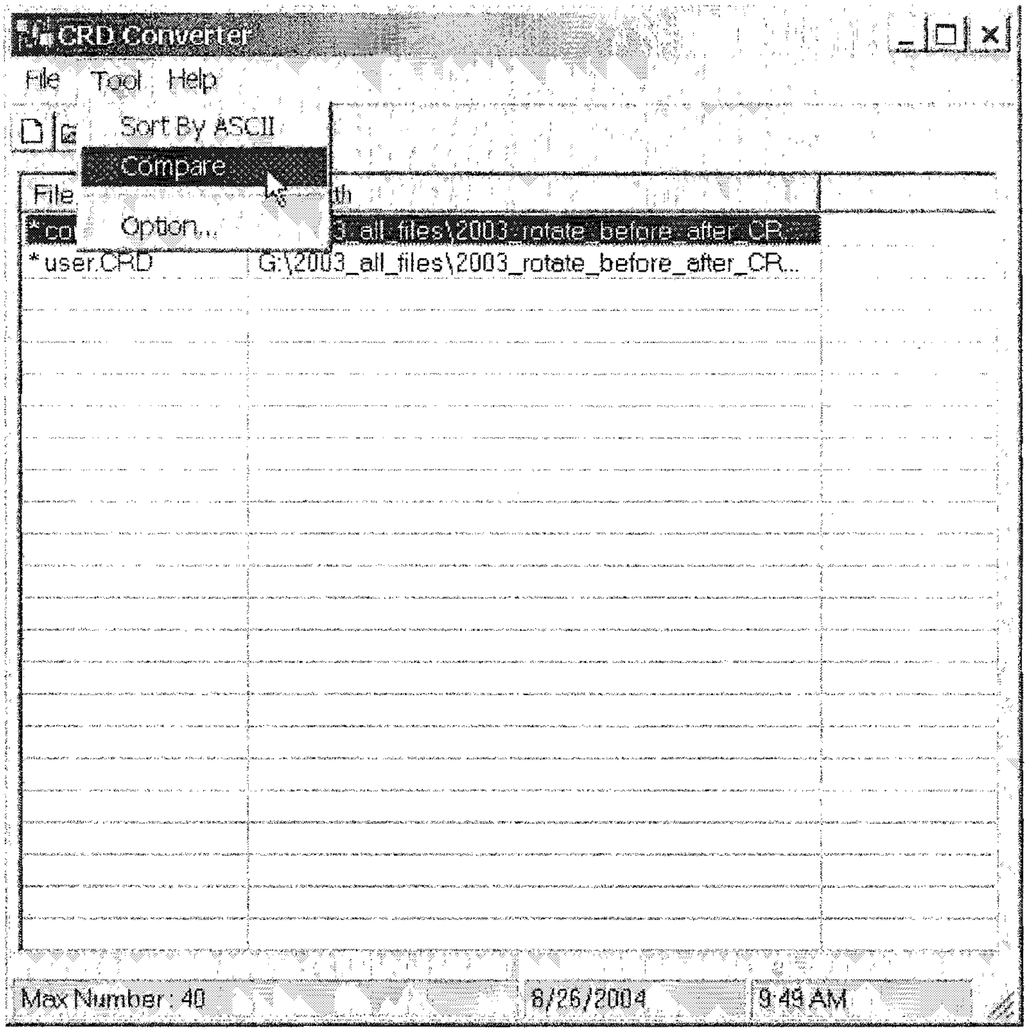


Figure 7-3-4: Add More Files to Compare



To do a comparison, choose the Compare function under the Tool selection of the menu bar (See Figure 7-3-5: Function of Compare in CRD Converter).

Figure 7-3-5: Function of Compare in CRD Converter



After the process of comparison (see Figure 7-3-6: After Compare in CRD Converter),

Figure 7-3-6: After Comparison in CRD Converter

Now one may locate those same object labels between reference frames easily and treat them as a set of stable concepts within the process, to serve as anchoring reference objects for controlling the orientation of the individual "frames" (Barnett & Woelfel, 1992; Woelfel & Fink, 1980). In the File selection of the menu bar, CRD Converter provides either Save as the same file name or Save As a different one (see Figure 7-3-7: Function of Save as in CRD Converter, and Figure 7-3-8: Choose

Different Directory for File Saving).

Figure 7-3-7: Function of Save as in CRD Converter

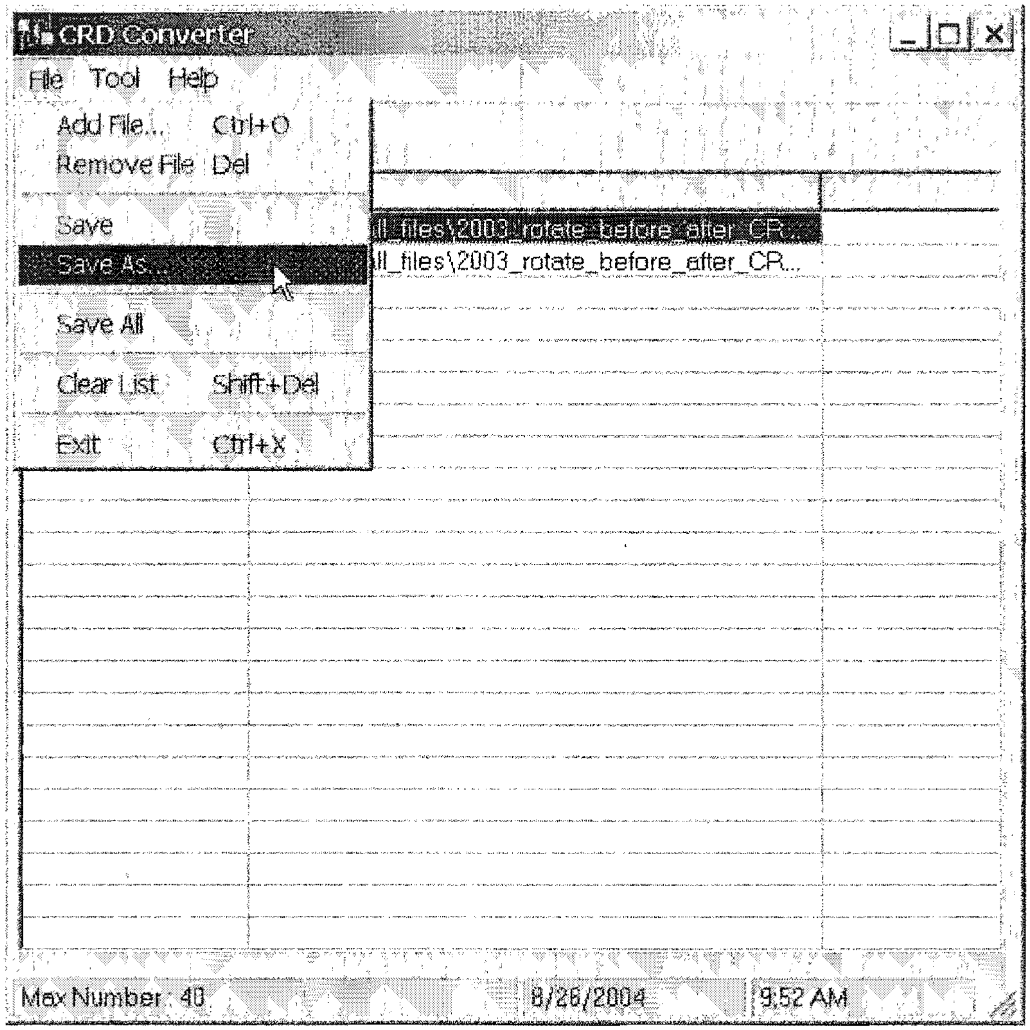
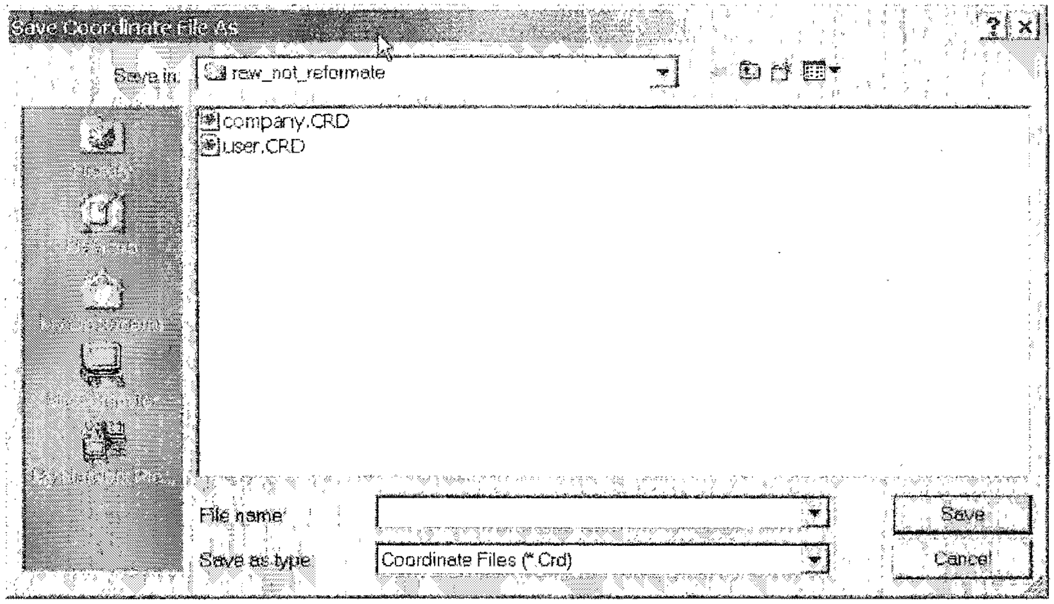


Figure 7-3-8: Choose Different Directory for File Saving



In this case, the same subset of 18 anchoring objects is selected from the entire set of 40, as a common frame of reference (See Appendix D: the first 18 anchoring objects. Figure7-3-9, 7-3-10 after comparison, the result of .CRD files for user's perception and E-retailer policy respectively).

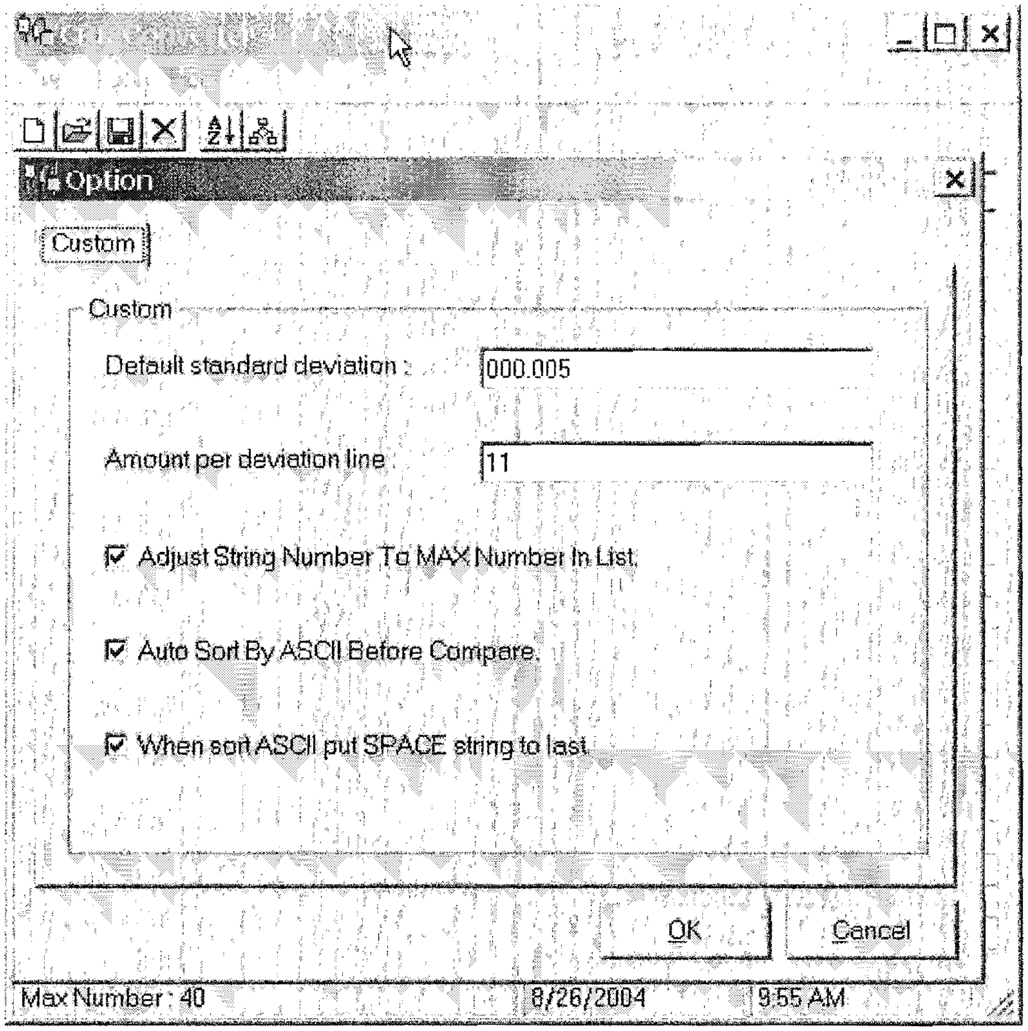
Figure 7-3-9, Figure 7-3-10 About Here

There is an Option function in the Tool selection menu of CRD Converter (See Figure 7-3-11 Option Function in CRD Converter).

Figure 7-3-11 Option Function in CRD Converter

Inside Option, there are several features that are provided by CRD Converter (see Figure 7-3-12: Option Menu).

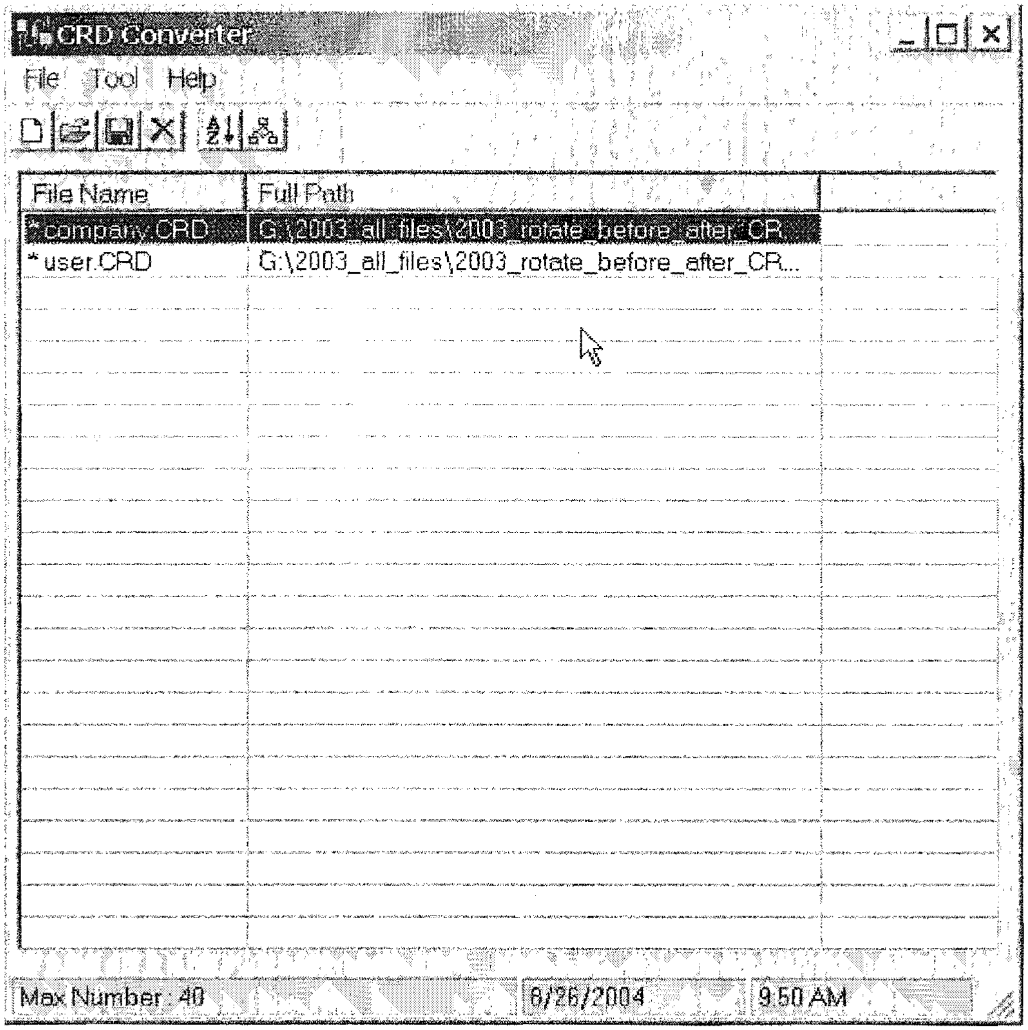
Figure 7-3-12: Option Menu



The first one option is Standard Error Input. In CATPAC, there is not currently a way of estimating the standard error, which specifies the amount of error that surrounds the concepts (uncertainty of location of the concepts) in a space. However, the Galileo software is capable of making such estimates (Woelfel, 1998). As such, for any further comparison in Galileo through CATPAC, the CRD Converter provides not only the option to manually input the standard errors, but also provides a "default standard error". The second option is "Amount Per deviation line". This provides the option to manually input the field number of standard error shown in the last portion of the CRD file, but the system default number is "11". Enable the feature of "Adjust String Number To MAX Number in List" will modify the datasets with fewer concepts by increasing their number to match the number of concepts in the larger dataset. The feature of "When Sort ASCII put space string to last" will add vectors of zeros for the distance values missing from the augmented smaller matrices, and put them to the last position in the coordinates before sorting. These empty vectors do not participate in the rotation comparison. The feature of "Sort By ASCII Before Compare" is defaulted by the system to process automatically. But users have the option to activate or deactivate manually. This feature will recover any file that has been sorted to non-ASCII back to ASCII original coding before starting any new comparison. This feature will help to retrieve any original setting of ASCII before making new comparisons. It also speeds up comparisons especially when comparing more than two files.

There is an asterisk shown along with the displayed File Name in the working window (See Figure 7-3-13 Asterisk).

Figure 7-3-13 Asterisk



When one begins to open a new file, or to sort by ASCII, or do a comparison, the asterisk won't disappear till the moment the file is saved again. Therefore, as long as the asterisk shows, it means the old .CRD files have not been updated to the new ones.

7.4 The Procedures of Microrot Rotation

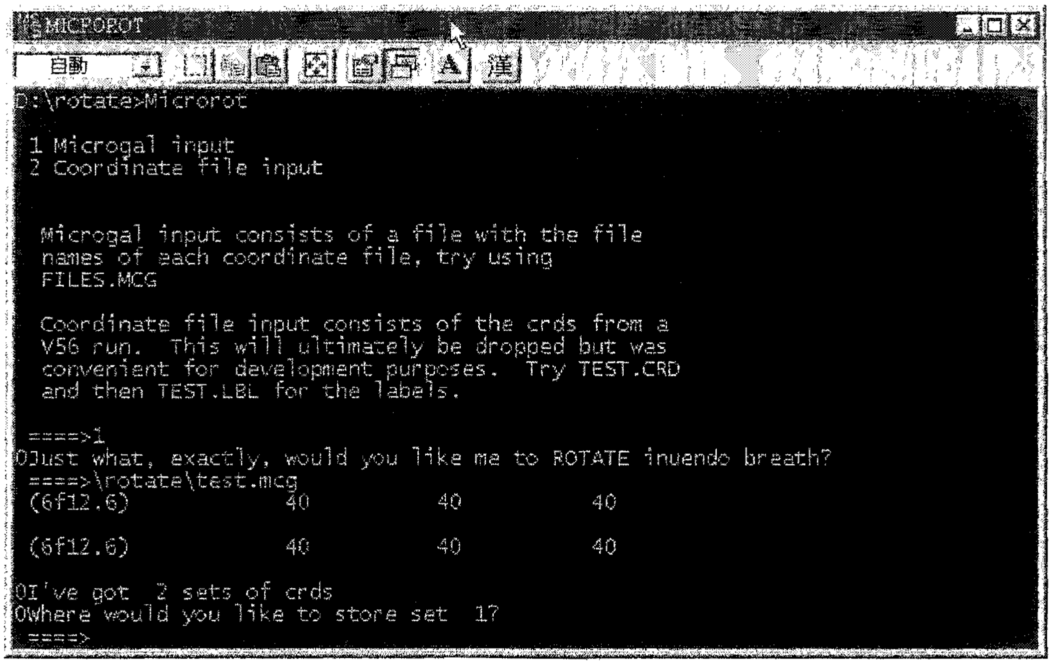
For elimination of arbitrary differences in orientation, Galileo* Microrot must be used for the rotation. To use Microrot, one should create any folder in any hard drive (in this case, hard drive D will be used). Suppose the new folder is named as "Rotate". Inside the Rotate folder, there are four components must be placed: (1) The Microrot tool. (2) The two .CRD files completed by the CRD Converter (coordinates ready for rotation which in this case are named, "user6fe.crd" and "com6fe.crd"). (3) new file named "test.mcg". Inside the file "test.mcg", the user may use any ASCII text editor to add text as desired.

\rotate\user6fe.crd

\rotate\com6fe.crd

After saving all the above required files, go to DOS prompt (Start ->All Programs -> Accessories -> Command Prompt) and direct to D:\rotate (see Figure 7-4-1 Microrot Start)

Figure 7-4-1 Microrot Start

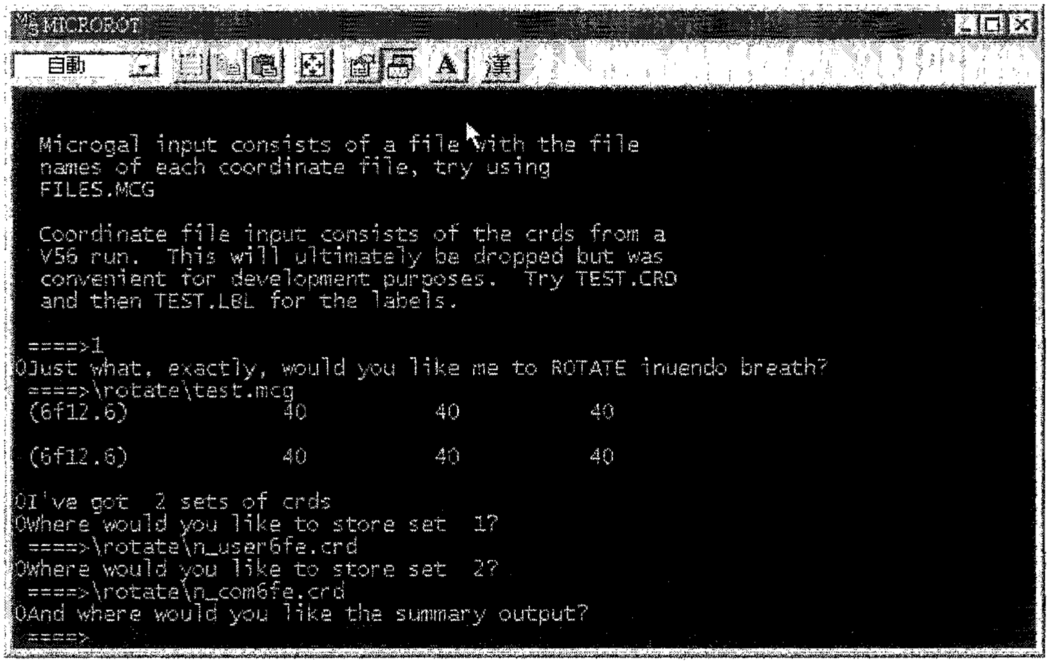


The following are procedures to run Microrot:

1. Type in "Microrot" inside the Rotate folder in DOS prompt, and hit Enter. You will see the introduction to Microgal, and there will be two choices to process Microrot. The first is "Microgal Input", and second is "Coordinate file input".
2. Type in "1" to continue the process (See Figure 7-4-1 Microrot Start).
3. Microrot asks "Just what, exactly, would you like me to ROTATE innuendo breath? " One should type in "\rotate\test.mcg". This action will target all the files for rotation (See Figure 7-4-1 Microrot Start).
4. Microrot replies "I've got 2 sets of CRDs" and asks "Where would you like to store set 1". Type in "\rotate\n_user6fe.crd", and "rotate\n_com6fe.crd" to store

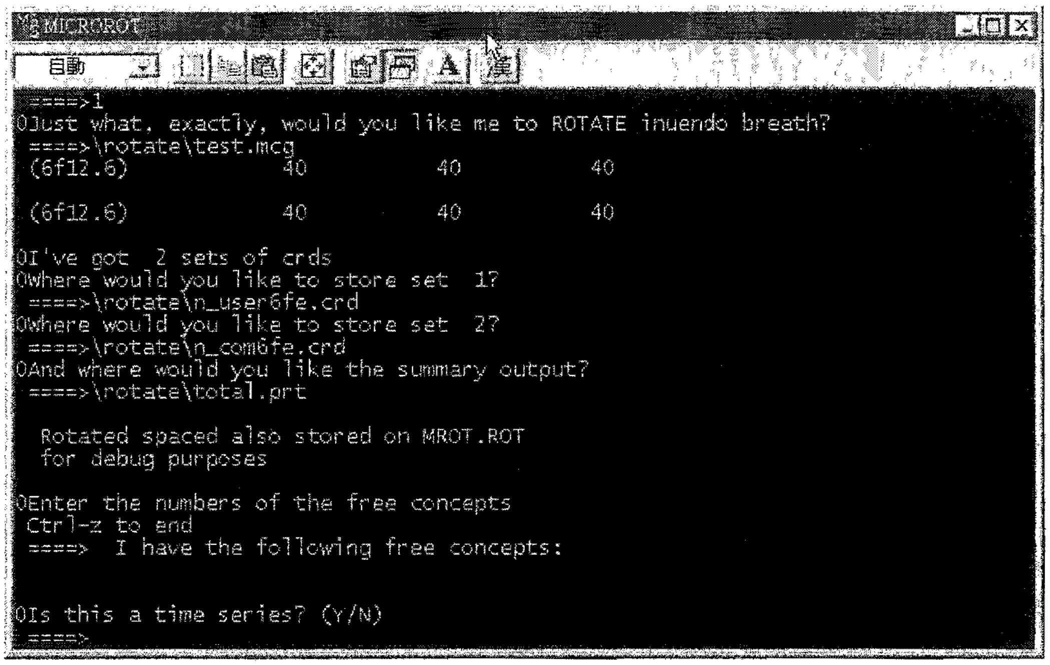
set 2 (See Figure 7-4-2 Microrot Store new CRDs).

Figure 7-4-2 Microrot Store New CRDs



5. "And where would you like the summary output?" Type in "\rotate\total.prt" in response (See Figure 7-4-3 Microrot Summary Output).

Figure 7-4-3 Microrot Summary Output

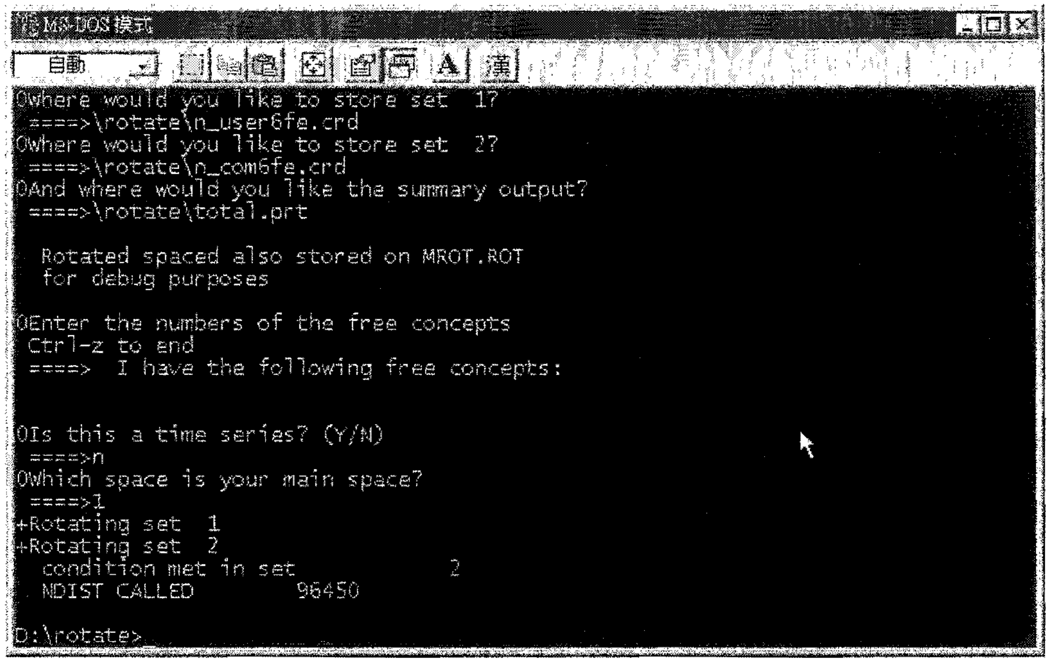


6. Microrot asks "Enter the numbers of the free concepts". Hold Ctrl and Z key to skip (See Figure 7-4-3 Microrot Summary Output).

7. "Is this a time series? (Y/N)" Type in ""N (See Figure 7-4-4 Microrot Completion).

8. "Which space is your main space?" Type in "1" (See Figure 7-4-4 Microrot Completion).

Figure 7-4-4 Microrot Completion



9. Microrot shows "Rotating set 1, Rotating set 2, and condition met in set 2". The process of rotation has been completed (See Figure 7-4-4 Microrot Completion).

10. Since the concept coordinates for the user's perceptions have been used as the main space for rotation, the concept coordinates of the E-retailer's policies are rotated to match the same concepts in main space. The rotation is default in the Galileo software. Any ASCII text editor can be used to match the original concepts with the concept labels of E-retailer's policy file. This is a simple process of copying and pasting. In this case, the concept labels from the com6fe.crd file are copied to the n_com6fe.crd file.

After the process of Microrot, the two new .CRD files (n_user6fe.crd &

n_com6fe.crd) now share a common orientation, and the rotated coordinates are written out, as shown in Appendix D: Figure 7-4-5: New CRD File for User's Perception (n_user6fe.crd) , & Figure 7-4-6: New CRD File for E-retailer Policy (n_com6fe.crd).

Figure 7-4-5, Figure 7-4-6 About Here

7.5 ThoughtView display

To visually present differences in the concept spaces, ThoughtView is used to display the conceptual maps from rotated coordinate .CRD files. ThoughtView uses a multiple document interface by splitting the data into different demographic groups and makes .CRDs of each for visual comparison. In ThoughtView display, one thing must be stressed, that is, it is irrelevant whether the concepts are above or below the grid plane, left, right, or center -- only the relative positions matter. After rotation, it is possible to visually compare the two sets of perceptual maps of users' perceptions, and E-retailer's policies, and observe the differences between them.

