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From the Editor

This present issue, the landmark of the *Journal of Today*, is devoted to articles that review research as well as commentaries in the areas of Management, Humanities, Social Sciences, and Pure and Applied Sciences. By publishing a wide spectrum of research-based articles and real-life experiences, the *Journal of Today* aims to meet the interests of a broad audience. Our vision for this inaugural edition was to publish articles focusing on issues that are popular and current. Thus, we have selected articles, which highlight issues that are in the center of discussion and for which interested readers may find solutions, develop processes and make innovations in their areas of interest. We believe and hope that academics and researchers will welcome it.

The publication of this issue was made possible due to the cooperation of a number of key players. First and foremost are the authors who shared their quality work with us. Their sincere and enthusiastic support to the *Journal of Today*, has allowed us to publish interesting articles that scholars may read and cite. We also thank all the authors whose articles, even though of great interest, were not possible to be included in this issue. However, we assure them that they will be published in forthcoming issues. The expert individuals, who serve on the Editorial Board as reviewers, were also essential in the development process of the *Journal of Today*. I would also like to express my warm and sincere thanks to the Administration of Americanos College for their inspiration and continuous support in making this publication possible. Last but not least, I wish to express my gratitude and appreciation to everyone who was involved in the publication of the *Journal of Today*.

Charalambos Louca



TOTAL QUALITY MANAGEMENT IN EDUCATION: HOW TO CREATE A LEARNING QUALITY ENVIRONMENT

MARY VAXEVANIDOU*

ABSTRACT

The purpose of this paper is to present the key points that an educational institution should pay attention to if it is interested in providing high level education, offering quality services and applying continuous improvement. We cannot say we will describe anything that must happen or should change, but we will try to focus on some very important issues that can influence a school's image and effectiveness. Our target is to present an alternative proposal in order to have better schools that prepare high level graduates, who learn to work in teams, with high self-esteem and with sensibilities to social and physical environment.

1. INTRODUCTION

In recent years, there has been a cultural change in the business world. Enterprises are becoming more like educational institutions, recognizing the need for continuous learning and continuous education. Educational institutions are becoming more like businesses with emphasis on the need to evaluate processes and to better satisfy students and their parents.

With this knowledge and understanding, through this paper, we would like to high-light some of the points an educational institution can take into account, in order to ameliorate its effectiveness.

This paper, describes how an educational institution can be effective and efficient by implementing TQM in its overall activities and in education. That is managing the entire educational institution so that it excels on all dimensions of services that are important to the customer.

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2. LITERATURE REVIEW

In the 1950s, the Japanese asked W. Edwards Deming, an American statistician and management theorist, to help them improve their war torn economy. By implementing Deming's principles of total quality management (TQM), Japan experienced dramatic economic growth. In the 1980s, when the United States began to see a reduction in its own world market share in relation to Japan, American businesses rediscovered Deming. Quality Management experts Joseph Juran and Philip Crosby, also contributed to the development of TQM theories, models, and tools. TQM is now practiced in business as well as in government, the military, education, and in non-profit organisations (Jurov & Barnard, 1993).

Perhaps the best known, treatment is by Deming (1986), who presents 14 prescriptive points that he says "are the basis for transformation of the American industry"(p.23). Crosby (1979), another major figure, also proposes 14 prescriptions as part of his program for quality. Imai's (1986) influential book, "Kaizen", does not give a systematic list, but mentions some of the same prescription points as Deming and Crosby do.

- Scholte's (1988), influential Team Handbook lists specific principles of what he calls the "quality leadership" system.
- Juran and Gryna (1988) present their "quality trilogy" (planning, control and improvement) and suggest 11 dimensions in quality area.
- The Malcolm Baldrige National Quality Award (1993) has its own 7-dimension scheme to assess a company's quality program.
- Anderson et al. (1994), used the Delphi method to determine the basic concepts underlying Deming's 14 points.
- Dean and Bowen (1994) outline three basic principles for quality management: customer focus, continuous improvement and teamwork.
- Spencer (1994) also takes a theoretical and analytical approach to TQM, presenting seven major components.

From the other side, experts mentioned 37 concepts and nominal definitions, which were further reduced to 7 overall concepts.

3. QUALITY IN EDUCATION AS IN BUSINESS

In this paper, we will present a quality model that can be applied in education, as well as in business. The proposed model is that of the European Foundation for Quality Management (EFQM), which was created in the late 1980's by leading European enterprises, in order to increase their competitive advantage through quality improvement initiatives. More exactly, the EFQM developed a quality model, based on the experience of a number of leading European companies and on the experience gained from the Malcolm Baldrige model in the USA and the Deming Award in Japan. The model can be applied to corporations and to business units. It is, increasingly accepted by managers as a way to coherently assess their organisation before any developments. It is also the basis of the European Quality Award and of several national awards in Europe and other parts of the world.

The model is developed around nine areas. Five of them describe how a business works and are called "enablers". The other four areas describe what a business achieves and we call them "results".

The enablers establish the business environment and facilitate the introduction of quality in business. The enablers are Leadership, Policy and Strategy, People Management, Resources and Processes.

1. **Leadership** means to introduce quality as culture to human potential and to organize the whole enterprise around quality culture. At this point, top management commitment is necessary.
2. **Policy and Strategy** need to reflect management commitment, and to put goals towards quality practice and continuous improvement.
3. **People Management** defines how to manage people through quality aspects, in order to realize their full potential.
4. **Resources** need to be effectively managed and rationally utilized to support quality purposes.
5. **Processes** are every step we take to evaluate quality and to improve it. They must be well identified, reviewed and revised before we put them in function.

The results we achieve include four areas: external customer satisfaction, internal customer satisfaction, impact on the society and on

business results. In general, we can say that results measure enterprise performance.

1. **External customer** satisfaction measures the perception, negative or positive that our customers have for the enterprise, concerning the level of our goods and services we provide to them.
2. **Internal customer satisfaction** measures employee satisfaction. Otherwise, it measures how human resources feel about their work.
3. **Impact on society** measures the impact the enterprise has on society, including social and environmental factors.
4. **Business results** measure if the enterprise achieves its planned performance.

We notice that through the EFQM model, external customer satisfaction, internal customer satisfaction and the impact on the society are achieved through the Total Quality Concept in leadership, policy and strategy, people management, processes, and resources, which lead to excellence in business results.

4. APPLICATION OF TOTAL QUALITY MANAGEMENT IN EDUCATION

Educational Institutions face real competition because as with any business, they have customers, suppliers and face competition. Within this environment, educational Institutions must have a clear statement of their mission, vision and values that covers their leadership style, policy and strategy.

Mission for a quality educational institution can be:

- To put students first of all others.
- To raise the achievement of all pupils, students, professors and staff.
- To follow quality improvement in teaching and learning.
- To foster high self-esteem and self-worth among students, professors and staff.

On the other hand, vision can be:

- To help all pupils/students realize their full potential.
- To prepare an updated, balanced and motivating curriculum.
- To create a challenging and supportive climate at school.
- To create a civilized and cultural educational institution.

Values can be:

- To encourage pupils/students have intellectual activities.
- To teach pupils work hard in order to be capable and effective.
- To tell the truth and not to promise more than what we can do or offer, especially to the students.
- To keep promises.
- To respect the rights and property of all pupils and students.
- To help the less fortunate pupils/students, and give support to those with capabilities, knowledge and in general to those who are hard workers.

Leadership adopted by senior management has to focus on mission, vision and values, in order to adopt the new philosophy. Management must undergo a transformation and begin to believe in quality policy.

Managing people means to:

- Institute training and retraining. Workers need to know how to do their jobs correctly even if they need to acquire new skills.
- Institute leadership. Leadership is the job of management. Managers have the responsibility to discover the barriers that prevent staff from taking pride in what they do. The staff must know what those barriers are.
- Drive out fear. People often fear reprisal if they openly express their ideas. Managers need to create an environment where workers can express concerns with confidence.
- Break down barriers between staff areas. Managers should promote teamwork by helping staff in different areas/departments to work together. Fostering interrelationships among departments encourages higher quality decision-making.

- Eliminate slogans, exhortations, and targets for the workforce. Using slogans alone, without an investigation into the processes of the workplace, can be offensive to workers because they imply that a better job could have been done. Managers need to learn how to really motivate people in their organizations.
- Eliminate numerical quotas. Quotas impede quality more than any other working condition; they leave no room for improvement. Workers need flexibility in order to offer customers the level of service that they need.
- Remove barriers to pride of workmanship. Give workers respect and feedback about how they are doing their jobs.
- Institute a vigorous program of education and retraining. With continuous improvement, job descriptions will change. As a result, employees need to be educated and retrained so they will be successful at new job responsibilities.
- Improve communication through the school. This includes formal and informal meetings, regularly walking at school, use of daily bulletins, school magazine and help Staff Association to communicate.

The resources of an educational institution can be financial, informational, physical and technological.

Financial resource management concern is to:

- Minimise and form an ideal cost centre, satisfying the needs of the educational institutions and allowing prioritisation of resources to all pupils and students.
- Finding additional funding from local enterprises or by government for specific purposes such as to work as a "green school".
- Minimize any kind of cost, starting by running costs, and coming to an agreement with the local authorities in order to save money.

Information resources are the key to undertake initiatives and to create a dynamic image between schools. In order to get information, a school can conduct surveys of students, staff, parents, local enterprises and authorities. In addition, regular meetings with all pupils/students can play an advantage key role to accumulating information.

Concerning physical resources, it is very important to make plan and to take preventive measures against vandalism, disasters and phenomenon like earthquakes or fire. In this case, educational institutions must give specific instructions to all pupils/students so as how to be protected.

Technological resources mean to put technology to work successfully for all school's/university's activities. Additionally, schools/universities must give P/C, Internet and e-mail access to all pupils/students. Technological resources must be available to anyone at school/university, especially to students, who will very soon make career in business.

Nevertheless, processes are not as easily defined in services as in production. We can underline that there are critical processes that can be documented, monitored and reviewed at a school or university. These processes are concerned with testing the knowledge or to making pupils/students feel self-confident or even developing pupils'/students' spirit. That means implementing and controlling processes in order for the goals of an educational institution are achieved. In the following table (table 1), basic processes corresponding to specific goals are presented:

TABLE 1: MATCHING OF PROCESSES AND GOALS

GOALS	PROCESSES
Specific skills and knowledge to be acquired by the students.	To regularly test specific skills and knowledge. Tests can be written, oral, psychometric, personality tests, etc.
To help students be capable of easily making a career after their graduation. That means to help the transition from school to work.	<ul style="list-style-type: none">• To have practical, technological and new technology lessons in the curriculum.• To have an extra training at local enterprises.• To measure new skills and knowledge.
To attend to the moral and spiritual development of students and staff.	<ul style="list-style-type: none">• To develop a programme to support the application of the school values and behaviour with sanctions against unacceptable behaviour.• To put a test for measuring good or

	bad behaviour of the students and the staff in practice.
To develop skills and knowledge in specific subjects, create enthusiasm and promote interests.	<ul style="list-style-type: none">• To review action plans of pupils.• To promote team building and empowerment by team homework or special activities.• To test how we help less able students and to support challenged ones.• To develop links with other schools by common programmes or clubs.• To make better use of leisure time by theatre, club, environmental and social policy etc.
To offer high-level education.	<ul style="list-style-type: none">• To define what a "good lesson", a "good teacher", and a "good school" mean.• To explain how to evaluate the "good lesson" and the "good teacher".• To prepare all forms about evaluation and to explain how and when to fill them in from the beginning.• To adopt a staff development programme.
To be the best or one of the best schools in the area.	<ul style="list-style-type: none">• To benchmark against other similar schools.• To take account of disadvantages and to ameliorate bad conditions or bad quality services.• Get pupils' ideas for continuous improvement.• To have good collaboration with professors and staff. To put complaint points into action and to have open doors days for discussion.
To develop self-confidence and self-esteem.	To develop rewards for the best students, professors and administration staff.
To help pupils undertake initiative.	<ul style="list-style-type: none">• To promote and to support initiative

	by publication and by making available technological and financial resources. <ul style="list-style-type: none">• To reward initiative.
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We note that all these proposals must be described in strict guidelines and when a new process is involved, it needs a lot of changes that can affect other ones. However, when processes affect more than one team, these changes are reviewed, monitored and incorporated in the School Handbook. Also, training needs are incorporated in the staff development programme.

As we have already mentioned, we organize enablers in order to have some important results in external and internal customer satisfaction, in society and in business.

External customer for an educational institution can be the parents and the local enterprises. The performance of the Institution depends on the perception that these two groups have. For a parent, the best school is that which can maximize his/her child's potential and can help the graduate find work easily. For the local enterprises, the best school is that which has capable and effective graduates, ready to transfer their academic knowledge into the business world.

Satisfaction of internal customer means that academics and administration work hard without any time lost, with pleasure and enthusiasm, interested in learning new things. All these cannot happen by chance or by simply having a good attitude. It can happen with a stable policy focused on continuous education, team building, technological and emotional support and open communication.

An educational institution has an enormous impact on its local society. Talking about impact on society, we mean impact on physical, social and technological environment. A good school can play a key role to protect its environment and to exercise prevent policy to a lot of important subjects, as:

1. To create a "green" school. It means to increase awareness of environmentally sustainable development and to create institutional culture of sustainability.

For example:

- To take initiative in areas such as transport, recycling, waste management, energy conservation and campus design according to environment protection.
- To review "curriculum greening" moves in other schools and to collaborate with them.
- To report staff and student initiative, as well as inter-university developments (such as the launch of the New Jersey Higher Education Partnership for Sustainability in the USA), and the effects of larger initiative (over 240 European universities have now signed the Copernicus Charter for Sustainable Development).
- To compare and contrast the environmental policies and statements published by different universities and colleges.
- To report regulatory and legislative issues and developments.
- To discuss alternative methodologies for introducing and maintaining sustainability initiatives.
- To prepare the "green manager" of the 21st century, with sensibility to environment by discussions and activities about it.

We note that over 270 universities world wide have already signed the Talloires Declaration, a ten-point plan committing institutions to the path of sustainability (Walter Leal Filho, Editor of the new International Journal of Sustainability in Higher Education).