This comparison is shown in Figures 7-5-1 to 7-5-5. Because Figures 7-5-1 & 7-5-2 display tight clusters of terms too crowed to easily read, these are blown up in Figures 7-5-3, 7-5-4 & 7-5-5.

Figure 7-5-1: The Comparison of two maps (3D view) (Window on the left is for user's perception; window on the right is for E-retailer's policy)

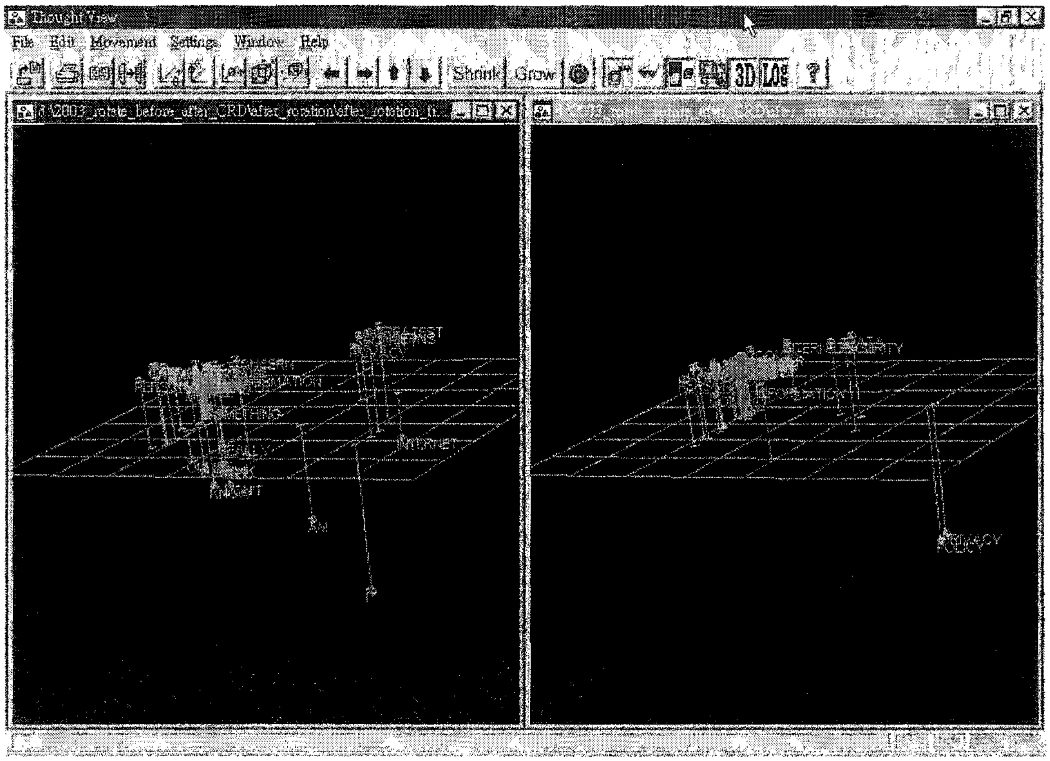


Figure 7-5-2: The Comparison of two maps (2D view) (Window on the left is for user's perception; window on the right is for E-retailer's policy)

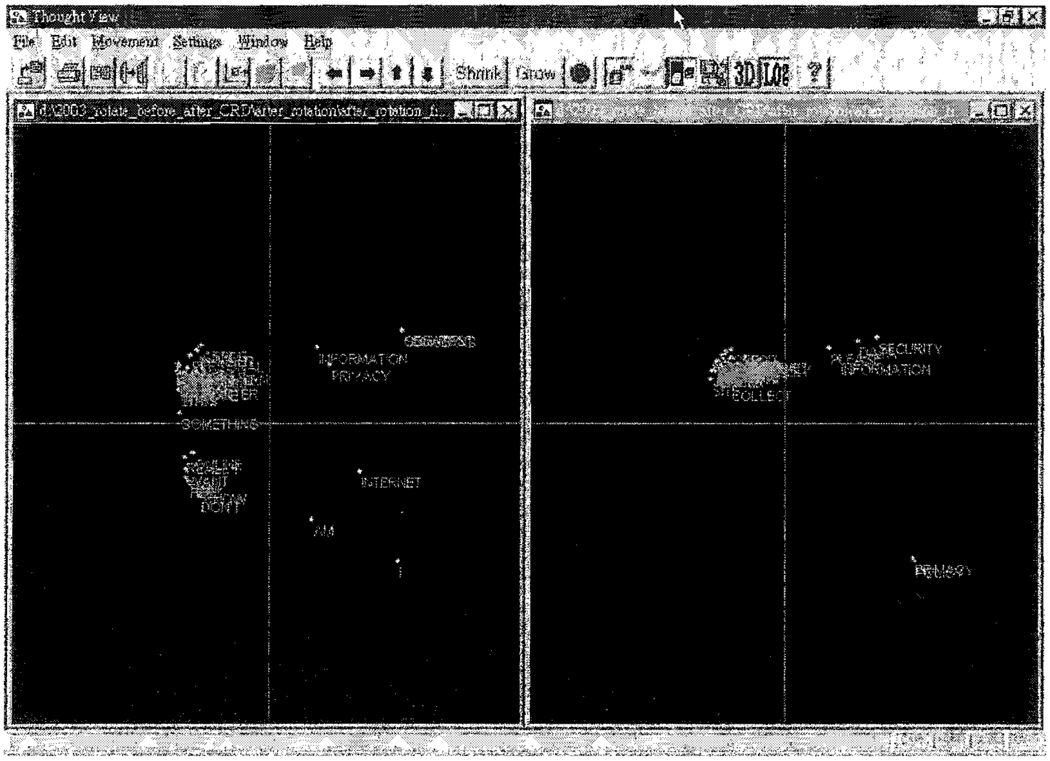


Figure 7-5-3: Close-up view for Comparison of two maps (3D view) (Window on the left is for user's perception; window on the right is for E-retailer's policy)

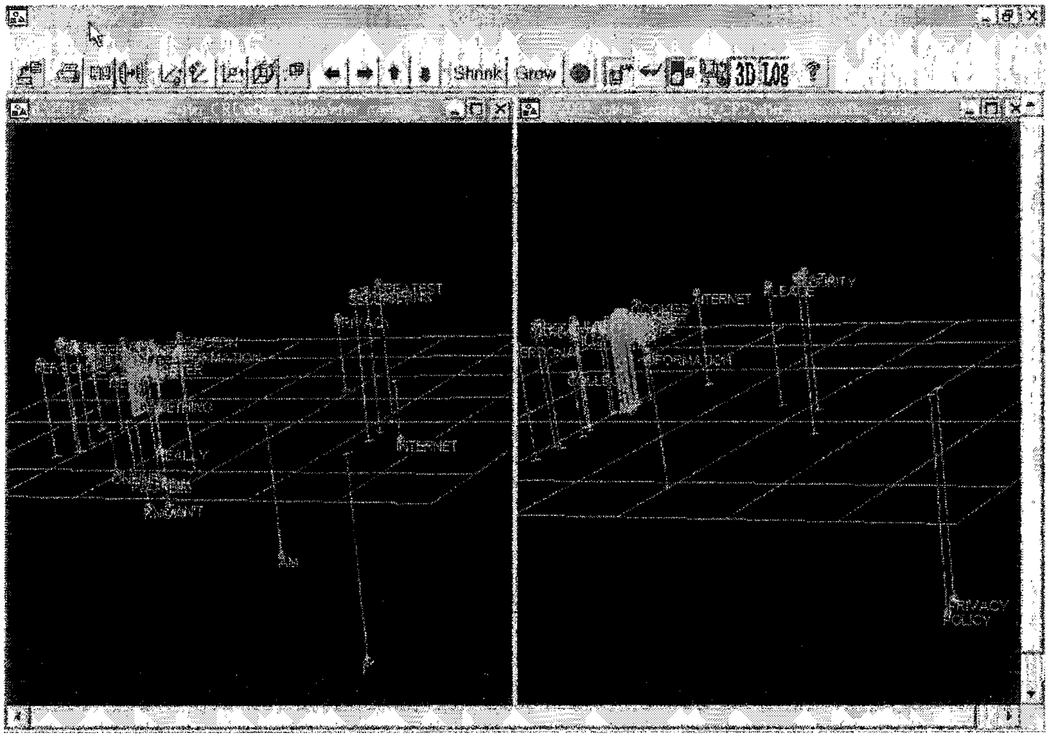


Figure 7-5-4 : Close-up view for the Comparison of two maps (2D view) (Window on the left is for user's perception; window on the right is for E-retailer's policy)

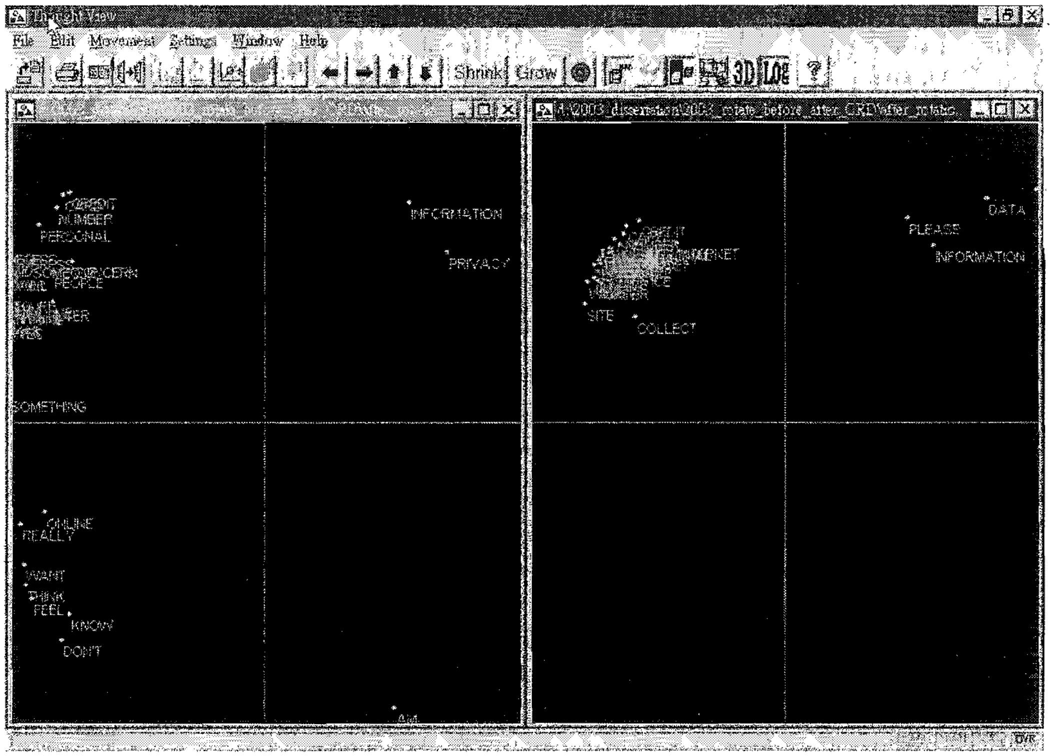
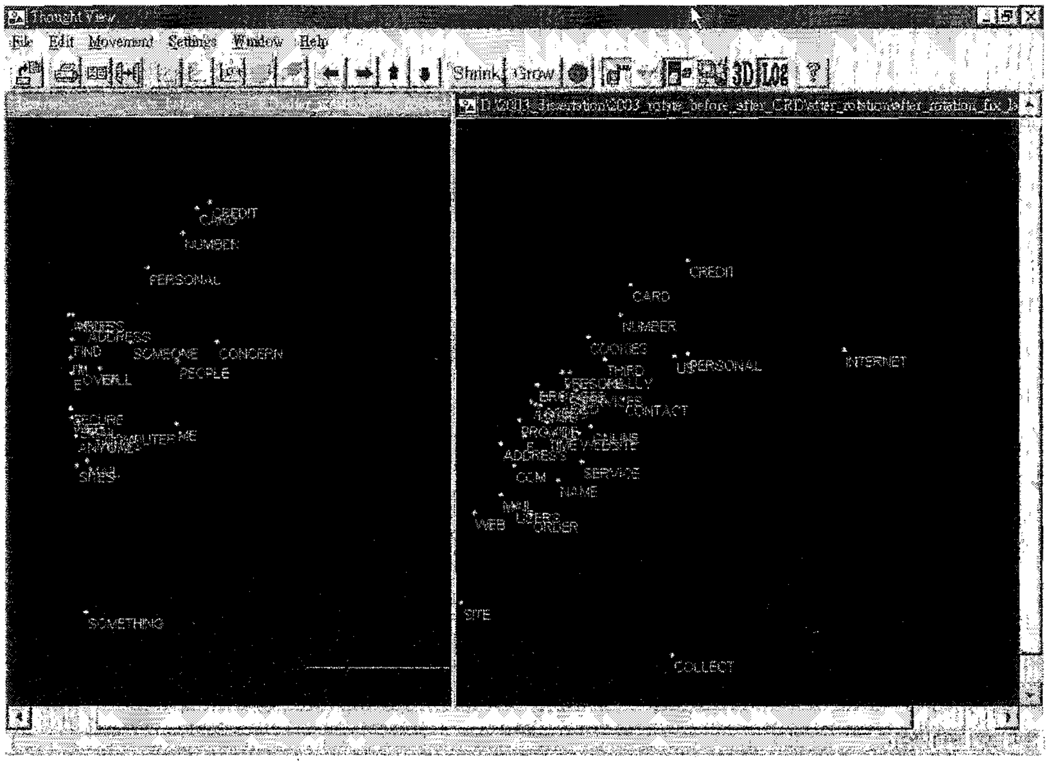


Figure 7-5-5: Another Close-up view for the Comparison of two maps (2D view) (Window on the left is for user's perception; window on the right is for E-retailer's policy)



The comparison shows that the concepts of "information" and "privacy" are close to each other in the user's perceptions, while they are more distant in E-retailer's policies. (See Figure 7-5-1 & 7-5-2). This means online users more closely link information and privacy than do online policy statements.

In E-retailer's policies, the concept of "privacy" is directly linked to "policy"; and the concept of "security" is closely tied to "data". However, among user's perceptions, "privacy" is linked to "information", while the concept of "security" is associated with "concern"-- while "policy" is quite far away from the concepts of "privacy" and "security" (see Figure 7-5-1 & Figure 7-5-2). This suggests that E-retailer's policies focus on privacy policy and security data (transmission mechanisms). On the other hand, from the user's perspective, regardless of how privacy and security are linked, ultimately the concept of personal information is the focus. Furthermore, it is worth noting that the concept of "policy" does not significantly connect to the concepts of privacy and security (see Figure 7-5-3, Figure 7-5-4 & Figure 7-5-5). This finding justified the result of a recent survey that said that nearly 64 percent of respondents did not read privacy and security statements at all or only glanced at them (Harris Interactive, 2001).

As noted earlier, concepts or objects are assumed to be defined by their association with the members of a set of "nearby" objects (Woelfel, Newton, Holmes, Kincaid, & Lee, 1986). Specifically, in Galileo, objects are not defined by being placed in categories, but rather by their patterns of association (similarities and dissimilarities) with other objects (Woelfel, 1990). As such, in the E-retailer's policies, the concept of "contact" is clustered with the concept of "credit" , " card" , "number", and "personal" . However, from the user's perspective, the concept of "concern" is clustered with the concept of "credit" , " card" , "number", and "personal" (see Figure 7-5-5). This suggests that E-retailer's identification (personalization) efforts strongly demand users to submit personal information, in some cases even credit card numbers. As personalization and customer information become more significant in a company's strategy, collecting and mining the personalized data is a crucial success factor for E-commerce. But from the user's point of view, an improved consumer-oriented policy should regulate the companies for collecting personal data especially credit card information. Users' concern about how their personal information has been collected by E-retailers has focused attention on requiring companies to post privacy and security policies that express what information they collect and what they do with it. The personal information should be protected by E-retailer's privacy and security polices. It appears there is a big gap between the users' conceptual opinion and E-retailer's policies regarding issues of privacy and security. In the next paragraph, Galileo V56 will be employed to provide more precise statistics to show the discrepancy between these two groups.

7.6 The process of Galileo* V56

A runstream file is required to make Galileo * V56 work (see Appendix D: Figure 7-6-1: An Example of Runstream File Named As "run.rs").

Figure 7-6-1 About Here

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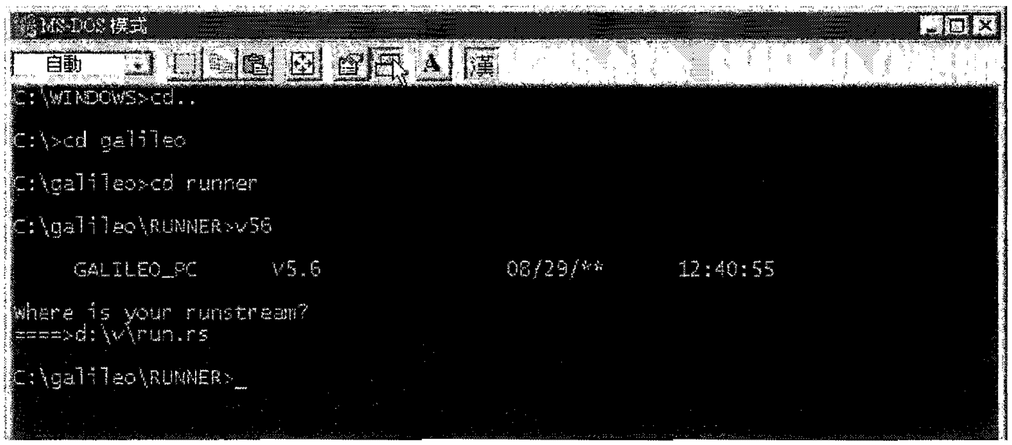
1. In Dos prompt, the directory of Galileo software is defined. Usually it is defaulted at the directory named Galileo in hard drive C. Inside Galileo, there is a folder called "runner" (See Figure 7-6-2: Galileo * V56 demonstration).

Figure 7-6-2: Galileo * V56 Demonstration



2. Inside the Runner directory, one must type "V56" or choose option 12 Run V56 after typing "Galileo" (main menu of Galileo).

3. After V56 asks "where is your runstream?", type the path of the runstream file. In this case, one should type "d:\v\run.rs" and the execution of V56 is completed (See Figure 7-6-2: Galileo * V56 demonstration).

Since original coordinate .CRD files are generated by CATPAC, one step is crucial for running V56, that is, one must append the unrotated coordinates dataset, which was modified by the CRD Converter, directly into the runstream file, because V56 cannot read coordinate files made by CATPAC without editing (see Figure 7-6-1:

Example of Runstream File Named As "run.rs"). Users may use any ASCII text editor to copy the coordinates and paste them into the runstream file. Note that the first "1" on the Options line of the runstream file must be changed to "3", which is for coordinate input (Woelfel, 1990), see Appendix D: Figure 7-6-1: Example of Runstream File Named As "run.rs" and the result is shown in Appendix D: Figure 7-6-3 Output of Galileo V56. (See the part of "distances moved in the interval" in the output).

Figure 7-6-3 About Here

Using the common 18 anchoring objects, out of 40 in the entire set, as the frame of reference for comparing the two groups through the Galileo V56 run, one may easily see that concept 13, "Privacy", has been moved the longest distance (1.084 units) from group 1(users' perceptions) to group 2 (online policies), and concept 15, "Security", has been changed the second longest distances (0.636 units). This finding has shown that there is a substantial difference between the online users' conceptual associations and E-retailers' policies regarding the concepts of privacy and security.

7.7 Conclusion

On first reading of this dissertation, it may be difficult to see how the detailed and tedious processes presented can make the solution to the problem of comparing datasets with different objects or concepts, easier -- especially the part about CRD file re-organization. However, the CRD Converter does vastly simplify the re-formatting of CRD files generated by CATPAC and intended for comparison in Galileo. Although the derivation of the processes presented earlier was strenuous work, once derived they need not be derived again for each use. In fact, all of these used in the dissertation have been encoded into computer programs which make the tedious logical manipulations they entail quite automatic (such as Microrot, CRD Converter). In this case, the results from the example give ample evidence that the solution to the problem of inconsistent objects is truly workable. Furthermore, the example provides a model of the procedures to follow in rotating inconsistent datasets. Specifically, it has successfully shown the ability to compare inconsistent concept/object sets in Galileo through CATPAC, and has solved a fundamental incompatibility problem between Galileo software and CATPACT software.

CHAPTER Eight

Future Research

8.1 An Internet-Based Measurement System

The Internet has tremendously changed the relation of data and analysis. Large popular websites host millions of people per day, and large volumes of very precise data are now attainable. In future research, one may develop a website which can collect people opinion (textual data) and complete paired comparison magnitude estimation data concerning any topic in a wide variety of languages, and display the space representing the objects measured in near real time.

In brief, although the Web site system may be very comprehensive, it possesses the potential for making multidimensional cognitive real time movies rather than static maps, to strengthen conceptual and visual presentation. Future Internet research could conduct ongoing studies of collective cognitive and cultural processes. It could be considered the cognitive equivalent of the Hubbel Telescope (Woelfel, 2004). Since this dissertation has successfully proven the ability to compare inconsistent datasets in Galileo through CATPAC, it could be used to facilitate the Internet research to collect real time textual data for further more precise analysis of the relationships among different cultures, languages, countries and demographic groupings, relative to any topics or events in the world.

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Appendix A

The Exclude File of CATPAC

{\rtf1\ansi\ansicpg1252\uc1
\deff0\deflang1033\deflangfe1033{\fonttbl{\f0\froman\fcharset0\fprq2{*\panose
02020603050405020304}Times New Roman;}{\f2\fmodern\fcharset0\fprq1{*\panose
02070309020205020404}Courier New;}
{\f16\froman\fcharset238\fprq2 Times New Roman CE;}{\f17\froman\fcharset204\fprq2 Times New
Roman Cyr;}{\f19\froman\fcharset161\fprq2 Times New Roman
Greek;}{\f20\froman\fcharset162\fprq2 Times New Roman Tur;}
{\f21\froman\fcharset186\fprq2 Times New Roman Baltic;}{\f28\fmodern\fcharset238\fprq1
Courier New CE;}{\f29\fmodern\fcharset204\fprq1 Courier New
Cyr;}{\f31\fmodern\fcharset161\fprq1 Courier New Greek;}{\f32\fmodern\fcharset162\fprq1
Courier New Tur;}
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\red128\green0\blue0;\red128\green128\blue0;\red128\green128\blue128;\red192\green192\b
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Appendix B

Visual Basic Source Code of ModuleFilePro

```
Attribute VB_Name = "ModuleFileProc"
Option Explicit
Public Function DeleteFileData(ByVal sKey As String, ByVal ItemIndey As Long,
ByVal Index As Long)
    Dim objItem As clsCRDFileItem
    Dim objLItem As ListItem
    Dim bolResetMax As Boolean
    If FileData(Index).VarCount = lngMaxStrCount Then
        bolResetMax = True
    Else
        bolResetMax = False
    End If
    RemoveOneFileDataArray Index
    objCRDFile.Item.Remove sKey
    For Each objItem In objCRDFile.Item
        If objItem.FileDataIndex > Index Then objItem.FileDataIndex =
objItem.FileDataIndex - 1
    Next

    fMainForm.lvFile.ListItems.Remove ItemIndey
    For Each objLItem In fMainForm.lvFile.ListItems
        If CLng(objLItem.Tag) > Index Then
            objLItem.Tag = CLng(objLItem.Tag) - 1
        End If
    Next
    lngFileDataCount = lngFileDataCount - 1

    If bolResetMax Then
        FindMaxStrCount
        SetMaxStatusBar
    End If
```

```
End Function

Private Sub RemoveOneFileDataArray(ByVal Index As Long)
    Dim Ind As Long, Ind2 As Long, ind3 As Long
    If Index < lngFileDataCount Then

    For Ind = Index To lngFileDataCount - 1
        Erase FileData(Ind).VarArr
        Erase FileData(Ind).StrArr
        Erase FileData(Ind).MidArr
        Erase FileData(Ind).SortIndex
        ReDim FileData(Ind).VarArr(1 To FileData(Ind + 1).VarCount, 1 To
FileData(Ind + 1).VarCount)
        ReDim FileData(Ind).StrArr(1 To UBound(FileData(Ind + 1).StrArr))
        ReDim FileData(Ind).MidArr(1 To UBound(FileData(Ind + 1).MidArr))
        ReDim FileData(Ind).SortIndex(1 To UBound(FileData(Ind +
1).SortIndex))
        For Ind2 = 1 To FileData(Ind + 1).VarCount
            For ind3 = 1 To FileData(Ind + 1).VarCount
                FileData(Ind).VarArr(Ind2, ind3) = FileData(Ind + 1).VarArr(Ind2,
ind3)
            Next
        Next
        For Ind2 = 1 To UBound(FileData(Ind + 1).StrArr)
            FileData(Ind).StrArr(Ind2) = FileData(Ind + 1).StrArr(Ind2)
        Next
        For Ind2 = 1 To UBound(FileData(Ind + 1).MidArr)
            FileData(Ind).MidArr(Ind2) = FileData(Ind + 1).MidArr(Ind2)
        Next
        For Ind2 = 1 To UBound(FileData(Ind + 1).SortIndex)
            FileData(Ind).SortIndex(Ind2) = FileData(Ind + 1).SortIndex(Ind2)
        Next
        FileData(Ind).VarCount = FileData(Ind + 1).VarCount
    Next

    End If
    If lngFileDataCount > 1 Then
        ReDim Preserve FileData(1 To lngFileDataCount - 1)
```

```
    Else
        Erase FileData
    End If
End Sub
Public Function ClearFileList()
    Dim Ind As Long, Count As Long
    Dim IndX() As Long
    Dim objItem As ListItem
    Erase FileData

    Count = fMainForm.lvFile.ListItems.Count
    ReDim IndX(1 To Count)
    Ind = 0
    For Each objItem In fMainForm.lvFile.ListItems
        objCRDFile.Item.Remove objItem.Key
        Ind = Ind + 1
        IndX(Ind) = objItem.Index
    Next
    For Ind = Count To 1 Step -1
        fMainForm.lvFile.ListItems.Remove IndX(Ind)
    Next
    ReSetFileData
    SetMaxStatusBar
End Function
Public Function InitFileAdd(ByRef sFile As String) As Boolean
Dim sTitle As String
Dim objItem As ListItem
Dim ReVal As Boolean
ReVal = False
If FileFormatCheck(sFile) = True Then
    On Error Resume Next
    sTitle = GetFileTitleInPathName(sFile)
    Set objItem = fMainForm.lvFile.ListItems.Add(, sFile, "* " & sTitle)
    If Err.Number = 0 Then

        objItem.SubItems(1) = sFile
        objCRDFile.Item.Add sFile, sTitle
        objItem.Tag = lngFileDataCount
```

```
            Set fMainForm.lvFile.SelectedItem = objItem
            ReVal = True
        Else
            If Err.Number = 35602 Then
                MsgBox LoadResString(2001), vbInformation
            Else
                ErrMsgBox "InitFileAdd", Err.Number
            End If
        End If
        Set objItem = Nothing
        On Error GoTo 0
    Else
        MsgBox LoadResString(2000), vbCritical
    End If
    InitFileAdd = ReVal
    End Function
    Public Sub SaveFileData(ByVal sFile As String, ByVal sKey As String, ByVal fIndex
    As Long)
        Dim hFile As Integer
        Dim objItem As Object
        Dim Ind As Long, Ind2 As Long
        Dim sBuf As String
        Set objItem = objCRDFile.Item(sKey)

        If KillIfFind(sFile) = False Then
            MsgBox LoadResString(2002) & vbCrLf & LoadResString(2003) & sFile,
    vbCritical
            Exit Sub
        End If

        hFile = FreeFile
        Open sFile For Binary Access Write As hFile

        'Check whether to add to the maximum object number
        If BLN_OPT_ADJTOMAXCOUNT And objItem.VarCount < lngMaxStrCount
    Then
            'Save file header
            sBuf = objItem.Formats & "    " & CStr(lngMaxStrCount) & " " &
```

```
CStr(lngMaxStrCount) & " " & CStr(lngMaxStrCount) & " " & vbCrLf
        Put hFile, , sBuf
        'Save the maximum number
        For Ind = 1 To lngMaxStrCount 'objItem.VarCount
            For Ind2 = 1 To lngMaxStrCount 'objItem.VarCount
                If (Ind > objItem.VarCount) Or (Ind2 > objItem.VarCount) Then
                    sBuf = " 0.000000"
                Else
                    sBuf = FileData(fIndex).VarArr(Ind, Ind2)
                    If InStr(1, sBuf, "-") = 0 Then sBuf = " " & sBuf
                End If
                Put hFile, , "    " & sBuf
                If (Ind2 Mod 6) = 0 Then Put hFile, , vbCrLf
            Next Ind2
            If ((Ind2 - 1) Mod 6) <> 0 Then Put hFile, , vbCrLf
        Next Ind
        'Save the string
        For Ind = 1 To lngMaxStrCount ' objItem.StrCount
            If Ind > objItem.StrCount Then
                Put hFile, , "        " & vbCrLf
            Else
                Put hFile, , FileData(fIndex).StrArr(Ind) & vbCrLf
            End If
        Next Ind
        'Save the standard deveation
        For Ind = 1 To lngMaxStrCount ' lngMaxStrCount ' objItem.MidCount
            If Ind > objItem.MidCount Then
                If (Ind Mod LNG_OPT_COUNT_PER_TOLERANCELINE) = 0
Then
                    Put hFile, , "    " & STR_OPT_TOLERANCE & vbCrLf
                Else
                    Put hFile, , "    " & STR_OPT_TOLERANCE
                End If
            Else
                If (Ind Mod LNG_OPT_COUNT_PER_TOLERANCELINE) = 0
Then
                    Put hFile, , "    " & FileData(fIndex).MidArr(Ind) & vbCrLf
                Else
```

```
                    Put hFile, , "    " & FileData(fIndex).MidArr(Ind)
                End If
            End If
        Next Ind


    Else
        'Save the file header
        sBuf = objItem.Formats & "    " & CStr(objItem.VarCount) & " " &
CStr(objItem.StrCount) & " " & CStr(objItem.MidCount) & " " & vbCrLf
        Put hFile, , sBuf
        'Save the number
        For Ind = 1 To objItem.VarCount
            For Ind2 = 1 To objItem.VarCount
                sBuf = FileData(fIndex).VarArr(Ind, Ind2)
                If InStr(1, sBuf, "-") = 0 Then sBuf = " " & sBuf
                Put hFile, , "     " & sBuf
                If (Ind2 Mod 6) = 0 Then Put hFile, , vbCrLf
            Next Ind2
            If ((Ind2 - 1) Mod 6) <> 0 Then Put hFile, , vbCrLf
        Next Ind
        'Save the string
        For Ind = 1 To objItem.StrCount
            Put hFile, , FileData(fIndex).StrArr(Ind) & vbCrLf
        Next Ind
        'Save the standard deviation
        For Ind = 1 To objItem.MidCount
            If (Ind Mod LNG_OPT_COUNT_PER_TOLERANCELINE) = 0 Then
                Put hFile, , "    " & FileData(fIndex).MidArr(Ind) & vbCrLf
            Else
                Put hFile, , "    " & FileData(fIndex).MidArr(Ind)
            End If
        Next Ind
    End If

    Close hFile

    Set objItem = Nothing
```

```
End Sub


Private Function FileFormatCheck(ByRef sFile As String) As Boolean

    FileFormatCheck = True
End Function
```

Appendix C

Visual Basic Source Code of ModuleCompare

```
Attribute VB_Name = "ModuleCompare"
Option Explicit


Public Sub CompareFileData()
    Dim lngCompareIndex As Long
    InitCompareFileData
    CountStringPerFile

        ' QuickSortData LBound(FileData(lngCompareIndex).StrArr),
UBound(FileData(lngCompareIndex).StrArr)
    For lngCompareIndex = 1 To lngFileDataCount
        If BLN_OPT_SORTASCII Then
            BSortByASCII lngCompareIndex
        End If
        BSortData lngCompareIndex
    Next
End Sub

Private Sub InitCompareFileData()
    Dim Ind As Long, Ind2 As Long
    For Ind = 1 To lngFileDataCount
        For Ind2 = LBound(FileData(Ind).StrArr) To UBound(FileData(Ind).StrArr)
            FileData(Ind).SortIndex(Ind2) = 1
        Next Ind2
    Next Ind
End Sub

Private Sub CountStringPerFile()
'counting the exact number of every string which display in every file
    Dim Ind As Long, Ind2 As Long
```

```
    Dim Xind As Long, Xind2 As Long
    'File A
    For Ind = 1 To lngFileDataCount - 1
        'All string in file A
        For Ind2 = LBound(FileData(Ind).StrArr) To UBound(FileData(Ind).StrArr)
            'File B
            For Xind = 2 To lngFileDataCount
                'All string in file B
                For Xind2 = LBound(FileData(Xind).StrArr) To
UBound(FileData(Xind).StrArr)
                    '0 string doesn't need to compare
                    If Trim(FileData(Ind).StrArr(Ind2)) <> "" Then
                        'How to calculate when the number of the string is the
same
                        If StrComp(FileData(Ind).StrArr(Ind2),
FileData(Xind).StrArr(Xind2), vbBinaryCompare) = 0 Then
                            FileData(Ind).SortIndex(Ind2) =
FileData(Ind).SortIndex(Ind2) + 1
                            FileData(Xind).SortIndex(Xind2) =
FileData(Xind).SortIndex(Xind2) + 1
                        End If
                    End If
                Next Xind2
            Next Xind

        Next Ind2
    Next Ind
End Sub


Private Sub QuickSortData(ByVal lngCompareIndex As Long, ByVal indStart As
Long, ByVal indEnd As Long)
'=======================
' Express sorting function for VBScript
' arrObj : matrix varaible
' indStart : sorting range , initial index
' indEnd : sorting range, ending index
' Programer : Raymond & Siva
```

```
' Email : rjh2677@alum.rit.edu & siva@cpatch.org
' =======================
Dim MagicVal As String   'Standard value
Dim varTmp 'tem variable for exchange purpose
Dim iStart As Long 'Recode the initial point of the process at the present moment
Dim iEnd As Long ' Recode the ending point of the process at the present moment

MagicVal = FileData(lngCompareIndex).SortIndex(indStart)
iStart = indStart + 1
iEnd = indEnd
Do While iStart < iEnd
    DoEvents
    Do While iStart < iEnd
        If MagicVal <= FileData(lngCompareIndex).SortIndex(iStart) Then
            iStart = iStart + 1
        Else
            Exit Do
        End If
        DoEvents
    Loop
    Do While iEnd >= iStart
        If MagicVal >= FileData(lngCompareIndex).SortIndex(iEnd) Then
            iEnd = iEnd - 1
         Else
             Exit Do
         End If
         DoEvents
    Loop
    If iStart < iEnd Then
        'varTmp = arrObj(iStart)
        'arrObj(iStart) = arrObj(iEnd)
        'arrObj(iEnd) = varTmp
        SwapArrData iStart, iEnd, lngCompareIndex
    Else
        'arrObj(indStart) = arrObj(iEnd)
        'arrObj(iEnd) = MagicVal
        SwapArrData indStart, iEnd, lngCompareIndex
        If iEnd - 1 > indStart Then
```

```
            QuickSortData lngCompareIndex, indStart, iEnd - 1
        End If
        If iEnd + 1 < indEnd Then
            QuickSortData lngCompareIndex, iEnd + 1, indEnd
        End If
    End If
Loop
End Sub
Private Sub BSortData(ByVal lngCompareIndex As Long)
'According the Bubble Sorting with appearance possibility by only single file of the
  data
    Dim lngUBound As Long
    Dim Index As Long, Index2 As Long

        lngUBound = UBound(FileData(lngCompareIndex).SortIndex)
        For Index = 1 To lngUBound
            For Index2 = 1 To lngUBound - Index
                If FileData(lngCompareIndex).SortIndex(Index2) <
FileData(lngCompareIndex).SortIndex(Index2 + 1) Then
                    SwapArrData Index2, Index2 + 1, lngCompareIndex
                End If
            Next
            DoEvents
        Next

End Sub
Public Sub BSortByASCII(ByVal lngCompareIndex As Long)
'According the Bubble Sorting with ASCII by only single file of the data
    Dim lngUBound As Long
    Dim Index As Long, Index2 As Long

    lngUBound = UBound(FileData(lngCompareIndex).StrArr)

    'Whether adding more empty space to express the time for process
    If BLN_OPT_SORT_SPACE_TO_LAST Then
        For Index = 1 To lngUBound
            For Index2 = 1 To lngUBound - Index
                If (Trim(FileData(lngCompareIndex).StrArr(Index2)) = "") Or _
```

```
                    StrComp(FileData(lngCompareIndex).StrArr(Index2),
FileData(lngCompareIndex).StrArr(Index2 + 1), vbBinaryCompare) > 0 Then
                        SwapArrData Index2, Index2 + 1, lngCompareIndex
                    End If
                Next
                DoEvents
            Next
        Else
            For Index = 1 To lngUBound
                For Index2 = 1 To lngUBound - Index
                    If StrComp(FileData(lngCompareIndex).StrArr(Index2),
FileData(lngCompareIndex).StrArr(Index2 + 1), vbBinaryCompare) > 0 Then
                        SwapArrData Index2, Index2 + 1, lngCompareIndex
                    End If
                Next
                DoEvents
            Next
        End If
End Sub

Private Sub SwapArrData(ByVal IndA As Long, ByVal IndB As Long, ByVal
lngCompareIndex As Long)
    Dim lngTmp As Long
    Dim strX As String
    Dim strZ() As String
    Dim Ind As Long, MaxIndex As Long

    lngTmp = FileData(lngCompareIndex).SortIndex(IndA)
    FileData(lngCompareIndex).SortIndex(IndA) =
FileData(lngCompareIndex).SortIndex(IndB)
    FileData(lngCompareIndex).SortIndex(IndB) = lngTmp
    strX = FileData(lngCompareIndex).StrArr(IndA)
    FileData(lngCompareIndex).StrArr(IndA) =
FileData(lngCompareIndex).StrArr(IndB)
    FileData(lngCompareIndex).StrArr(IndB) = strX
    strX = FileData(lngCompareIndex).MidArr(IndA)
    FileData(lngCompareIndex).MidArr(IndA) =
FileData(lngCompareIndex).MidArr(IndB)
```

```
    FileData(lngCompareIndex).MidArr(IndB) = strX
    MaxIndex = UBound(FileData(lngCompareIndex).StrArr)
    ReDim strZ(1 To MaxIndex)
    ReDim strZ2(1 To MaxIndex)
    For Ind = 1 To MaxIndex
        strZ(Ind) = FileData(lngCompareIndex).VarArr(IndA, Ind)
    Next Ind
    For Ind = 1 To MaxIndex
        FileData(lngCompareIndex).VarArr(IndA, Ind) =
FileData(lngCompareIndex).VarArr(IndB, Ind)
    Next Ind
    For Ind = 1 To MaxIndex
        FileData(lngCompareIndex).VarArr(IndB, Ind) = strZ(Ind)
    Next Ind
End Sub
```

Appendix D

Figure 7-3-1: The original CRD file: Online users' perception.

(6f12.6) 40 40 40 Old .CRD Format

0.026721	-0.071689	-0.003948	-0.014087	0.026997	-0.011301
-0.018019	0.025430	-0.007170	-0.007442	-0.010573	0.000408
0.007497	0.005119	0.028794	0.000437	0.012852	-0.030910
-0.034635	-0.046094	0.048191	-0.024326	-0.014707	-0.015051
0.007212	0.032102	-0.059610	-0.110286	-0.064014	-0.014969
-0.153512	-0.027268	-0.071274	0.028996	-0.007717	-0.004651
0.000305	0.000077	0.000159	0.179592		
0.039453	-0.069322	-0.005595	-0.043685	-0.000833	-0.003112
-0.032337	0.020003	-0.049472	-0.026417	0.045799	-0.065790
-0.052116	0.005933	-0.011234	0.116196	-0.028313	0.031920
-0.015754	-0.017936	-0.074791	-0.078464	-0.015050	-0.004522
-0.028154	-0.012325	0.000150	0.070828	-0.002249	-0.167289
-0.028935	0.019157	-0.001952	0.002195	-0.003344	-0.006186
-0.004036	-0.000759	0.000012	0.179833		
0.095237	-0.107822	-0.078665	-0.066274	-0.302292	0.011465
0.051609	-0.033909	0.017051	0.011383	-0.017198	0.005341
0.003104	0.015590	-0.005299	-0.058153	0.011289	-0.010038
-0.010740	-0.001473	-0.013813	-0.007497	-0.004683	-0.000428
-0.000184	-0.001064	0.001514	-0.000362	0.001518	-0.003676
-0.000648	0.000052	0.003744	0.001636	-0.001770	-0.011281
-0.133652	0.005728	-0.000536	0.191075		
0.099509	-0.110969	-0.078336	-0.067400	-0.311890	0.012091
0.056590	-0.038030	0.022722	0.011427	-0.019014	0.013510
0.013319	0.013979	-0.012529	-0.089686	0.019340	-0.016591
-0.021955	-0.007924	-0.026985	-0.023131	-0.004200	0.001553
-0.005931	-0.002017	0.000943	0.009567	-0.000043	-0.017740
-0.003201	0.001072	0.000614	-0.000090	-0.000901	0.010540
0.120727	-0.002355	0.000153	0.191272		
0.028475	-0.060148	0.007200	-0.036512	0.032936	-0.002638
-0.039441	0.036084	-0.067953	-0.033502	0.056756	-0.080920
-0.061089	0.002534	-0.103642	-0.068960	0.002808	-0.006560

0.035056	0.008358	0.017831	0.001626	0.001273	0.005871
-0.003840	0.000965	-0.000716	-0.003911	-0.008301	0.013456
0.000835	-0.002040	-0.002924	0.001905	-0.000016	0.148340
-0.012261	0.000824	0.000550	0.178937		
0.033998	-0.053525	0.005578	-0.035962	0.025454	0.000736
-0.024916	0.014698	-0.020800	-0.025842	0.022720	-0.025189
-0.005833	-0.004150	0.023062	0.057643	-0.006818	0.012914
-0.079993	-0.046812	-0.151548	-0.127000	-0.025774	-0.020501
-0.020958	0.006872	0.005478	-0.059163	0.005787	0.120797
0.038015	-0.018100	0.016782	-0.002529	-0.004813	0.003245
0.000178	0.001199	0.000182	0.179469		
0.165466	-0.101587	-0.351074	0.398556	0.023163	0.016941
0.021130	-0.009946	0.014714	0.012404	-0.005088	0.001424
-0.062881	-0.110291	-0.007267	0.009525	-0.020849	0.010349
-0.005462	0.003624	0.008080	-0.004054	-0.002357	0.003882
0.000561	-0.001429	-0.003269	-0.005766	0.001211	0.000916
0.007346	-0.003029	0.002304	0.000835	-0.001115	0.000668
0.001259	-0.000250	0.000009	0.200062		
0.268648	-0.018408	0.437143	0.333356	-0.129244	-0.089764
-0.037213	-0.010220	-0.004640	0.000488	0.001462	0.002037
0.000398	0.005619	-0.010363	0.004846	-0.006881	-0.000196
0.006372	-0.001777	0.000957	-0.007192	0.002209	-0.000827
-0.005565	-0.000303	0.000693	0.001278	-0.000570	-0.000688
-0.000980	-0.013247	0.008249	0.008214	0.002648	-0.000203
-0.000242	0.000588	-0.001175	0.183372		
0.040007	-0.049462	0.007548	-0.044388	0.037696	-0.004379
-0.045568	0.041246	-0.086982	-0.041937	0.071570	-0.111341
-0.088021	-0.001054	-0.147596	-0.097895	0.006507	-0.012011
0.050446	0.010259	0.022288	-0.000946	0.002530	0.000737
-0.013282	-0.001669	0.000652	-0.017840	0.001351	0.027004
0.006653	-0.001361	0.008017	0.001331	-0.001634	-0.108771
0.009160	-0.000209	-0.000265	0.181191		
0.090342	-0.097015	-0.035928	-0.076710	-0.162555	0.001710
0.003313	-0.001262	-0.025592	-0.013011	0.025244	-0.060628
-0.054885	0.038149	0.033668	0.216382	-0.050872	0.039159
0.076901	0.020072	0.084011	0.065766	0.018501	0.000222
0.002932	0.004251	-0.001705	-0.027748	-0.000074	0.060806
0.013772	-0.010103	0.001321	0.002112	0.002688	0.000428

0.016251	-0.011503	0.002021	0.180904		
0.080786	-0.030378	-0.008543	-0.046913	-0.008738	0.008504
-0.008012	0.026483	0.001678	-0.063025	0.060333	0.160250
0.185717	-0.111714	-0.156971	0.064454	-0.015189	0.009882
0.055017	-0.033958	0.009040	-0.008852	0.004744	-0.014145
-0.025256	0.016318	0.002876	0.004903	-0.008729	0.000986
0.003930	-0.001965	-0.004538	0.001874	-0.000936	-0.001393
-0.001797	-0.000903	0.000095	0.185066		
0.075288	-0.084619	-0.134649	0.144782	0.061938	0.012885
-0.020487	0.044984	-0.042176	-0.023253	0.024636	-0.000941
0.139202	0.274437	0.002737	-0.008761	0.031070	-0.000826
0.031541	0.000495	-0.017296	0.011077	-0.001333	-0.005692
-0.005340	-0.000641	0.003911	0.007982	0.000961	-0.002458
0.005742	-0.001796	0.007011	-0.000364	0.000003	-0.003128
-0.000406	0.000395	0.000273	0.185449		
0.181082	-0.070053	0.135189	0.020129	0.080868	0.360027
0.216640	-0.021325	0.022589	0.018391	0.005515	-0.002830
-0.020671	0.019532	-0.021787	0.009627	-0.046813	-0.040788
-0.005636	0.003362	0.003034	-0.003661	0.007245	-0.007681
0.000534	-0.004850	-0.001867	0.001281	-0.003322	0.000102
-0.002023	0.002015	-0.001514	-0.002665	0.000561	-0.000329
0.000299	0.011039	-0.000421	0.163924		
0.028131	-0.055090	0.008136	-0.020864	0.020270	-0.001556
-0.018477	0.017813	-0.014861	-0.011761	0.004057	0.007362
0.003431	-0.013966	0.021499	-0.007065	0.002764	-0.003787
-0.029329	-0.008624	-0.009245	0.031027	-0.007748	0.028853
0.008003	0.006720	0.006246	-0.005533	0.005886	-0.005950
0.005028	0.002935	-0.024655	-0.048485	0.202434	-0.003208
-0.000588	0.000795	-0.000406	0.179562		
0.830225	-0.171991	-0.020372	-0.042896	0.011456	-0.032383
-0.030262	0.012314	-0.011839	-0.004807	0.002491	-0.000916
0.000012	-0.003409	0.007877	0.010804	-0.000989	0.004718
0.001538	-0.000216	0.004531	0.007258	0.000360	0.003611
0.001861	0.002156	-0.000411	-0.000641	-0.000544	0.002189
0.001902	0.000668	-0.001411	-0.000041	-0.001479	-0.000068
0.006715	0.112605	-0.022154	-0.273006		
0.032654	-0.048943	0.009215	-0.024139	0.023515	-0.007098
-0.025216	0.023038	-0.023543	-0.010212	0.002887	0.003673

-0.002836	-0.021291	0.028063	-0.015030	0.001578	-0.007720
-0.076494	-0.026371	-0.017856	0.121136	0.061718	-0.098964
-0.089724	-0.037989	-0.002479	-0.010858	-0.004870	-0.020895
-0.000530	-0.067479	0.022856	-0.113668	-0.036802	0.000841
-0.000279	0.000082	0.000061	0.179749		
0.028828	-0.054071	0.004978	-0.024192	0.025692	0.001445
-0.024263	0.024173	-0.016113	-0.011644	0.007626	0.000647
0.000322	-0.020424	0.030205	-0.012802	0.002580	-0.008345
-0.069795	-0.018228	-0.025337	0.101063	0.046132	-0.075518
-0.044737	-0.005917	0.001621	0.017543	-0.001128	0.007081
0.021608	0.065945	0.003883	0.165009	0.019592	-0.000903
0.000940	-0.000366	-0.000064	0.178172		
0.049238	-0.061044	0.004340	-0.021924	0.028074	-0.004598
-0.035315	0.029299	0.048906	0.014118	0.007885	0.013584
-0.019141	-0.044905	0.060496	0.036489	0.127430	-0.194877
0.128696	0.080494	-0.085118	0.011301	0.010606	0.000816
-0.007972	0.003413	-0.002363	-0.000654	-0.005034	-0.005427
-0.003124	-0.007846	0.003366	0.001295	-0.003898	-0.000200
0.000174	0.000303	0.000400	0.182185		
0.030114	-0.071824	0.005491	-0.031109	0.038825	-0.025376
-0.013477	0.035897	0.034222	-0.003941	-0.008425	-0.008614
0.001902	-0.001152	0.056012	-0.000894	0.037611	-0.099893
-0.019900	-0.109245	0.170367	-0.096310	-0.053341	-0.033030
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0.073635	0.011512	0.019556	-0.001537	0.000307	0.001044
-0.001392	0.000258	0.000234	0.180188		
0.161438	0.114060	-0.001395	-0.034042	0.014435	-0.000204
-0.029739	0.061343	0.083866	-0.180734	0.054796	0.191144
-0.150880	0.060724	0.063571	-0.052135	-0.063306	0.033376
0.028740	0.012775	-0.001703	-0.005559	-0.008794	0.019723
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0.006984	-0.009190	-0.003762	0.003808	-0.009770	-0.001874
0.000038	0.000132	-0.000103	0.194389		
0.031333	-0.051914	0.005482	-0.025988	0.027462	-0.000029
-0.021096	0.015888	-0.021646	0.009744	-0.000231	0.009208
0.006248	-0.016741	0.038615	-0.013279	-0.009801	-0.002510
-0.011154	-0.025520	0.020765	-0.006436	0.054250	0.019236
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-0.051395	0.061049	0.168353	-0.026676	-0.002170	0.000038
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0.050236	-0.052864	0.007832	-0.034481	0.044616	0.004579
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0.030093	0.006968	-0.012006	-0.007637	0.001542	0.000172
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0.009824	-0.002961	0.004371	0.004217	-0.000031	0.000324
0.000384	-0.000104	0.000166	0.181909		
0.101594	-0.065972	0.041931	-0.016842	0.037242	0.076576
0.016694	-0.007384	0.006390	-0.012145	-0.009689	-0.002066
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0.047070	-0.005707	0.017744	-0.011032	-0.003759	0.004318
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0.001902	-0.005320	0.002456	0.004370	-0.003840	-0.000716
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0.821117	-0.165559	-0.006949	-0.033848	0.027013	-0.002245
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0.002955	0.000554	-0.000243	-0.011756	-0.015852	-0.017352
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0.003810	0.000169	0.000239	0.000349	0.001214	-0.001060
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-0.004621	-0.081309	-0.070613	-0.268432		
0.094843	0.021909	0.005530	-0.038330	0.036131	-0.022191
0.008290	-0.004550	-0.068571	0.116584	-0.000858	-0.005773
0.050375	-0.036460	0.096291	-0.070803	-0.114458	0.048419
0.109222	0.021092	-0.013667	-0.020145	-0.050467	-0.010894
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0.068271	-0.005225	0.012741	-0.024229	0.024774	0.012725
-0.012946	0.006854	-0.017478	-0.009436	-0.000001	-0.027398
0.035475	-0.022582	0.021190	0.005233	0.000998	-0.024673
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0.019287	-0.024840	0.001740	0.014810	-0.037989	-0.003329
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-0.025561	-0.010482	0.019971	-0.009391	-0.002629	-0.001180
0.030813	-0.032504	0.087378	0.166030	0.000309	0.090719
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0.000506	-0.003972	0.004235	-0.011918	0.008765	0.004903
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0.005529	-0.004046	-0.000260	0.007419	-0.013387	-0.057011
0.023916	-0.000652	-0.013495	0.017484	0.028015	-0.014356
-0.014726	-0.003989	0.005098	-0.002920	0.005452	-0.015441
0.005330	-0.005152	0.007599	-0.004062	0.005408	0.000417
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0.027798	-0.062874	0.015588	-0.023041	0.023267	0.001873
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0.015403	-0.015817	0.005042	-0.002243	-0.003775	0.000227
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0.065646	0.014319	-0.018447	-0.032567	0.224083	-0.015049
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0.001507	0.000383	0.001162	0.177749		
0.099705	0.003903	-0.001287	-0.045070	0.055022	-0.075410
0.037098	-0.030436	-0.088184	0.249137	0.017288	0.165914
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0.009504	-0.005255	-0.006053	0.003821	-0.003860	-0.000266
0.000402	-0.000182	-0.000400	0.187945		
0.087912	-0.053177	-0.003984	-0.032583	0.087093	0.005971
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0.009472	-0.005458	0.005114	0.001885	0.002952	-0.006784

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0.035756	-0.061156	0.033522	0.009604	0.005629	-0.010438
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0.004920	-0.008479	0.017990	-0.001462	0.006039	-0.000744
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0.026991	0.012243	-0.007018	0.002645	-0.018623	0.021636
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0.088145	-0.062101	0.010351	-0.039512	0.115931	-0.254492
0.324768	-0.038730	0.073849	-0.064001	-0.007601	-0.047951
0.008183	0.006964	-0.018536	0.003513	-0.000545	0.009517
0.007394	0.008502	-0.013787	0.012140	-0.000347	-0.002303
0.001824	0.002453	-0.002564	-0.004730	-0.002984	-0.004019
0.000805	0.002917	0.006512	0.000058	0.000547	0.000455
-0.000360	0.000617	0.000558	0.186526		
0.055193	-0.028301	0.016342	-0.029584	0.026738	0.000781
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0.033228	-0.033543	0.057589	-0.038658	-0.062205	0.025937
0.045155	0.023784	-0.011872	0.037374	-0.141838	-0.053362
0.051148	-0.018231	0.148753	-0.068245	-0.028334	-0.037625
0.013087	-0.004474	0.006518	0.006117	-0.013304	-0.000681
0.002791	0.000236	0.001393	0.180655		
0.067067	-0.065933	0.010156	-0.038999	0.038897	0.002152
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0.005206	0.025805	-0.064345	-0.002490	-0.037839	0.048484
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0.000012	0.000612	0.000318	0.182724		
0.039373	-0.040571	0.009850	-0.030670	0.018409	-0.003404
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0.026476	-0.020312	0.003885	0.002929	-0.001362	-0.000603
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0.141513	-0.173208	-0.078190	-0.006883	-0.044469	-0.005130
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0.049006	-0.012342	0.005061	0.007574	0.000600	0.006382
-0.118666	0.240231	0.073082	-0.064176	0.004708	0.001205
-0.020844	-0.010193	-0.008259	-0.007575	-0.010987	-0.002645
0.011581	-0.002260	0.009484	0.001780	-0.003048	-0.001877
0.000411	0.000041	0.000444	0.180538		
0.062151	-0.010886	0.009704	-0.027294	0.018058	0.004945
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0.014867	-0.018397	0.022602	-0.013280	0.000138	0.002506
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0.109695	0.132509	-0.066034	0.061039	-0.032582	-0.017434
0.089925	-0.082511	-0.050351	0.006190	-0.017736	-0.006058
0.000519	-0.001016	0.000401	0.181858		
0.061088	-0.018538	0.000429	-0.032838	0.035713	-0.019470
-0.004480	0.007293	-0.025330	0.053247	0.001359	-0.012316
0.036662	-0.019846	0.070850	-0.047348	-0.062940	0.017490
0.048267	-0.018408	0.009642	-0.065953	0.194443	0.054823
0.004993	-0.003665	0.075575	-0.036569	0.005095	-0.026799
0.035779	-0.031813	-0.052859	0.014997	-0.007877	-0.002075
-0.001419	-0.000297	-0.000443	0.181499		

ACCESS
ADDRESS
CARD
CREDIT
E
EMAIL
INFORMATION
INTERNET
MAIL
NUMBER
ONLINE
PERSONAL
PRIVACY
SECURE
SECURITY
SITES
WEB

WILL
ABLE
AM
ANYONE
COMPUTER
CONCERN
CONCERNS
DON'T
FEEL
FIND
GREATEST
I
I'M
KNOW
ME
OVER
PEOPLE
REALLY
SOMEONE
SOMETHING
THINGS
THINK
WANT

Figure 7-3-2: The original CRD file: E-retailer policy.

(6f12.6) 40 40 40 Old .CRD Format

0.136786	-0.025538	-0.008398	0.001355	-0.016803	0.020025
-0.008273	-0.025211	-0.020052	-0.003818	-0.018884	0.002214
-0.020244	-0.009394	-0.023116	0.003559	-0.012336	0.082352
0.032015	-0.050434	-0.172264	-0.052752	-0.055098	0.010041
-0.028217	-0.008003	0.008152	-0.020831	-0.005983	-0.014128
-0.002918	-0.009288	-0.010096	-0.005998	0.002588	0.000251
-0.000541	-0.000053	-0.000009	0.237501		
0.147241	-0.039523	-0.037833	-0.014078	-0.022498	-0.128507
-0.031012	0.029423	0.011106	0.008949	-0.034954	-0.137161
0.084501	0.052099	0.030976	-0.020658	0.015752	0.004631
0.002223	0.003221	0.002760	-0.024116	-0.016233	-0.041690

0.003370	0.002262	0.021664	-0.011639	-0.002873	0.007050
-0.028359	-0.008501	-0.002779	-0.019205	-0.076256	-0.060822
-0.010038	0.000086	-0.001829	0.240481		
0.145628	-0.018518	-0.034733	-0.013686	-0.092926	-0.021579
0.179350	0.054760	0.065047	-0.001618	0.020535	0.023258
-0.012793	0.003511	0.002508	-0.001740	-0.002548	-0.004328
-0.000183	-0.000355	-0.000986	-0.002089	-0.000269	0.007184
-0.004596	-0.000884	-0.002243	0.000330	0.001716	-0.001760
0.002408	-0.002151	-0.000697	-0.001311	0.005992	-0.013036
-0.001007	-0.001685	-0.083434	0.239834		
0.145664	-0.019245	-0.034898	-0.014371	-0.093422	-0.023134
0.180419	0.053737	0.066964	-0.001748	0.020813	0.022227
-0.012713	0.004552	0.004370	-0.001601	-0.001875	-0.004664
-0.001944	-0.000017	-0.001603	-0.002358	0.000362	0.008028
-0.004836	-0.002386	-0.001974	0.000179	0.001860	-0.003345
0.003584	-0.003035	-0.000589	-0.002772	0.011155	-0.029870
0.000927	0.002056	0.080830	0.239815		
0.145987	-0.046136	-0.041814	-0.038728	0.024682	-0.168683
-0.085162	0.041379	0.037028	0.007009	0.011664	0.089757
-0.045403	-0.013283	-0.002540	-0.000004	-0.006770	-0.005082
-0.000529	-0.001152	-0.000830	0.000002	0.004573	0.014846
-0.004137	-0.001023	-0.004013	0.002141	0.005809	-0.004162
0.009066	0.003424	-0.000753	0.002793	0.016427	0.010136
-0.095730	-0.000256	0.000887	0.239682		
0.139263	-0.039547	-0.025383	-0.004795	-0.000241	-0.020407
-0.004753	-0.003135	-0.015732	-0.007518	-0.015614	-0.104861
0.060046	0.027563	0.001168	0.004369	-0.003135	-0.006860
-0.020637	0.007226	-0.018489	0.025722	0.059366	0.146363
-0.037151	-0.028541	-0.029811	0.011589	0.014205	-0.027839
0.045172	0.010327	-0.003852	0.007382	0.026311	0.023671
-0.001357	-0.000268	-0.000073	0.237370		
0.305033	0.695894	0.009417	-0.012058	-0.004978	-0.021988
0.002173	0.024405	-0.048538	0.000246	-0.001997	0.004007
-0.002284	0.010490	-0.005001	-0.001777	0.002093	0.003854
-0.004772	-0.002648	-0.000022	-0.005136	0.009792	0.001650
0.006026	0.000774	-0.000151	0.000950	-0.002384	0.001229
-0.003044	0.001867	-0.002167	-0.006885	0.001578	0.004022
0.000462	-0.000083	0.000263	0.275308		