2. To contribute to decrease criminality and use of drugs or anything that can destroy human beings. That can happen by organizing lectures and undertaking initiative about them. Pupils and students need information and protection. A good school can offer to this subject by all its potential.
3. To give scholarships to poor students/pupils and help everybody acquired the necessary knowledge and skills so that to become a useful and a productive citizen.

Business results are not only financial for a good educational institution with a good image and reputation. First of all, results mean:

- Increase of the number of students/pupils with excellent graduation.
- Increase of the level of knowledge, something can be tested by local enterprises.
- Increase of the number of students at all departments and faculties. In case there is diminution of demand of a faculty, it needs to review and reorganize studies.
- Direct employment of graduate students at big enterprises.
- Need of less advertising from one year to another. Students/pupils and their parents promote the image of an educational institution.

5. CONCLUSIONS

EFQM (European Foundation for Quality Management) is a tool of TQM (Total Quality Management) system for continuous improvement employing participative management and centred on the needs of customers (Jurow & Barnard, 1993). Key components of EFQM are employee involvement and training, leadership involvement based on the principles of TQM principles, rational use of resources and design of processes according to goals.

Educational Institutions can benefit from TQM in three ways: organising educational institutions around quality principles; redefining the beneficiaries of the educational institutions' services as internal customers (students, academic and administration staff) and external customers (local enterprises, society); and reaching a state of continuous improvement (Jurow & Barnard, 1993).

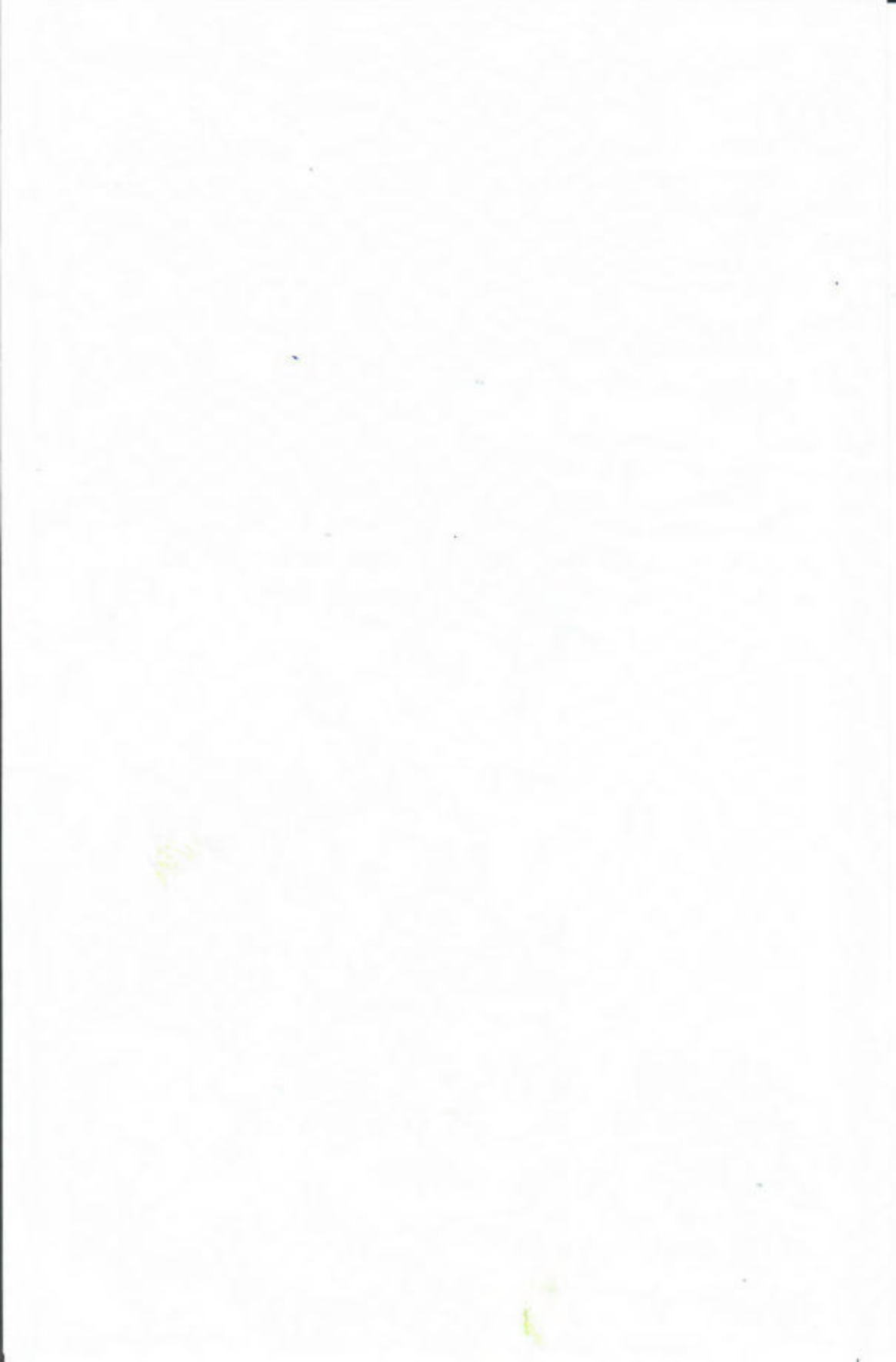
Schools and Universities are ideal places to implement TQM. They are service organisations dedicated to their customers. By formulating a strategic plan, and following it with a commitment to continuous quality improvement, we can transform and improve the image of the educational institution. Finally, we have to note that TQM is not a "quick fix." It needs to be implemented gradually over a two to three-year period, in order to have the first results.

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A STUDY ON LANGUAGE LEARNING STRATEGIES USED IN READING AND VOCABULARY ESL CLASSROOMS

MARIA ANASTASIADOU*

ABSTRACT

Much interest has been expressed in recent years in language learning strategies and many surveys were conducted to draw different implications on these. Many of these studies examined strategies in listening skills, some others examined oral skills and others reading skills. The conclusions varied accordingly to the findings of the different skills. This article focuses on the reading and vocabulary strategies used in classrooms of English as a second language. It also explains the categories and sub-categories of these strategies and gives examples of how some strategies are used by different students. Finally we will look at the results of the findings to see which strategies are used by the students and how often.

1. INTRODUCTION

Since much emphasis was placed on language learning strategies teaching, I was motivated to investigate in what extent this is feasible. Therefore, I conducted a research based on the learning strategies to see whether students do use any strategies, which these strategies are and how often students use them. Having the results, we can conclude that language learning strategies are teachable and can also become part of the teaching process.

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2. READING AND VOCABULARY IN ESL

According to Williams (1984), a simple definition of reading is that it is a process whereby one looks at and understands what has been written. However if we focus on the reading process itself, it is an individual process that takes place inside the reader's mind and is based on their past experience, both in learning how to read and also in the way reading fits into their lives. All readers bring something with them to the text, in terms of a general stock of knowledge of the world. The reading process that Davies (1995) described, is the 'Bottom-up' process, where the learner begins to read the letters, then identifies the sounds, then the words, then moves on to identify whole sentences and finally the meaning and thinking. By contrast to the 'Bottom up' model, another model, the 'Top down', includes thinking and meaning at a very early stage and the processing sequence proceeds from predictions about meaning to attention to progressively smaller units.

As a skill we may argue that reading is one of the most important foreign language skills, particularly in cases where students have to read English material for their own specialist subject but may never actually have to speak the language. Reading has been given great attention in the language classroom, since most of the activities in different lessons involve reading skills. In fact, reading is a part of the way we use language in daily life in order to communicate with each other and therefore it's essential to be taught.

As mentioned at the beginning of this article, the correlation between reading and vocabulary is strong and is supported by quite few researchers, such as Johnson and Steele (1996). When the task requires the learner to answer a comprehension question, he will have to understand a large amount of vocabulary in order to be able to answer it successfully. If the learner fails to comprehend even what the question is requesting then he cannot do the task. Therefore we can support the theory of the strong bond between reading comprehension and vocabulary knowledge.

However teachers should be aware of the difficulties of the readers in learning vocabulary and reading, therefore they should instruct learners to use effective methods which will enhance the learning of these two language aspects. These methods, better known as *language learning strategies*, will be investigated in the following paragraphs.

3. LEARNING STRATEGIES IN LANGUAGE LEARNING (LLSS)

'Language learning strategies' is a complex concept and many researchers provided different definitions. Oxford (1990), has defined learning strategies as specific actions, behaviours, steps or techniques that students employ-often consciously-to improve their own progress in internalizing, storing, retrieving and using the second language. Wenden, (1987), sees three aspects in the concept of 'learning strategies' relating to: the language learning behaviours, that learners actually engage in to learn and regulate the learning of a second language, what learners know about the strategies they use and what they know about aspects of their language learning. Furthermore, strategies can increase the learner autonomy, which is essential for developing communicative competence.

In terms of my experience as a learner, observer and teacher, all the students either consciously or unconsciously use different strategies to different language learning activities, such as vocabulary, comprehension, etc, which help them acquire, improve and organize their learning. Interestingly, there were arguments supporting that learning strategies began from the learners themselves using different ways which led to effective learning. Particularly Naiman (1978) argued that the literature on learning strategies in second language acquisition emerged from a concern for identifying the characteristics of effective learners.

In addition to all the above aspects concerning language learning strategies, there are some more characteristics that concern them. Some strategies can be observed; there is an observable behaviour that accompanies the mental act, as

when the learners ask a question to clarify something they don't understand. Other strategies cannot be observed, such as when the learners infer or compare. Also some strategies can be changed or rejected, usually the ineffective ones, new strategies can be learned and well-functioned strategies can be adapted to new situations.

An implication that was drawn by different studies was that language learning strategies could be described and classified into a number of categories and subcategories. Many researchers, such as Rubin (1981), O'Malley and Chamot (1990), Oxford (1990) did this classification and used different names of the categories. O'Malley and Chamot (1990) divided strategies into three main groups, namely Metacognitive, Cognitive and Social-affective strategies. This classification looks at the learning strategies only from one point of view, that is, it views only the indirect learning strategies, which are those that the learners use to manage or control their own learning process. Oxford's classification of language learning strategies includes both Direct Strategies, that is those strategies which learners apply directly to the language learning itself and Indirect strategies.

However, this study will focus only on Direct strategies thus, it will not analyze any of the Indirect strategies. According to Oxford (1990), all direct strategies require mental processing of the language, but the three groups of direct strategies, as we will now examine, do this processing differently and for different purposes. The Appendix 1 represents the Direct Strategies according to Oxford's (1989) classification. The first group of direct strategies is Memory strategies, the second, is Cognitive strategies and the third is Compensation strategies.

Memory strategies, sometimes called "mnemonics", have been used for thousands of years. Human memory is crucial to the concept of learning and according to Wenden and Rubin (1987), the ability to understand the language and producing, it depends on the ability to recognize and retrieve information stored in the memory. Memory strategies are important because they help language learners to cope with vocabulary and enable them to store verbal

material and then receive it, when needed, for communication. Memory strategies fall into four sets: Creating Mental Linkages, Applying Images and Sounds, Reviewing Well and Employing Actions. The first set includes strategies such as grouping language material into meaningful units; associating/elaborating new language information to known concepts, and placing new words into a content. The second set includes strategies such as using imagery by relating new language information to concepts in memory by means of imagery; semantic mapping; using keywords by remembering a new word with the use of auditory and visual links; and representing sounds in memory. The third set is associated with structured reviewing and the last set involves strategies such as using physical response or sensation by physically acting out a new expression; and using mechanical techniques involving moving in order to remember new target language information.

The second category of Oxford's classification is the category of *Cognitive Strategies*. These, as analysed previously, are essential in learning a new language. Such strategies are a varied group, ranging from repeating to analysing expressions to summarising. With all their variety, cognitive strategies are important in language learning, since they are unified by a common function: manipulation or transformation of the target language by the learner (Oxford, 1990). Cognitive strategies are typically found to be the most popular strategies with language learners. In addition, strategies for practicing are among the most important cognitive strategies because practice is essential in the learning process and helps learners to reach an acceptable level of proficiency. In the classification of cognitive strategies there are four sets: the first one is "Practicing", the second is "Receiving and sending messages", the other one is "Analysing and reasoning" and the last set is "Creating structure for input and output".

The last category of this classification is *Compensation Strategies*. Compensation strategies are important in language learning because they enable learners to use the new language for either comprehension or production despite limitations in knowledge. These strategies are intended to make up for an inadequate repertoire of grammar and, especially vocabulary Oxford, (1990).

There are ten Compensation Strategies which fall into two sets: Guessing Intelligently in listening and in reading and Overcoming Limitations in Speaking and Writing. The first set includes strategies such as using linguistic clues and using other clues. The second set involves strategies such as switching to the mother tongue; getting help; using mime or gestures; avoiding communication partially or totally; selecting the topic; adjusting or approximating the message, coining words; and using a synonym.

Thus, all direct strategies require mental processing of the language but the three categories of direct strategies, Memory, Cognitive and Compensation are important in language learning because they do this processing differently and for different purposes. Since all of these strategies are essential in the language learning process and even if the learners are not aware of them, teachers should introduce them for adaptation.

4. EFFECTIVE READING AND VOCABULARY STRATEGIES

Let us now examine the effective strategies concerning reading and vocabulary skills as different researches concluded. As Sternberg (1969) explained, the strategy which concerns guessing from the context, is quite useful because this way learners will not interrupt the flow of their reading process in looking up the word in the dictionary. Also this strategy enables them to rely more on themselves rather than on the teacher or the dictionary. This strategy was supported by Aebersold and Field (1997), who suggested that in order to guess a word, learners should examine the grammatical function of that word; if it is a noun, adjective, and so on. As Nation (1990) describes, first the learner looks at the unknown word and decides its part of speech. Then looks at the sentence containing the unknown word and try to see what adjectives describe it, if it is a verb, etc and then looks at the relationship between the sentence end the unknown word. At this point I would like to mention that this strategy is introduced in the First Certificate level, where learners are encouraged and advised to use this method in solving different tasks.

Another strategy is to use the context surrounding the word to guess its general meaning or analyse the parts of the word to guess its probable meaning. For example, if in the text there is the word 'lawn' and the learner does not understand it, he can assume from the surrounding words, such as 'green', 'mow', 'garden, etc, the meaning of that word. Another example, when the learner sees the word 'ineffective', he can assume that the prefix -in is usually used for negative things and he would guess its meaning, since he knows the word 'effective'. In addition, Gu and Johnson (1996), supported that the 'keyword' strategy was a popular one, where the learner relates a sound or image to the new language. Generally, all the memory strategies help the learners to store verbal material and then retrieve it when needed for communication.