0.135869	-0.039372	-0.013163	-0.001832	-0.021007	0.018012
-0.007852	-0.007974	-0.024237	0.002067	-0.007908	-0.000919
0.006178	-0.015662	-0.020395	-0.005107	-0.022592	0.093002
0.063069	-0.088255	0.125034	-0.097681	0.007262	0.014789
-0.027712	-0.008756	0.017215	0.007191	0.013391	0.011670
0.028319	-0.010098	0.003701	0.002969	0.006765	0.007036
0.001231	0.000027	0.000560	0.236571		
0.145043	-0.047056	-0.042140	-0.036522	0.023913	-0.159152
-0.081732	0.039010	0.033998	0.003952	0.014117	0.074993
-0.036369	-0.010118	-0.000166	0.000188	-0.001719	-0.005111
-0.001358	-0.000773	-0.002982	-0.000327	0.005867	0.018360
-0.005744	-0.004054	-0.002165	0.000980	0.005453	-0.005046
0.006608	0.001554	-0.000587	-0.000708	-0.004731	-0.003428
0.104584	0.000312	-0.001053	0.239225		
0.135675	-0.037667	-0.024500	-0.008873	-0.038023	-0.022287
0.035844	0.015782	0.015004	0.003906	-0.005028	-0.025173
0.010830	0.002046	0.002154	-0.000932	0.002457	-0.000313
0.001283	0.001193	-0.002057	0.005008	-0.008793	-0.029440
0.007858	0.012414	0.000254	-0.001696	-0.005675	0.013944
-0.016781	0.015501	0.002196	0.016989	-0.062608	0.160210
0.002826	0.000210	0.007458	0.237228		
0.138237	-0.028118	-0.015733	-0.003493	-0.016355	0.020969
-0.004371	-0.006093	-0.017958	-0.001960	-0.009316	0.007207
-0.003268	-0.027635	-0.009787	0.020102	0.015190	0.027514
-0.007411	0.019467	0.016074	0.048843	-0.027349	0.033050
0.105760	-0.067537	0.129724	-0.046155	0.005251	-0.028159
0.026178	-0.006278	-0.006510	-0.001256	-0.005390	0.000626
-0.001115	-0.002981	-0.000135	0.235613		
0.170089	0.108217	-0.024975	0.005160	-0.029544	0.063651
-0.078329	-0.145325	0.240902	0.008210	0.034278	-0.018795
0.025303	-0.036867	0.006188	0.004126	-0.001516	-0.011822
0.004718	0.000009	0.001028	-0.007973	0.000942	0.000475
0.001973	0.001830	-0.000685	-0.000652	0.002427	-0.000583
0.002088	0.001110	0.002136	0.009054	-0.002077	-0.004747
-0.000630	-0.000323	-0.000496	0.244004		
1.157145	-0.033718	-0.003818	-0.001175	-0.001656	-0.000195
0.000776	-0.005473	-0.002020	-0.000469	0.000697	-0.000018
-0.000355	-0.000495	-0.000750	0.000654	0.000305	0.001428

-0.000213	-0.000088	0.000266	0.001481	0.000273	0.000240
0.001539	-0.000243	0.002087	-0.001911	-0.000426	-0.001634
0.001288	0.001024	-0.000480	0.000294	-0.000303	0.000223
-0.000363	0.086150	-0.001762	-0.589595		
0.139570	-0.031450	-0.009750	0.002502	-0.024637	0.030546
-0.000936	-0.026805	-0.039251	-0.015025	-0.053025	0.153446
0.203481	-0.001459	0.040024	-0.012065	-0.002045	-0.019552
-0.007626	0.003905	-0.008850	-0.003752	-0.001788	-0.002701
-0.007618	0.002628	-0.004070	-0.003521	0.003766	0.005549
0.000614	-0.002637	-0.002777	0.000704	-0.000766	-0.001419
-0.000162	0.000263	0.000072	0.238491		
0.170406	-0.027822	-0.004320	-0.012808	-0.056977	0.156043
-0.121817	0.247522	0.048256	0.020887	-0.005659	-0.007614
0.000698	-0.005998	0.008735	-0.004631	-0.000410	-0.009104
-0.002619	0.005447	-0.005066	0.000718	-0.001817	-0.002148
-0.006391	0.003337	-0.006492	-0.000429	0.003326	0.002572
-0.000033	-0.002521	-0.001504	0.000073	0.001711	-0.004677
-0.000340	0.000810	0.000112	0.232059		
0.134718	-0.042920	0.006504	-0.001040	-0.015584	0.014966
-0.005595	-0.023237	-0.030481	0.056226	0.039137	0.000224
-0.006755	-0.003682	0.001842	0.004188	-0.011418	0.008414
-0.004272	0.001569	-0.000986	0.018692	0.027025	-0.016098
-0.028549	0.014191	0.030579	-0.002636	-0.051474	0.050969
0.018883	0.129111	-0.095627	-0.009273	0.001864	-0.016588
0.000139	-0.000973	-0.000264	0.236092		
0.155020	-0.043090	0.193143	-0.010325	-0.007597	-0.001843
-0.000091	-0.023024	-0.035112	0.196668	0.124877	0.007611
0.014200	0.041988	0.029947	0.006964	0.009933	-0.008954
-0.000006	0.000358	-0.005948	-0.007541	-0.009320	0.009401
0.005523	-0.002850	-0.004510	-0.006211	0.015058	0.001987
0.001607	-0.039033	0.027829	0.002089	-0.000599	0.003121
-0.000318	-0.000075	-0.000052	0.241677		
0.164845	-0.004335	-0.021898	0.341578	0.113257	-0.020008
0.023970	0.039693	0.025406	0.012334	0.005565	0.006723
0.001969	0.004524	-0.001284	-0.000179	0.002402	0.000010
-0.004112	-0.003436	0.000290	-0.004210	-0.000861	-0.000947
0.001636	-0.000416	0.001784	-0.001784	-0.003135	0.000839
0.001584	-0.001009	0.000162	-0.000950	0.000771	0.001338

-0.000033	0.000187	0.000149	0.241899		
0.131842	-0.041697	-0.006616	0.003553	-0.015076	0.014490
-0.005876	-0.017023	-0.024546	0.020697	0.005906	0.000518
0.000207	-0.010667	-0.015182	-0.019636	0.000235	0.012072
0.014411	-0.011987	0.017745	0.002660	-0.001010	-0.012410
0.054374	0.011946	-0.044946	0.066054	0.010467	-0.146093
-0.068277	0.031603	-0.044982	-0.010182	0.003302	-0.003430
0.000224	-0.000179	-0.000161	0.236487		
0.141898	0.005984	-0.011311	0.004918	-0.013455	0.009632
-0.010455	-0.027032	-0.014561	-0.000943	-0.007692	-0.000701
-0.009996	-0.000893	-0.032875	0.002086	-0.003592	0.027784
-0.009613	0.025033	0.053493	0.103530	-0.138344	0.007376
-0.085545	-0.018066	-0.031134	0.009174	0.003796	0.002538
0.002907	-0.020844	-0.015672	-0.030585	-0.006470	-0.002605
-0.000432	0.000388	0.000076	0.238300		
0.148157	-0.038249	-0.002298	0.003790	-0.004888	0.022481
-0.030700	-0.006949	-0.042975	-0.176239	0.199685	-0.000728
0.007627	0.060529	0.040942	-0.003653	0.009921	0.000643
0.005679	0.004592	-0.001863	-0.007325	-0.006428	-0.008009
0.002218	-0.003093	0.000857	-0.001170	0.003583	0.000203
-0.001460	-0.002967	0.000293	0.000299	-0.001628	0.000145
-0.002170	-0.000926	-0.000065	0.236986		
0.144197	-0.022139	-0.022843	-0.030446	0.060630	0.018765
0.016000	-0.004014	-0.025108	-0.005954	0.002278	-0.022786
0.003401	-0.005856	-0.070513	0.082551	-0.060222	-0.131174
-0.034507	-0.064693	-0.000542	-0.038784	-0.038190	-0.020781
-0.001584	0.000533	0.003909	-0.027607	0.078181	-0.010017
0.019568	0.023553	-0.006259	-0.004305	-0.005558	-0.005106
-0.000120	0.000000	-0.000058	0.238024		
0.136569	-0.037685	-0.001297	-0.000177	-0.011984	0.020111
-0.002484	-0.029413	-0.034579	-0.002231	0.003734	-0.006018
-0.028217	-0.051680	-0.060672	-0.197968	0.058390	-0.058583
-0.050518	-0.016974	-0.001824	-0.025889	-0.002445	0.005903
-0.004425	-0.008685	0.006289	-0.012345	0.006837	0.016424
0.004838	-0.008611	0.000208	0.000014	-0.000117	-0.001260
-0.000423	0.000294	-0.000016	0.237705		
0.141297	-0.039674	-0.017485	-0.002213	-0.013543	0.054211
-0.020270	-0.050809	0.020370	0.000317	-0.084830	0.051128

-0.067777	0.220201	-0.028173	-0.006404	0.026050	-0.005226
-0.015200	0.008143	0.011046	-0.013446	0.013071	0.000487
0.006651	-0.001753	0.002700	-0.010856	0.000219	0.000685
-0.003610	0.003588	0.000535	-0.000311	0.001374	0.000967
0.000572	-0.000270	-0.000174	0.238293		
0.137481	-0.035747	-0.026079	-0.009808	-0.016753	-0.051354
-0.013649	0.001553	-0.004270	0.003226	-0.021240	-0.074421
0.039266	0.017959	0.010704	-0.005571	0.000379	0.000850
-0.005235	0.000747	0.001083	0.006139	-0.031094	-0.070088
0.031389	0.017951	0.001518	-0.002603	-0.017214	0.017881
0.002101	-0.009359	0.004234	0.020763	0.148330	0.024453
0.009621	0.000352	-0.000761	0.237788		
0.137949	-0.032133	-0.015396	-0.001856	-0.012558	0.011693
-0.000271	-0.017985	-0.030158	-0.007026	-0.022780	-0.001476
-0.023829	-0.052866	0.022886	0.098283	0.201466	-0.014999
-0.015667	0.000814	0.006939	-0.032721	0.004268	-0.003552
-0.021265	0.001872	-0.015367	0.001990	-0.001574	0.002001
-0.004059	-0.002789	-0.004019	-0.000671	0.003041	-0.003525
-0.001546	0.000009	-0.000364	0.237605		
0.137193	-0.002668	-0.011321	0.002070	-0.007250	0.006910
-0.000810	-0.009874	-0.034870	-0.000335	-0.008635	-0.001660
-0.011651	-0.010314	-0.016941	0.003582	-0.008100	0.014220
0.004707	0.002080	-0.000587	0.034631	-0.005077	-0.014451
-0.013767	0.000443	-0.008505	0.005259	-0.003472	-0.007957
-0.000911	0.028755	0.047794	0.168236	-0.024524	-0.034572
-0.000902	-0.000093	-0.000360	0.237162		
0.140251	-0.037744	-0.015909	-0.021212	0.024389	0.016380
-0.000462	-0.007799	-0.014353	-0.005681	0.003936	0.000245
-0.002503	-0.008817	-0.040090	0.038670	-0.036323	-0.055006
-0.027648	-0.044153	0.004460	-0.003617	0.013897	0.017711
-0.008469	-0.018667	0.027034	0.052622	-0.150895	0.007122
-0.041083	-0.061281	0.006772	-0.001781	-0.006950	-0.003088
-0.001204	0.000352	-0.000020	0.235186		
1.138988	-0.033678	-0.004243	-0.000141	-0.002638	-0.000392
0.001021	-0.002367	-0.001565	0.000753	-0.002254	-0.000162
-0.000309	-0.001283	-0.000362	-0.000487	-0.000794	-0.000685
0.000677	0.000284	-0.000310	-0.000629	-0.000257	-0.000645
-0.001445	0.000623	-0.002578	0.002095	0.000527	0.001409

-0.001259	-0.000593	0.000813	0.000091	0.000353	0.000092
0.000427	-0.087369	0.001795	-0.584746		
0.147041	-0.006170	-0.019239	-0.011967	0.040083	0.033264
0.012232	-0.029737	-0.023000	-0.001698	-0.058802	-0.007915
-0.076044	-0.016389	0.212215	-0.030025	-0.032365	-0.051164
0.024836	-0.042775	0.000834	0.011731	-0.020183	0.009671
-0.007816	-0.003000	0.011095	0.013696	0.005299	-0.003718
0.006895	-0.002730	-0.000387	-0.000814	-0.002051	-0.000200
0.000052	0.000388	-0.000325	0.239808		
0.133118	-0.039362	-0.014348	0.000607	-0.009572	0.010581
-0.004530	-0.018198	-0.022292	-0.005823	-0.008036	-0.001481
-0.015871	-0.026407	-0.002103	0.011294	-0.020488	0.012398
0.023187	-0.029135	0.016841	0.035021	0.028469	0.024946
0.055427	-0.019708	-0.098315	-0.121692	-0.011069	0.046939
-0.076741	-0.008350	-0.011016	-0.007992	-0.000593	-0.010551
-0.000635	0.000010	-0.000015	0.236429		
0.135156	-0.036208	-0.013412	0.001205	-0.011495	0.018634
-0.002849	-0.027850	-0.030195	-0.001890	-0.013800	-0.003448
-0.033544	-0.038834	0.033556	0.023342	-0.068336	0.050518
-0.132147	0.116495	0.015982	-0.089353	-0.001836	-0.000292
-0.005140	-0.000931	-0.012670	-0.007460	0.006157	0.000192
-0.016506	-0.009160	-0.001506	0.000638	-0.001459	-0.001443
0.000166	0.000297	-0.000367	0.237198		
0.172935	-0.034234	0.387365	-0.007648	0.027371	-0.033007
0.015543	0.020419	0.048140	-0.096999	-0.069583	-0.006207
-0.004777	-0.017020	-0.010949	0.001642	-0.004689	0.003025
0.000114	0.000759	0.004703	0.001822	0.002937	-0.002472
-0.001842	-0.002254	0.001560	0.001149	-0.004987	-0.002316
-0.000603	0.015299	-0.008554	-0.000301	0.001057	-0.000283
0.000589	-0.000061	-0.000036	0.245990		
0.135222	-0.027565	-0.011634	0.003351	-0.012909	0.012504
-0.004036	-0.022312	-0.019223	0.002553	-0.005115	-0.002987
-0.015106	-0.018435	-0.008730	0.004880	-0.019314	0.013286
0.003692	0.002662	-0.013814	0.054916	0.113925	-0.101279
-0.076411	-0.076063	0.015242	-0.016922	0.029440	-0.036397
0.012300	-0.038745	0.001962	-0.021513	0.002038	0.003162
-0.000366	-0.000241	-0.000303	0.236879		
0.134040	-0.038061	-0.010792	0.003628	-0.009576	0.010841

-0.003448	-0.018283	-0.016797	-0.006183	-0.011801	-0.001916
-0.010825	-0.011208	-0.022155	0.012985	-0.008490	0.021565
0.003764	-0.005017	-0.025141	0.032180	0.023690	0.010397
0.047110	-0.013825	0.004043	0.122239	0.081446	0.105374
-0.046251	-0.019644	-0.012697	-0.005318	-0.002630	-0.010488
-0.000427	0.001507	0.000014	0.235800		
0.162956	-0.013173	-0.049041	-0.128433	0.293547	0.050894
0.077215	0.034878	0.044320	0.013723	0.014337	-0.002350
0.026623	0.006481	-0.008269	-0.022063	0.023933	0.047364
0.010088	0.026241	-0.000154	0.003962	0.003996	-0.009079
0.002178	0.004887	-0.004146	-0.002834	-0.001640	0.002819
-0.002850	0.000265	-0.000864	-0.001046	-0.001013	-0.000600
-0.000630	-0.000318	0.000043	0.243008		
0.137783	-0.018596	-0.011997	0.007334	-0.009653	0.009843
-0.000837	-0.019166	-0.035701	-0.000635	-0.015567	-0.007841
-0.016031	-0.019232	-0.034382	-0.001560	-0.017906	-0.069813
0.153950	0.133342	-0.001680	-0.044386	-0.002819	0.012506
-0.011207	0.001273	0.008500	-0.001359	-0.006935	0.005155
-0.003863	-0.010577	-0.003355	-0.002775	0.004767	-0.000476
0.000331	0.000745	0.000340	0.237880		
0.133439	-0.030800	-0.009983	-0.000904	-0.014179	0.009671
-0.003681	-0.018124	-0.023130	-0.005333	-0.013338	-0.004488
-0.012581	-0.011878	-0.012825	0.005212	-0.009235	0.012077
0.003058	0.003732	-0.011453	0.015477	0.005506	-0.037409
0.077243	0.030465	-0.080288	0.023520	-0.033757	0.002663
0.144004	-0.028005	-0.005561	-0.016472	-0.035193	-0.012264
-0.000891	-0.000290	-0.000185	0.236549		
0.134527	-0.031061	-0.006513	0.002631	-0.011364	0.011948
-0.004325	-0.020042	-0.022002	-0.010261	-0.005581	-0.002941
-0.013846	-0.017396	-0.015750	0.007374	-0.009613	0.015808
-0.005910	-0.005384	0.002721	0.049473	0.039373	0.020332
-0.020018	0.173308	0.057294	-0.030774	0.020421	-0.013941
-0.011806	-0.044459	-0.003754	-0.008264	-0.002306	-0.005910
-0.000094	-0.000581	0.000138	0.236557		
0.131952	-0.035712	-0.014373	-0.000031	-0.012197	0.014174
-0.005546	-0.014965	-0.019563	-0.001924	-0.005077	-0.001160
-0.004954	-0.017351	-0.011252	0.002309	-0.005865	0.012419
0.002378	0.000149	-0.003835	0.017238	0.004817	-0.001539

0.004524	0.011222	0.001540	0.013415	-0.015898	-0.000688
-0.009420	0.087449	0.149966	-0.069692	0.004030	-0.007736
-0.000322	0.000132	-0.000309	0.235878		

ACCESS
ADDRESS
CARD
CREDIT
E
EMAIL
INFORMATION
INTERNET
MAIL
NUMBER
ONLINE
PERSONAL
PRIVACY
SECURE
SECURITY
SITES
WEB
WILL
BROWSER
COLLECT
COM
CONTACT
COOKIES
DATA
NAME
ORDER
PERSONALLY
PLEASE
POLICY
PROVIDE
SERVICE
SERVICES
SITE
THIRD
TIME

US
USED
USER
USERS
WEBSITE

Figure 7-3-9 the Result of .CRD Files for User's Perception (New Name As: user6fe.crd)

(6f12.6) 40 40 40

0.026721	-0.071689	-0.003948	-0.014087	0.026997	-0.011301
-0.018019	0.025430	-0.007170	-0.007442	-0.010573	0.000408
0.007497	0.005119	0.028794	0.000437	0.012852	-0.030910
-0.034635	-0.046094	0.048191	-0.024326	-0.014707	-0.015051
0.007212	0.032102	-0.059610	-0.110286	-0.064014	-0.014969
-0.153512	-0.027268	-0.071274	0.028996	-0.007717	-0.004651
0.000305	0.000077	0.000159	0.179592		
0.039453	-0.069322	-0.005595	-0.043685	-0.000833	-0.003112
-0.032337	0.020003	-0.049472	-0.026417	0.045799	-0.065790
-0.052116	0.005933	-0.011234	0.116196	-0.028313	0.031920
-0.015754	-0.017936	-0.074791	-0.078464	-0.015050	-0.004522
-0.028154	-0.012325	0.000150	0.070828	-0.002249	-0.167289
-0.028935	0.019157	-0.001952	0.002195	-0.003344	-0.006186
-0.004036	-0.000759	0.000012	0.179833		
0.095237	-0.107822	-0.078665	-0.066274	-0.302292	0.011465

0.051609	-0.033909	0.017051	0.011383	-0.017198	0.005341
0.003104	0.015590	-0.005299	-0.058153	0.011289	-0.010038
-0.010740	-0.001473	-0.013813	-0.007497	-0.004683	-0.000428
-0.000184	-0.001064	0.001514	-0.000362	0.001518	-0.003676
-0.000648	0.000052	0.003744	0.001636	-0.001770	-0.011281
-0.133652	0.005728	-0.000536	0.191075		
0.099509	-0.110969	-0.078336	-0.067400	-0.311890	0.012091
0.056590	-0.038030	0.022722	0.011427	-0.019014	0.013510
0.013319	0.013979	-0.012529	-0.089686	0.019340	-0.016591
-0.021955	-0.007924	-0.026985	-0.023131	-0.004200	0.001553
-0.005931	-0.002017	0.000943	0.009567	-0.000043	-0.017740
-0.003201	0.001072	0.000614	-0.000090	-0.000901	0.010540
0.120727	-0.002355	0.000153	0.191272		
0.028475	-0.060148	0.007200	-0.036512	0.032936	-0.002638
-0.039441	0.036084	-0.067953	-0.033502	0.056756	-0.080920
-0.061089	0.002534	-0.103642	-0.068960	0.002808	-0.006560
0.035056	0.008358	0.017831	0.001626	0.001273	0.005871
-0.003840	0.000965	-0.000716	-0.003911	-0.008301	0.013456
0.000835	-0.002040	-0.002924	0.001905	-0.000016	0.148340

-0.012261	0.000824	0.000550	0.178937		
0.033998	-0.053525	0.005578	-0.035962	0.025454	0.000736
-0.024916	0.014698	-0.020800	-0.025842	0.022720	-0.025189
-0.005833	-0.004150	0.023062	0.057643	-0.006818	0.012914
-0.079993	-0.046812	-0.151548	-0.127000	-0.025774	-0.020501
-0.020958	0.006872	0.005478	-0.059163	0.005787	0.120797
0.038015	-0.018100	0.016782	-0.002529	-0.004813	0.003245
0.000178	0.001199	0.000182	0.179469		
0.165466	-0.101587	-0.351074	0.398556	0.023163	0.016941
0.021130	-0.009946	0.014714	0.012404	-0.005088	0.001424
-0.062881	-0.110291	-0.007267	0.009525	-0.020849	0.010349
-0.005462	0.003624	0.008080	-0.004054	-0.002357	0.003882
0.000561	-0.001429	-0.003269	-0.005766	0.001211	0.000916
0.007346	-0.003029	0.002304	0.000835	-0.001115	0.000668
0.001259	-0.000250	0.000009	0.200062		
0.268648	-0.018408	0.437143	0.333356	-0.129244	-0.089764
-0.037213	-0.010220	-0.004640	0.000488	0.001462	0.002037
0.000398	0.005619	-0.010363	0.004846	-0.006881	-0.000196
0.006372	-0.001777	0.000957	-0.007192	0.002209	-0.000827

-0.005565	-0.000303	0.000693	0.001278	-0.000570	-0.000688
-0.000980	-0.013247	0.008249	0.008214	0.002648	-0.000203
-0.000242	0.000588	-0.001175	0.183372		
0.040007	-0.049462	0.007548	-0.044388	0.037696	-0.004379
-0.045568	0.041246	-0.086982	-0.041937	0.071570	-0.111341
-0.088021	-0.001054	-0.147596	-0.097895	0.006507	-0.012011
0.050446	0.010259	0.022288	-0.000946	0.002530	0.000737
-0.013282	-0.001669	0.000652	-0.017840	0.001351	0.027004
0.006653	-0.001361	0.008017	0.001331	-0.001634	-0.108771
0.009160	-0.000209	-0.000265	0.181191		
0.090342	-0.097015	-0.035928	-0.076710	-0.162555	0.001710
0.003313	-0.001262	-0.025592	-0.013011	0.025244	-0.060628
-0.054885	0.038149	0.033668	0.216382	-0.050872	0.039159
0.076901	0.020072	0.084011	0.065766	0.018501	0.000222
0.002932	0.004251	-0.001705	-0.027748	-0.000074	0.060806
0.013772	-0.010103	0.001321	0.002112	0.002688	0.000428
0.016251	-0.011503	0.002021	0.180904		
0.080786	-0.030378	-0.008543	-0.046913	-0.008738	0.008504
-0.008012	0.026483	0.001678	-0.063025	0.060333	0.160250

0.185717	-0.111714	-0.156971	0.064454	-0.015189	0.009882
0.055017	-0.033958	0.009040	-0.008852	0.004744	-0.014145
-0.025256	0.016318	0.002876	0.004903	-0.008729	0.000986
0.003930	-0.001965	-0.004538	0.001874	-0.000936	-0.001393
-0.001797	-0.000903	0.000095	0.185066		
0.075288	-0.084619	-0.134649	0.144782	0.061938	0.012885
-0.020487	0.044984	-0.042176	-0.023253	0.024636	-0.000941
0.139202	0.274437	0.002737	-0.008761	0.031070	-0.000826
0.031541	0.000495	-0.017296	0.011077	-0.001333	-0.005692
-0.005340	-0.000641	0.003911	0.007982	0.000961	-0.002458
0.005742	-0.001796	0.007011	-0.000364	0.000003	-0.003128
-0.000406	0.000395	0.000273	0.185449		
0.181082	-0.070053	0.135189	0.020129	0.080868	0.360027
0.216640	-0.021325	0.022589	0.018391	0.005515	-0.002830
-0.020671	0.019532	-0.021787	0.009627	-0.046813	-0.040788
-0.005636	0.003362	0.003034	-0.003661	0.007245	-0.007681
0.000534	-0.004850	-0.001867	0.001281	-0.003322	0.000102
-0.002023	0.002015	-0.001514	-0.002665	0.000561	-0.000329
0.000299	0.011039	-0.000421	0.163924		

0.028131	-0.055090	0.008136	-0.020864	0.020270	-0.001556
-0.018477	0.017813	-0.014861	-0.011761	0.004057	0.007362
0.003431	-0.013966	0.021499	-0.007065	0.002764	-0.003787
-0.029329	-0.008624	-0.009245	0.031027	-0.007748	0.028853
0.008003	0.006720	0.006246	-0.005533	0.005886	-0.005950
0.005028	0.002935	-0.024655	-0.048485	0.202434	-0.003208
-0.000588	0.000795	-0.000406	0.179562		
0.830225	-0.171991	-0.020372	-0.042896	0.011456	-0.032383
-0.030262	0.012314	-0.011839	-0.004807	0.002491	-0.000916
0.000012	-0.003409	0.007877	0.010804	-0.000989	0.004718
0.001538	-0.000216	0.004531	0.007258	0.000360	0.003611
0.001861	0.002156	-0.000411	-0.000641	-0.000544	0.002189
0.001902	0.000668	-0.001411	-0.000041	-0.001479	-0.000068
0.006715	0.112605	-0.022154	-0.273006		
0.032654	-0.048943	0.009215	-0.024139	0.023515	-0.007098
-0.025216	0.023038	-0.023543	-0.010212	0.002887	0.003673
-0.002836	-0.021291	0.028063	-0.015030	0.001578	-0.007720
-0.076494	-0.026371	-0.017856	0.121136	0.061718	-0.098964
-0.089724	-0.037989	-0.002479	-0.010858	-0.004870	-0.020895

-0.000530	-0.067479	0.022856	-0.113668	-0.036802	0.000841
-0.000279	0.000082	0.000061	0.179749		
0.028828	-0.054071	0.004978	-0.024192	0.025692	0.001445
-0.024263	0.024173	-0.016113	-0.011644	0.007626	0.000647
0.000322	-0.020424	0.030205	-0.012802	0.002580	-0.008345
-0.069795	-0.018228	-0.025337	0.101063	0.046132	-0.075518
-0.044737	-0.005917	0.001621	0.017543	-0.001128	0.007081
0.021608	0.065945	0.003883	0.165009	0.019592	-0.000903
0.000940	-0.000366	-0.000064	0.178172		
0.049238	-0.061044	0.004340	-0.021924	0.028074	-0.004598
-0.035315	0.029299	0.048906	0.014118	0.007885	0.013584
-0.019141	-0.044905	0.060496	0.036489	0.127430	-0.194877
0.128696	0.080494	-0.085118	0.011301	0.010606	0.000816
-0.007972	0.003413	-0.002363	-0.000654	-0.005034	-0.005427
-0.003124	-0.007846	0.003366	0.001295	-0.003898	-0.000200
0.000174	0.000303	0.000400	0.182185		
0.030114	-0.071824	0.005491	-0.031109	0.038825	-0.025376
-0.013477	0.035897	0.034222	-0.003941	-0.008425	-0.008614
0.001902	-0.001152	0.056012	-0.000894	0.037611	-0.099893

-0.019900	-0.109245	0.170367	-0.096310	-0.053341	-0.033030
-0.041226	-0.031463	0.001640	0.012726	0.028170	-0.013532
0.073635	0.011512	0.019556	-0.001537	0.000307	0.001044
-0.001392	0.000258	0.000234	0.180188		
0.161438	0.114060	-0.001395	-0.034042	0.014435	-0.000204
-0.029739	0.061343	0.083866	-0.180734	0.054796	0.191144
-0.150880	0.060724	0.063571	-0.052135	-0.063306	0.033376
0.028740	0.012775	-0.001703	-0.005559	-0.008794	0.019723
-0.007562	0.003715	-0.007992	0.005546	-0.003416	-0.001818
0.006984	-0.009190	-0.003762	0.003808	-0.009770	-0.001874
0.000038	0.000132	-0.000103	0.194389		
0.031333	-0.051914	0.005482	-0.025988	0.027462	-0.000029
-0.021096	0.015888	-0.021646	0.009744	-0.000231	0.009208
0.006248	-0.016741	0.038615	-0.013279	-0.009801	-0.002510
-0.011154	-0.025520	0.020765	-0.006436	0.054250	0.019236
0.055082	0.103474	0.014155	0.006213	-0.036896	0.001940
-0.051395	0.061049	0.168353	-0.026676	-0.002170	0.000038
0.001077	0.000017	0.000701	0.179171		
0.050236	-0.052864	0.007832	-0.034481	0.044616	0.004579

-0.045055	0.044241	-0.027615	-0.045782	-0.334078	0.017111
-0.027431	0.016338	-0.069640	0.015938	-0.024803	0.007756
0.030093	0.006968	-0.012006	-0.007637	0.001542	0.000172
-0.011874	-0.002361	0.000781	0.002379	-0.005043	-0.001893
0.009824	-0.002961	0.004371	0.004217	-0.000031	0.000324
0.000384	-0.000104	0.000166	0.181909		
0.101594	-0.065972	0.041931	-0.016842	0.037242	0.076576
0.016694	-0.007384	0.006390	-0.012145	-0.009689	-0.002066
-0.004197	-0.039997	0.051954	-0.015704	0.223284	0.194778
0.047070	-0.005707	0.017744	-0.011032	-0.003759	0.004318
-0.018697	-0.005992	0.000497	-0.002393	0.000034	-0.001659
0.001902	-0.005320	0.002456	0.004370	-0.003840	-0.000716
-0.000268	-0.004301	-0.008293	0.169948		
0.821117	-0.165559	-0.006949	-0.033848	0.027013	-0.002245
-0.007534	0.006580	-0.003753	-0.000614	0.000694	0.003033
0.002955	0.000554	-0.000243	-0.011756	-0.015852	-0.017352
-0.008867	-0.000184	-0.005994	-0.001302	-0.001936	-0.001479
0.003810	0.000169	0.000239	0.000349	0.001214	-0.001060
-0.001348	0.001648	0.000280	-0.001579	0.000524	0.001021