However, a number of studies Cotterall, (1990) and Williams, (1984) concentrated on reading strategies and particularly Oxford (1990) outlined those reading strategies which were applied in the direct language learning strategies, of her classification.

Firstly, she identified reading strategies in the *Memory* category of strategies. Learners use grouping strategies to classify what is heard or read into meaningful groups. For example, learners group different new words they read or hear, like quickly, completely, easily, etc under the heading 'Adjectives'. The same grouping is done for other words, like 'nouns', 'masculine', 'feminine', etc. Reading strategies are also used in the associating/elaborating group, where learners associate new language information with familiar concepts already in memory. Any associations must have meaning to the learner, even though it might not make a great deal of sense to someone else. For example, a German student would remember the word 'knowledge' (Wissenschaft) by associating it with the English words 'wise' and 'shaft' in thinking of knowledge as a 'shaft of wisdom'. In addition, another frequent strategy that occurs in reading is 'placing new words into a context'. This strategy involves placing new words or expressions that have been heard into a meaningful context, such as a spoken or written sentence, as a way of remembering it. An example that Oxford (1990) reported, is a student who read the names of the Great Lakes in the United States and wants to remember them. To do so, he uses the acronym HOMES

(standing for Huron, Ontario, Michigan, Erie, and Superior) and puts it in the context of the spoken sentence, 'My HOME'S on the Great Lakes'. Another good way of remembering words is to create a mental image of them. This strategy is used often in early stages of language learning and it seems that a number of learners use them effectively. For example, some learners remember a word or a group of words like 'cooker, bathroom, living room' by making a mental image of a situation in which they first heard these words. This is the main reason that the teachers of these low levels use flash cards of grouped items rather than individual items. A similar strategy used frequently is the 'Keyword' strategy. This combines sounds and images so that learners can more easily remember what they read or hear in the new language. I believe that everyone who has been a second language learner has used this strategy at some point of their learning, at least few times if not always. There are some more memory strategies, but we have focused only on the most frequent ones that the learners find effective.

Concerning the other category, the *Cognitive Strategies*, are used in reading and vocabulary skills more often than any other strategies. According to Oxford (1989), the 'receiving and sending messages' group is very widely used, especially when learners use resources for either receiving or sending messages. To understand better a word or a phrase, printed resources such as dictionaries, word lists and phrase books are used frequently and some learners find them extremely helpful. However, as we will see in a later chapter, this strategy is not very effective, in terms of learning a new language. Another strategy which is considered as fairly easy and learners use it naturally is "analysing contrastively". It involves analysing elements (sounds, words and syntax) of the new language to determine similarities and differences in comparison with one's own native language. It is usually used in early stages of language learning to understand the meaning of a word or phrase. For example, in reading an English passage, a student will understand that the word "cream", which corresponds to the Greek word "krema" (crema). Moreover, a very frequent strategy that is used by learners in almost all stages of language learning is 'translation'. This allows students to use their own language in order to understand a word or a phrase in the new language. Usually when the learners

read a text and come across an unknown word, they translate its definition in their mother tongue. Another strategy, which is usually used in reading, is 'taking notes'. Learners, when reading a text, might find it useful to write down the main ideas or something that find important in the text and then organise it in a note-structured way so to remember it. A similar strategy that learners usually adopt is 'summarizing'. Learners, in order to understand a passage, they make a shorter version of the original one, which can also be done in their mother tongue.

The last category of direct strategies, *Compensation* strategies, consists of useful and frequent reading strategies, (Oxford, 1989). 'Guessing Intelligently' group of strategies is essential for reading and is also effective for learners in remembering words. There are two strategies in this group; the first strategy is using linguistic clues. Previously gained knowledge of the target language, the learners' own language, or some other language can provide linguistic clues to the meaning of what is read. Suffixes, prefixes and word order are useful linguistic clues for guessing meanings. An example of guessing based on partial knowledge of the target language is when a learner recognises the English words 'grass, mower and lawn' so he knows that the text is about gardening (Oxford, 1990:91). The second strategy is 'using other clues'. In addition to clues coming purely from knowledge of language, there are clues from other sources. Some clues are related to language but go beyond (such as forms of address that imply social relationships), and others come from a variety of other sources, which are not related to language. Forms of address, such as nicknames or titles, help learners guess the meaning of what they read or hear. For instance, the term 'dear'... 'My love', etc, implies a close relationship between the addresser and the addressee, while the title 'Ph. D.' indicates status. To the learner all these are aids for understanding the rest of the passage.

5. RESULTS

Having explained the effective strategies that different researches supported, we are now going to analyze the results that were drawn by the investigation I conducted to a group of foreign students studying abroad. The students were from different countries and of different age. They were enrolled in an intensive English language course that lasted for 9 weeks. The results will show which strategies the students used more frequently and how often they used them. Also they will prove that the results of other researchers who were mentioned previously, are very similar to the ones of this investigation.

We shall now explain the means of measuring the results of this research. A questionnaire was given to the students at the beginning and at the end of their course. This questionnaire was adapted from Oxford (1989) and it is called Strategy Inventory for Language Learning (SILL) as shown in Appendix 2. Let us now see the explanation of the results.

Figure 1, illustrates the total number of direct strategies, classified according to Memory, Cognitive and Compensation that were employed by the learners in the reading and vocabulary classroom throughout their course. The vertical column with the numbers represents the average frequency of the strategies used, which is translated below the figure. The definition of the results is adapted from Oxford (1989), and is explained in the next page, above Figure 2. Those strategies that are reported to be used "Always or almost always" or "Usually used", score the highest marks from 4.5-5.0 and 3.5-4.4. This means that those strategies are used most frequently. Those which were reported to be used as "Sometimes", score 2.5-3.4 and have medium frequency, and those which are "Generally not used" or "Never or almost never used" score from 1.5-2.4 to 1.0-1.4 and have low frequency. These definitions apply in all three graphs. This graph shows that the most frequently used strategies are Cognitive and Compensation ones with the same average rate, 3.5, which translates to High - usually used. Memory strategies are the least frequently used with average rate 2.5, which translates to Medium-sometimes used.

Figure 2, illustrates the types of Memory strategies that are used in the classroom. These are divided into four strategies namely 'creating mental linkages', 'applying images and sounds', 'reviewing well' and 'employing action'. The most frequent strategy of these four is 'creating mental linkages' with an average rate of 3.5, which translates into 'High-usually used'. The next most frequent strategies are 'applying images and sounds' and 'reviewing well'. These are equal in rate of 2.5, which translate to 'Medium-sometimes used'. The least frequent strategy is 'employing action' with an average rate of 2.0, which translates to 'Medium-generally not used'.

Figure 3, illustrates the types of Cognitive strategies that are used in reading and vocabulary classroom. Cognitive strategies, consist of four sub-strategies, namely 'practicing', 'receiving and sending messages', 'analysing and reasoning' and 'creating structure for input and output'. The most frequently used sub-strategies are 'practising' and 'analysing and reasoning' with an average rate of 3.5, which translates to 'High-usually' used. The next most frequent strategy is 'receiving and sending messages' with an average rate of 3.0, which translates to 'Medium-sometimes' used. The same translation of frequency, 'Medium-sometimes' used, applies to the last strategy, 'creating structures for input and output', but with a lower average rate of 2.5.

The last Direct Strategy, Compensation, consists of only one sub-strategy, concerning reading and vocabulary skills therefore a graph for illustrating the average rate was not applicable. However, the only sub-strategy of Compensation category, relating to reading and vocabulary, is 'guessing intelligently' which has an average rate of frequency of 3-5, which translates into 'High-usually' used.

Key to the averages, adapted from Oxford (1989) SILL Profile of Results:

High	Always or almost always used	4.5 to 5.0
	Usually used	3.5 to 4.4
Medium	Sometimes used	2.5 to 3.4
Low	Generally not used	1.5 to 2.4
	Never or almost never used	1.0 to 1.4

FIGURE 1: TOTAL NUMBER OF READING AND VOCABULARY STRATEGIES REPORTED IN THE STUDY

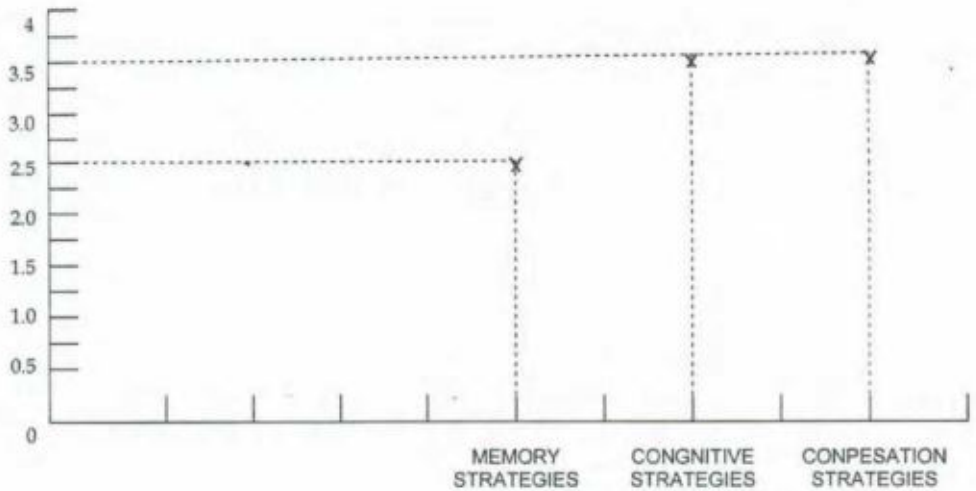
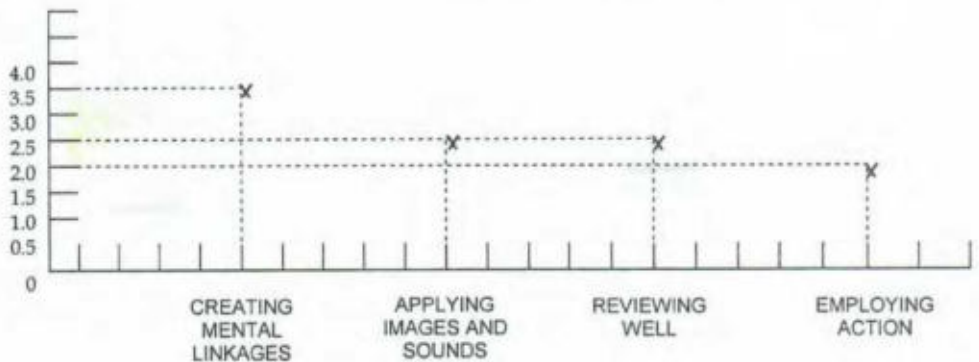
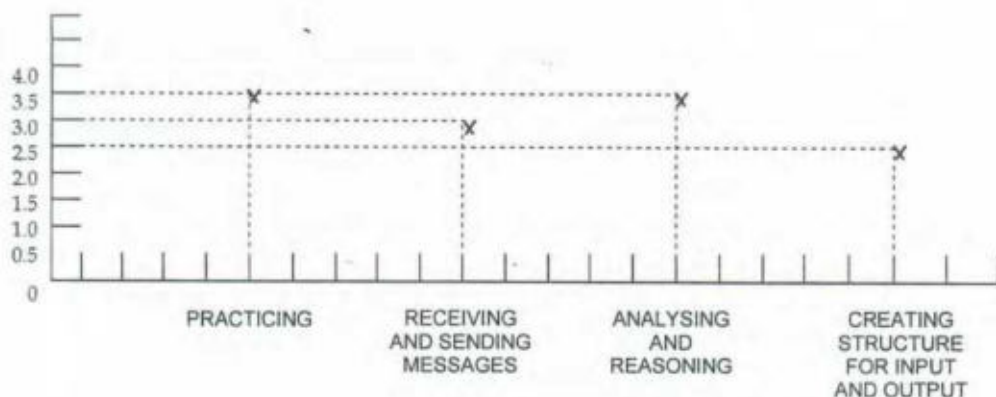


FIGURE 2: TYPES OF MEMORY STRATEGIES



2.0 Medium	Generally not used
3.0 Medium	Sometimes used
3.5 High	Usually used

FIGURE 3: TYPES OF COGNITIVE STRATEGIES



2.5 Medium	Sometimes used
3.0 Medium	Sometimes used
3.5 High	Usually used

6. CONCLUSION

The present study has focused on the reading and vocabulary skills of ESL students and it might well be adapted to focus on other language skills. Having analyzed all the Direct Strategies, we went on to compare the results of my research to the findings of other researchers. We concluded that the results were similar and that the most frequently used strategies are the Cognitive and Compensation strategies.

The implications drawn from this study suggest that teaching language learning strategies to students could be a basic factor in the learning process, which however needs a well organised syllabus in terms of teaching time, in order to fit both goals, teaching the strategies and teaching the lesson.

APPENDIX 1: DIRECT STRATEGIES ACCORDING TO OXFORD'S (1989) CLASSIFICATION

I. Memory strategies

A. Creating Mental Linkages:

- Grouping
- Associating/elaborating
- Placing new words into context

B. Applying images and sounds:

- Using imagery
- Semantic mapping
- Using keywords
- Representing sounds in memory

C. Reviewing well:

- Structured reviewing

D. Employing action:

- Using physical response or sensation
- Using mechanical techniques

II. Cognitive strategies

A. Practicing

- Repeating
- Formally practicing with sounds and Writing
- Recognizing and using formulas and Patterns.
- Recombining

- Practicing naturalistically.

B. Receiving and sending messages

- Getting the idea quickly
- Using resources for receiving and sending messages

C. Analysing and reasoning

- Reasoning deductively
- Analysing contrastively (across languages)
- Translating
- Transferring

D. Creating structure for input and output

- Taking notes
- Summarising
- Highlighting

III. Compensation strategies

A. Guessing intelligently:

- Using linguistic clues
- Using other clues

B. Overcoming limitations in speaking and writing

- Switching to the mother tongue
- Getting help
- Using mime or gesture
- Avoiding communication partially or totally
- Selecting the topic
- Adjusting or approximating the message
- Coining words
- Using a circumlocution or synonym

APPENDIX 2: STRATEGY INVENTORY FOR LANGUAGE LEARNING (SILL) QUESTIONNAIRE USED BY THE STUDENTS AT THE BEGINNING AND AT THE END OF THEIR COURSE (ADAPTED FROM OXFORD, 1989)

EXAMPLE:

1. Never or almost never true of me
2. Usually not true of me
3. Somewhat true of me
4. Usually true of me
5. Always or almost true of me

Read the item and choose a response (1 to 5 as above) and write it in the space after the item.

I actively seek opportunities to talk with native speakers of English....

You have just completed the example item. Answer the rest of the items on the worksheet.

Strategy Inventory for Language Learning
Version 7.0 (ESL/EFL)

PART A

1. I think of relationships between what I already know and new things I learn in English.
2. I use new English words in a sentence so I can remember them.
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.
4. I remember a new English word by imagining a picture of a situation in which the word might be used.
5. I use rhymes to remember new English words.
6. I use flashcards to remember new English words.
7. I physically act out new English words.
8. I review English lessons often.

9. I remember new English words or phrases by remembering their location on the page, on the board or on a street sign.

PART B

10. I say or write English words several times.
11. I try to talk like native, English speakers.
12. I practice the sounds of English.
13. I use the English words I know in different ways.
14. I start conversation in English.
15. I watch English language TV shows spoken in English or go to movies spoken in English.
16. I read for pleasure in English.
17. I write notes, messages, letters or reports in English.
18. I first skim an English passage (read over the passage quickly) then go back and read carefully.
19. I look for words in my own language that, are similar to new words in English.
20. I try to find patterns in English.
21. I find the meaning of an English word by dividing it into parts that I understand.
22. I try not to translate word-for-word.
23. I make summaries of information that I hear or read in English.

PART C

24. To understand unfamiliar English words, I make guesses.
25. When I can't think of a word during a conversation in English I use gestures.
26. I make up new words if I don't know the right ones in English.
27. I read English without looking up every new word.
28. I try to guess what the other person will say next in English.
29. If I can't think of an English word, I use a word or phrase that means the same thing.

PART D

30. I try to find as many ways as I can to use my English
31. I notice my English mistakes and use that information to help me do better.

32. I pay attention when someone is speaking English.
33. I try to find out how to be a better learner of English.
34. I plan my schedule so I will have enough time to study English.
35. I look for opportunities to read as much as possible in English.
36. I look for people I can talk to in English.
37. I have clear goals for improving my English skills.
38. I think about my progress in learning English.

PART E

39. I try to relax whenever I feel afraid of using English
40. I encourage myself to speak English even when I am afraid of making mistakes.
41. I give myself a reward or treat when I do well in English.
42. I notice if I am tense or nervous when I am studying or using English.
43. I write down my feelings in a language learning diary.
44. I talk to someone else about how I feel when I am learning English.

PART F

45. If I do not understand something in English I ask the other person to slow down or say it again.
46. I ask English speakers to correct me when I talk.
47. I practice English with other students.
48. I ask for help from native speakers.
49. I ask questions in English.
50. I try to learn about the culture of English speakers.

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SUICIDE,
SYNOPTIC, EXPLANATORY, EDUCATIONAL
REFERENCES
AND SYLLOGISM.

ANDREAS SPANOS*

ABSTRACT

One of the most challenging issues that scientists of Psychology, Sociology, and Psychiatry – among others – have been confronting throughout the history of at least the last two hundred years is the one of Suicide. Perhaps, one could say that suicide represents the most lethal “virus” that human kind has ever encountered. However, what is suicide? How does it occur? What do scientists say about this issue? What could be so powerful so to lead an individual toward the rejection of the most valuable gift of all? Is there any reason for one to end life? Is there a list of reasons? Perhaps, the answer has to do with an endless amount of reasons for every human being that reaches the point of doubting the validity of living. No one can be absolutely sure of the exact feelings that can lead a person toward becoming suicidal. We all know that suicide is a totally wrong behavior and it will lead to absolutely nothing. It can accomplish nothing. However, we keep on finding out from the mass media that “a suicide was attempted”, or “it has been completed”.

The quality and quantity of available scientific information regarding suicidal behavior, is of a tremendous importance. Still, all these shelves fill with books and information are not enough so for us to be absolutely sure that we can answer every single question regarding suicide. I believe that researching the issue of suicide can only give us a general orientation of how to define it, and some times to be able to identify it as a symptomatic behavior. Nevertheless, we cannot ever be sure of what an individual feels inside of him. In addition, overall, we must never give up in trying to find a

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"cure" for it. It is my belief that for the time being the best "cure" available is through the process of informing.

1. INTRODUCTION

Generally, what is suicide? Suicide is a self-destructive behavior that I perceive as being a major part of the most difficult and scientifically complex areas of scientific research, analysis, and therapy as far as human behavior is concerned. It is a decision of one to end his life. I tend to resemble suicide as a "virus"-like situation because it comes from within, but it can be developed from both external and internal psychological "infections" and traumas.

The reason that I perceive the issue of suicide as being difficult and complex is because each human being differs from one another in thinking and behavioral patterns, attitudes and perceptions toward everyday socio-psychological stimuli, and generally we all differ in our overall inner-psychological perception of everything that has to do with life. We can never be sure what a person plans to do in the next five minutes, or in the short or long future. And one of the most serious errors anyone can do in such situations is to compare himself with another person so to determine what will most probably take place or not in the other person's life. We can never be absolutely positive what can lead an individual toward the decision of attempting suicide. This particular complexity of the human mind and inner-psychic is one of the reasons that all individuals are unique and must be seen as unique. We might all be the same in our biological structure, but we are all different from one another in the way that we function psychologically. In addition, this is one of the reasons that I believe that our psychological "organism" is one of the most complicated areas to understand than any other human trait.

Each human being is different in the way that he or she was brought up, in family values, in religious values, in the way that each one of us comprehends the nature and importance of life and survival. To deal objectively with a situation of suicidal behavior we must examine an endless number of areas and motives that might lead an individual toward a self-destructive behavior such as suicide. Among others, we must include the

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familial background of an individual; his/or her personal life; cultural background; social background; medical background and present; financial status; psychological background - in terms of previous therapy, counseling participation(s), negative impacts from past life events - and so many other areas that might be proven to represent the most crucial motives that might have lead (independently, interdependently and/or collectively) toward the development of suicidal ideation. Moreover, in the last few years, the scientific community also came to the conclusion that the area of genetics (i.e., DNA) and genetic heredity of certain psychological traits play a crucial role in trying to "predict" possibilities in one's future psychological development, and in relevance with major clinical issues (i.e., suicide, depressive disorders, schizophrenia, etc). So, when a scientist is attempting to find out "all" the information available on complex issues, such as the one of suicide, I do advise him to take as a possible fact that retrieving all the information might be an impossible task to pursue. To do that, in an absolutely objective manner, he must examine an endless amount of categories for each and every single human being, and of the entire human population of our planet as well. However, what a clinician can do is to familiarize himself with the most crucial, historical, and current scientific information available, so to try to find out more original information and submit it to the scientific communities for further exploration via long-term studies (i.e., *macro*-sociological and long-term psychological studies). Additionally, I perceive it as crucial for one - in the further provision of original information on suicidal behavior - to be involved in academic studies that will be further explored by a university's scientific community if an opportunity such as this is available. Of course, what we initially tend to do is to take as a probable fact that human behavior can be perceived as being generally similar among humans and so we set a general basis of information as a foundation for our work. Then we proceed in familiarizing ourselves via a series of in-detail analysis in order to develop general guidelines in understanding human behavior in its psychological sense. This is one of the primary objectives of crucial scientific guidance that we can retrieve from clinical manuals of diagnosis and therapy (i.e., DSM-IV-TR) as well as textbooks of psychological and psychiatric importance.

My primary objective with this article is to inform, in a synoptic, academic, and explanatory manner, on general knowledge about suicide, which I have selected from specific references. I believe that the task of informing people about an issue such as this can be of a tremendous challenge due to the fact that every single information is of an outermost crucial importance. However, one cannot include in an academic article all the information that he considers as necessary. So, with the objective of synoptically informing about this issue, I have chosen to briefly refer to (1). the explanation of suicide based on previous and historical information (a brief reference on a portion of Durkheim's suggestions on suicide), and then (2). to proceed in my article with some general facts and information that are based on references of primarily psychological and psychiatric interest.

2. A SYNOPTIC REFERENCE TO EMILE DURKHEIM'S THREE TYPES OF SUICIDE AND BRIEF SYLLOGISM

I believe that anyone who is focusing on a scientific study of Suicide ought to begin with the writings and suggestions that **Emile Durkheim** offered to humanity and to the world science in general. From a sociological point of view, Durkheim's work is, as I believe, the most crucial scientific foundation on the issue of suicide. In addition, even if in our days the statistical and theoretical collection of information is much broader - than during Durkheim's era - his work remains a prototype in the history of the scientific literature regarding suicidal behavior. Concurrently, one must also focus on how science analyzes Suicide today through Psychiatry and Psychology, and which are some guiding knowledge and information that can provide a more in-depth comprehension of the complexity of the matter at hand.

Among others, and as I have already referred, my synoptic historical reference on suicidal behavior is based on one of the most crucial - in my belief - reading material available today, Emile Durkheim's "***Suicide, a study in Sociology***" (1951; The Free Press-New York). John A. Spaulding and George Simpson provided an excellent work by translating this crucial scientific work [***Le Suicide***] from French to English. Furthermore, I have chosen to present some basic principles regarding the following: **Egoistic**

*Suicide,
Synoptic, Explanatory, Educational References
And Syllogism*

Suicide, Altruistic Suicide, and Anomic Suicide, which Durkheim suggested.

Primarily, one of my objectives, in choosing to refer to these specific sociological suggestions, is so for the reader to be able to comprehend the crucial complexity that can exist when one is studying the issue of suicide, as well as to see the similarities and differences with the analysis methodology on the issue of suicide between our days and Durkheim's era. Briefly, there is a lot of information that must be studied about suicide. My reference to this historical information is going to be brief. In addition, do not forget that through time, knowledge about many areas of human behavior can change due to expected social change and to the discovery of new relevant findings and new social circumstances. Nevertheless, studying in a comparative analysis method, one can understand the sequence of knowledge development on a particular issue such as suicide through time. Moreover, one aspect that must also be considered is that different cultures, different societies, and different social groups can be entirely different, both whiles in the same era, as well as via a comparison between different eras. An objective of mine is to show that even in those "old" days, what Durkheim said and presented in his writings were, indeed, ahead of his time.

One of Durkheim's suggestions regarding the determination of the social causes of suicide included his reference to the *motive* - "family trouble, physical or other pain, remorse, drunkenness" - as how legally it was referred to in cases of suicides, and in many countries during that time in history. Not far from what is suggested today by the fields of Psychology and Psychiatry, Durkheim gave a first clue of explaining suicide based on what sociologically, (and in my opinion, as well as socio-psychologically) causes, or better, what can motivate people so to develop suicidal behavior. As I will explain later, motives that used to be regarded as relevant to the development of suicidal behavior during that past time in history, can be considered to lead toward the development of suicidal behavior in our days as well, and within the context of psychological therapy and counseling. Therefore, a first step is to try to understand how certain aspects of the social context can have such an unpleasant psychological effect on people,

and why. On that matter, I suggest the following questions for the purpose of syllogism and further discussion:

- Why is an individual being influenced by the social context in which he lives in?
- What can possibly be so bothersome – in respect of the society's way of functioning – that can be so difficult to except and one to end up preferring to end his life over adjusting to what is socially acceptable, and basically a "routine" of social functioning?
- Is this influence occurring due to the possibility of the individual's inability to socialize and accept the way which the greater social context functions? Alternatively, is it because his psychological development was based on "false" beliefs about how society "should" function? But then again, what can be defined as a "false" social functioning when the majority of a society accepts it? Isn't this necessary acceptance of the written and unwritten norms, mores, and laws also a necessity for social survival?
- If there is a possibility of such an inability occurring, is it due to the lack of knowledge regarding how one should socialize and the similar? On the other hand, is it due to other reasons such as chronic effects of victimization from abuse, or PTSD, or a psychological disorder, or substance addiction, or family pressure, or social isolation, etc?

Among others, some of the most important causes of suicide today include things such as the psychological effects of dysfunctional family systems/environments, the effects of poverty and financial difficulties, the psychological impact and confusion that might derive from losses of loved ones, psychiatric and psychological disorders, stress, illnesses, substance addictions, and unsatisfied personal life. Durkheim referred to causes such as these as "poverty and losses, family troubles, various types of distress, mental sickness, gambling, mental troubles, mania", etc. It is important here to emphasize that during those times in history the social structure of societies was much different from today. For example, Durkheim was primarily based – among other areas of social living - on the way that the law was functioning, the two then primary social classes – "*agriculture workers and liberal professions*" - as well as financial situations and their socio-psychological impact that existed for people during that time in history. Moreover, his findings and suggestions were primarily based on the

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sociological, statistical, as well as philosophical analysis of areas such as the effects of the "*social environments* (religious confessions, family, political society, occupational groups)". One of his objectives was to examine when these types of factors change in their effect from being "*societal and general in personalized and individualized*". He suggested that when these factors (i.e., religious cultures' effects on individuals), are perceived as effecting one in a personalized manner, this is when the suicidal behavior begins initializing in a person (i.e., as an individualized factor of cause and effect).

Specifically, and for sociologically explaining statistical information on suicidal behavior, the first of the types of suicide that Durkheim suggested was what he defined as **Egoistic Suicide**. In his terms, egoistic suicide derives from "*excessive individualism*". In other words, egoistic suicide refers to the situation whereas the person is not socially active, is not socially involved within the larger society (i.e., the social group, the society in which the individual lives in, or the social context that surrounds the person), because he depends heavily on his own self for living and surviving. The latter is caused due to individual's perception of the unsatisfying and "weak" nature of the social context in which he lives in. Moreover, the weaker the social group is perceived to be, the less he is willing to depend on it. Consequently, the more he grows to depend only on himself and to accept the rules of conduct that the individual himself decided. The result is a gradual increase of social isolation and social withdrawal. Durkheim called this state of self-isolation as a "*state of egoism*". In our days, and among others, we could name this state of inner-psychological reaction as social isolation caused due to the development of a depressive disorder. Depressive disorders are regarded as a behavioral symptom that can lead one toward the development of suicidal behavior and/or suicidal personality - given that certain clinical diagnostic criteria are met. In addition, we could define this type of suicide occurring as a result of a psychiatric and/or psychological dysphorias, a dysfunctional family system, a substance-addiction behavior, and in some cases, possibly even due to a Post-traumatic Stress Disorder.