-0.004621	-0.081309	-0.070613	-0.268432		
0.094843	0.021909	0.005530	-0.038330	0.036131	-0.022191
0.008290	-0.004550	-0.068571	0.116584	-0.000858	-0.005773
0.050375	-0.036460	0.096291	-0.070803	-0.114458	0.048419
0.109222	0.021092	-0.013667	-0.020145	-0.050467	-0.010894
-0.078799	-0.012996	-0.114837	0.045181	0.011543	0.030047
-0.018860	0.012519	0.010914	-0.002514	0.006089	-0.000621
-0.000206	0.000395	0.000227	0.185537		
0.068271	-0.005225	0.012741	-0.024229	0.024774	0.012725
-0.012946	0.006854	-0.017478	-0.009436	-0.000001	-0.027398
0.035475	-0.022582	0.021190	0.005233	0.000998	-0.024673
-0.064130	-0.030334	-0.008213	0.082968	-0.063323	0.215070
-0.070368	0.020265	0.009020	0.000443	-0.007785	-0.005252
0.019287	-0.024840	0.001740	0.014810	-0.037989	-0.003329
-0.000327	-0.001890	0.000276	0.181862		
0.028363	-0.066455	-0.004344	-0.017379	0.028785	-0.014123
-0.013694	0.015034	0.004682	-0.006768	-0.002257	-0.009322
0.003991	-0.014992	0.019728	-0.000106	0.001569	-0.011394
-0.025561	-0.010482	0.019971	-0.009391	-0.002629	-0.001180

0.030813	-0.032504	0.087378	0.166030	0.000309	0.090719
-0.101151	-0.033660	-0.036643	-0.001624	-0.008284	-0.005715
-0.000687	0.000340	-0.000107	0.179790		
0.806452	-0.169492	0.000090	-0.029387	0.024095	-0.000984
-0.009348	0.009929	-0.005192	-0.000992	0.000192	0.005009
0.000506	-0.003972	0.004235	-0.011918	0.008765	0.004903
-0.003838	-0.002345	-0.003484	-0.002664	0.000920	0.000881
-0.000771	-0.000807	-0.000397	0.001821	-0.000658	-0.001262
-0.000540	-0.000779	-0.000654	0.000052	0.001564	-0.000561
-0.003163	-0.034286	0.094833	-0.266424		
0.727400	0.724346	-0.060794	-0.016142	-0.029367	0.010995
0.005529	-0.004046	-0.000260	0.007419	-0.013387	-0.057011
0.023916	-0.000652	-0.013495	0.017484	0.028015	-0.014356
-0.014726	-0.003989	0.005098	-0.002920	0.005452	-0.015441
0.005330	-0.005152	0.007599	-0.004062	0.005408	0.000417
-0.011983	0.010758	0.001069	-0.003091	0.005527	0.002830
0.000037	-0.000024	0.000795	0.255565		
0.027798	-0.062874	0.015588	-0.023041	0.023267	0.001873
-0.016713	0.019676	-0.015567	-0.011649	-0.001723	0.008319

0.015403	-0.015817	0.005042	-0.002243	-0.003775	0.000227
-0.019144	0.005724	-0.004835	0.025266	-0.007026	0.002806
0.065646	0.014319	-0.018447	-0.032567	0.224083	-0.015049
-0.040195	-0.000804	-0.000461	0.000947	-0.019956	0.002639
0.001507	0.000383	0.001162	0.177749		
0.099705	0.003903	-0.001287	-0.045070	0.055022	-0.075410
0.037098	-0.030436	-0.088184	0.249137	0.017288	0.165914
-0.112493	0.062540	-0.074280	0.036241	0.043708	-0.002009
-0.034541	-0.009115	0.003497	0.003474	-0.006577	0.010616
0.006446	0.002167	0.011228	-0.001035	-0.000721	0.001149
0.009504	-0.005255	-0.006053	0.003821	-0.003860	-0.000266
0.000402	-0.000182	-0.000400	0.187945		
0.087912	-0.053177	-0.003984	-0.032583	0.087093	0.005971
-0.116558	-0.394766	0.042522	-0.043774	-0.000690	-0.002065
-0.001539	0.023385	-0.014080	-0.003538	-0.011940	-0.011095
0.009472	-0.005458	0.005114	0.001885	0.002952	-0.006784
-0.004136	0.002655	-0.004621	-0.000089	0.001286	-0.001179
0.000286	0.000240	-0.000436	0.000635	0.000928	0.000061
-0.000595	0.000643	0.001048	0.183285		

0.035756	-0.061156	0.033522	0.009604	0.005629	-0.010438
-0.022545	0.015159	-0.009853	-0.008130	-0.002517	-0.000237
0.004920	-0.008479	0.017990	-0.001462	0.006039	-0.000744
-0.020000	-0.003525	-0.009504	0.023177	0.005313	0.005731
0.026991	0.012243	-0.007018	0.002645	-0.018623	0.021636
0.024822	0.176545	-0.098911	-0.081296	-0.044172	-0.003488
-0.000097	-0.001080	0.000902	0.178777		
0.088145	-0.062101	0.010351	-0.039512	0.115931	-0.254492
0.324768	-0.038730	0.073849	-0.064001	-0.007601	-0.047951
0.008183	0.006964	-0.018536	0.003513	-0.000545	0.009517
0.007394	0.008502	-0.013787	0.012140	-0.000347	-0.002303
0.001824	0.002453	-0.002564	-0.004730	-0.002984	-0.004019
0.000805	0.002917	0.006512	0.000058	0.000547	0.000455
-0.000360	0.000617	0.000558	0.186526		
0.055193	-0.028301	0.016342	-0.029584	0.026738	0.000781
-0.012561	0.001584	-0.040901	0.031205	0.002638	-0.002004
0.033228	-0.033543	0.057589	-0.038658	-0.062205	0.025937
0.045155	0.023784	-0.011872	0.037374	-0.141838	-0.053362
0.051148	-0.018231	0.148753	-0.068245	-0.028334	-0.037625

0.013087	-0.004474	0.006518	0.006117	-0.013304	-0.000681
0.002791	0.000236	0.001393	0.180655		
0.067067	-0.065933	0.010156	-0.038999	0.038897	0.002152
-0.106398	0.078105	0.316250	0.130271	0.012373	-0.061875
0.005206	0.025805	-0.064345	-0.002490	-0.037839	0.048484
-0.004488	0.009447	-0.008603	0.010301	-0.004612	-0.000502
-0.005736	0.002419	-0.001709	-0.007447	-0.002001	-0.003069
-0.001265	0.000801	0.005407	-0.001469	0.001548	-0.000369
0.000012	0.000612	0.000318	0.182724		
0.039373	-0.040571	0.009850	-0.030670	0.018409	-0.003404
-0.026290	0.013955	-0.013064	-0.009513	0.008919	0.008341
0.026476	-0.020312	0.003885	0.002929	-0.001362	-0.000603
-0.017493	-0.022919	-0.015351	0.019584	0.016102	0.038891
0.141513	-0.173208	-0.078190	-0.006883	-0.044469	-0.005130
0.018728	-0.007946	0.038445	0.007398	-0.007763	-0.002835
0.001149	-0.000065	0.000305	0.180175		
0.043498	-0.052211	0.007848	-0.032273	0.021464	-0.008154
-0.022235	0.009416	-0.024117	-0.016214	0.008410	0.013831
0.049006	-0.012342	0.005061	0.007574	0.000600	0.006382

-0.118666	0.240231	0.073082	-0.064176	0.004708	0.001205
-0.020844	-0.010193	-0.008259	-0.007575	-0.010987	-0.002645
0.011581	-0.002260	0.009484	0.001780	-0.003048	-0.001877
0.000411	0.000041	0.000444	0.180538		
0.062151	-0.010886	0.009704	-0.027294	0.018058	0.004945
-0.016202	0.016751	-0.017984	0.002766	0.000320	-0.028396
0.014867	-0.018397	0.022602	-0.013280	0.000138	0.002506
-0.025905	-0.006060	-0.002783	0.024028	-0.020584	-0.041320
0.109695	0.132509	-0.066034	0.061039	-0.032582	-0.017434
0.089925	-0.082511	-0.050351	0.006190	-0.017736	-0.006058
0.000519	-0.001016	0.000401	0.181858		
0.061088	-0.018538	0.000429	-0.032838	0.035713	-0.019470
-0.004480	0.007293	-0.025330	0.053247	0.001359	-0.012316
0.036662	-0.019846	0.070850	-0.047348	-0.062940	0.017490
0.048267	-0.018408	0.009642	-0.065953	0.194443	0.054823
0.004993	-0.003665	0.075575	-0.036569	0.005095	-0.026799
0.035779	-0.031813	-0.052859	0.014997	-0.007877	-0.002075
-0.001419	-0.000297	-0.000443	0.181499		

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

ABLE

AM

ANYONE

COMPUTER

CONCERN

CONCERNS

DON'T

FEEL

FIND

GREATEST

I

I'M

KNOW

ME

OVER

PEOPLE

REALLY

SOMEONE

SOMETHING

THINGS

THINK

WANT

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Figure 7-3-10 the Result of .CRD Files for E-retailer Policy (New Name AS: com6fe.crd)

(6f12.6) 40 40 40

0.136786	-0.025538	-0.008398	0.001355	-0.016803	0.020025
-0.008273	-0.025211	-0.020052	-0.003818	-0.018884	0.002214
-0.020244	-0.009394	-0.023116	0.003559	-0.012336	0.082352
0.032015	-0.050434	-0.172264	-0.052752	-0.055098	0.010041
-0.028217	-0.008003	0.008152	-0.020831	-0.005983	-0.014128
-0.002918	-0.009288	-0.010096	-0.005998	0.002588	0.000251
-0.000541	-0.000053	-0.000009	0.237501		

0.147241	-0.039523	-0.037833	-0.014078	-0.022498	-0.128507
-0.031012	0.029423	0.011106	0.008949	-0.034954	-0.137161
0.084501	0.052099	0.030976	-0.020658	0.015752	0.004631
0.002223	0.003221	0.002760	-0.024116	-0.016233	-0.041690
0.003370	0.002262	0.021664	-0.011639	-0.002873	0.007050
-0.028359	-0.008501	-0.002779	-0.019205	-0.076256	-0.060822
-0.010038	0.000086	-0.001829	0.240481		
0.145628	-0.018518	-0.034733	-0.013686	-0.092926	-0.021579
0.179350	0.054760	0.065047	-0.001618	0.020535	0.023258
-0.012793	0.003511	0.002508	-0.001740	-0.002548	-0.004328
-0.000183	-0.000355	-0.000986	-0.002089	-0.000269	0.007184
-0.004596	-0.000884	-0.002243	0.000330	0.001716	-0.001760
0.002408	-0.002151	-0.000697	-0.001311	0.005992	-0.013036
-0.001007	-0.001685	-0.083434	0.239834		
0.145664	-0.019245	-0.034898	-0.014371	-0.093422	-0.023134
0.180419	0.053737	0.066964	-0.001748	0.020813	0.022227
-0.012713	0.004552	0.004370	-0.001601	-0.001875	-0.004664
-0.001944	-0.000017	-0.001603	-0.002358	0.000362	0.008028
-0.004836	-0.002386	-0.001974	0.000179	0.001860	-0.003345

0.003584	-0.003035	-0.000589	-0.002772	0.011155	-0.029870
0.000927	0.002056	0.080830	0.239815		
0.145987	-0.046136	-0.041814	-0.038728	0.024682	-0.168683
-0.085162	0.041379	0.037028	0.007009	0.011664	0.089757
-0.045403	-0.013283	-0.002540	-0.000004	-0.006770	-0.005082
-0.000529	-0.001152	-0.000830	0.000002	0.004573	0.014846
-0.004137	-0.001023	-0.004013	0.002141	0.005809	-0.004162
0.009066	0.003424	-0.000753	0.002793	0.016427	0.010136
-0.095730	-0.000256	0.000887	0.239682		
0.139263	-0.039547	-0.025383	-0.004795	-0.000241	-0.020407
-0.004753	-0.003135	-0.015732	-0.007518	-0.015614	-0.104861
0.060046	0.027563	0.001168	0.004369	-0.003135	-0.006860
-0.020637	0.007226	-0.018489	0.025722	0.059366	0.146363
-0.037151	-0.028541	-0.029811	0.011589	0.014205	-0.027839
0.045172	0.010327	-0.003852	0.007382	0.026311	0.023671
-0.001357	-0.000268	-0.000073	0.237370		
0.305033	0.695894	0.009417	-0.012058	-0.004978	-0.021988
0.002173	0.024405	-0.048538	0.000246	-0.001997	0.004007
-0.002284	0.010490	-0.005001	-0.001777	0.002093	0.003854

-0.004772	-0.002648	-0.000022	-0.005136	0.009792	0.001650
0.006026	0.000774	-0.000151	0.000950	-0.002384	0.001229
-0.003044	0.001867	-0.002167	-0.006885	0.001578	0.004022
0.000462	-0.000083	0.000263	0.275308		
0.135869	-0.039372	-0.013163	-0.001832	-0.021007	0.018012
-0.007852	-0.007974	-0.024237	0.002067	-0.007908	-0.000919
0.006178	-0.015662	-0.020395	-0.005107	-0.022592	0.093002
0.063069	-0.088255	0.125034	-0.097681	0.007262	0.014789
-0.027712	-0.008756	0.017215	0.007191	0.013391	0.011670
0.028319	-0.010098	0.003701	0.002969	0.006765	0.007036
0.001231	0.000027	0.000560	0.236571		
0.145043	-0.047056	-0.042140	-0.036522	0.023913	-0.159152
-0.081732	0.039010	0.033998	0.003952	0.014117	0.074993
-0.036369	-0.010118	-0.000166	0.000188	-0.001719	-0.005111
-0.001358	-0.000773	-0.002982	-0.000327	0.005867	0.018360
-0.005744	-0.004054	-0.002165	0.000980	0.005453	-0.005046
0.006608	0.001554	-0.000587	-0.000708	-0.004731	-0.003428
0.104584	0.000312	-0.001053	0.239225		
0.135675	-0.037667	-0.024500	-0.008873	-0.038023	-0.022287

0.035844	0.015782	0.015004	0.003906	-0.005028	-0.025173
0.010830	0.002046	0.002154	-0.000932	0.002457	-0.000313
0.001283	0.001193	-0.002057	0.005008	-0.008793	-0.029440
0.007858	0.012414	0.000254	-0.001696	-0.005675	0.013944
-0.016781	0.015501	0.002196	0.016989	-0.062608	0.160210
0.002826	0.000210	0.007458	0.237228		
0.138237	-0.028118	-0.015733	-0.003493	-0.016355	0.020969
-0.004371	-0.006093	-0.017958	-0.001960	-0.009316	0.007207
-0.003268	-0.027635	-0.009787	0.020102	0.015190	0.027514
-0.007411	0.019467	0.016074	0.048843	-0.027349	0.033050
0.105760	-0.067537	0.129724	-0.046155	0.005251	-0.028159
0.026178	-0.006278	-0.006510	-0.001256	-0.005390	0.000626
-0.001115	-0.002981	-0.000135	0.235613		
0.170089	0.108217	-0.024975	0.005160	-0.029544	0.063651
-0.078329	-0.145325	0.240902	0.008210	0.034278	-0.018795
0.025303	-0.036867	0.006188	0.004126	-0.001516	-0.011822
0.004718	0.000009	0.001028	-0.007973	0.000942	0.000475
0.001973	0.001830	-0.000685	-0.000652	0.002427	-0.000583
0.002088	0.001110	0.002136	0.009054	-0.002077	-0.004747

-0.000630	-0.000323	-0.000496	0.244004		
1.157145	-0.033718	-0.003818	-0.001175	-0.001656	-0.000195
0.000776	-0.005473	-0.002020	-0.000469	0.000697	-0.000018
-0.000355	-0.000495	-0.000750	0.000654	0.000305	0.001428
-0.000213	-0.000088	0.000266	0.001481	0.000273	0.000240
0.001539	-0.000243	0.002087	-0.001911	-0.000426	-0.001634
0.001288	0.001024	-0.000480	0.000294	-0.000303	0.000223
-0.000363	0.086150	-0.001762	-0.589595		
0.139570	-0.031450	-0.009750	0.002502	-0.024637	0.030546
-0.000936	-0.026805	-0.039251	-0.015025	-0.053025	0.153446
0.203481	-0.001459	0.040024	-0.012065	-0.002045	-0.019552
-0.007626	0.003905	-0.008850	-0.003752	-0.001788	-0.002701
-0.007618	0.002628	-0.004070	-0.003521	0.003766	0.005549
0.000614	-0.002637	-0.002777	0.000704	-0.000766	-0.001419
-0.000162	0.000263	0.000072	0.238491		
0.170406	-0.027822	-0.004320	-0.012808	-0.056977	0.156043
-0.121817	0.247522	0.048256	0.020887	-0.005659	-0.007614
0.000698	-0.005998	0.008735	-0.004631	-0.000410	-0.009104
-0.002619	0.005447	-0.005066	0.000718	-0.001817	-0.002148

-0.006391	0.003337	-0.006492	-0.000429	0.003326	0.002572
-0.000033	-0.002521	-0.001504	0.000073	0.001711	-0.004677
-0.000340	0.000810	0.000112	0.232059		
0.134718	-0.042920	0.006504	-0.001040	-0.015584	0.014966
-0.005595	-0.023237	-0.030481	0.056226	0.039137	0.000224
-0.006755	-0.003682	0.001842	0.004188	-0.011418	0.008414
-0.004272	0.001569	-0.000986	0.018692	0.027025	-0.016098
-0.028549	0.014191	0.030579	-0.002636	-0.051474	0.050969
0.018883	0.129111	-0.095627	-0.009273	0.001864	-0.016588
0.000139	-0.000973	-0.000264	0.236092		
0.155020	-0.043090	0.193143	-0.010325	-0.007597	-0.001843
-0.000091	-0.023024	-0.035112	0.196668	0.124877	0.007611
0.014200	0.041988	0.029947	0.006964	0.009933	-0.008954
-0.000006	0.000358	-0.005948	-0.007541	-0.009320	0.009401
0.005523	-0.002850	-0.004510	-0.006211	0.015058	0.001987
0.001607	-0.039033	0.027829	0.002089	-0.000599	0.003121
-0.000318	-0.000075	-0.000052	0.241677		
0.164845	-0.004335	-0.021898	0.341578	0.113257	-0.020008
0.023970	0.039693	0.025406	0.012334	0.005565	0.006723

0.001969	0.004524	-0.001284	-0.000179	0.002402	0.000010
-0.004112	-0.003436	0.000290	-0.004210	-0.000861	-0.000947
0.001636	-0.000416	0.001784	-0.001784	-0.003135	0.000839
0.001584	-0.001009	0.000162	-0.000950	0.000771	0.001338
-0.000033	0.000187	0.000149	0.241899		
0.131842	-0.041697	-0.006616	0.003553	-0.015076	0.014490
-0.005876	-0.017023	-0.024546	0.020697	0.005906	0.000518
0.000207	-0.010667	-0.015182	-0.019636	0.000235	0.012072
0.014411	-0.011987	0.017745	0.002660	-0.001010	-0.012410
0.054374	0.011946	-0.044946	0.066054	0.010467	-0.146093
-0.068277	0.031603	-0.044982	-0.010182	0.003302	-0.003430
0.000224	-0.000179	-0.000161	0.236487		
0.141898	0.005984	-0.011311	0.004918	-0.013455	0.009632
-0.010455	-0.027032	-0.014561	-0.000943	-0.007692	-0.000701
-0.009996	-0.000893	-0.032875	0.002086	-0.003592	0.027784
-0.009613	0.025033	0.053493	0.103530	-0.138344	0.007376
-0.085545	-0.018066	-0.031134	0.009174	0.003796	0.002538
0.002907	-0.020844	-0.015672	-0.030585	-0.006470	-0.002605
-0.000432	0.000388	0.000076	0.238300		

0.148157	-0.038249	-0.002298	0.003790	-0.004888	0.022481
-0.030700	-0.006949	-0.042975	-0.176239	0.199685	-0.000728
0.007627	0.060529	0.040942	-0.003653	0.009921	0.000643
0.005679	0.004592	-0.001863	-0.007325	-0.006428	-0.008009
0.002218	-0.003093	0.000857	-0.001170	0.003583	0.000203
-0.001460	-0.002967	0.000293	0.000299	-0.001628	0.000145
-0.002170	-0.000926	-0.000065	0.236986		
0.144197	-0.022139	-0.022843	-0.030446	0.060630	0.018765
0.016000	-0.004014	-0.025108	-0.005954	0.002278	-0.022786
0.003401	-0.005856	-0.070513	0.082551	-0.060222	-0.131174
-0.034507	-0.064693	-0.000542	-0.038784	-0.038190	-0.020781
-0.001584	0.000533	0.003909	-0.027607	0.078181	-0.010017
0.019568	0.023553	-0.006259	-0.004305	-0.005558	-0.005106
-0.000120	0.000000	-0.000058	0.238024		
0.136569	-0.037685	-0.001297	-0.000177	-0.011984	0.020111
-0.002484	-0.029413	-0.034579	-0.002231	0.003734	-0.006018
-0.028217	-0.051680	-0.060672	-0.197968	0.058390	-0.058583
-0.050518	-0.016974	-0.001824	-0.025889	-0.002445	0.005903
-0.004425	-0.008685	0.006289	-0.012345	0.006837	0.016424

0.004838	-0.008611	0.000208	0.000014	-0.000117	-0.001260
-0.000423	0.000294	-0.000016	0.237705		
0.141297	-0.039674	-0.017485	-0.002213	-0.013543	0.054211
-0.020270	-0.050809	0.020370	0.000317	-0.084830	0.051128
-0.067777	0.220201	-0.028173	-0.006404	0.026050	-0.005226
-0.015200	0.008143	0.011046	-0.013446	0.013071	0.000487
0.006651	-0.001753	0.002700	-0.010856	0.000219	0.000685
-0.003610	0.003588	0.000535	-0.000311	0.001374	0.000967
0.000572	-0.000270	-0.000174	0.238293		
0.137481	-0.035747	-0.026079	-0.009808	-0.016753	-0.051354
-0.013649	0.001553	-0.004270	0.003226	-0.021240	-0.074421
0.039266	0.017959	0.010704	-0.005571	0.000379	0.000850
-0.005235	0.000747	0.001083	0.006139	-0.031094	-0.070088
0.031389	0.017951	0.001518	-0.002603	-0.017214	0.017881
0.002101	-0.009359	0.004234	0.020763	0.148330	0.024453
0.009621	0.000352	-0.000761	0.237788		
0.137949	-0.032133	-0.015396	-0.001856	-0.012558	0.011693
-0.000271	-0.017985	-0.030158	-0.007026	-0.022780	-0.001476
-0.023829	-0.052866	0.022886	0.098283	0.201466	-0.014999

-0.015667	0.000814	0.006939	-0.032721	0.004268	-0.003552
-0.021265	0.001872	-0.015367	0.001990	-0.001574	0.002001
-0.004059	-0.002789	-0.004019	-0.000671	0.003041	-0.003525
-0.001546	0.000009	-0.000364	0.237605		
0.137193	-0.002668	-0.011321	0.002070	-0.007250	0.006910
-0.000810	-0.009874	-0.034870	-0.000335	-0.008635	-0.001660
-0.011651	-0.010314	-0.016941	0.003582	-0.008100	0.014220
0.004707	0.002080	-0.000587	0.034631	-0.005077	-0.014451
-0.013767	0.000443	-0.008505	0.005259	-0.003472	-0.007957
-0.000911	0.028755	0.047794	0.168236	-0.024524	-0.034572
-0.000902	-0.000093	-0.000360	0.237162		
0.140251	-0.037744	-0.015909	-0.021212	0.024389	0.016380
-0.000462	-0.007799	-0.014353	-0.005681	0.003936	0.000245
-0.002503	-0.008817	-0.040090	0.038670	-0.036323	-0.055006
-0.027648	-0.044153	0.004460	-0.003617	0.013897	0.017711
-0.008469	-0.018667	0.027034	0.052622	-0.150895	0.007122
-0.041083	-0.061281	0.006772	-0.001781	-0.006950	-0.003088
-0.001204	0.000352	-0.000020	0.235186		
1.138988	-0.033678	-0.004243	-0.000141	-0.002638	-0.000392

0.001021	-0.002367	-0.001565	0.000753	-0.002254	-0.000162
-0.000309	-0.001283	-0.000362	-0.000487	-0.000794	-0.000685
0.000677	0.000284	-0.000310	-0.000629	-0.000257	-0.000645
-0.001445	0.000623	-0.002578	0.002095	0.000527	0.001409
-0.001259	-0.000593	0.000813	0.000091	0.000353	0.000092
0.000427	-0.087369	0.001795	-0.584746		
0.147041	-0.006170	-0.019239	-0.011967	0.040083	0.033264
0.012232	-0.029737	-0.023000	-0.001698	-0.058802	-0.007915
-0.076044	-0.016389	0.212215	-0.030025	-0.032365	-0.051164
0.024836	-0.042775	0.000834	0.011731	-0.020183	0.009671
-0.007816	-0.003000	0.011095	0.013696	0.005299	-0.003718
0.006895	-0.002730	-0.000387	-0.000814	-0.002051	-0.000200
0.000052	0.000388	-0.000325	0.239808		
0.133118	-0.039362	-0.014348	0.000607	-0.009572	0.010581
-0.004530	-0.018198	-0.022292	-0.005823	-0.008036	-0.001481
-0.015871	-0.026407	-0.002103	0.011294	-0.020488	0.012398
0.023187	-0.029135	0.016841	0.035021	0.028469	0.024946
0.055427	-0.019708	-0.098315	-0.121692	-0.011069	0.046939
-0.076741	-0.008350	-0.011016	-0.007992	-0.000593	-0.010551

-0.000635	0.000010	-0.000015	0.236429		
0.135156	-0.036208	-0.013412	0.001205	-0.011495	0.018634
-0.002849	-0.027850	-0.030195	-0.001890	-0.013800	-0.003448
-0.033544	-0.038834	0.033556	0.023342	-0.068336	0.050518
-0.132147	0.116495	0.015982	-0.089353	-0.001836	-0.000292
-0.005140	-0.000931	-0.012670	-0.007460	0.006157	0.000192
-0.016506	-0.009160	-0.001506	0.000638	-0.001459	-0.001443
0.000166	0.000297	-0.000367	0.237198		
0.172935	-0.034234	0.387365	-0.007648	0.027371	-0.033007
0.015543	0.020419	0.048140	-0.096999	-0.069583	-0.006207
-0.004777	-0.017020	-0.010949	0.001642	-0.004689	0.003025
0.000114	0.000759	0.004703	0.001822	0.002937	-0.002472
-0.001842	-0.002254	0.001560	0.001149	-0.004987	-0.002316
-0.000603	0.015299	-0.008554	-0.000301	0.001057	-0.000283
0.000589	-0.000061	-0.000036	0.245990		
0.135222	-0.027565	-0.011634	0.003351	-0.012909	0.012504
-0.004036	-0.022312	-0.019223	0.002553	-0.005115	-0.002987
-0.015106	-0.018435	-0.008730	0.004880	-0.019314	0.013286
0.003692	0.002662	-0.013814	0.054916	0.113925	-0.101279

-0.076411	-0.076063	0.015242	-0.016922	0.029440	-0.036397
0.012300	-0.038745	0.001962	-0.021513	0.002038	0.003162
-0.000366	-0.000241	-0.000303	0.236879		
0.134040	-0.038061	-0.010792	0.003628	-0.009576	0.010841
-0.003448	-0.018283	-0.016797	-0.006183	-0.011801	-0.001916
-0.010825	-0.011208	-0.022155	0.012985	-0.008490	0.021565
0.003764	-0.005017	-0.025141	0.032180	0.023690	0.010397
0.047110	-0.013825	0.004043	0.122239	0.081446	0.105374
-0.046251	-0.019644	-0.012697	-0.005318	-0.002630	-0.010488
-0.000427	0.001507	0.000014	0.235800		
0.162956	-0.013173	-0.049041	-0.128433	0.293547	0.050894
0.077215	0.034878	0.044320	0.013723	0.014337	-0.002350
0.026623	0.006481	-0.008269	-0.022063	0.023933	0.047364
0.010088	0.026241	-0.000154	0.003962	0.003996	-0.009079
0.002178	0.004887	-0.004146	-0.002834	-0.001640	0.002819
-0.002850	0.000265	-0.000864	-0.001046	-0.001013	-0.000600
-0.000630	-0.000318	0.000043	0.243008		
0.137783	-0.018596	-0.011997	0.007334	-0.009653	0.009843
-0.000837	-0.019166	-0.035701	-0.000635	-0.015567	-0.007841

-0.016031	-0.019232	-0.034382	-0.001560	-0.017906	-0.069813
0.153950	0.133342	-0.001680	-0.044386	-0.002819	0.012506
-0.011207	0.001273	0.008500	-0.001359	-0.006935	0.005155
-0.003863	-0.010577	-0.003355	-0.002775	0.004767	-0.000476
0.000331	0.000745	0.000340	0.237880		
0.133439	-0.030800	-0.009983	-0.000904	-0.014179	0.009671
-0.003681	-0.018124	-0.023130	-0.005333	-0.013338	-0.004488
-0.012581	-0.011878	-0.012825	0.005212	-0.009235	0.012077
0.003058	0.003732	-0.011453	0.015477	0.005506	-0.037409
0.077243	0.030465	-0.080288	0.023520	-0.033757	0.002663
0.144004	-0.028005	-0.005561	-0.016472	-0.035193	-0.012264
-0.000891	-0.000290	-0.000185	0.236549		
0.134527	-0.031061	-0.006513	0.002631	-0.011364	0.011948
-0.004325	-0.020042	-0.022002	-0.010261	-0.005581	-0.002941
-0.013846	-0.017396	-0.015750	0.007374	-0.009613	0.015808
-0.005910	-0.005384	0.002721	0.049473	0.039373	0.020332
-0.020018	0.173308	0.057294	-0.030774	0.020421	-0.013941
-0.011806	-0.044459	-0.003754	-0.008264	-0.002306	-0.005910
-0.000094	-0.000581	0.000138	0.236557		

0.131952	-0.035712	-0.014373	-0.000031	-0.012197	0.014174
-0.005546	-0.014965	-0.019563	-0.001924	-0.005077	-0.001160
-0.004954	-0.017351	-0.011252	0.002309	-0.005865	0.012419
0.002378	0.000149	-0.003835	0.017238	0.004817	-0.001539
0.004524	0.011222	0.001540	0.013415	-0.015898	-0.000688
-0.009420	0.087449	0.149966	-0.069692	0.004030	-0.007736
-0.000322	0.000132	-0.000309	0.235878		

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

BROWSER

COLLECT

COM

CONTACT

COOKIES

DATA

NAME

ORDER

PERSONALLY

PLEASE

POLICY

PROVIDE

SERVICE

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Figure 7-4-5: New CRD File for User's Perception (n_user6fe.crd)