On an academic basis, and for the purpose of further syllogism, I suggest that cases of Post-traumatic Stress Disorder can be of a major scientific importance as far as the development of suicidal behavior is concerned. The primary reason that PTSD strikes me as being of a direct relevance to the issue of suicide, is primarily due to the effects of a PTSD occurring from unbearable situations of chronic victimization by abusive behavior (i.e., sexual abuse, psychological abuse, and physical abuse). One of the behavioral consequences of abuse is the gradual development of a chronic depressive disorder by the victim, and in which symptoms include low self-esteem – if any – and social isolation. So, in other words, I strongly believe and suggest that an interdependent sequence of psychological consequences (i.e., **Abuse causing PTSD, then Depression develops, then Social Isolation – and finally Suicidal Ideation**) is a possibility that must be studied in a much greater depth by the scientific community. Furthermore, suggestions such as Durkheim's "excessive individualism" can be observed in suicidal persons today as well; but preferably based on psychological thinking. Overall, I would initially see the specific cause from a psychological point of view (i.e., search for reasons behind it, such as PTSD, Depression, etc), rather than the weakness of the social context from which the individual has decided to withdraw, even if it is of a great importance as well and must always be considered.

Durkheim, even if he referred to similar to the above causes, he was primarily based on the negative effects of religion, society, and politics. Based on the egoistic suicide's meaning, Durkheim also believed that "*when society is strongly integrated it holds individuals under its control*" (social rules, norms and values, laws, etc), "*considers them at its service*", and thus forbids them to fully express themselves as they probably would like to. Social control of this type also exists today (i.e., norms & laws). So, one other motive for suicide is the psychological distress, which in our days we could probably define as the social restraints and taboos that cause a state of inner-psychological uneasiness and stress to people when they wish to behave more freely and accordingly to their self-decided needs.

Overall, the main point to remember regarding egoistic suicide is that it primarily applies to those who are not "*integrated*" in the larger society in general, or into any group (i.e., family). For example: "*the lack of family integration can be used to explain why the unmarried are possibly more vulnerable to suicide than the married ones, and why couples with children*

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are the best-protected group of all" (Kaplan, Sadock, and Grebb, 1994; p.807). Today, self-isolation (i.e., such as *excessive individualism*), with relevance to a chronic Mood Disorder (i.e., types of clinically diagnosed Depressive Disorder) can become a very effective motive/criterion toward the development of a suicidal personality.

The second type of suicide that Durkheim suggested was the **Altruistic Suicide**. Briefly, by Altruistic Suicide, Durkheim emphasized on the cause of "*insufficient individuation*". In his terms: "If, as we have seen, excessive individuation (*Egoistic Suicide*) leads to suicide, insufficient individuation (*Altruistic Suicide*) has the same effects. When man has become detached from society, he encounters less resistance to suicide in himself, and he does so likewise when social integration is too strong". In other words, based on *Altruistic Suicide*, people commit suicide under the effect of their *selflessness*. Additionally, he gave examples such as the following: "1. Suicides of men on the threshold of old age or stricken with sickness; 2. Suicides of women on their husbands' death; and 3. Servants of followers or servants on the death of their chiefs". Overall, I believe that the main point to remember here is that altruistic suicide applies to situations whereas the excessive dependency to the social context minimizes self-dependency. In other words, altruistic suicide refers to the situation whereas, simply, individuals cannot survive alone.

The third type of suicide is what Durkheim suggested as the **Anomic Suicide**. Among others, *Anomic Suicide* refers to situations whereas the main problem lies on the economic factor of life. Based on Durkheim, a person can live only if his needs are in a state of harmony with the means available to him. In other words, people must satisfy their needs accordingly with what they possess as means to satisfy them. If this - necessary for survival - "equilibrium", between the means available and the needs, is not maintained and controlled, then a person might be lead toward suicide; thus Anomic Suicide[as if against the law/rule of maintaining the "equilibrium"; against the specific "norm" for survival/Gk.: *nomos*/ "anomia"]. Thus, Anomic suicide is developed from the inability of the person to organize his financial situation accordingly.

Historically then, the information that Durkheim suggested regarding the motives of suicide are not in a great difference from the motives/criteria which science considers today as serious enough to develop a suicidal personality. I believe that one difference between these two eras might be the way of the social thinking of people due to different social functioning foundations; but some of those motives can be valid in their effects today as well. For example in Sociology and Psychology, we many times consider the financial status-of a person as being a very important factor to examine when treating a patient with a severe depressive disorder and/or suicidal ideation. I am not suggesting that it is always the outermost crucial motive toward the development of suicidal behavior. However, it is one of the areas that psychologists do examine, and seek in gathering information. There do exist cases whereas a case of suicidal behavior is solely due to the lack of financial means in accordance with the needs that the person decides that he must satisfy in life. In different situations, the primary motive for the development of a suicidal personality can be solely due to social isolation and not financial status. Other examples of cases include motives that derive from feelings of loneliness, depressive disorders, sudden losses of loved ones, cases whereas many of these motives occur simultaneously, and generally a variety of many other reasons. We can read about many core reasons, common motives and causes for suicides. However, as I have emphasized previously, I believe that each person is different from all others, and as far as cases of suicidal behavior is concerned, each individual must be "analyzed" based on both scientific knowledge and methodologies, as well as on his unique personality traits.

Overall, Durkheim raised many issues for further exploration. Many of these issues will most probably remain subjects for scientific analysis in relevant sciences, such as Clinical Psychology, Psychoanalysis, Counseling Psychology, Psychology of Education, Criminology, Social Psychology, Clinical Psychiatry, Sociology, and Philosophy. One must not perceive Durkheim's writings and suggestions based only on a single thought-perspective. I believe that in order to fully understand the importance of Durkheim's scientific guidance on the matter, one must explore his writings in the publication of *Le Suicide* by studying both our era and his. Further, one must examine, at least via Sociology and Psychology, the nature of Durkheim's era, and then to compare it with our times and based on different cultures. This method would be an adequate step toward researching the issue of Suicide in the most academically fulfilling manner.

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For example, if one is studying to become a Psychologist he must initially pursue the primary task of comprehending the diversity between people's personalities. He must understand that he must not ever compare people in their behavior even if the clinical diagnostic criteria are based on a single diagnostic manual. He must first become a scholar of many perspectives and schools of thought in Psychology. In the same methodological manner, if at a later stage he decides to emphasize his studies on a complex behavioral theme, such as Suicide, he must pursue other paths of learning methods as well. For Suicide, as I believe, one must also study Western Philosophy and Civilizations, Social Theories, Clinical Psychiatry, and deepen his studies in the theoretical foundations of different schools of psychological perspectives and therapy. Then he will be in a much better position to understand complicated theories like the one by Emile Durkheim by being able to "look" at it from different sides, as well as to refer to it for a further exploration of the specific matter. Following that, I present in *Figure-1* a portion of a classification map, which presents the most basic points that Durkheim suggested regarding the nature of each type of suicide.

I believe that the suggestions made by Emile Durkheim contributed enormously to the psychological, sociological and psychiatric research findings related to suicide throughout the twentieth century. One cannot disregard the obvious fact that many of these findings have transformed, or even, "evolved", into other similar criteria that apply to our days and current way of living. For example, today we might not have that old strict religious control in our lives, but we do have other similar social impacts such as the one of dysfunctional families, which has become one of the most serious causes for suicidal behavior. In addition, social and economic causes for suicide remain as very serious suicidal motives, but perhaps in different kinds of forms.

3. GENERAL REFERENCE TO FACTS
AND INFORMATION ON THE ISSUE OF
SUICIDE

[Sources: (1). David S. Holmes, pages 219 to 232, (2). Kaplan, Sadock, and Grebb, 1994, (3). Elisabeth Wilde McCormick, 1994].

For an informing and academic purpose, I have chosen to present some general information regarding different explanatory views on the issue of Suicide, and additional relevant information, which I consider as crucially important as far as general informing is concerned on Suicide.

- Sigmund Freud referred to suicides as "*disguised murders*"(1). Specifically, the individual who has developed a suicidal tendency due to a loss of a loved one, faces a situation whereas he unconsciously seeks to cause a destruction to that specific lost individual. Specifically, based on Freud's beliefs, individuals who lose a loved object perceive the object "as a part of themselves and as means of symbolically avoiding to confront and accept the specific loss"(1). Furthermore, in addition to the suicidal individual's love and affection for the object, he might also develop feelings of hatred for the object due to the "desertion or rejection" that has taken place by it. Then, the possibility of a suicide attempt may be perceived as follows: "an expression of aggression against the internalized object, rather than aggression against it per se" (1). Overall then, Freud suggested a situation occurring whereas the suicidal individual enters a phase of expressing aggression toward the internalized object. Furthermore, due to the assumption that the person may not consciously be aware of the feelings of aggression that he or she maintains toward the loved object, then the person's suicidal feelings and overall inner-psychological pressure do not seem to be related with the object or loss – for the person.
- "Freud also hypothesized that there was a death-instinct that had the goal of returning the troubled individual to a state of calm and nonexistence from which he or she came" (Holmes;1994). Specifically, when the death instinct becomes more powerful in its effects than the life instinct that was usually in control, the result of this transformation is the act of suicide.
- The contemporary psychodynamic explanation for suicide is that psychological conflict leads individuals toward trying to find an escape from it. Moreover, a variety of investigations (Cochrane and Robertson, 1975; Paykel et al., 1975; Slater and Depue, 1981 – Holmes/1994) suggest that "the ones who attempt suicide experience up to four times as many negative life events" (i.e., divorces, serious financial difficulties, diagnoses of serious

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illnesses, etc) short before the suicidal act in comparison with individuals who never attempted suicide.

- .Other evidence for the negative influence that stress can have on people – in relation to suicide – concerns the Great Depression era (1930s in the U.S.) whereas suicides increased “from fewer than 10% per 100,000 to 17.4% per 100,000”(Holmes;pg.224). In the same manner, “the rate of suicides also increased during the economic recession of the 1970s” (National Institute of Mental Health, 1976; Wekstein, 1979 – Holmes;pg.224).
- .Among many important suggestions in the psychodynamic school of thought, one important factor in determining whether one will reach a point whereas he will commit suicide is “*fantasies* about what will their suicide accomplish” (Furst & Ostow,1979; Holmes; pg.225).
- .As far as the most crucial cause of suicide, and in relevance with what I’ve referred to previously, psychodynamic theorists believe that depression – one of the most usually defined causes for the development of suicidal ideation - usually results due to the psychological impact that can be produced in a person due a loss in life (i.e., loss of a loved one): “...psychodynamic theorists believe that depression is triggered by a stressful loss” (Holmes; pg.225). When this kind of loss occurs, many times it produces an increased amount of stress, and many times an unbearable psychological discomfort. On this matter: “some theorists suggest that depressed people attempt to bring back into their lives the lost object (i.e., person) by “identifying” with it. If this specific object has been lost through death, then the most prominent act of identification is one’s own death” (Holmes;p.225). Therefore, it may be hypothetically suggested that the act of attempting the identification with the specific lost object (i.e.,person) lead toward suicidal attempts. In support of the latter, psychodynamic scientists have emphasized on what they referred to as **anniversary suicides**: “By anniversary suicides, scientists pointed out that a suicidal individual would commit suicide on the anniversary of the death of the lost object. An alternative explanation for anniversary suicides is that the anniversary brings back the individual’s stress and despair, and the heightening of those factors leads to suicide. Clearly, anniversaries of severe stresses are a time when increased social support is needed” (Holmes; p.225).

- Suicide can also be understood as a continuous state of inner conflict, a kind of an inner "war" inside the individual's mind that facilitates the means which seem to aid in the production of negative and unpleasant behavioral self-destructive tendencies.
- The learning theorists have emphasized their attention on the "processes" that provides the development of the self-destructive act of committing suicide when one decides to proceed with it. Based on this, the theorists of the Learning Perspective have suggested the effect which occurs by the mechanisms of "*Imitation and Behavioral Contagion*" (Holmes, pg.226).
- **Imitation** is the most basic foundation of the learning explanation regarding suicide. Generally, in psychology we generally define *imitation* as "the copying of a specific action or sequence of behavior" (Stratton and Hayes; pg.91). Imitation's principle definition and function is simply to understand how the learning of behavior generally occurs (i.e., children imitate their parent of the same sex while growing up, learning from their social environments, etc). For the Learning school of thought, the process of imitation provides the means of quick and massive cycles of learning. However, aside from its positive characteristics in the process of human psychological development, it seems that it also obtains dangerous ones in the case of suicide attempts. Specifically, and as far as the research of suicidal behavior is concerned, the reference to *imitation* concerns situations whereas individuals who are dealing with unbearable, as they perceive them, psychological stressful situations, learn about other individuals' suicides and due to this they may attempt suicide themselves in a similar manner with the publicized ones. Based on Figure-2, the following are reported: "The data indicate that the number of suicides increased by 7% after a nationally publicized suicide resulting in 224 additional suicides. Another study has shown that levels of publicity given to suicides were related to the levels of subsequent suicides (more publicity of suicides = more suicides) and that the effect was limited to the geographic area receiving the publicity. However, the data that I have presented above reflect only overt suicides. It has also been suggested that the effects of the publicity of suicides are much bigger because other studies have shown that motor vehicle fatalities increase following well-publicized suicides (Bollen and Phillips 1981; Phillips 1977, 1979). Moreover, the previously mentioned studies have also

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shown that suicides following publicized suicides come in two waves. Specifically, there is a surge of suicides on the day of the report and the following day, then there is a lull, and finally there is another surge on the 6th and 7th days after the report (in cases of both overt and covert suicides). Thus, there may be two kinds of suicidal responders:

- a. Those who respond immediately may be more impulsive or have already contemplated suicide, and the publicized suicide may have only hastened an act that would have occurred anyway, and
 - b. Those who respond after 6 days may be making a more considered response or may not have seriously contemplated suicide as a solution prior to the example provided by the publicized suicide"(Holmes,pg.226 and 227).
- Another interesting example regarding the effects of imitation has also been shown (Gould et al., 1989) regarding the "**epidemics**" or "**clusters of suicide**" that occur among adolescents. In a variety of times, "one adolescent has committed suicide, followed by a number of his or her peers, and often a similar procedure was followed" (Holmes; pg.227). On the specific matter, important attempts have been made so to prevent suicidal imitation. For example: "to end a rash of sensational suicides in subways (individuals throwing themselves in the way of trains), news reporters agreed to stop publicizing the suicides. The reduction of publicity was associated with a reduction in those specific suicides" (Etzersdorfer et. al., 1992; Holmes: pg. 227).
 - Briefly, **behavioral contagion** occurs in the following procedure:
 - ▶ a. "an individual wants to do something,
 - ▶ b. is restrained from doing so because society says that its wrong,
 - ▶ c. sees someone else do it and "get away with it", and
 - ▶ d. thinks that he or she can get away with it also"
(from: Holmes; pg. 226).
 - Among the most important etiologies and explanations that scientists suggest, include the *genetically*, *biologically*, and *sociologically* related explanations. For example, there have been suggestions regarding the possible relation between genetic factors and suicidal behavior (as with

other psychological issues as well). These suggestions were based – among other - on studies which explored the relation between the family factor and the future possibilities toward the development of suicidal behavior, as well as on the higher risk for the development of suicidal behavior among monozygotic twins compared with dizygotic twins.