(6F12.4) 40 40 40

-0.1179	-0.0328	-0.0044	-0.0068	0.0219	-0.0101
-0.0152	0.0235	-0.0056	-0.0070	-0.0109	0.0000
0.0073	0.0056	0.0278	0.0012	0.0133	-0.0307
-0.0340	-0.0459	0.0485	-0.0246	-0.0147	-0.0153
0.0069	0.0320	-0.0596	-0.1104	-0.0640	-0.0150
-0.1535	-0.0274	-0.0711	0.0291	-0.0077	-0.0047
0.0004	0.0002	0.0001	0.0295		
-0.1051	-0.0304	-0.0060	-0.0364	-0.0059	-0.0019
-0.0295	0.0180	-0.0479	-0.0260	0.0455	-0.0662
-0.0523	0.0064	-0.0122	0.1169	-0.0279	0.0321
-0.0151	-0.0177	-0.0745	-0.0788	-0.0150	-0.0048
-0.0285	-0.0124	0.0002	0.0707	-0.0023	-0.1673
-0.0290	0.0191	-0.0018	0.0023	-0.0034	-0.0062
-0.0040	-0.0007	-0.0001	0.0298		
-0.0493	-0.0689	-0.0791	-0.0589	-0.3074	0.0126
0.0545	-0.0359	0.0186	0.0118	-0.0175	0.0049
0.0029	0.0161	-0.0063	-0.0574	0.0117	-0.0098

-0.0101	-0.0013	-0.0135	-0.0078	-0.0047	-0.0007
-0.0005	-0.0012	0.0016	-0.0004	0.0015	-0.0037
-0.0007	0.0000	0.0039	0.0017	-0.0018	-0.0113
-0.1336	0.0058	-0.0006	0.0410		
-0.0451	-0.0720	-0.0787	-0.0601	-0.3170	0.0133
0.0595	-0.0400	0.0243	0.0119	-0.0193	0.0131
0.0131	0.0145	-0.0135	-0.0890	0.0198	-0.0164
-0.0213	-0.0077	-0.0267	-0.0234	-0.0042	0.0013
-0.0063	-0.0021	0.0010	0.0095	-0.0001	-0.0178
-0.0032	0.0010	0.0007	0.0000	-0.0009	0.0105
0.1208	-0.0023	0.0001	0.0412		
-0.1161	-0.0212	0.0068	-0.0292	0.0279	-0.0015
-0.0366	0.0341	-0.0664	-0.0331	0.0564	-0.0813
-0.0613	0.0030	-0.1046	-0.0682	0.0032	-0.0063
0.0357	0.0085	0.0181	0.0013	0.0013	0.0056
-0.0042	0.0009	-0.0007	-0.0040	-0.0083	0.0134
0.0008	-0.0021	-0.0028	0.0020	0.0000	0.1483
-0.0122	0.0009	0.0005	0.0289		
-0.1106	-0.0146	0.0052	-0.0286	0.0204	0.0019

-0.0220	0.0127	-0.0193	-0.0254	0.0224	-0.0256
-0.0060	-0.0037	0.0221	0.0584	-0.0064	0.0131
-0.0793	-0.0466	-0.1513	-0.1273	-0.0258	-0.0207
-0.0213	0.0068	0.0055	-0.0592	0.0058	0.1208
0.0380	-0.0182	0.0169	-0.0025	-0.0048	0.0032
0.0002	0.0013	0.0001	0.0294		
0.0209	-0.0627	-0.3515	0.4059	0.0181	0.0181
0.0240	-0.0119	0.0162	0.0129	-0.0054	0.0010
-0.0631	-0.1098	-0.0083	0.0102	-0.0204	0.0106
-0.0048	0.0038	0.0083	-0.0043	-0.0024	0.0036
0.0002	-0.0015	-0.0032	-0.0059	0.0012	0.0009
0.0073	-0.0031	0.0024	0.0009	-0.0011	0.0006
0.0013	-0.0002	-0.0001	0.0500		
0.1241	0.0205	0.4367	0.3407	-0.1343	-0.0886
-0.0343	-0.0122	-0.0031	0.0009	0.0011	0.0016
0.0002	0.0061	-0.0114	0.0056	-0.0065	0.0000
0.0071	-0.0016	0.0012	-0.0075	0.0022	-0.0011
-0.0059	-0.0004	0.0007	0.0012	-0.0006	-0.0007
-0.0010	-0.0133	0.0084	0.0083	0.0026	-0.0002

-0.0002	0.0007	-0.0012	0.0333		
-0.1046	-0.0105	0.0071	-0.0371	0.0326	-0.0032
-0.0427	0.0393	-0.0855	-0.0415	0.0713	-0.1118
-0.0882	-0.0006	-0.1486	-0.0972	0.0069	-0.0118
0.0511	0.0104	0.0226	-0.0012	0.0025	0.0005
-0.0136	-0.0018	0.0007	-0.0179	0.0013	0.0270
0.0066	-0.0015	0.0081	0.0014	-0.0017	-0.1088
0.0092	-0.0001	-0.0003	0.0311		
-0.0542	-0.0581	-0.0363	-0.0694	-0.1676	0.0029
0.0062	-0.0032	-0.0241	-0.0126	0.0249	-0.0610
-0.0551	0.0386	0.0327	0.2171	-0.0505	0.0394
0.0776	0.0203	0.0843	0.0655	0.0185	0.0000
0.0026	0.0041	-0.0017	-0.0278	-0.0001	0.0608
0.0137	-0.0102	0.0014	0.0022	0.0027	0.0004
0.0163	-0.0114	0.0020	0.0309		
-0.0638	0.0085	-0.0090	-0.0396	-0.0138	0.0097
-0.0051	0.0245	0.0032	-0.0626	0.0600	0.1598
0.1855	-0.1112	-0.1580	0.0652	-0.0148	0.0101
0.0557	-0.0338	0.0093	-0.0091	0.0047	-0.0144

-0.0256	0.0162	0.0029	0.0048	-0.0087	0.0010
0.0039	-0.0021	-0.0044	0.0019	-0.0010	-0.0014
-0.0017	-0.0008	0.0000	0.0350		
-0.0693	-0.0457	-0.1351	0.1521	0.0569	0.0141
-0.0176	0.0430	-0.0406	-0.0228	0.0243	-0.0014
0.1390	0.2749	0.0017	-0.0080	0.0315	-0.0006
0.0322	0.0007	-0.0170	0.0108	-0.0013	-0.0059
-0.0057	-0.0008	0.0039	0.0079	0.0009	-0.0025
0.0057	-0.0019	0.0071	-0.0003	0.0000	-0.0032
-0.0004	0.0005	0.0002	0.0354		
0.0365	-0.0311	0.1348	0.0275	0.0758	0.3612
0.2195	-0.0233	0.0241	0.0188	0.0052	-0.0032
-0.0209	0.0200	-0.0228	0.0103	-0.0464	-0.0406
-0.0050	0.0035	0.0033	-0.0040	0.0072	-0.0079
0.0002	-0.0050	-0.0018	0.0012	-0.0033	0.0001
-0.0021	0.0019	-0.0014	-0.0026	0.0005	-0.0004
0.0004	0.0111	-0.0005	0.0139		
-0.1164	-0.0162	0.0077	-0.0135	0.0152	-0.0004
-0.0156	0.0158	-0.0133	-0.0113	0.0037	0.0069

0.0032	-0.0135	0.0205	-0.0063	0.0032	-0.0036
-0.0286	-0.0084	-0.0090	0.0307	-0.0077	0.0286
0.0077	0.0066	0.0063	-0.0056	0.0059	-0.0060
0.0050	0.0028	-0.0245	-0.0484	0.2024	-0.0033
-0.0005	0.0009	-0.0005	0.0295		
0.6857	-0.1331	-0.0208	-0.0356	0.0064	-0.0312
-0.0274	0.0103	-0.0103	-0.0044	0.0022	-0.0013
-0.0002	-0.0029	0.0069	0.0115	-0.0006	0.0049
0.0022	0.0000	0.0048	0.0070	0.0004	0.0034
0.0015	0.0020	-0.0004	-0.0007	-0.0006	0.0022
0.0019	0.0006	-0.0013	0.0000	-0.0015	-0.0001
0.0068	0.1127	-0.0222	-0.4231		
-0.1119	-0.0100	0.0088	-0.0168	0.0184	-0.0059
-0.0223	0.0211	-0.0220	-0.0098	0.0026	0.0033
-0.0030	-0.0208	0.0271	-0.0143	0.0020	-0.0075
-0.0758	-0.0262	-0.0176	0.1208	0.0617	-0.0992
-0.0901	-0.0381	-0.0024	-0.0109	-0.0049	-0.0209
-0.0006	-0.0676	0.0230	-0.1136	-0.0368	0.0008
-0.0002	0.0002	0.0000	0.0297		

-0.1157	-0.0151	0.0046	-0.0169	0.0206	0.0026
-0.0214	0.0222	-0.0146	-0.0112	0.0073	0.0002
0.0001	-0.0199	0.0292	-0.0121	0.0030	-0.0081
-0.0691	-0.0180	-0.0251	0.1008	0.0461	-0.0758
-0.0451	-0.0060	0.0017	0.0175	-0.0011	0.0071
0.0216	0.0659	0.0040	0.1651	0.0196	-0.0009
0.0010	-0.0003	-0.0001	0.0281		
-0.0953	-0.0221	0.0039	-0.0146	0.0230	-0.0034
-0.0324	0.0273	0.0504	0.0146	0.0076	0.0132
-0.0193	-0.0444	0.0595	0.0372	0.1278	-0.1947
0.1294	0.0807	-0.0849	0.0110	0.0106	0.0006
-0.0083	0.0033	-0.0023	-0.0007	-0.0050	-0.0054
-0.0032	-0.0079	0.0035	0.0014	-0.0039	-0.0002
0.0002	0.0004	0.0003	0.0321		
-0.1145	-0.0329	0.0051	-0.0238	0.0338	-0.0242
-0.0106	0.0339	0.0358	-0.0035	-0.0087	-0.0090
0.0017	-0.0007	0.0550	-0.0002	0.0380	-0.0997
-0.0192	-0.1091	0.1706	-0.0966	-0.0533	-0.0333
-0.0416	-0.0316	0.0017	0.0126	0.0282	-0.0136

0.0736	0.0114	0.0197	-0.0015	0.0003	0.0010
-0.0013	0.0003	0.0002	0.0301		
0.0169	0.1530	-0.0018	-0.0267	0.0094	0.0010
-0.0269	0.0594	0.0854	-0.1803	0.0545	0.1907
-0.1511	0.0612	0.0626	-0.0514	-0.0629	0.0336
0.0294	0.0130	-0.0014	-0.0059	-0.0088	0.0195
-0.0079	0.0036	-0.0080	0.0055	-0.0034	-0.0018
0.0070	-0.0093	-0.0036	0.0039	-0.0098	-0.0019
0.0001	0.0002	-0.0002	0.0443		
-0.1132	-0.0130	0.0051	-0.0187	0.0224	0.0011
-0.0182	0.0139	-0.0201	0.0102	-0.0005	0.0088
0.0060	-0.0163	0.0376	-0.0126	-0.0094	-0.0023
-0.0105	-0.0253	0.0210	-0.0067	0.0543	0.0190
0.0547	0.1034	0.0142	0.0061	-0.0369	0.0019
-0.0514	0.0610	0.1685	-0.0266	-0.0022	0.0000
0.0011	0.0001	0.0006	0.0291		
-0.0943	-0.0139	0.0074	-0.0272	0.0395	0.0058
-0.0422	0.0423	-0.0261	-0.0453	-0.3344	0.0167
-0.0276	0.0168	-0.0706	0.0167	-0.0244	0.0080

0.0308	0.0072	-0.0117	-0.0079	0.0015	-0.0001
-0.0122	-0.0025	0.0008	0.0023	-0.0051	-0.0019
0.0098	-0.0031	0.0045	0.0043	0.0000	0.0003
0.0004	0.0000	0.0001	0.0319		
-0.0430	-0.0270	0.0415	-0.0095	0.0322	0.0777
0.0196	-0.0094	0.0079	-0.0117	-0.0100	-0.0025
-0.0044	-0.0395	0.0510	-0.0150	0.2237	0.1950
0.0478	-0.0055	0.0180	-0.0113	-0.0038	0.0041
-0.0190	-0.0061	0.0005	-0.0025	0.0000	-0.0017
0.0019	-0.0054	0.0026	0.0044	-0.0039	-0.0008
-0.0002	-0.0042	-0.0084	0.0199		
0.6765	-0.1266	-0.0074	-0.0265	0.0219	-0.0011
-0.0047	0.0046	-0.0022	-0.0002	0.0004	0.0026
0.0027	0.0010	-0.0012	-0.0110	-0.0154	-0.0171
-0.0082	0.0000	-0.0057	-0.0016	-0.0019	-0.0017
0.0035	0.0001	0.0003	0.0003	0.0012	-0.0011
-0.0014	0.0016	0.0004	-0.0015	0.0005	0.0010
-0.0046	-0.0812	-0.0707	-0.4185		
-0.0497	0.0608	0.0051	-0.0310	0.0311	-0.0210

0.0112	-0.0065	-0.0670	0.1170	-0.0012	-0.0062
0.0502	-0.0360	0.0953	-0.0701	-0.1140	0.0486
0.1099	0.0213	-0.0134	-0.0204	-0.0505	-0.0111
-0.0791	-0.0131	-0.1148	0.0451	0.0115	0.0300
-0.0189	0.0124	0.0110	-0.0024	0.0061	-0.0007
-0.0002	0.0005	0.0002	0.0355		
-0.0763	0.0337	0.0123	-0.0169	0.0197	0.0139
-0.0101	0.0049	-0.0159	-0.0090	-0.0003	-0.0278
0.0353	-0.0221	0.0202	0.0059	0.0014	-0.0245
-0.0634	-0.0301	-0.0079	0.0827	-0.0633	0.2148
-0.0707	0.0202	0.0091	0.0004	-0.0078	-0.0053
0.0193	-0.0249	0.0019	0.0149	-0.0380	-0.0034
-0.0003	-0.0018	0.0002	0.0318		
-0.1162	-0.0275	-0.0048	-0.0101	0.0237	-0.0129
-0.0108	0.0131	0.0062	-0.0063	-0.0026	-0.0097
0.0038	-0.0145	0.0187	0.0006	0.0020	-0.0112
-0.0249	-0.0103	0.0202	-0.0097	-0.0026	-0.0014
0.0305	-0.0326	0.0874	0.1659	0.0003	0.0907
-0.1012	-0.0338	-0.0365	-0.0015	-0.0083	-0.0058

-0.0006	0.0004	-0.0002	0.0297		
0.6619	-0.1306	-0.0003	-0.0221	0.0190	0.0002
-0.0065	0.0080	-0.0037	-0.0005	-0.0001	0.0046
0.0003	-0.0035	0.0032	-0.0112	0.0092	0.0051
-0.0032	-0.0022	-0.0032	-0.0030	0.0009	0.0006
-0.0011	-0.0009	-0.0004	0.0017	-0.0007	-0.0013
-0.0006	-0.0009	-0.0005	0.0001	0.0015	-0.0006
-0.0031	-0.0342	0.0948	-0.4165		
0.5828	0.7633	-0.0612	-0.0088	-0.0344	0.0122
0.0084	-0.0060	0.0013	0.0079	-0.0137	-0.0574
0.0237	-0.0002	-0.0145	0.0182	0.0284	-0.0141
-0.0140	-0.0038	0.0054	-0.0032	0.0055	-0.0157
0.0050	-0.0053	0.0076	-0.0041	0.0054	0.0004
-0.0120	0.0107	0.0012	-0.0030	0.0055	0.0028
0.0001	0.0001	0.0007	0.1055		
-0.1168	-0.0239	0.0152	-0.0157	0.0182	0.0030
-0.0138	0.0177	-0.0140	-0.0112	-0.0020	0.0079
0.0152	-0.0153	0.0040	-0.0015	-0.0034	0.0004
-0.0185	0.0059	-0.0046	0.0250	-0.0070	0.0026

0.0653	0.0142	-0.0184	-0.0327	0.2241	-0.0151
-0.0402	-0.0009	-0.0003	0.0010	-0.0200	0.0026
0.0016	0.0005	0.0011	0.0277		
-0.0449	0.0428	-0.0017	-0.0377	0.0500	-0.0742
0.0400	-0.0324	-0.0867	0.2496	0.0170	0.1655
-0.1127	0.0630	-0.0753	0.0370	0.0441	-0.0018
-0.0339	-0.0089	0.0038	0.0032	-0.0066	0.0104
0.0061	0.0021	0.0113	-0.0011	-0.0007	0.0011
0.0095	-0.0053	-0.0059	0.0039	-0.0039	-0.0003
0.0005	-0.0001	-0.0005	0.0379		
-0.0567	-0.0143	-0.0044	-0.0253	0.0820	0.0071
-0.1137	-0.3967	0.0441	-0.0433	-0.0010	-0.0025
-0.0017	0.0239	-0.0151	-0.0028	-0.0115	-0.0109
0.0102	-0.0053	0.0054	0.0016	0.0030	-0.0070
-0.0045	0.0025	-0.0046	-0.0002	0.0013	-0.0012
0.0003	0.0001	-0.0003	0.0007	0.0009	0.0000
-0.0005	0.0007	0.0010	0.0332		
-0.1088	-0.0222	0.0331	0.0169	0.0006	-0.0093
-0.0197	0.0132	-0.0083	-0.0077	-0.0028	-0.0007

0.0047	-0.0080	0.0170	-0.0007	0.0065	-0.0005
-0.0193	-0.0033	-0.0092	0.0229	0.0053	0.0055
0.0267	0.0121	-0.0070	0.0026	-0.0186	0.0216
0.0248	0.1765	-0.0988	-0.0812	-0.0442	-0.0035
0.0000	-0.0010	0.0008	0.0287		
-0.0564	-0.0232	0.0099	-0.0322	0.1109	-0.2533
0.3276	-0.0407	0.0754	-0.0636	-0.0079	-0.0484
0.0080	0.0074	-0.0195	0.0042	-0.0001	0.0097
0.0081	0.0087	-0.0135	0.0118	-0.0003	-0.0025
0.0015	0.0023	-0.0025	-0.0048	-0.0030	-0.0040
0.0008	0.0028	0.0066	0.0001	0.0005	0.0004
-0.0003	0.0007	0.0005	0.0365		
-0.0894	0.0106	0.0159	-0.0223	0.0217	0.0020
-0.0097	-0.0004	-0.0394	0.0317	0.0023	-0.0024
0.0330	-0.0331	0.0566	-0.0379	-0.0618	0.0262
0.0458	0.0240	-0.0116	0.0371	-0.1418	-0.0536
0.0508	-0.0183	0.1488	-0.0683	-0.0283	-0.0376
0.0131	-0.0046	0.0066	0.0062	-0.0133	-0.0007
0.0028	0.0003	0.0013	0.0306		

-0.0775	-0.0270	0.0097	-0.0317	0.0338	0.0033
-0.1035	0.0761	0.3178	0.1307	0.0121	-0.0623
0.0050	0.0263	-0.0653	-0.0018	-0.0374	0.0487
-0.0038	0.0096	-0.0083	0.0100	-0.0046	-0.0007
-0.0061	0.0023	-0.0017	-0.0075	-0.0020	-0.0031
-0.0013	0.0007	0.0055	-0.0014	0.0015	-0.0004
0.0001	0.0007	0.0003	0.0327		
-0.1052	-0.0016	0.0094	-0.0233	0.0133	-0.0022
-0.0234	0.0120	-0.0115	-0.0091	0.0086	0.0079
0.0263	-0.0198	0.0029	0.0036	-0.0009	-0.0004
-0.0168	-0.0227	-0.0151	0.0193	0.0161	0.0387
0.1412	-0.1733	-0.0782	-0.0070	-0.0445	-0.0051
0.0187	-0.0080	0.0386	0.0075	-0.0078	-0.0029
0.0012	0.0000	0.0002	0.0301		
-0.1011	-0.0133	0.0074	-0.0249	0.0164	-0.0070
-0.0194	0.0074	-0.0226	-0.0158	0.0081	0.0134
0.0488	-0.0119	0.0041	0.0083	0.0010	0.0066
-0.1180	0.2404	0.0733	-0.0645	0.0047	0.0010
-0.0212	-0.0103	-0.0082	-0.0077	-0.0110	-0.0027

0.0115	-0.0024	0.0096	0.0019	-0.0031	-0.0019
0.0005	0.0001	0.0004	0.0305		
-0.0824	0.0280	0.0093	-0.0200	0.0130	0.0061
-0.0133	0.0148	-0.0165	0.0032	0.0000	-0.0288
0.0147	-0.0179	0.0216	-0.0126	0.0006	0.0027
-0.0252	-0.0059	-0.0025	0.0237	-0.0206	-0.0416
0.1094	0.1324	-0.0660	0.0610	-0.0326	-0.0175
0.0899	-0.0826	-0.0502	0.0063	-0.0178	-0.0061
0.0006	-0.0009	0.0003	0.0318		
-0.0835	0.0204	0.0000	-0.0255	0.0306	-0.0183
-0.0016	0.0053	-0.0238	0.0537	0.0010	-0.0127
0.0365	-0.0194	0.0699	-0.0466	-0.0625	0.0177
0.0489	-0.0182	0.0099	-0.0662	0.1944	0.0546
0.0047	-0.0038	0.0756	-0.0367	0.0051	-0.0268
0.0357	-0.0319	-0.0527	0.0151	-0.0079	-0.0021
-0.0014	-0.0002	-0.0005	0.0314		

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

ABLE

AM

ANYONE

COMPUTER

CONCERN

CONCERNS

DON'T

FEEL

FIND

GREATEST

I

I'M

KNOW

ME

OVER

PEOPLE

REALLY

SOMEONE

SOMETHING

THINGS

THINK

WANT

Figure 7-4-6: New CRD File for E-retailer Policy (n_com6fe.crd)

(6F12.4) 40 40 40

-0.0524	-0.0406	0.0105	-0.0090	0.0068	-0.0279
-0.0159	0.0072	-0.0084	-0.0069	-0.0063	0.0086
0.0097	0.0058	0.0244	-0.0018	0.0067	-0.0177
-0.0258	-0.0352	0.0427	-0.0204	-0.0143	-0.0096
0.0068	0.0257	-0.0507	-0.0992	-0.0613	-0.0137
-0.1436	-0.0349	-0.0714	0.0289	-0.0072	-0.0047
0.0004	-0.0011	-0.0009	-0.0178		
-0.0585	-0.0347	0.0060	-0.0377	-0.0124	-0.0209
-0.0257	0.0146	-0.0514	-0.0137	0.0455	-0.0641
-0.0473	0.0013	-0.0097	0.0906	-0.0381	0.0353
0.0068	-0.0148	-0.0724	-0.0836	-0.0216	-0.0042
-0.0418	-0.0153	-0.0133	0.0668	0.0011	-0.1461
-0.0265	0.0109	0.0048	0.0032	-0.0037	-0.0103
-0.0035	-0.0018	-0.0030	0.0024		
-0.0360	-0.0631	-0.0377	-0.0413	-0.2023	-0.0070
0.0340	-0.0278	0.0098	0.0063	-0.0121	0.0068
0.0055	0.0140	-0.0044	-0.0480	0.0074	-0.0073

-0.0085	-0.0038	-0.0101	-0.0093	-0.0044	0.0010
-0.0034	-0.0005	0.0015	0.0017	0.0013	-0.0048
0.0013	-0.0064	0.0047	0.0010	0.0002	-0.0078
-0.0890	0.0081	-0.0024	0.0101		
-0.0287	-0.0690	-0.0396	-0.0466	-0.2014	-0.0094
0.0325	-0.0290	0.0102	0.0061	-0.0120	0.0100
0.0120	0.0116	-0.0071	-0.0636	0.0109	-0.0094
-0.0139	-0.0067	-0.0191	-0.0181	-0.0041	0.0017
-0.0060	-0.0001	0.0001	0.0072	0.0001	-0.0154
-0.0011	-0.0041	0.0030	0.0008	0.0001	0.0055
0.0724	-0.0010	-0.0002	0.0243		
-0.0538	-0.0358	0.0140	-0.0416	0.0183	-0.0180
-0.0413	0.0301	-0.0620	-0.0281	0.0590	-0.0852
-0.0694	0.0013	-0.1158	-0.0726	-0.0025	-0.0006
0.0500	0.0100	0.0213	-0.0050	0.0014	0.0063
-0.0128	-0.0009	-0.0009	-0.0037	-0.0083	0.0108
0.0015	-0.0096	0.0036	0.0019	0.0009	0.1306
-0.0122	-0.0002	0.0040	0.0018		
-0.0458	-0.0432	0.0114	-0.0354	0.0089	-0.0237

-0.0246	0.0085	-0.0150	-0.0122	0.0128	-0.0164
-0.0061	-0.0021	0.0210	0.0499	-0.0114	0.0179
-0.0531	-0.0368	-0.1235	-0.1089	-0.0259	-0.0171
-0.0199	0.0068	0.0029	-0.0457	0.0029	0.0958
0.0312	-0.0275	0.0209	-0.0009	-0.0052	-0.0006
0.0003	0.0024	0.0029	-0.0018		
0.0311	-0.0476	-0.4467	0.5236	0.0291	0.0395
0.0331	0.0000	0.0364	0.0136	-0.0114	0.0073
-0.0896	-0.1393	-0.0167	0.0103	-0.0320	0.0172
-0.0069	0.0133	0.0108	-0.0087	-0.0062	0.0082
0.0079	-0.0076	-0.0051	-0.0010	0.0068	0.0019
0.0068	-0.0064	0.0031	0.0025	-0.0067	0.0030
0.0027	0.0055	-0.0031	0.0769		
-0.0151	-0.0494	0.1760	0.1113	-0.0561	-0.0768
-0.0342	-0.0065	-0.0079	-0.0008	0.0054	0.0104
0.0003	0.0029	-0.0036	0.0018	-0.0051	0.0047
0.0055	-0.0022	0.0045	-0.0098	0.0008	0.0030
-0.0052	0.0001	0.0013	0.0014	-0.0036	-0.0025
0.0011	-0.0228	0.0099	0.0079	0.0039	-0.0029

0.0019	0.0002	-0.0023	0.0030		
-0.0587	-0.0285	0.0111	-0.0428	0.0181	-0.0204
-0.0415	0.0309	-0.0629	-0.0288	0.0614	-0.0928
-0.0749	0.0021	-0.1263	-0.0757	0.0019	-0.0001
0.0514	0.0092	0.0195	-0.0077	0.0010	0.0046
-0.0156	-0.0024	0.0015	-0.0108	-0.0037	0.0154
0.0030	-0.0097	0.0112	0.0037	0.0010	-0.0700
0.0073	0.0007	0.0019	-0.0089		
-0.0374	-0.0565	-0.0053	-0.0468	-0.0801	-0.0243
-0.0062	-0.0039	-0.0229	-0.0075	0.0129	-0.0314
-0.0275	0.0251	0.0209	0.1197	-0.0316	0.0303
0.0475	0.0091	0.0537	0.0373	0.0088	0.0021
-0.0034	0.0014	-0.0027	-0.0151	0.0014	0.0415
0.0090	-0.0180	-0.0002	0.0017	0.0030	0.0006
0.0110	-0.0183	0.0019	0.0055		
-0.0420	-0.0371	0.0048	-0.0260	-0.0053	-0.0210
-0.0139	0.0070	-0.0024	-0.0371	0.0371	0.1040
0.1159	-0.0657	-0.0947	0.0404	-0.0095	0.0129
0.0403	-0.0244	0.0106	-0.0081	0.0006	-0.0058

-0.0182	0.0141	0.0041	0.0013	-0.0116	0.0031
0.0065	-0.0142	-0.0033	0.0015	0.0021	-0.0039
-0.0033	-0.0014	0.0005	-0.0089		
-0.0287	-0.0487	-0.1045	0.1227	0.0374	-0.0044
-0.0172	0.0327	-0.0332	-0.0232	0.0217	0.0041
0.1199	0.2450	0.0048	-0.0110	0.0252	0.0027
0.0338	0.0034	-0.0160	0.0068	-0.0030	-0.0041
-0.0054	0.0008	0.0024	0.0056	0.0022	-0.0051
0.0108	-0.0138	0.0093	0.0022	0.0002	-0.0023
0.0020	0.0003	-0.0051	0.0052		
0.6358	0.8046	0.0759	0.0554	0.0652	0.5519
0.3364	-0.0384	0.0416	0.0439	-0.0088	-0.0883
-0.0094	0.0291	-0.0575	0.0437	-0.0409	-0.0925
-0.0266	-0.0005	0.0059	-0.0107	0.0182	-0.0348
0.0061	-0.0165	0.0090	-0.0015	0.0047	-0.0008
-0.0214	0.0343	-0.0015	-0.0139	0.0036	0.0034
0.0044	0.0330	0.0010	0.1767		
-0.0453	-0.0456	0.0157	-0.0168	0.0069	-0.0192
-0.0183	0.0070	-0.0150	-0.0102	0.0025	0.0181

0.0074	-0.0110	0.0226	-0.0091	0.0006	-0.0006
-0.0286	-0.0099	-0.0042	0.0276	-0.0054	0.0343
0.0082	0.0081	0.0107	-0.0061	0.0065	-0.0064
0.0085	-0.0078	-0.0298	-0.0577	0.2554	-0.0049
-0.0017	-0.0023	-0.0039	-0.0057		
0.1470	-0.1084	-0.0078	-0.0304	-0.0005	-0.0518
-0.0375	0.0100	-0.0192	-0.0047	0.0112	0.0041
0.0058	-0.0124	0.0081	0.0175	0.0050	0.0091
0.0031	-0.0032	0.0121	0.0122	0.0049	0.0044
-0.0003	0.0088	-0.0015	0.0021	-0.0015	0.0018
0.0015	0.0074	-0.0005	0.0000	-0.0026	-0.0005
0.0118	0.2313	-0.0391	-0.1194		
-0.0508	-0.0401	0.0217	-0.0251	0.0085	-0.0281
-0.0179	0.0061	-0.0169	-0.0097	0.0017	0.0121
0.0043	-0.0102	0.0224	-0.0106	0.0026	0.0011
-0.0561	-0.0199	-0.0095	0.0917	0.0491	-0.0797
-0.0737	-0.0304	-0.0018	-0.0090	-0.0049	-0.0158
0.0026	-0.0655	0.0217	-0.0854	-0.0329	-0.0009
0.0012	-0.0024	0.0018	-0.0122		