[Note:“The occurrence of suicide in monozygotic and dizygotic twins has been examined in two investigations: Among the 113 sets of monozygotic twins in the two studies, some conclusions were the following:

- The concordance rate was 14%, whereas among the 212 sets of dizygotic twins, the concordance rate was less than 1%. When the twins had identical genes, the concordance rate was about 15 times higher than when they had different genes, thus providing evidence for a generic influence on suicide”](Holmes;pg.231).

Another example of studies on genetic factors and their relation with suicide is the one that concerns adoptees: “In a study based on the adoptee method, the investigators found that the relatives of children who were adopted and later committed suicide, the suicide rate among the adoptees’ biological relatives was 4.5%, whereas the suicide rate among the adoptees’ adoptive relatives was 0%” (Schulsinger et al.,1979; Holmes; p.231). Findings such as these show some distinctive facts between persons who are characterized by aggressive behaviors, impulsive behaviors, and the ones who proceed with the completion of suicide. Specifically (Kaplan, Sadock, and Grebb; p.1121 & Holmes; p.230 and 231):

- “Low levels of **serotonin (5-HT)** and its major metabolite, **5-hydroxyindoleacetic acid (5-HIAA)**, have been found postmortem in the brains of suicide completers”.

[note 1:**Serotonin**: a complex amine, $C_{10}H_{12}N_2O$, found in blood, the brain, many tissues (i.e. *trhombocytes*, *intestine's mucous membrane*, *conarium/epiphysis*, and *central nervous system/CNS*) etc./or produced synthetically: it constricts the blood vessels and contracts smooth muscle tissue, and is important both as a neurotransmitter and a hormone] (Dorland's; 1997).

- “Low levels of 5-HIAA, have been found in the cerebrospinal fluid of depressed persons who attempted suicide by violent methods”.

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[note 2: *Hydroxyindoleacetic acid/5-HIAA*): a product from serotonin's metabolism that is located in encephalospinal/cerebrospinal fluid] (Dorland's; 1997).

- "Alcohol and other psychoactive substances may lower 5-HIAA and perhaps the increase the vulnerability to suicidal behavior in an already predisposed person. The mechanism linking decreased serotonic function and aggressive suicidal behavior is unknown".

[Note: "The characteristic about serotonin that is important to our further understanding of suicide is that if it is in decreased levels it might lead toward the development of aggressive behavior as well as behavior that is characterized by a mood disorder such as a depressive disorder. For example, in a study of men in the U.S. military, it was found that 80% of the differences in their levels of aggression could be accounted for by the differences in their levels of serotonin; lower serotonin was associated with more aggression. Overall, what happens regarding serotonin levels and suicide is the following: A low level of serotonin causes an increase in depression and a decrease in the inhibition of responses, so when the depression leads to thoughts of self-destruction (i.e. suicide ideation) there is not enough inhibition of self-destructive behavior, and the individual attempts suicide" (Holmes;pg 230 &231)].

Apart from the previously mentioned knowledge about suicide, there are also the situations of **Covert Suicides** and **Suicide Gestures**, which basically refer to suicidal behavior "disguises"(1). Briefly, a Covert Suicide takes place when people do not seek for others to be aware of what they have done because they feel ashamed, or due to other similar reasons. An example of a covert suicide is the suicide that deliberately occurs via an automobile accident: "Persons who use the automobile/accident suicide disguise will deliberately drive into the paths of other cars, trucks, trains, or even fall over a cliff or a mountain road" (Holmes; pg 221).

Opposite to covert suicides, in suicide gestures individuals develop suicidal behavior with the difference that they do not really want to end their lives. Individuals who make suicidal gestures seek attention from others and they behave in such ways that they believe that their message will get across. As Holmes states (pg. 221): "Persons who make suicide gestures generally make them in such a way that other people will find out. For some individuals, suicide gestures are cries for help". Specifically, the individuals who make

suicidal gestures are mainly desperate, however they do not know the way to ask for the help that they want. Moreover, as mentioned previously, they feel uneasy about their situation, and at the same time they feel embarrassed, so they hesitate in asking for help. They might have asked for help initially, but they did not receive it by the people who they contacted because their psychological tension might not have been perceived as it really is. However, as far as suicide gestures are concerned, one must not forget that an individual who is suicidal does not have the clear mind so to focus on ways of effective communicating with others. The amount of stress can be so massive that even messages for help might be too difficult to be shown to others, as others would understand. A message for help can be a single and unnoticed behavioral reaction for some people, and for others to be presented through noticeable and surprising behaviors. An example of the above dilemma is when a suicidal individual sends messages for help by the overuse of alcohol in front of the people from whom he wishes to receive help. For the suicidal individual, this might be a cry for help since he persists in behaving in an intense and self-destructive behavior in front of his loved ones. In contrast, the ones who are watching him might perceive his behavior as an addiction to alcohol, or a behavior, which is not out of the ordinary, and that it will eventually go away. The particular reference of mine can occur in families whereas the alcohol abuse by family members happened before. So, the message for help is basically ignored or misinterpreted. Last, in cases such as these, I strongly recommend the use of family therapy and counseling, or group therapy as the most adequate initial measures against family miscommunication.

Edwin Schneidman defined suicide as: "the conscious act of self-induced annihilation, best understood as a multi-dimensional malaise in a needful individual who defines an issue for which the act is perceived as the best solution" (Kaplan, Sadock, and Grebb; pg. 803). The act of suicide seems to be related with the psychological status which occurs due to needs that are not satisfied, needs that are believed that they cannot ever be satisfied, feelings of hopelessness and helplessness, psychological confusion between the need for survival, anxiety and stress, and a need for finding a pseudo-escape from all of these. In other words, a kind of an inner psychological "volcano" exists and is about to erupt. In these situations, when the suicidal individual begins to understand his mental confusion, he will possibly send out signals of stress to his personal environment. Signals of stress must not ever be ignored because they are messages of asking for help.

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Another main point to understand, is that suicide is deeply and directly related to a severe nature of psychological discomfort(s). Based on the differentiability of personalities, there are people who cannot survive such psychologically advanced stressful feelings with the result of many seeking in finding a sort of an "exit" from their discomfort; and unfortunately many select the many times fatal act of suicide.

What can be done is to keep on attempting in defining suicide in a more in-depth clinical and academic sense, so for scientific researchers to be guided and to guide toward a more adequate comprehension of the matter. The reason that I believe the latter is that if one considers the differences in psychological reactions of any two individuals, and how many these differences can be, then how can anyone define suicide as it would apply to a number of ten thousand individuals? In other words, I believe that the most great achievement that science had made until now is that it has narrowed down some of the most common and serious causes that might lead to suicide, as well as explanations of suicide; but only in a general clinical sense. By finding out the most usual symptoms, guidelines and characteristics, so to identify and possibly prevent suicide, scientists have settled a foundation for further analysis of the specific matter. For example, Edwin Schneidman suggested ten common factors of suicide and suggestions for appropriate response (McCormick, 1994, p. 191, 200 and 201):

1. "The common purpose of suicide is to seek a solution. It is a way out of a problem, dilemma, bind, challenge, or difficulty. To understand what the suicide was about we must first know the problems it intends to solve".
2. "The common goal is cessation of consciousness (the person wants to stop hurting, stop the intolerable pain)".
3. "The common stimulus is an endurable psychological pain. No one commits suicide out of joy. The pain felt is impossible to imagine unless you have been there. If the level of suffering is reduced, the person may be able to choose life".
4. "The common stressor is frustrated psychological needs; this is what it creates the pain".
5. "The common emotion is helplessness-hopelessness. The feeling is one of "there is nothing I can do, there is no one who can help me". Moreover,

different emotions may underlie – in the individual – shame, guilt, frustration, dependency, hostility”.

6. “The common internal attitude towards suicide is ambivalence. For example, we call for help and try to end our life at the same time, we feel we have to go ahead with it and yet we yearn for rescue and intervention”.
7. “Our thinking state is severely constricted. Our range of thinking is limited to two views: we think that there must be either a magical and complete solution or nothing at all. Nothing else is on our horizon at this time: families, friends, abilities, are not so much disregarded as simply out of range. This is not psychosis or character disorder, this is total constriction of the person’s thinking. This must be seen to first and attempts made to widen the constricted view and suggest more than to fixed options”.
8. “The common action in suicide is escape. Suicide is the ultimate escape: a radical and permanent change of scene”.
9. “The common interpersonal act in suicide is communication of intention. There are always clues that someone is thinking of attempting suicide. People signal their distress in a number of ways: talking about death and suicide, inquiring about suicides, and showing interest in methods; the watching of the river or standing by the railway, counting the number of pills. People often tidy up their affairs, make a will, speak to people they have not for a long time, get over unfinished business, behaving as if saying goodbye”.
10. “The common consistency in suicide is with life-coping patterns. There are always links with ways in which the person has behaved before”.

The suicidal symptoms, such as suicidal ideation, suicidal gestures, cries for help, and suicidal attempts are most often related to a pre-existing depressive disorder. More specifically, when Depression has reached levels of severeness, then there is a much higher risk toward the development of suicidal behavior. Following, I am referring to additional to this matter information (Kaplan, Sadock, and Grebb, 1994, p. 1120 & 1121):

- **Completed suicide is rare under the age of 12 years due to the belief that a young child is not able “enough” to organize and carry out a suicidal act. Moreover, another reason for its rareness is that it is believed that cognitive immaturity plays a protective role in preventing children from suicidal attempts.**
- **Completed suicide takes place about five times more often in adolescent boys than in girls, although the rate of suicide attempts is at least three times higher among adolescent girls than among boys.**

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- The most common method of a complete suicide in the U.S., in both children and adolescents, is by firearms, which account for about two-thirds of all suicides in boys, and almost half the suicides in girls.
- The second most common method in boys, which occurs in about a fourth of all cases, is by hanging.
- In girls, about a fourth of all cases take place through the ingestion of toxic substances.
- Carbon monoxide poisoning is the next most common method for suicide in boys, but occurs in less than 10 percent. Suicide by hanging and carbon monoxide poisoning are equally frequent among girls accounting for ten percent each.
- There has been a steady increase in suicide rate for Americans 15 to 19 years of age.
- This increase in 1994 was 13.6 per 100,000 for boys and 3.6 per 100,000 for girls.
- More than 5,000 adolescents commit suicide each year in the United States, one every 90 minutes.
- The increased suicide rates are thought to reflect changes in the social environment, changing attitudes toward suicide, and the increasing availability of the means to commit suicide; for example, in the United States 66 percent of adolescent suicides in boys are committed by firearms, compared with 6 percent in the United Kingdom.
- Suicide is the third leading cause of death in the United States for persons aged 15 to 24 years and is second among white males in that age group.
- The rates for suicide depend on age, and they increase significantly after puberty:
- Where less than one completed suicide per 100,000 occurs under 14 years of age, about 10 per 100,000 completed suicides occur in adolescents between 15 and 19 years of age.

- Under 14 years of age, suicide attempts are at least 50 times more common than are suicide completions.
- Between 15 and 19 years, however, the rate of suicide attempts is about 15 times greater than suicide completions.
- The number of adolescent suicides over the past several decades has increased three to four”.

Last, one additional cause for suicidal behavior is the relation between depression and suicide. As Kaplan, Sadock, and Grebb suggest (p. 806 and 807): “Depression is associated not only with completed suicide but also with serious attempts in suicide. Studies that relate the clinical characteristics of those who attempt suicide with various measures of the medical seriousness of the attempt or of their intend to die show that the clinical feature most often associated with the seriousness of the intend to die is a diagnosis of a depressive disorder”. Furthermore, a past suicide attempt is perhaps one of the best indicators that an individual (i.e., a suicidal patient) is at increased risk for suicide. Studies show that “about 40% of the patients with depression who commit suicide have made a previous attempt. Specifically, the risk of a patient’s making a second suicide attempt is highest within the first three months of the first attempt”.

Measurements of intend-to-die diatheses significantly relate both suicide risk scores and the number and the severity of depressive symptoms: “When the attempters rated in studies (Kaplan, Sadock, and Grebb, p. 806 and 807) as having high suicide intend are compared with those of low suicide intend, they are significantly more often male, older, single, or separated, and living alone. The interference from that correlation is that depressed patients who make a serious suicide attempt more closely resemble suicide victims than they do suicide attempters”.

Based on the above psychiatric source (pg. 805), it is also reported that specifically the patients who suffer from delusional depression are the ones with the highest suicide risk. The risk for suicide for patients with depressive disorders – in general – is about 15%. Moreover, “a 25% of all patients who have a history of impulsive behavior or violent acts are also at high risk for suicide”. Risk for suicide is also increased with previously hospitalized patients who were institutionalized for any reason.