-0.0649	-0.0264	0.0229	-0.0157	0.0171	-0.0087
-0.0246	0.0198	-0.0166	-0.0156	0.0046	0.0083
0.0034	-0.0235	0.0392	-0.0115	0.0072	-0.0056
-0.0868	-0.0297	-0.0221	0.1268	0.0584	-0.0963
-0.0566	-0.0086	0.0000	0.0240	-0.0083	0.0127
0.0374	0.1230	-0.0183	0.1901	0.0113	-0.0015
0.0016	0.0018	-0.0012	-0.0060		
-0.0494	-0.0375	-0.0030	-0.0063	0.0220	-0.0068
-0.0301	0.0274	0.0451	0.0094	0.0076	0.0164
-0.0207	-0.0486	0.0753	0.0436	0.1456	-0.2282
0.1550	0.0981	-0.0997	0.0127	0.0120	0.0019
-0.0057	0.0019	-0.0019	-0.0023	-0.0062	-0.0091
-0.0052	-0.0183	0.0083	0.0002	-0.0056	-0.0029
-0.0007	0.0024	-0.0011	0.0103		
-0.0513	-0.0434	0.0212	-0.0262	0.0106	-0.0355
-0.0172	0.0139	0.0102	-0.0040	-0.0042	0.0049
0.0068	-0.0009	0.0416	-0.0025	0.0268	-0.0549
-0.0144	-0.0774	0.1244	-0.0692	-0.0394	-0.0267
-0.0333	-0.0287	0.0033	0.0132	0.0218	-0.0096

0.0632	0.0002	0.0178	0.0064	0.0042	0.0002
0.0006	-0.0007	-0.0030	-0.0124		
-0.0306	-0.0146	-0.0129	-0.0053	0.0022	-0.0371
-0.0330	0.0320	0.0395	-0.1072	0.0334	0.1273
-0.0896	0.0346	0.0468	-0.0338	-0.0401	0.0300
0.0240	0.0099	0.0022	-0.0048	-0.0114	0.0169
-0.0066	0.0021	-0.0047	0.0083	-0.0051	0.0024
0.0085	-0.0197	-0.0025	0.0030	-0.0121	-0.0040
0.0002	-0.0043	-0.0020	0.0015		
-0.0560	-0.0318	0.0156	-0.0219	0.0139	-0.0102
-0.0204	0.0097	-0.0189	0.0049	-0.0006	0.0136
0.0062	-0.0094	0.0365	-0.0115	-0.0058	0.0026
-0.0090	-0.0257	0.0246	-0.0073	0.0553	0.0196
0.0590	0.1161	0.0177	0.0059	-0.0450	0.0081
-0.0599	0.0675	0.2071	-0.0399	-0.0035	-0.0038
0.0029	0.0031	0.0000	-0.0148		
-0.0371	-0.0410	0.0076	-0.0231	0.0193	-0.0224
-0.0396	0.0280	0.0035	-0.0179	-0.2190	0.0129
-0.0193	0.0084	-0.0538	0.0112	-0.0235	0.0130

0.0226	0.0060	-0.0106	-0.0109	-0.0005	0.0038
-0.0103	-0.0027	-0.0002	0.0016	-0.0080	-0.0007
0.0098	-0.0114	0.0091	0.0053	-0.0020	0.0000
0.0005	-0.0056	0.0060	-0.0115		
-0.0424	-0.0521	0.0312	-0.0203	0.0135	0.0116
0.0002	-0.0048	0.0016	-0.0106	-0.0089	0.0099
0.0012	-0.0245	0.0463	-0.0140	0.1715	0.1565
0.0341	-0.0059	0.0221	-0.0115	-0.0048	0.0034
-0.0180	-0.0059	0.0040	-0.0017	-0.0039	0.0004
0.0006	-0.0131	-0.0002	0.0050	-0.0063	-0.0008
-0.0020	-0.0119	-0.0141	-0.0031		
0.0701	-0.0956	0.0071	-0.0292	0.0107	-0.0346
-0.0221	0.0037	-0.0060	-0.0094	0.0072	0.0118
0.0116	0.0114	0.0086	-0.0180	-0.0089	-0.0106
-0.0097	0.0034	-0.0052	-0.0022	-0.0083	0.0000
0.0085	0.0025	-0.0002	-0.0022	0.0043	-0.0039
-0.0038	-0.0056	-0.0035	0.0023	-0.0002	0.0002
-0.0088	-0.1699	-0.1411	-0.1038		
-0.0474	-0.0301	0.0082	-0.0329	0.0048	-0.0359

-0.0148	0.0008	-0.0480	0.0549	0.0067	-0.0080
0.0207	-0.0191	0.0563	-0.0287	-0.0773	0.0438
0.0770	0.0143	-0.0179	-0.0284	-0.0389	-0.0073
-0.0670	-0.0139	-0.0941	0.0435	0.0108	0.0100
-0.0176	0.0032	0.0121	-0.0020	0.0052	0.0014
-0.0016	-0.0031	0.0013	-0.0019		
-0.0526	-0.0262	0.0109	-0.0218	0.0040	-0.0221
-0.0220	-0.0008	-0.0164	-0.0086	0.0003	-0.0079
0.0319	-0.0199	0.0166	0.0028	0.0015	-0.0119
-0.0466	-0.0276	-0.0032	0.0665	-0.0561	0.1946
-0.0644	0.0176	0.0098	-0.0037	-0.0035	-0.0042
0.0207	-0.0362	0.0040	0.0153	-0.0444	-0.0048
0.0019	-0.0038	0.0015	-0.0143		
-0.0466	-0.0456	-0.0028	-0.0041	0.0107	-0.0331
-0.0106	0.0025	0.0013	-0.0060	-0.0030	0.0089
0.0004	-0.0160	0.0147	-0.0024	-0.0027	-0.0025
-0.0162	-0.0043	0.0167	-0.0070	-0.0043	0.0023
0.0210	-0.0266	0.0665	0.1256	-0.0032	0.0720
-0.0804	-0.0406	-0.0306	-0.0018	-0.0098	-0.0059

0.0002	-0.0017	0.0000	-0.0034		
0.0201	-0.0710	0.0135	-0.0239	0.0069	-0.0260
-0.0199	0.0053	0.0043	0.0000	-0.0175	0.0063
-0.0005	0.0023	-0.0032	-0.0096	0.0022	0.0107
0.0000	-0.0031	-0.0011	-0.0047	0.0002	-0.0003
-0.0025	0.0002	0.0036	0.0017	-0.0049	0.0003
0.0037	-0.0080	0.0048	-0.0007	0.0011	-0.0021
-0.0046	-0.0619	0.1777	-0.0829		
0.6551	0.8676	0.0375	0.0416	0.0371	0.4307
0.2587	-0.0303	0.0326	0.0397	-0.0140	-0.1043
0.0086	0.0188	-0.0474	0.0426	-0.0064	-0.0794
-0.0309	-0.0012	0.0045	-0.0078	0.0143	-0.0399
0.0109	-0.0167	0.0127	-0.0039	0.0110	-0.0018
-0.0293	0.0395	0.0015	-0.0146	0.0096	0.0066
-0.0012	0.0186	0.0075	0.1897		
-0.0547	-0.0379	0.0039	-0.0039	0.0143	-0.0141
-0.0182	0.0044	0.0044	-0.0002	-0.0029	0.0116
0.0154	-0.0128	0.0008	-0.0015	-0.0032	0.0060
-0.0169	0.0074	-0.0019	0.0213	-0.0086	0.0069

0.0660	0.0141	-0.0189	-0.0344	0.2361	-0.0148
-0.0437	-0.0139	-0.0018	0.0007	-0.0254	0.0041
0.0046	-0.0032	0.0010	-0.0152		
-0.0433	-0.0323	0.0146	-0.0328	0.0159	-0.0660
0.0041	-0.0164	-0.0527	0.1312	0.0093	0.1070
-0.0614	0.0394	-0.0424	0.0202	0.0301	0.0009
-0.0216	-0.0054	0.0061	0.0004	-0.0063	0.0112
0.0076	0.0022	0.0090	-0.0045	0.0011	0.0034
0.0086	-0.0147	-0.0040	0.0046	-0.0061	0.0001
0.0007	-0.0043	0.0005	-0.0046		
-0.0442	-0.0425	0.0103	-0.0272	0.0344	-0.0227
-0.0722	-0.2153	0.0215	-0.0307	-0.0023	0.0094
0.0030	0.0170	-0.0043	-0.0048	-0.0069	-0.0030
0.0074	-0.0016	0.0064	0.0005	0.0029	-0.0055
-0.0020	0.0033	-0.0050	-0.0024	0.0070	0.0000
0.0000	-0.0089	0.0006	0.0002	-0.0018	-0.0012
-0.0017	0.0008	0.0022	-0.0015		
-0.0681	-0.0183	0.0323	0.0109	0.0123	-0.0102
-0.0218	0.0187	-0.0154	-0.0147	-0.0028	0.0034

0.0069	-0.0195	0.0338	-0.0012	0.0137	-0.0006
-0.0475	-0.0099	-0.0179	0.0582	0.0200	-0.0098
0.0382	0.0209	-0.0113	0.0091	-0.0332	0.0394
0.0508	0.3241	-0.1746	-0.1000	-0.0741	-0.0074
0.0013	0.0011	0.0011	-0.0108		
-0.0397	-0.0479	0.0097	-0.0261	0.0455	-0.1416
0.1429	-0.0230	0.0347	-0.0361	-0.0042	-0.0193
0.0087	0.0055	-0.0044	-0.0023	0.0003	0.0078
0.0057	0.0050	-0.0055	0.0105	-0.0008	-0.0004
-0.0003	0.0041	-0.0011	-0.0055	-0.0020	-0.0026
0.0013	-0.0065	0.0084	0.0006	0.0001	0.0005
-0.0011	-0.0013	0.0011	0.0025		
-0.0495	-0.0362	0.0183	-0.0263	0.0058	-0.0285
-0.0163	-0.0029	-0.0262	0.0145	-0.0014	0.0076
0.0251	-0.0179	0.0400	-0.0238	-0.0394	0.0210
0.0328	0.0177	-0.0036	0.0256	-0.1059	-0.0393
0.0393	-0.0164	0.1217	-0.0590	-0.0274	-0.0280
0.0107	-0.0129	0.0053	0.0045	-0.0129	-0.0007
0.0037	0.0002	0.0008	-0.0133		

-0.0303	-0.0483	0.0042	-0.0283	0.0327	-0.0042
-0.0917	0.0708	0.2795	0.1148	-0.0099	-0.0565
0.0014	0.0260	-0.0778	-0.0047	-0.0414	0.0558
-0.0019	0.0109	-0.0088	0.0104	-0.0079	0.0043
-0.0036	0.0071	0.0007	-0.0149	0.0109	0.0001
-0.0021	-0.0044	0.0096	-0.0037	0.0010	0.0021
-0.0014	-0.0017	0.0081	0.0082		
-0.0467	-0.0416	0.0065	-0.0180	0.0066	-0.0260
-0.0205	0.0047	-0.0095	-0.0102	0.0002	0.0135
0.0171	-0.0172	0.0085	0.0038	0.0038	0.0082
-0.0124	-0.0164	-0.0079	0.0132	0.0141	0.0352
0.1228	-0.1608	-0.0685	-0.0065	-0.0421	-0.0048
0.0183	-0.0192	0.0399	0.0077	-0.0078	-0.0024
-0.0006	-0.0026	-0.0010	-0.0033		
-0.0514	-0.0402	0.0127	-0.0247	0.0050	-0.0282
-0.0180	-0.0001	-0.0191	-0.0079	0.0032	0.0165
0.0316	-0.0086	0.0091	0.0036	-0.0022	0.0099
-0.0780	0.1650	0.0573	-0.0485	-0.0006	0.0041
-0.0179	-0.0090	-0.0093	-0.0079	-0.0114	0.0018

0.0111	-0.0109	0.0084	0.0027	-0.0037	-0.0019
0.0010	-0.0017	0.0007	-0.0116		
-0.0560	-0.0272	0.0134	-0.0198	0.0040	-0.0266
-0.0177	0.0035	-0.0138	-0.0001	-0.0024	-0.0068
0.0107	-0.0124	0.0219	-0.0098	0.0016	0.0088
-0.0160	-0.0047	0.0028	0.0171	-0.0160	-0.0279
0.0875	0.1080	-0.0521	0.0509	-0.0323	-0.0122
0.0781	-0.0860	-0.0442	0.0028	-0.0201	-0.0062
0.0015	-0.0014	-0.0004	-0.0197		
-0.0438	-0.0361	0.0116	-0.0279	0.0095	-0.0401
-0.0166	-0.0001	-0.0164	0.0228	0.0002	0.0060
0.0243	-0.0109	0.0490	-0.0292	-0.0355	0.0184
0.0308	-0.0126	0.0119	-0.0463	0.1324	0.0390
0.0042	-0.0027	0.0608	-0.0291	0.0018	-0.0188
0.0276	-0.0390	-0.0426	0.0140	-0.0090	-0.0040
-0.0024	-0.0019	0.0000	-0.0093		

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

BROWSER

COLLECT

COM

CONTACT

COOKIES

DATA

NAME

ORDER

PERSONALLY

PLEASE

POLICY

PROVIDE

SERVICE

SERVICES

SITE

THIRD

TIME

US

USED

USER

USERS

WEBSITE

Figure 7-6-1: An Example of Runstream File Named As "run.rs"

d:\v\out.prt

d:\v\\final1.crd

RUN NAME Raymond

N-CONCEPTS 40

N-DATASETS 2

CRITERION PAIR Happiness and Sadness are 100 units apart

CONLABELS

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

BROWSER

COLLECT

COM

CONTACT

COOKIES

DATA

NAME

ORDER

PERSONALLY

PLEASE

POLICY

PROVIDE

SERVICE

SERVICES

SITE

THIRD

TIME

US

USED

USER

USERS

WEBSITE

OPERATIONS COMPARISON

OPTIONS 3,12,13,14,15,16,19,20

READ DATA

(6f12.6) 40 40 40

0.136786	-0.025538	-0.008398	0.001355	-0.016803	0.020025
-0.008273	-0.025211	-0.020052	-0.003818	-0.018884	0.002214
-0.020244	-0.009394	-0.023116	0.003559	-0.012336	0.082352
0.032015	-0.050434	-0.172264	-0.052752	-0.055098	0.010041
-0.028217	-0.008003	0.008152	-0.020831	-0.005983	-0.014128

-0.002918	-0.009288	-0.010096	-0.005998	0.002588	0.000251
-0.000541	-0.000053	-0.000009	0.237501		
0.147241	-0.039523	-0.037833	-0.014078	-0.022498	-0.128507
-0.031012	0.029423	0.011106	0.008949	-0.034954	-0.137161
0.084501	0.052099	0.030976	-0.020658	0.015752	0.004631
0.002223	0.003221	0.002760	-0.024116	-0.016233	-0.041690
0.003370	0.002262	0.021664	-0.011639	-0.002873	0.007050
-0.028359	-0.008501	-0.002779	-0.019205	-0.076256	-0.060822
-0.010038	0.000086	-0.001829	0.240481		
0.145628	-0.018518	-0.034733	-0.013686	-0.092926	-0.021579
0.179350	0.054760	0.065047	-0.001618	0.020535	0.023258
-0.012793	0.003511	0.002508	-0.001740	-0.002548	-0.004328
-0.000183	-0.000355	-0.000986	-0.002089	-0.000269	0.007184
-0.004596	-0.000884	-0.002243	0.000330	0.001716	-0.001760
0.002408	-0.002151	-0.000697	-0.001311	0.005992	-0.013036
-0.001007	-0.001685	-0.083434	0.239834		
0.145664	-0.019245	-0.034898	-0.014371	-0.093422	-0.023134
0.180419	0.053737	0.066964	-0.001748	0.020813	0.022227
-0.012713	0.004552	0.004370	-0.001601	-0.001875	-0.004664

-0.001944	-0.000017	-0.001603	-0.002358	0.000362	0.008028
-0.004836	-0.002386	-0.001974	0.000179	0.001860	-0.003345
0.003584	-0.003035	-0.000589	-0.002772	0.011155	-0.029870
0.000927	0.002056	0.080830	0.239815		
0.145987	-0.046136	-0.041814	-0.038728	0.024682	-0.168683
-0.085162	0.041379	0.037028	0.007009	0.011664	0.089757
-0.045403	-0.013283	-0.002540	-0.000004	-0.006770	-0.005082
-0.000529	-0.001152	-0.000830	0.000002	0.004573	0.014846
-0.004137	-0.001023	-0.004013	0.002141	0.005809	-0.004162
0.009066	0.003424	-0.000753	0.002793	0.016427	0.010136
-0.095730	-0.000256	0.000887	0.239682		
0.139263	-0.039547	-0.025383	-0.004795	-0.000241	-0.020407
-0.004753	-0.003135	-0.015732	-0.007518	-0.015614	-0.104861
0.060046	0.027563	0.001168	0.004369	-0.003135	-0.006860
-0.020637	0.007226	-0.018489	0.025722	0.059366	0.146363
-0.037151	-0.028541	-0.029811	0.011589	0.014205	-0.027839
0.045172	0.010327	-0.003852	0.007382	0.026311	0.023671
-0.001357	-0.000268	-0.000073	0.237370		
0.305033	0.695894	0.009417	-0.012058	-0.004978	-0.021988

0.002173	0.024405	-0.048538	0.000246	-0.001997	0.004007
-0.002284	0.010490	-0.005001	-0.001777	0.002093	0.003854
-0.004772	-0.002648	-0.000022	-0.005136	0.009792	0.001650
0.006026	0.000774	-0.000151	0.000950	-0.002384	0.001229
-0.003044	0.001867	-0.002167	-0.006885	0.001578	0.004022
0.000462	-0.000083	0.000263	0.275308		
0.135869	-0.039372	-0.013163	-0.001832	-0.021007	0.018012
-0.007852	-0.007974	-0.024237	0.002067	-0.007908	-0.000919
0.006178	-0.015662	-0.020395	-0.005107	-0.022592	0.093002
0.063069	-0.088255	0.125034	-0.097681	0.007262	0.014789
-0.027712	-0.008756	0.017215	0.007191	0.013391	0.011670
0.028319	-0.010098	0.003701	0.002969	0.006765	0.007036
0.001231	0.000027	0.000560	0.236571		
0.145043	-0.047056	-0.042140	-0.036522	0.023913	-0.159152
-0.081732	0.039010	0.033998	0.003952	0.014117	0.074993
-0.036369	-0.010118	-0.000166	0.000188	-0.001719	-0.005111
-0.001358	-0.000773	-0.002982	-0.000327	0.005867	0.018360
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0.006608	0.001554	-0.000587	-0.000708	-0.004731	-0.003428

0.104584	0.000312	-0.001053	0.239225		
0.135675	-0.037667	-0.024500	-0.008873	-0.038023	-0.022287
0.035844	0.015782	0.015004	0.003906	-0.005028	-0.025173
0.010830	0.002046	0.002154	-0.000932	0.002457	-0.000313
0.001283	0.001193	-0.002057	0.005008	-0.008793	-0.029440
0.007858	0.012414	0.000254	-0.001696	-0.005675	0.013944
-0.016781	0.015501	0.002196	0.016989	-0.062608	0.160210
0.002826	0.000210	0.007458	0.237228		
0.138237	-0.028118	-0.015733	-0.003493	-0.016355	0.020969
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-0.003268	-0.027635	-0.009787	0.020102	0.015190	0.027514
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0.105760	-0.067537	0.129724	-0.046155	0.005251	-0.028159
0.026178	-0.006278	-0.006510	-0.001256	-0.005390	0.000626
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0.170089	0.108217	-0.024975	0.005160	-0.029544	0.063651
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0.025303	-0.036867	0.006188	0.004126	-0.001516	-0.011822
0.004718	0.000009	0.001028	-0.007973	0.000942	0.000475

0.001973	0.001830	-0.000685	-0.000652	0.002427	-0.000583
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0.000776	-0.005473	-0.002020	-0.000469	0.000697	-0.000018
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0.001539	-0.000243	0.002087	-0.001911	-0.000426	-0.001634
0.001288	0.001024	-0.000480	0.000294	-0.000303	0.000223
-0.000363	0.086150	-0.001762	-0.589595		
0.139570	-0.031450	-0.009750	0.002502	-0.024637	0.030546
-0.000936	-0.026805	-0.039251	-0.015025	-0.053025	0.153446
0.203481	-0.001459	0.040024	-0.012065	-0.002045	-0.019552
-0.007626	0.003905	-0.008850	-0.003752	-0.001788	-0.002701
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0.000614	-0.002637	-0.002777	0.000704	-0.000766	-0.001419
-0.000162	0.000263	0.000072	0.238491		
0.170406	-0.027822	-0.004320	-0.012808	-0.056977	0.156043
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0.000698	-0.005998	0.008735	-0.004631	-0.000410	-0.009104
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-0.006391	0.003337	-0.006492	-0.000429	0.003326	0.002572
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0.134718	-0.042920	0.006504	-0.001040	-0.015584	0.014966
-0.005595	-0.023237	-0.030481	0.056226	0.039137	0.000224
-0.006755	-0.003682	0.001842	0.004188	-0.011418	0.008414
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0.018883	0.129111	-0.095627	-0.009273	0.001864	-0.016588
0.000139	-0.000973	-0.000264	0.236092		
0.155020	-0.043090	0.193143	-0.010325	-0.007597	-0.001843
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0.014200	0.041988	0.029947	0.006964	0.009933	-0.008954
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0.005523	-0.002850	-0.004510	-0.006211	0.015058	0.001987
0.001607	-0.039033	0.027829	0.002089	-0.000599	0.003121
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0.023970	0.039693	0.025406	0.012334	0.005565	0.006723
0.001969	0.004524	-0.001284	-0.000179	0.002402	0.000010
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0.001584	-0.001009	0.000162	-0.000950	0.000771	0.001338
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0.131842	-0.041697	-0.006616	0.003553	-0.015076	0.014490
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0.000207	-0.010667	-0.015182	-0.019636	0.000235	0.012072
0.014411	-0.011987	0.017745	0.002660	-0.001010	-0.012410
0.054374	0.011946	-0.044946	0.066054	0.010467	-0.146093
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0.000224	-0.000179	-0.000161	0.236487		
0.141898	0.005984	-0.011311	0.004918	-0.013455	0.009632
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0.031389	0.017951	0.001518	-0.002603	-0.017214	0.017881
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0.172935	-0.034234	0.387365	-0.007648	0.027371	-0.033007
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-0.011983	0.010758	0.001069	-0.003091	0.005527	0.002830
0.000037	-0.000024	0.000795	0.255565		
0.027798	-0.062874	0.015588	-0.023041	0.023267	0.001873
-0.016713	0.019676	-0.015567	-0.011649	-0.001723	0.008319
0.015403	-0.015817	0.005042	-0.002243	-0.003775	0.000227
-0.019144	0.005724	-0.004835	0.025266	-0.007026	0.002806
0.065646	0.014319	-0.018447	-0.032567	0.224083	-0.015049
-0.040195	-0.000804	-0.000461	0.000947	-0.019956	0.002639
0.001507	0.000383	0.001162	0.177749		
0.099705	0.003903	-0.001287	-0.045070	0.055022	-0.075410
0.037098	-0.030436	-0.088184	0.249137	0.017288	0.165914
-0.112493	0.062540	-0.074280	0.036241	0.043708	-0.002009
-0.034541	-0.009115	0.003497	0.003474	-0.006577	0.010616
0.006446	0.002167	0.011228	-0.001035	-0.000721	0.001149
0.009504	-0.005255	-0.006053	0.003821	-0.003860	-0.000266
0.000402	-0.000182	-0.000400	0.187945		
0.087912	-0.053177	-0.003984	-0.032583	0.087093	0.005971

-0.116558	-0.394766	0.042522	-0.043774	-0.000690	-0.002065
-0.001539	0.023385	-0.014080	-0.003538	-0.011940	-0.011095
0.009472	-0.005458	0.005114	0.001885	0.002952	-0.006784
-0.004136	0.002655	-0.004621	-0.000089	0.001286	-0.001179
0.000286	0.000240	-0.000436	0.000635	0.000928	0.000061
-0.000595	0.000643	0.001048	0.183285		
0.035756	-0.061156	0.033522	0.009604	0.005629	-0.010438
-0.022545	0.015159	-0.009853	-0.008130	-0.002517	-0.000237
0.004920	-0.008479	0.017990	-0.001462	0.006039	-0.000744
-0.020000	-0.003525	-0.009504	0.023177	0.005313	0.005731
0.026991	0.012243	-0.007018	0.002645	-0.018623	0.021636
0.024822	0.176545	-0.098911	-0.081296	-0.044172	-0.003488
-0.000097	-0.001080	0.000902	0.178777		
0.088145	-0.062101	0.010351	-0.039512	0.115931	-0.254492
0.324768	-0.038730	0.073849	-0.064001	-0.007601	-0.047951
0.008183	0.006964	-0.018536	0.003513	-0.000545	0.009517
0.007394	0.008502	-0.013787	0.012140	-0.000347	-0.002303
0.001824	0.002453	-0.002564	-0.004730	-0.002984	-0.004019
0.000805	0.002917	0.006512	0.000058	0.000547	0.000455

-0.000360	0.000617	0.000558	0.186526		
0.055193	-0.028301	0.016342	-0.029584	0.026738	0.000781
-0.012561	0.001584	-0.040901	0.031205	0.002638	-0.002004
0.033228	-0.033543	0.057589	-0.038658	-0.062205	0.025937
0.045155	0.023784	-0.011872	0.037374	-0.141838	-0.053362
0.051148	-0.018231	0.148753	-0.068245	-0.028334	-0.037625
0.013087	-0.004474	0.006518	0.006117	-0.013304	-0.000681
0.002791	0.000236	0.001393	0.180655		
0.067067	-0.065933	0.010156	-0.038999	0.038897	0.002152
-0.106398	0.078105	0.316250	0.130271	0.012373	-0.061875
0.005206	0.025805	-0.064345	-0.002490	-0.037839	0.048484
-0.004488	0.009447	-0.008603	0.010301	-0.004612	-0.000502
-0.005736	0.002419	-0.001709	-0.007447	-0.002001	-0.003069
-0.001265	0.000801	0.005407	-0.001469	0.001548	-0.000369
0.000012	0.000612	0.000318	0.182724		
0.039373	-0.040571	0.009850	-0.030670	0.018409	-0.003404
-0.026290	0.013955	-0.013064	-0.009513	0.008919	0.008341
0.026476	-0.020312	0.003885	0.002929	-0.001362	-0.000603
-0.017493	-0.022919	-0.015351	0.019584	0.016102	0.038891

0.141513	-0.173208	-0.078190	-0.006883	-0.044469	-0.005130
0.018728	-0.007946	0.038445	0.007398	-0.007763	-0.002835
0.001149	-0.000065	0.000305	0.180175		
0.043498	-0.052211	0.007848	-0.032273	0.021464	-0.008154
-0.022235	0.009416	-0.024117	-0.016214	0.008410	0.013831
0.049006	-0.012342	0.005061	0.007574	0.000600	0.006382
-0.118666	0.240231	0.073082	-0.064176	0.004708	0.001205
-0.020844	-0.010193	-0.008259	-0.007575	-0.010987	-0.002645
0.011581	-0.002260	0.009484	0.001780	-0.003048	-0.001877
0.000411	0.000041	0.000444	0.180538		
0.062151	-0.010886	0.009704	-0.027294	0.018058	0.004945
-0.016202	0.016751	-0.017984	0.002766	0.000320	-0.028396
0.014867	-0.018397	0.022602	-0.013280	0.000138	0.002506
-0.025905	-0.006060	-0.002783	0.024028	-0.020584	-0.041320
0.109695	0.132509	-0.066034	0.061039	-0.032582	-0.017434
0.089925	-0.082511	-0.050351	0.006190	-0.017736	-0.006058
0.000519	-0.001016	0.000401	0.181858		
0.061088	-0.018538	0.000429	-0.032838	0.035713	-0.019470
-0.004480	0.007293	-0.025330	0.053247	0.001359	-0.012316

0.036662	-0.019846	0.070850	-0.047348	-0.062940	0.017490
0.048267	-0.018408	0.009642	-0.065953	0.194443	0.054823
0.004993	-0.003665	0.075575	-0.036569	0.005095	-0.026799
0.035779	-0.031813	-0.052859	0.014997	-0.007877	-0.002075
-0.001419	-0.000297	-0.000443	0.181499		

Figure 7-6-3: Output of Galileo V56

GALILEO Version 5.6 Control List

Run Name is...................Raymond

Number of concepts is......... 40

Number of sets of data is..... 2

CRITERION PAIR Happiness and Sadness are 100 units apar

CONLABELS

ACCESS

ADDRESS

CARD

CREDIT

E

EMAIL

INFORMATION

INTERNET

MAIL

NUMBER

ONLINE

PERSONAL

PRIVACY

SECURE

SECURITY

SITES

WEB

WILL

BROWSER

COLLECT

COM

CONTACT

COOKIES

DATA

NAME

ORDER

PERSONALLY

PLEASE

POLICY

PROVIDE

SERVICE

SERVICES

SITE

THIRD

TIME

US

USED

USER

USERS

WEBSITE

OPERATIONS COMPARISON

OPTIONS 3,12,13,14,15,16,19,20

READ DATA

GALILEO Version 5.6 ** Update June, 1993 **

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Joe Woelfel

Rick Holmes

Scott Danielsen

Rudolf Zelf

This program is the exclusive

CCEACCE	-.061	-.017	-.007	.001	-.016	.020	-.008	-.025
DDRADDR	-.050	-.031	-.037	-.014	-.022	-.129	-.031	.030
ARDCARD	-.052	-.010	-.034	-.014	-.092	-.022	.179	.055
REDCRED	-.052	-.011	-.034	-.014	-.093	-.023	.180	.054
E	-.052	-.037	-.041	-.039	.025	-.169	-.085	.042
MAIEMAI	-.058	-.031	-.024	-.005	.000	-.021	-.005	-.002
NFOINFO	.107	.705	.010	-.012	-.004	-.022	.002	.025
NTEINTE	-.062	-.031	-.012	-.002	-.020	.018	-.008	-.007
AILMAIL	-.053	-.038	-.041	-.036	.024	-.159	-.082	.040
UMBNUMB	-.062	-.029	-.023	-.009	-.037	-.023	.036	.016
NLIONLI	-.059	-.019	-.015	-.003	-.016	.021	-.004	-.005
ERSPERS	-.028	.117	-.024	.005	-.029	.063	-.078	-.145
RIVPRIV	.959	-.025	-.003	-.001	-.001	.000	.001	-.005
ECUSECU	-.058	-.023	-.009	.003	-.024	.030	-.001	-.026
ECUSECU	-.027	-.019	-.003	-.013	-.056	.156	-.122	.248
ITESITE	-.063	-.034	.008	-.001	-.015	.015	-.006	-.023
EB WEB	-.043	-.034	.194	-.010	-.007	-.002	.000	-.022
ILLWILL	-.033	.004	-.021	.342	.114	-.020	.024	.040
ROWBROW	-.066	-.033	-.006	.004	-.014	.014	-.006	-.016
OLLCOLL	-.056	.015	-.010	.005	-.013	.009	-.010	-.026
OM COM	-.049	-.030	-.001	.004	-.004	.022	-.031	-.006
ONTCONT	-.053	-.013	-.022	-.030	.061	.019	.016	-.003
OOKCOOK	-.061	-.029	.000	.000	-.011	.020	-.002	-.029
ATADATA	-.056	-.031	-.016	-.002	-.013	.054	-.020	-.050