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Overall, the majority of depressive disorder patients reach the point whereas they commit suicide "early in the course of the illness than later in the illness" (2: pg.805, 806). In the U.S. more males reach the point whereas they will commit suicide than the females. In addition, the possibility of individuals who suffer from depression to commit suicide increases due to factors such as being single, having lost a spouse, etc. Individuals who suffer from depression who commit suicide are most often in their middle age or older. As Kaplan, Sadock, and Grebb also report (p. 805 and 806): "Suicide among depressed patients is likely at the onset or the end of a depressive episode. As among other psychiatric patients, the months after discharge from a hospital are a time of high risk. Studies show that one third or more of depressed patients who commit suicide do so within six months of leaving a hospital, presumably having relapsed".

Based on the same psychiatric reference (2), it is suggested that both children and adolescents are vulnerable to overwhelmingly dysfunctional families and abusive environments in general (social, personal, and familial). A wide range of psychopathological symptoms can develop due to these types of situations. Aggressiveness, hostility, self-destructiveness, and suicidal behavior seem to occur more often in individuals who have been living in such stressful and psychologically abusive environments. Moreover, let us not forget that it is clinically proven that stress is a factor that can cause both a variety of psychological as well as biological problems (DSM-IV-TR 2000). The negative effects of what we call stress can include consequences that might lead to behavioral and biological reactions of a dramatic nature.

The issue of suicide has been explored, identified, and categorized by many theorists and scholars for long periods. Based on McCormick (3), three of the most crucial types and categorizations ever given – in my opinion – include the following:

Impulsive and Immediate Suicide, Premeditated Suicide, and Parasuicide.

Impulsive and Immediate Suicide refers to situations where we do not know what happened with a person who committed suicide because he or she is dead: "he or she saw the means of suicide and at the same time experienced

an impulse strong enough to be acted upon without hesitation" (McCormick, 1994, p. 186). The peculiarity with this type of suicide is that even if the person really wanted to kill himself, it was only felt completely in a specific and unexpected moment. Thus, and hypothetically, this type of suicide refers to suicidal attempts that are decided in a period of even a split of a second in the person's mind. An example would be a person who suddenly decides to jump in front of a car, or fall off a ten store building and other similar examples that were not planned in any way before that specific time in period. Impulsive and immediate suicides do not seem to have been planned; but they seem to have been decided during the immediate "present" and in an explicitly short period in time (i.e., after leaving home for work, while returning home after work, etc).

Premeditated Suicide refers to premeditated, planned, "pre-organized" suicide attempts. Examples include deliberate drug overdose, cutting one's own wrist veins with a knife, etc. A common characteristic of premeditated suicides is that the individuals usually feel that they should share their pain with someone else.

Parasuicide refers to individuals who "gamble with life" (McCormick; p.187). These individuals harm themselves in many different and dangerous ways. The basic idea seems to be as follows: "if someone comes I'll have another go at life; if not, well it doesn't matter" (McCormick, p. 187). The "task", in a case of parasuicide, is an attempt toward changing one's own life. Moreover, the primary objective in a case of parasuicide is to achieve getting attention from a specific individual, or from the greater social group in which the person lives. In other words, it is as if saying that one can change for the better if certain attention (from specific people or society in general) is given to him.

The term suicidal behavior refers not to one or two, but to many different behaviors and situations. For example, based on Dunner (1997/pg.548) suicidal behavior can involve: "**suicidal ideation** (thinking about suicide), **suicidal communication** (talking to others about suicide), **suicide attempt** (attempting suicide and not dying), or **suicide** (attempting suicide and dying). Suicidal behavior can also vary as follows: "in the dimensions of frequency, intensity, and duration. Specifically: frequency involves how often the episodes occur. Intensity describes how concentrated the behavior is when it occurs (e.g., fleeting suicidal thoughts versus obsessive suicidal rumination). Duration describes

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the time consumed during an episode (e.g., all day versus five minutes)". Overall, one of the basic messages of the above is that as frequency, intensity, and duration escalate, clinicians have more cause for alarm".

As I have explained previously, suicidal behavior, suicide attempts, as well as suicide completion can all take place due to a variety of reasons. Each individual who is "trapped" within the suicidal "nets" is affected by a reason that he or she – individually – perceives as being a desperate one. Moreover, this type of psychological conflict which causes the pursue of death can also be examined as a separate category due the many different forms of it in each individual. Scientists managed to narrow down the most common and "classic" examples of the "roots", or better, causes for suicide. Among these causes, and as one of the most crucial, is the one of the family.

4. THE RELEVANCE BETWEEN FAMILY AND THE DEVELOPMENT OF SUICIDAL BEHAVIOR.

[source: Melvin R. Lansky, 1995]

As Lansky reports, many of the suicides that take place have as a "root" the family. Suicide is, indeed, many times directly related to familial factors: "likewise is the overcoming or healing of suicidal despair. Individual motives and precipitants usually appear in a context of other individuals whose motives and strivings are relevant. In turn, these motives, strivings, and situations are all parts of a broader familial, as well as social "network: the biologic predisposition of one member of the network may be relevant to the suicide of another member" (Lansky; p.145,146). In the same way, the presence of facilitating social circumstances take place within the social network. Thus, the whole issue of suicide can be best examined as the behavioral act of an individual within the social context that surrounds him or her.

Dealing with the relation between family and the development of suicidal behavior is a very delicate matter to deal with. In these cases, a Psychologist must examine in a step-by step and in a detail manner the specific family system. Within the family system, there exist a sort of a "cycle" of interdependent and interrelated areas of psychological,

sociological, and communicational importance. Moreover, all areas that are to be examined must be perceived of being of an equal and serious importance. Nothing must be disregarded or assumed of being of a minor importance. The primary reason for this is that no one can decide what is "logical" to be bothered from or what is not. I believe that feelings are always correct because they are developed and exist inside the person. However, the causes for the development of uncomfortable feelings in a family member are another matter. There usually lies the problem that might cause dramatic responses such as suicidal behavior. In addition, one of the usual mistakes that older family members do is that they assume that they know the younger members of their family and they behave in this manner for their entire lives. One must remember that age has nothing to do with psychologically "knowing" someone or not. The person itself decides who he is. Family members must always treat each other individually, as separate human beings, as separate entities and types of characters and personalities. Unfortunately, this is not always the case.

Based on the writings of Lansky (1995, p.146), the family setting can be one of the most appropriate in searching for clues regarding possibilities of reasons that might have lead an individual to develop suicidal behavior. The family setting is of a crucial importance because we can emphasize in observing the interactions between the suicidal individual and the "significant others".

The area of examining and observing the communicational types of interactions between family members can be both simple and complex. I believe that a psychologist should emphasize on four – among others – areas of primary importance:

1. The application of observational procedures of all communicational interactions between family members.
2. Carefully examine the way these interactions influence the suicidal individual – in psychological terms - such as specific types of reactions (i.e. anger, depression, hopelessness, and feelings toward the necessity for withdrawal from the family environment, etc).
3. Attempt to find out the reasons behind these disturbing reactions; has it always been like that, or was there a specific event (in the short or long past) that has triggered the beginning of these responses?

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4. If the reason for the development of suicidal behavior is found to be located in the family setting, examine the question of whether the rest of the family is willing to change its ways. If not, then one must consider the possibility of the therapy program ending up being a total failure. In such a case, I believe that there are always possibilities in trying to help the suicidal patient to overcome his self-destructive behavior (i.e., by his removal from the family setting).

Lansky suggests the following regarding causes for suicidal behavior in the family (1995, p.146 & 147):

1. An inability to accept necessary change, including:
 - An intolerance for separation
 - A symbiosis without empathy
 - A fixation upon infantile patterns and the primary or earliest family relationships
2. Role conflicts, failures, and fixations
3. A disturbed family structure, including:
 - A closed family system
 - A prohibition against intimacy outside the family
 - An isolation of the potentially suicidal person within the family
 - A quality of family fragility
4. Affective difficulties, including:
 - A unipolar pattern of aggression
 - A family depression, hopelessness, etc.
 - Pervasive separation and death anxiety
 - Sexual disturbances
 - An intolerance of all affects
5. Unbalanced or unipolar interfamilial relationships, including:
 - A specific kind of scapegoat
 - Double-binding sadomasochistic relationships
 - A turning of the potentially suicidal person into the bad object for the entire family

6. Transactional difficulties, including:
 - Communication disturbances
 - Excessive secretiveness
7. An intolerance of crises.

Following, I will briefly refer to the fourth of Lansky's seven characteristics mentioned above: Affective difficulties.

Affective difficulties.

Affective difficulties (or: affective disturbances) refer to the functioning system that characterizes the family and how its function structure is related to the factors of expressing / "discharging tensions". More specifically, the whole idea of affective difficulties concerns the societal nature of the family system as members influence other members in a socio-psychological way. The two factors that we must consider are:

A: "the rules that are responsible for controlling and governing drive expression and discharge", and

B: "the prevailing affect or mood in the home conducive to depression and morbidity".

Two of the sub-characteristics of affective difficulties are as follows:

(i). Intolerance of all affects: In this sub-category of affective difficulties, the main idea is that there do exist behavioral tendencies toward wanting to withdraw from the family setting. The primary reason behind this is caused by the occurrence of continuous and repeated suppression of natural and basic needs such as *free expression* and *genuine spontaneity*. The latter is caused by the totally false assumption that freedom of expression and genuine spontaneity are *threads to family homeostasis*. However, as it is known from Freudian theory, this continuous suppression of psychic energy cannot be kept hidden for good. It is going to find a way out in a disguised form sometime during the course of life. And one of the disguised forms is suicidal behavior (or: depression, hostile and aggressive behavior, etc) because the individual cannot freely express himself, cannot leave his family setting, so he begins searching for a possible way out.

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(ii). Anxiety: Simply, Lansky defines anxiety as: "the emotional spur behind the basic experiences of separation, symbiosis, and early fixations, which, in effect, direct all that follows: Its prevailing expression is in the form of anxiety about death and separation. A more accurate term might be Separation /Symbiosis/ Fixation Anxiety" (Lansky; p. 149). Specifically, Separation Anxiety is seen, for example, in times of conflict within the family group regarding a teenager's social companions and their use of substances such as alcohol, and cases such as "drug addiction".

The psychological consequences of feeling hopeless and desperate are two more aspects that can seriously cause a suicidal attempt in a family. Hopelessness' increase "at the time of suicidal crisis is a major danger signal". Moreover, as Lansky also reports (pg.153): "Like depression, despair may be a very contagious commodity. The of thread statement from the relatives of chronically suicidal patients - Maybe he would be better off dead - is not necessarily a death wish or only a death wish. It is also an expression of that relative's hopelessness and having giving up. These feelings in the significant relatives verbalized or not, often precede an actual suicide or the more lethal attempts". Thus, it is not only the affective factors that might be caused between family members and depressing situations, but also the factors that might be created by other members giving up their hopes for recovery toward the suicidal member. Conclusively then, despair, hopelessness, and giving up can be regarded as a social system's phenomena (affected by family environments and people) and not just individual feelings. The psychological patterns that cause all the situations that I have referred to previously are many of the times unpredictable and mysterious. In addition, regarding the therapeutic method towards the *suicidogenic family*, therapists must always keep in mind that the whole family must be dealt with and helped, and not only the suicidal individual. As Lansky suggests: "The major lesson for those therapists who wish to help the seriously suicidal individual, is therefore, not to give up, to despair, or above all, to feel hopeless about feelings of hopelessness on the part of the family as well as the patient".

As a psychologist, I suggest the following when treating a family-suicide case:

1. Organize a therapy schedule for the suicidal individual.
2. Organize separate meetings with each individual of the immediate family environment.
3. Organize group therapy sessions for the entire family.
4. Inform, guide, and educate the family members of all scientifically proven information regarding suicidal behavior, and how they should avoid panic.
5. Advise that additional immediate steps should be followed such as the participation of a Psychiatrist in the overall therapeutic procedure so to examine also the high possibility of a psycho-pharmaceutical treatment being used (i.e., antidepressants if that is the case, etc).
6. Consult with specialists – were available – if there is also a need for an even more specialized treatment at a controlled clinical and pleasant setting for a certain period of time (i.e., institutionalization).
7. Give high emphasis on helping the family members to understand the importance of learning to communicate within their family cycle.
8. Explain that many times throughout life, it becomes necessary for people to want to improve themselves by changing their attitudes and behavior for their own and their family's well being.

Additionally, and as I have referred to previously in my article, it is of a crucial importance for psychologists to be adequately informed of how to follow certain diagnostic methodologies that will aid a suicidal individual to receive the best treatment as possible. However, there do exist cases whereas this, unfortunately, is not the case, with the possibility of a false diagnosis and therapy program occurring.

It is my belief one of the most crucial diagnostic manuals in the world today concerns the DSM series, which are published by the American Psychiatric Association. Specifically, during the present time, I strongly recommend the use of the DSM-IV-TR of 2000. Of course, I would recommend that if one is a prospective psychologist he must also obtain all the previous series of DSMs, beginning at least from DSM-III-R. The latter is crucially important because one must follow all advances of information and diagnostic changes that occur through time, and due to new scientific studies being proven. In the same way, a prospective psychologist must also pursue an in-detail study of the historical roots concerning the study of human behavior (i.e., the Freudian theory, Psychoanalysis, the

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Psychodynamic Perspective in general, the Learning Perspective, Family therapy, Child Psychology, Developmental Psychology, etc).

As far as Suicidal Behavior is concerned, the in-detail and circular study of areas that I have referred to previously will help a practicing psychologist to comprehend that he must maintain a strict objectivity due to the difference of human behavior and reactions amongst different individuals. For example, one must be prepared to know how to use a diagnostic manual. A major area that is directly related to suicidal ideation is Mood Disorders. This category has other sub-categories of types of Mood Disorders. For example, (DSM-IV-TR, pages 345 and 346):

1. Major Depressive Disorder
2. Dysthymic Disorder
3. Depressive Disorder Not Otherwise Specified
4. Bipolar I Disorder
5. Bipolar II Disorder
6. Cyclothymic Disorder
7. Bipolar Disorder Not Otherwise Specified
8. Mood Disorder Due to a General Medical Condition
9. Substance-Induced Mood Disorder
10. Mood Disorder Not Otherwise Specified

Following, one must carefully know, among others, how to review both Specifiers and Criteria so for a diagnosis to be directed in a more narrow and clearer way – if that is possible. Additionally, a very helpful tool concerns the Decision Trees for Differential Diagnosis. Here, one can re-check whether an initial diagnostic hypothesis is possible to be valid or not. Overall, a psychologist must be very careful and delicate in treating an individual who is facing a “type” of a Mood Disorder and which might relate to the development of suicidal behavior. Simultaneously, one must also have in mind that if a psychological diagnosis is not possible, then the specific behavior might be related to medical reasons, neuro-physiological reasons, substance addiction reasons, hormonal reasons, and so many other motives that might be the reasons behind the emergence of self-destructive behavior. Moreover, it can also relate to a combination between many

categories of reasons (financial reasons, sudden loss, etc), and all must be considered and researched.