AMENAME	-.060	-.027	-.025	-.010	-.016	-.052	-.014	.002
RDEORDE	-.060	-.023	-.014	-.002	-.012	.011	.000	-.017
ERSPERS	-.060	.006	-.010	.002	-.007	.007	-.001	-.009
LEAPLEA	-.057	-.029	-.015	-.021	.025	.016	.000	-.007
OLIPOLI	.941	-.025	-.003	.000	-.002	-.001	.001	-.002
ROVPROV	-.051	.002	-.018	-.012	.041	.033	.012	-.029
ERVSERV	-.065	-.031	-.013	.001	-.009	.010	-.005	-.018
ERVSERV	-.062	-.028	-.012	.001	-.011	.018	-.003	-.027
ITESITE	-.025	-.026	.388	-.008	.028	-.033	.016	.021
HIRTHIR	-.062	-.019	-.011	.003	-.012	.012	-.004	-.022
IMETIME	-.064	-.029	-.010	.004	-.009	.011	-.003	-.018
S US	-.035	-.005	-.048	-.128	.294	.051	.077	.036
SEDUSED	-.060	-.010	-.011	.007	-.009	.010	-.001	-.019
SERUSER	-.064	-.022	-.009	-.001	-.014	.009	-.004	-.017
SERUSER	-.063	-.022	-.005	.003	-.011	.012	-.004	-.019
EBSWEBS	-.066	-.027	-.013	.000	-.012	.014	-.006	-.014

The Rotated Coordinates of Space Number 1

	9	10	11	12	13	14
CCEACCE	-.020	-.004	-.019	.002	-.020	-.009
DDRADDR	.011	.009	-.035	-.137	.085	.052
ARDCARD	.065	-.002	.021	.023	-.013	.004
REDCRED	.067	-.002	.021	.022	-.013	.005
E	.037	.007	.012	.090	-.045	-.013
MAIEMAI	-.015	-.008	-.015	-.105	.060	.028
NFOINFO	-.048	.000	-.002	.004	-.002	.011
NTEINTE	-.024	.002	-.008	-.001	.006	-.015
AILMAIL	.034	.004	.014	.075	-.036	-.010
UMBNUMB	.015	.004	-.005	-.025	.011	.002
NLIONLI	-.018	-.002	-.009	.007	-.003	-.027
ERSPERS	.241	.008	.034	-.019	.025	-.037
RIVPRIV	-.002	.000	.001	.000	.000	.000
ECUSECU	-.039	-.015	-.053	.153	.204	-.001
ECUSECU	.049	.021	-.006	-.008	.001	-.006
ITESITE	-.030	.056	.039	.000	-.007	-.003
EB WEB	-.035	.197	.125	.008	.014	.042
ILLWILL	.026	.012	.006	.007	.002	.005

ROWBROW	-.024	.021	.006	.001	.000	-.010
OLLCOLL	-.014	-.001	-.008	-.001	-.010	-.001
OM COM	-.043	-.176	.200	-.001	.008	.061
ONTCONT	-.025	-.006	.002	-.023	.003	-.006
OOKCOOK	-.034	-.002	.004	-.006	-.028	-.051
ATADATA	.021	.000	-.085	.051	-.068	.220
AMENAME	-.004	.003	-.021	-.074	.039	.018
RDEORDE	-.030	-.007	-.023	-.001	-.024	-.053
ERSPERS	-.034	.000	-.009	-.002	-.012	-.010
LEAPLEA	-.014	-.006	.004	.000	-.002	-.009
OLIPOLI	-.001	.001	-.002	.000	.000	-.001
ROVPROV	-.023	-.002	-.059	-.008	-.076	-.016
ERVSERV	-.022	-.006	-.008	-.001	-.016	-.026
ERVSERV	-.030	-.002	-.014	-.003	-.033	-.039
ITESITE	.049	-.097	-.069	-.006	-.005	-.017
HIRTHIR	-.019	.003	-.005	-.003	-.015	-.018
IMETIME	-.016	-.006	-.012	-.002	-.011	-.011
S US	.045	.014	.014	-.002	.027	.007
SEDUSED	-.035	-.001	-.015	-.008	-.016	-.019
SERUSER	-.023	-.005	-.013	-.004	-.012	-.012
SERUSER	-.022	-.010	-.005	-.003	-.014	-.017
EBSWEBS	-.019	-.002	-.005	-.001	-.005	-.017

The Rotated Coordinates of Space Number 1

	17	18	19	20	21	22
CCEACCE	-.012	.082	.032	-.050	-.172	-.053
DDRADDR	.016	.005	.002	.003	.003	-.024
ARDCARD	-.002	-.004	.000	.000	-.001	-.002
REDCRED	-.002	-.005	-.002	.000	-.002	-.002
E	-.007	-.005	-.001	-.001	-.001	.000
MAIEMAI	-.003	-.007	-.021	.007	-.018	.026
NFOINFO	.002	.004	-.005	-.003	.000	-.005
NTEINTE	-.023	.093	.063	-.088	.125	-.098
AILMAIL	-.002	-.005	-.001	-.001	-.003	.000
UMBNUMB	.003	.000	.001	.001	-.002	.005
NLIONLI	.015	.027	-.007	.019	.016	.049
ERSPERS	-.001	-.012	.005	.000	.001	-.008

RIVPRIV	.000	.001	.000	.000	.000	.001
ECUSECU	-.002	-.020	-.008	.004	-.009	-.004
ECUSECU	.000	-.009	-.003	.005	-.005	.001
ITESITE	-.011	.008	-.004	.002	-.001	.019
EB WEB	.010	-.009	.000	.000	-.006	-.008
ILLWILL	.002	.000	-.004	-.003	.000	-.004
ROWBROW	.000	.012	.014	-.012	.018	.003
OLLCOLL	-.004	.028	-.010	.025	.053	.103
OM COM	.010	.001	.006	.005	-.002	-.007
ONTCONT	-.060	-.131	-.035	-.065	-.001	-.039
OOKCOOK	.058	-.059	-.051	-.017	-.002	-.026
ATADATA	.026	-.005	-.015	.008	.011	-.014
AMENAME	.000	.001	-.005	.001	.001	.006
RDEORDE	.202	-.015	-.016	.001	.007	-.033
ERSPERS	-.008	.014	.005	.002	-.001	.035
LEAPLEA	-.036	-.055	-.028	-.044	.004	-.004
OLIPOLI	-.001	-.001	.001	.000	.000	-.001
ROVPROV	-.032	-.051	.025	-.043	.001	.012
ERVSERV	-.020	.012	.023	-.029	.017	.035
ERVSERV	-.068	.050	-.132	.116	.016	-.089
ITESITE	-.005	.003	.000	.001	.005	.002
HIRTHIR	-.019	.013	.004	.003	-.014	.055
IMETIME	-.008	.021	.004	-.005	-.025	.032
S US	.024	.047	.010	.026	.000	.004
SEDUSED	-.018	-.070	.154	.133	-.002	-.045
SERUSER	-.009	.012	.003	.004	-.011	.015
SERUSER	-.010	.016	-.006	-.005	.003	.049
EBSWEBS	-.006	.012	.002	.000	-.004	.017

The Rotated Coordinates of Space Number 1

	25	26	27	28	29	30
CCEACCE	-.028	-.008	.008	-.021	-.006	-.014
DDRADDR	.003	.002	.022	-.012	-.003	.007
ARDCARD	-.005	-.001	-.002	.000	.002	-.002
REDCRED	-.005	-.002	-.002	.000	.002	-.003
E	-.004	-.001	-.004	.002	.006	-.004
MAIEMAI	-.037	-.029	-.030	.012	.014	-.028

NFOINFO	.006	.001	.000	.001	-.002	.001
NTEINTE	-.028	-.009	.017	.007	.013	.012
AILMAIL	-.006	-.004	-.002	.001	.005	-.005
UMBNUMB	.008	.012	.000	-.002	-.006	.014
NLIONLI	.106	-.068	.130	-.046	.005	-.028
ERSPERS	.002	.002	-.001	-.001	.002	-.001
RIVPRIV	.002	.000	.002	-.002	.000	-.002
ECUSECU	-.008	.003	-.004	-.004	.004	.006
ECUSECU	-.006	.003	-.006	.000	.003	.003
ITESITE	-.029	.014	.031	-.003	-.051	.051
EB WEB	.006	-.003	-.004	-.006	.015	.002
ILLWILL	.002	.000	.002	-.002	-.003	.001
ROWBROW	.054	.012	-.045	.066	.010	-.146
OLLCOLL	-.086	-.018	-.031	.009	.004	.003
OM COM	.002	-.003	.001	-.001	.004	.000
ONTCONT	-.002	.001	.004	-.028	.078	-.010
OOKCOOK	-.004	-.009	.006	-.012	.007	.016
ATADATA	.007	-.002	.003	-.011	.000	.001
AMENAME	.031	.018	.002	-.003	-.017	.018
RDEORDE	-.021	.002	-.015	.002	-.002	.002
ERSPERS	-.014	.000	-.008	.005	-.003	-.008
LEAPLEA	-.008	-.019	.027	.053	-.151	.007
OLIPOLI	-.001	.001	-.003	.002	.001	.001
ROVPROV	-.008	-.003	.011	.014	.005	-.004
ERVSERV	.055	-.020	-.098	-.122	-.011	.047
ERVSERV	-.005	-.001	-.013	-.007	.006	.000
ITESITE	-.002	-.002	.002	.001	-.005	-.002
HIRTHIR	-.076	-.076	.015	-.017	.029	-.036
IMETIME	.047	-.014	.004	.122	.081	.105
S US	.002	.005	-.004	-.003	-.002	.003
SEDUSED	-.011	.001	.009	-.001	-.007	.005
SERUSER	.077	.030	-.080	.023	-.034	.003
SERUSER	-.020	.173	.057	-.031	.020	-.014
EBSWEBS	.005	.011	.002	.013	-.016	-.001

The Rotated Coordinates of Space Number 1

33	34	35	36	37	38

CCEACCE	-.010	-.006	.003	.000	-.001	.000
DDRADDR	-.003	-.019	-.076	-.061	-.010	.000
ARDCARD	-.001	-.001	.006	-.013	-.001	-.002
REDCRED	-.001	-.003	.011	-.030	.001	.002
E	-.001	.003	.016	.010	-.096	.000
MAIEMAI	-.004	.007	.026	.024	-.001	.000
NFOINFO	-.002	-.007	.002	.004	.000	.000
NTEINTE	.004	.003	.007	.007	.001	.000
AILMAIL	-.001	-.001	-.005	-.003	.105	.000
UMBNUMB	.002	.017	-.063	.160	.003	.000
NLIONLI	-.007	-.001	-.005	.001	-.001	-.003
ERSPERS	.002	.009	-.002	-.005	-.001	.000
RIVPRIV	-.001	.000	.000	.000	.000	.086
ECUSECU	-.003	.001	-.001	-.001	.000	.000
ECUSECU	-.002	.000	.002	-.005	.000	.001
ITESITE	-.096	-.009	.002	-.017	.000	-.001
EB WEB	.028	.002	-.001	.003	.000	.000
ILLWILL	.000	-.001	.001	.001	.000	.000
ROWBROW	-.045	-.010	.003	-.003	.000	.000
OLLCOLL	-.016	-.031	-.006	-.003	.000	.000
OM COM	.000	.000	-.002	.000	-.002	-.001
ONTCONT	-.006	-.004	-.006	-.005	.000	.000
OOKCOOK	.000	.000	.000	-.001	.000	.000
ATADATA	.000	.000	.001	.001	.001	.000
AMENAME	.004	.021	.148	.024	.010	.000
RDEORDE	-.004	-.001	.003	-.004	-.002	.000
ERSPERS	.048	.168	-.025	-.035	-.001	.000
LEAPLEA	.007	-.002	-.007	-.003	-.001	.000
OLIPOLI	.001	.000	.000	.000	.000	-.087
ROVPROV	.000	-.001	-.002	.000	.000	.000
ERVSERV	-.011	-.008	-.001	-.011	-.001	.000
ERVSERV	-.002	.001	-.001	-.001	.000	.000
ITESITE	-.009	.000	.001	.000	.001	.000
HIRTHIR	.002	-.022	.002	.003	.000	.000
IMETIME	-.013	-.005	-.003	-.011	.000	.002
S US	-.001	-.001	-.001	-.001	-.001	.000
SEDUSED	-.003	-.003	.005	-.001	.000	.001
SERUSER	-.006	-.017	-.035	-.012	-.001	.000

SERUSER	-.004	-.008	-.002	-.006	.000	-.001
EBSWEBS	.150	-.070	.004	-.008	.000	.000

The Rotated Coordinates of Space Number 2

	1	2	3	4	5	6
CCEACCE	-.074	-.017	-.008	.008	.008	-.007
DDRADDR	-.074	-.034	-.010	-.010	-.006	-.136
ARDCARD	-.063	.010	-.019	-.020	-.149	-.048
REDCRED	-.037	-.003	-.025	-.021	-.142	-.050
E	-.069	-.023	-.014	-.025	.058	-.188
MAIEMAI	-.056	-.027	-.013	.004	.009	-.067
NFOINFO	.025	.544	.017	-.039	-.028	-.028
NTEINTE	.089	-.031	-.004	.022	.001	.031
AILMAIL	-.098	-.026	-.018	-.002	.046	-.213
UMBNUMB	-.090	-.024	-.002	-.006	-.081	-.040
NLIONLI	-.077	-.003	-.009	.021	-.005	.015
ERSPERS	.009	.147	-.009	-.005	-.014	.017
RIVPRIV	.218	-.048	-.002	-.012	.018	-.036
ECUSECU	-.071	.001	.006	.007	.007	-.017
ECUSECU	.226	-.045	-.096	-.074	-.096	.366
ITESITE	-.059	-.012	.046	-.010	.016	-.028
EB WEB	-.059	-.011	.127	-.003	.003	-.038
ILLWILL	-.010	.015	-.023	.280	.108	-.028
ROWBROW	-.104	-.004	.008	.028	.014	-.015
OLLCOLL	.045	-.003	-.003	.016	.000	.008
OM COM	-.056	-.024	.013	-.004	.003	-.019
ONTCONT	-.014	-.011	-.023	-.011	.074	-.004
OOKCOOK	-.046	-.007	.005	.006	-.011	.010
ATADATA	.220	-.049	-.085	-.052	-.073	.325
AMENAME	.003	-.023	-.008	.011	-.006	-.055
RDEORDE	-.023	-.016	.020	-.001	.001	-.021
ERSPERS	-.090	-.007	.012	.001	.013	-.035
LEAPLEA	.210	-.037	-.085	-.068	-.057	.318
OLIPOLI	.628	-.006	-.014	-.031	-.055	.061
ROVPROV	-.104	-.005	-.002	.007	.037	.012
ERVSERV	-.024	-.039	.008	.030	-.013	-.033
ERVSERV	.014	-.027	-.016	.001	-.006	.005

ITESITE	-.043	-.016	.210	.022	.035	-.035
HIRTHIR	-.046	-.031	-.013	-.003	-.002	.010
IMETIME	-.051	-.024	-.004	.016	-.020	-.025
S US	-.072	-.007	-.016	-.104	.313	.057
SEDUSED	-.034	-.031	.017	.006	.015	-.047
SERUSER	-.040	-.028	.003	.008	-.006	-.016
SERUSER	-.041	-.012	.022	.004	-.006	-.010
EBSWEBS	-.061	-.005	.008	.005	-.004	.006

The Rotated Coordinates of Space Number 2

	9	10	11	12	13	14
CCEACCE	-.024	-.019	.017	.003	-.016	-.036
DDRADDR	.012	-.001	-.020	-.152	.094	.002
ARDCARD	.085	.018	.015	.033	-.026	.004
REDCRED	.093	.018	.039	.042	-.035	.008
E	.024	-.012	.016	.085	-.021	-.050
MAIEMAI	-.022	-.001	.007	-.109	.077	-.009
NFOINFO	-.024	-.026	-.004	-.026	-.032	.038
NTEINTE	-.050	-.023	-.057	-.007	.010	-.012
AILMAIL	.046	-.011	.012	.093	-.036	-.026
UMBNUMB	.044	-.008	-.016	-.061	.025	-.018
NLIONLI	-.019	.007	.019	.000	-.005	-.047
ERSPERS	.248	.023	.079	-.033	.037	-.069
RIVPRIV	-.049	-.015	.022	.015	-.012	.006
ECUSECU	-.043	-.009	-.026	.113	.180	-.021
ECUSECU	.154	.037	-.126	.059	-.093	.276
ITESITE	-.053	.082	.063	-.001	.011	-.036
EB WEB	-.065	.149	.117	.020	.022	.007
ILLWILL	-.017	.014	.029	.008	.011	-.025
ROWBROW	-.012	.001	.032	-.011	.028	-.007
OLLCOLL	-.038	.005	-.024	.004	-.001	-.024
OM COM	-.056	-.157	.166	.001	.024	.019
ONTCONT	-.041	-.027	-.004	-.023	.012	-.045
OOKCOOK	-.049	-.022	.021	.004	-.036	-.067
ATADATA	.150	.033	-.154	.066	-.131	.408
AMENAME	-.054	.013	-.012	-.089	.065	.005
RDEORDE	-.024	.011	-.023	-.009	.012	-.093

ERSPERS	-.046	.000	.025	-.008	.020	-.048
LEAPLEA	.127	.026	-.117	.059	-.104	.302
OLIPOLI	.038	.002	-.052	-.005	.002	.030
ROVPROV	-.025	-.016	-.043	.004	-.037	-.052
ERVSERV	-.049	.014	-.015	-.002	-.013	-.059
ERVSERV	-.065	.012	-.029	.022	-.060	-.077
ITESITE	.020	-.079	-.047	-.007	.017	-.045
HIRTHIR	-.059	.004	.010	-.021	-.044	-.028
IMETIME	-.031	-.014	.005	-.007	.015	-.031
S US	.039	.033	.039	-.029	.023	.004
SEDUSED	-.055	-.011	.009	-.006	-.017	-.059
SERUSER	-.060	.000	.009	-.014	.002	-.031
SERUSER	-.047	-.025	.004	-.014	.011	-.048
EBSWEBS	-.007	-.026	.016	-.001	.022	-.043

The Rotated Coordinates of Space Number 2

	17	18	19	20	21	22
CCEACCE	.011	.077	.043	-.047	-.192	-.040
DDRADDR	.010	.006	-.009	.026	-.041	-.026
ARDCARD	.024	.003	-.011	-.010	-.002	-.013
REDCRED	.014	.005	-.008	.005	.003	.002
E	.000	-.001	-.005	.000	-.017	.023
MAIEMAI	-.003	-.022	-.025	.033	-.030	.030
NFOINFO	-.009	.028	.017	.024	-.033	-.019
NTEINTE	-.056	.254	.159	-.243	.319	-.232
AILMAIL	-.012	-.009	-.005	.006	-.002	.010
UMBNUMB	.001	.022	-.016	-.005	-.031	.009
NLIONLI	.027	.043	-.010	.041	.023	.062
ERSPERS	-.012	-.002	.039	.004	-.003	.024
RIVPRIV	.028	-.004	-.038	-.059	.005	-.010
ECUSECU	.015	-.008	.011	.027	-.026	-.003
ECUSECU	-.023	-.098	-.046	-.055	.070	-.040
ITESITE	.000	.010	.000	.005	-.007	.006
EB WEB	.007	-.016	.010	-.010	-.026	.001
ILLWILL	.033	.011	-.005	.004	-.031	.024
ROWBROW	-.027	.028	.019	-.011	-.018	.000
OLLCOLL	.012	.010	-.027	.035	.095	.172

OM COM	.035	.009	.002	.016	-.001	.010
ONTCONT	-.060	-.202	-.025	-.093	.002	-.051
OOKCOOK	.065	-.086	-.062	-.033	-.007	-.063
ATADATA	-.008	-.101	-.053	-.051	.080	-.056
AMENAME	-.009	-.001	.014	.001	-.016	.023
RDEORDE	.227	-.016	-.001	.035	.009	-.051
ERSPERS	.010	.018	-.004	-.001	-.010	.057
LEAPLEA	-.031	-.128	-.070	-.102	.076	-.061
OLIPOLI	-.018	-.012	.014	.032	-.004	.029
ROVPROV	-.027	-.052	.038	-.024	-.019	.010
ERVSERV	-.035	.017	.048	-.016	.010	.056
ERVSERV	-.122	.087	-.240	.204	.007	-.157
ITESITE	-.006	.020	.005	-.007	-.006	.003
HIRTHIR	-.026	.042	.007	.007	-.049	.139
IMETIME	-.018	-.002	.026	.008	-.045	.030
S US	.036	.074	.005	.060	-.009	.009
SEDUSED	-.022	-.057	.170	.149	-.001	-.024
SERUSER	-.009	.015	.033	.013	-.036	.026
SERUSER	-.009	.019	-.022	.010	-.002	.073
EBSWEBS	-.014	.021	.023	.022	-.037	.019

The Rotated Coordinates of Space Number 2

	25	26	27	28	29	30
CCEACCE	-.034	-.002	-.004	-.021	.018	-.028
DDRADDR	-.010	.006	.031	-.034	.019	.009
ARDCARD	-.006	-.017	.010	-.002	-.009	-.005
REDCRED	.011	-.006	.000	-.010	.013	-.014
E	.002	.027	.006	.002	.021	-.012
MAIEMAI	-.055	-.037	-.036	.028	.041	-.027
NFOINFO	-.003	-.016	-.025	-.023	.007	.009
NTEINTE	-.099	-.016	.051	.033	.033	.037
AILMAIL	-.011	.029	-.008	-.001	.021	-.003
UMBNUMB	.000	.035	-.005	-.023	.019	.019
NLIONLI	.183	-.115	.192	-.058	.036	-.021
ERSPERS	.020	.013	-.003	-.012	.006	.009
RIVPRIV	.020	.013	.030	.007	.004	-.025
ECUSECU	-.005	.002	.003	-.013	.025	.003

ECUSECU	-.037	-.041	.026	.029	-.243	.016
ITESITE	-.021	.020	.013	-.014	-.023	.053
EB WEB	-.008	.020	.002	.001	.058	.002
ILLWILL	.002	.012	.003	.011	.012	-.006
ROWBROW	.065	.014	-.066	.099	.047	-.212
OLLCOLL	-.127	-.058	-.068	.023	-.005	.015
OM COM	.009	.015	-.019	-.017	.027	.010
ONTCONT	.018	.008	-.003	-.061	.159	-.040
OOKCOOK	-.007	-.002	.024	-.028	.002	.016
ATADATA	-.033	-.037	.040	.029	-.248	.025
AMENAME	.069	.036	-.014	-.005	-.017	.047
RDEORDE	.004	.019	-.032	.034	.031	-.023
ERSPERS	-.025	-.006	-.003	.009	.011	-.023
LEAPLEA	-.031	-.059	.055	.069	-.330	.027
OLIPOLI	-.059	.016	.019	-.021	-.035	.028
ROVPROV	-.011	.019	.002	.000	.045	.007
ERVSERV	.109	-.019	-.183	-.197	-.008	.064
ERVSERV	.016	-.012	-.041	.015	.025	.010
ITESITE	.008	-.015	-.001	.008	.027	-.003
HIRTHIR	-.118	-.172	.031	-.030	.080	-.085
IMETIME	.066	.014	-.009	.158	.121	.153
S US	.018	.031	-.039	.001	.034	.012
SEDUSED	-.013	.003	.045	.009	-.011	-.020
SERUSER	.113	.046	-.088	.023	-.046	-.017
SERUSER	-.021	.203	.079	-.016	.030	-.025
EBSWEBS	.003	.031	-.016	-.003	.004	.018

The Rotated Coordinates of Space Number 2

	33	34	35	36	37	38
CCEACCE	-.040	-.002	.022	-.001	.009	.018
DDRADDR	.006	-.035	-.117	-.077	-.021	.021
ARDCARD	-.014	-.010	.004	.003	.001	-.011
REDCRED	-.005	-.005	.018	-.035	.011	-.011
E	-.004	-.017	.019	.016	-.115	.004
MAIEMAI	-.004	-.011	.042	.018	.008	.009
NFOINFO	-.012	.024	-.010	-.012	.000	.020
NTEINTE	.010	-.006	.012	.010	-.009	-.017

AILMAIL	.002	-.004	.009	-.014	.137	.006
UMBNUMB	-.008	.032	-.112	.258	.010	-.001
NLIONLI	-.019	-.010	-.005	.010	.003	.003
ERSPERS	-.009	.035	-.001	.010	-.002	.022
RIVPRIV	-.008	.032	-.008	.027	.018	.371
ECUSECU	-.019	-.003	-.008	-.002	.006	.018
ECUSECU	-.005	.004	-.010	-.009	-.011	-.024
ITESITE	-.115	-.022	.006	-.025	.002	.010
EB WEB	.038	-.014	-.020	.012	.003	.000
ILLWILL	.014	-.006	-.024	.002	.001	-.013
ROWBROW	-.041	-.012	.004	-.017	-.010	.010
OLLCOLL	-.039	-.069	-.037	.007	-.009	-.037
OM COM	.007	-.010	-.001	.000	.002	-.009
ONTCONT	-.004	.012	-.018	.003	.010	-.011
OOKCOOK	.009	-.007	.023	-.006	.010	.015
ATADATA	-.003	.018	-.012	-.008	-.035	.002
AMENAME	.037	.015	.231	.029	.011	-.027
RDEORDE	-.008	-.002	.008	.001	-.001	-.003
ERSPERS	.051	.215	-.020	-.054	-.023	.007
LEAPLEA	.005	-.002	-.022	-.007	-.016	-.006
OLIPOLI	.011	-.002	-.005	-.015	-.002	-.438
ROVPROV	-.007	.001	-.008	-.018	-.012	.024
ERVSERV	-.016	-.014	.011	-.033	-.018	-.012
ERVSERV	.029	.021	-.005	.003	.003	-.018
ITESITE	-.012	.000	.017	-.010	.007	.012
HIRTHIR	.002	-.067	.025	-.005	.016	.008
IMETIME	-.025	.007	.020	-.025	-.010	.018
S US	.008	.005	-.003	.000	.027	.003
SEDUSED	.001	.012	-.003	.022	.004	.017
SERUSER	-.004	-.003	-.075	-.015	.005	-.002
SERUSER	-.027	-.019	.012	-.025	.007	-.010
EBSWEBS	.217	-.081	.038	-.016	-.016	.033

2 Distances moved in the interval between time 1 and time 2

Concept 1 (ACCESS) moved .108 units.

Concept 2 (ADDRESS) moved .113 units.

Concept 3 (CARD) moved .147 units.

Concept 4 (CREDIT) moved .154 units.

Concept 5 (E) moved .107 units.

Concept 6 (EMAIL) moved .113 units.

Concept 7 (INFORMATION) moved .217 units.

Concept 8 (INTERNET) moved .399 units.

Concept 9 (MAIL) moved .129 units.

Concept 10 (NUMBER) moved .178 units.

Concept 11 (ONLINE) moved .169 units.

Concept 12 (PERSONAL) moved .140 units.

Concept 13 (PRIVACY) moved 1.084 units.

Concept 14 (SECURE) moved .113 units.

Concept 15 (SECURITY) moved .636 units.

Concept 16 (SITES) moved .124 units.

Concept 17 (WEB) moved .130 units.

Concept 18 (WILL) moved .132 units.

Concept 19 (BROWSER) moved .152 units.

Concept 20 (COLLECT) moved .241 units.

Concept 21 (COM) moved .112 units.

Concept 22 (CONTACT) moved .170 units.

Concept 23 (COOKIES) moved .118 units.

Concept 24 (DATA) moved .706 units.

Concept 25 (NAME) moved .166 units.

Concept 26 (ORDER) moved .133 units.

Concept 27 (PERSONALLY) moved .115 units.

Concept 28 (PLEASE) moved .730 units.

Concept 29 (POLICY) moved .550 units.

Concept 30 (PROVIDE) moved .130 units.

Concept 31 (SERVICE) moved .200 units.

Concept 32 (SERVICES) moved .223 units.

Concept 33 (SITE) moved .203 units.

Concept 34 (THIRD) moved .248 units.

Concept 35 (TIME) moved .129 units.

Concept 36 (US) moved .139 units.

Concept 37 (USED) moved .128 units.

Concept 38 (USER) moved .133 units.

Concept 39 (USERS) moved .108 units.

Concept 40 (WEBSITE) moved .151 units.

2Col Vector Correlations Between Time 1 and Time 2

	T 1 Magnitude	T 2 Magnitude	Scalar Product	Correlation	Angle
1	1.39	.84	.86	.730412	43.1
2	.73	.58	.42	.984862	10.0
3	.45	.30	.12	.839194	32.9
4	.37	.33	.11	.919175	23.2
5	.37	.44	.15	.920140	23.1
6	.34	.69	.18	.739836	42.3
7	.33	.60	.17	.845281	32.3
8	.33	.67	.14	.655271	49.1
9	.31	.45	.11	.815452	35.4
10	.29	.27	.07	.917091	23.5
11	.29	.36	.08	.758416	40.7
12	.28	.31	.08	.909786	24.5
13	.27	.33	.07	.810754	35.8
14	.27	.63	.11	.670504	47.9
15	.26	.33	.07	.845243	32.3
16	.25	.33	.07	.906016	25.0
17	.24	.30	.07	.930879	21.4
18	.24	.43	.09	.879927	28.4
19	.23	.38	.08	.918901	23.2
20	.23	.41	.08	.879359	28.4
21	.23	.43	.08	.859168	30.8
22	.22	.41	.09	.921590	22.8
23	.22	.38	.08	.942791	19.5
24	.21	.34	.07	.929576	21.6
25	.21	.36	.07	.932479	21.2
26	.21	.33	.06	.903812	25.3
27	.21	.34	.07	.933476	21.0
28	.21	.31	.06	.938627	20.2
29	.21	.55	.08	.710102	44.8
30	.20	.31	.06	.952140	17.8
31	.20	.34	.06	.890389	27.1
32	.20	.34	.06	.838009	33.1
33	.19	.27	.05	.958218	16.6
34	.19	.27	.05	.933231	21.1
35	.19	.31	.06	.959924	16.3
36	.18	.29	.05	.967408	14.7
37	.14	.19	.03	.925589	22.2
38	.12	.58	.07	.982466	10.7

39	.12	.19	.02	.915257	23.8
40	1.14	.64	.53	.721133	43.9

2

End Program GALILEO

Raymond PAU