The relation between Child - Adolescent Abuse and the development of Suicidal Behavior.

One other area that is deeply related with the development of suicidal behavior is Abusive Behavior. It seems that one major motive (or, cause) for suicide is child and adolescent abuse. As Briere states (p.48): "It is likely that society's problems with drug-addiction, alcoholism, violent crime, and suicide would be reduced substantially if child abuse was prevented, and/or successfully treated". It has been researched (Widom; 1989, Pollock et al.;1990, and McCord; 1983) that suicide is one of the long-term consequences of child abuse. Moreover, as Schneidman suggested (Briere;pg.61): "escape from extreme psychic pain (i.e., severe depression, crippling anxiety, overwhelmingly painful memories, or extreme hopelessness) is a commonly expressed motivation for suicide".

The unfortunate and most unjustifiable "practice" of child abuse can be of serious and unpleasant future consequences for many victims if they do not decide to take the first step and deal with it via therapy. I believe that the issue of child abuse can cause not only the long-term effect of suicidal behavior, but it must be viewed as a situation whereas an individual is carrying with him a tremendous amount of an unbearable psychological trauma for a long time. Additionally, if one considers the alterations that can occur in the victim's psychological world due to the trauma of unresolved abuse, then the consequences can easily be as important as the most serious crime known. I perceive it as being a terribly forceful nightmare that destroys the victim's future life in every aspect imaginable. And as long as the abused individual carries with him the trauma from an abuse (i.e. sexual abuse, psychological abuse, physical abuse, etc), and as long as these experiences remain unresolved, then they are continually going to be evolving and keep on affecting the individual throughout his entire life. Conclusively, this tremendous amount of stress and traumatic tension might cause one to begin seeking a way out (i.e., suicidal ideation and/or suicide attempt).

My thoughts on this issue are based on the belief that as long as the key source of a problem remains hidden within the mind of the individual, at

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some point in time it will eventually begin to take over his ability to think clearly, behave in a logical manner (being under the influence of the trauma), and finally – if not confronted and be dealt with – it will cause the development of a “need” to withdraw or “escape” from it.

Overall, the helping strategies and treatment methods must be seriously considered in a collective method when one is seeking in helping a suicidal individual to snap out of his situation the best way possible. Among others, I suggest the following areas that must be examined when facing a case of suicidal behavior:

Medical analysis of the matter

(i.e., possibility for an organic cause).

Psychiatric analysis of the matter

(i.e., possibility for a need of a psychopharmacological treatment – depressive disorder, substance addiction, etc – institutionalization at an appropriate environment and with careful consideration of the time duration at the appropriate institution).

Psychological analysis of the matter

(i.e., possibility toward a need for a specific psychotherapeutic treatment, family therapy, and generally careful design of a counseling-psychotherapy program, use of group therapy sessions, etc).

Sociological and socio-psychological analysis of the matter

(i.e., financial reasons, difficulties that relate to one's personal life, and generally the possibility for an everyday guidance program, etc).

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FIGURE: 1

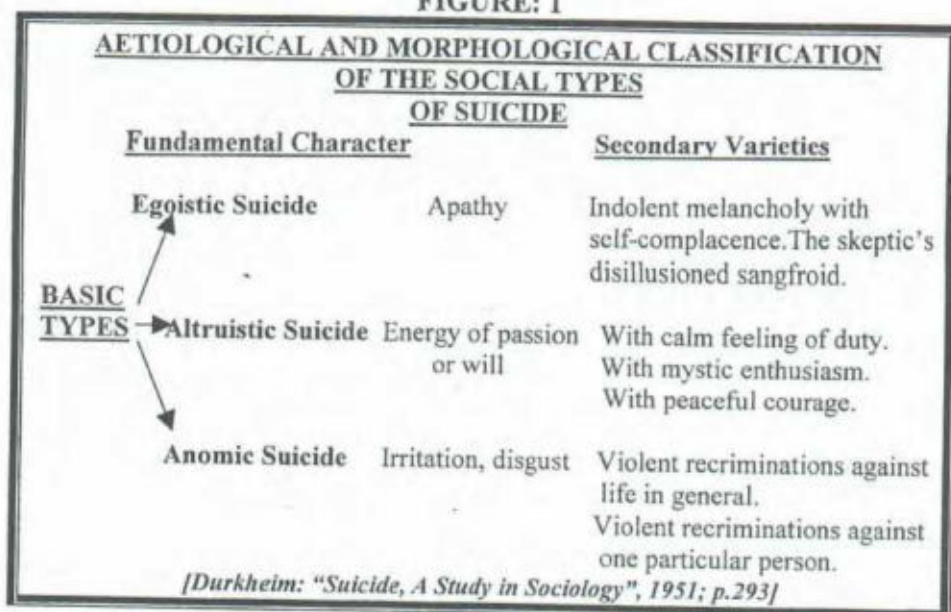


FIGURE: 2

(Source: *Abnormal Psychology*, Holmes; pg. 226 and 227)

INCREASES IN SUICIDES FOLLOWING STORIES ABOUT SUICIDES ON TELEVISION EVENING PROGRAMS			
<u>Date of story</u>	<u>Suicides after story (following a week)</u>	<u>Suicides during Control period</u>	<u>Difference</u>
April 25, 1972	554	444	110
June 4, 1973	528	435	93
September 11, 1973	487	514	- 27
July 15, 1974	482	462	20
April 11, 1975	593	572	- 21
September 3, 1975	553	501	52
May 13, 1976	550	575	- 25
TOTALS	3,747	3,503	244

[David S. Holmes, 1994; p.226 and 227]

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DEVELOPMENT OF THE PROCESSING SOFTWARE PACKAGE FOR RPV NEUTRON FLUENCY DETERMINATION METHODOLOGY

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ABSTRACT

The interface software package used in RPV neutron fluency calculation for converting of the reactor core codes output data to input data for the discrete ordinate transport codes, was extended by capacity to process pin-wise reactor core presentation. The assembly-wise and pin-wise output data of PYTHIA-DERAB codes for power and burn-up distribution in hexagonal 3D geometry, are transforming into neutron source input data in (r, θ, z) geometry format of the discrete ordinate codes DORT/TORT. This is needed for calculation of RPV neutron fluency with pin-wise neutron source presentation for standard and dummy cassettes loading of VVER-440 reactor. The interface software package was additionally modified to eliminate any type of handwork intervention in PYTHIA-DERAB codes output files. This allows the diminishing of the personal errors and mistakes that warrants the reliability of the data. New software for processing of threshold detector experimental data was developed. The experimental data is statistically processed before its application in the procedure for verification of calculation in order to minimize the estimate uncertainty. The enhanced software package will be implemented in the INRNE neutron Fluency Methodology and applied for incoming comprehensive neutron fluency analyses at Kozloduy NPP.

1. INTRODUCTION

Neutron fluency determination is a base element of the VVER RPV surveillance program. According to this program the RPV current state and

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residual lifetime estimation are accomplished. The program requires computational and experimental neutron fluency determination.

Because of the inaccessibility of the RPV surveillance positions for measurements, the neutron fluency is determined by calculation only. Verification/validation of the fluency calculation is performed by measurements at the appropriate positions in the RPV vicinity.

According to the IAEA recommendations the safety NPP activities have to be performed under Quality Assurance (QA) requirements. In relation to this, calculation process has to be carried out in a manner that allows elimination of all possible sources of uncertainties. All steps in calculation processing have to be computerized to avoid possible human errors and mistakes, to ensure maximal authenticity of the input data as well as conditions for input data revision.

Neutron fluency verification is based on the data of measured induced activities from threshold detectors irradiated in the air cavity behind RPV, during one or more cycles. Experimental data with low uncertainties is recommended for verification of the calculation methods.

According to the INRNE methodology the neutron transport calculation is carried out in two steps. At the first step, reactor core eigenvalue calculation is performed. This calculation is used to determine the fixed source for the next step calculation of neutron transport from the reactor core to the RPV. Both calculation steps are performed by state of the art and tested codes. The interface software package DOSRC [1] developed at INRNE is used as a link between these two calculations. The package transforms reactor core calculation results to neutron source input data in a format appropriate for the neutron transport codes (DORT [2], TORT [3] and ASYNT [4]) based on the discrete ordinates method. These codes are applied for calculation of the RPV neutron flux and its responses – induced activity, radiation damage, neutron fluency etc.

For more precise estimation of the neutron fluency, the INRNE methodology has been supplemented by the next improvements:

- Implementation of more advanced codes (PYTHIA[5]/DERAB) for neutron-physics parameter calculations;

- More detailed neutron source presentation; and
- Verification of neutron fluency by statistically treated experimental data.

The implementation of mentioned improvements has required modification of the interface package by new options and functions, as well as creation of the new software.

2. FUNCTION OF THE INTERFACE PACKAGE

The interface software package used for RPV neutron fluency calculation transforms the output data of reactor core code to input data of discrete ordinates method transport code. In particular, the output data of assembly-wise power density and fuel burn-up distribution in 3D-geometry from PYTHIA/DERAB code are transformed to input neutron source data in (r, θ , z)-geometry in a format appropriate for the neutron transport DORT/TORT and ASYNT code.

The scheme of interface software package is shown in Fig.1. The purpose of some base package modules and files is described below.

The SRC_HEX module calculates the neutron and activity source in hexagonal geometry. The activity source is prepared for the calculation of activities from ^{60}Co , ^{54}Mn , $^{93\text{m}}\text{Nb}$ of copper, iron and niobium foils respectively that are used as ex-vessel detectors. The SRC_HEX module output file named REAC.OUT is input file for SKV module. The SKV module processes data when more than one cycle is calculated. It summarizes the cycle-sources accounting the time between cycles.

The SRCREAC module transforms the neutron/activity source from hexagonal to radial-azimuth geometry for the mesh format of discrete ordinates codes. It records the transformed data in files for every axial interval.

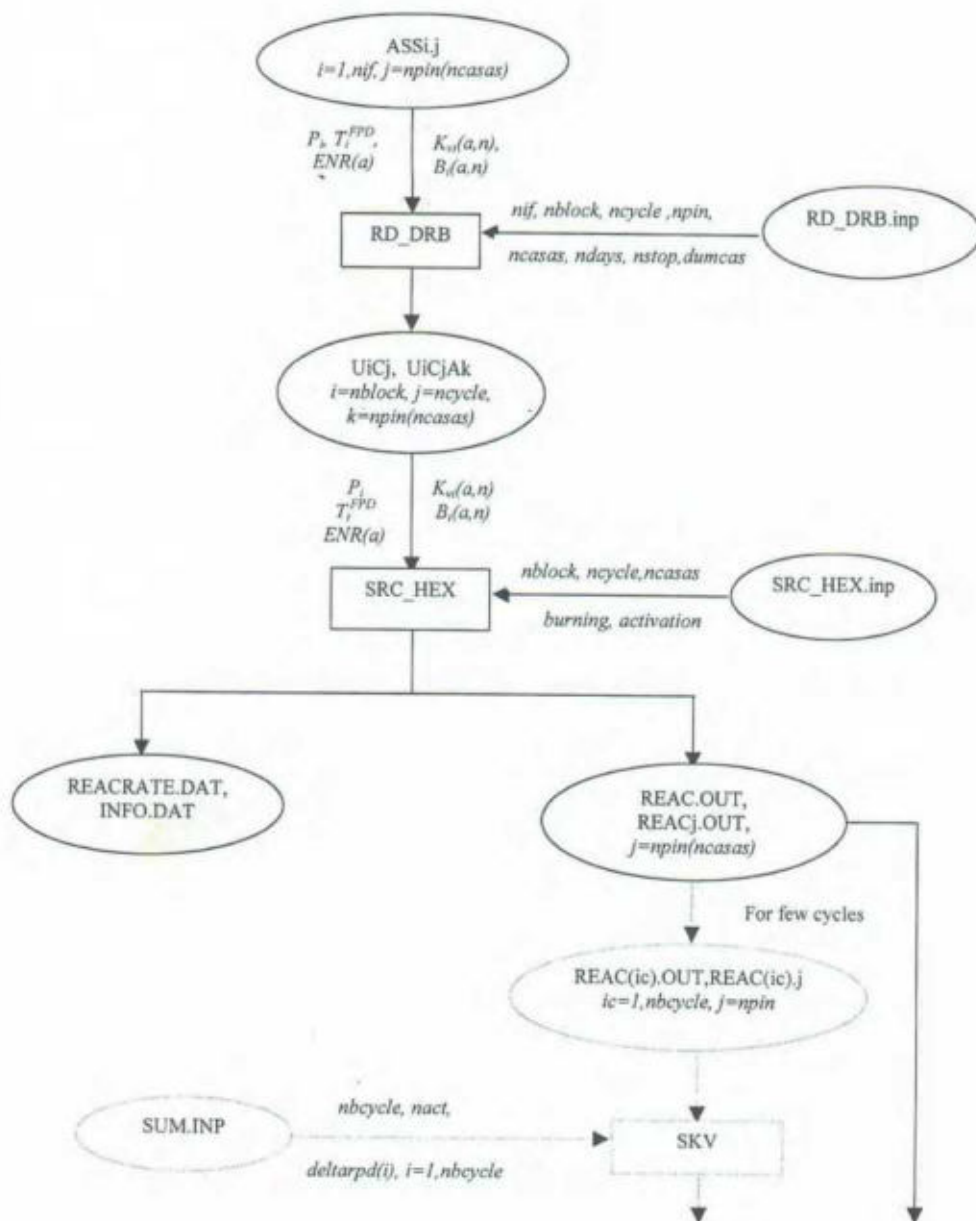
The COLLECT module collects all axial level data and records them in the files: Kv.A – for neutron source data, Co/Mn/Nb.A – for activity source data. The data of these output files is recorded in 96** card format used for TORT and ASYNT code input.

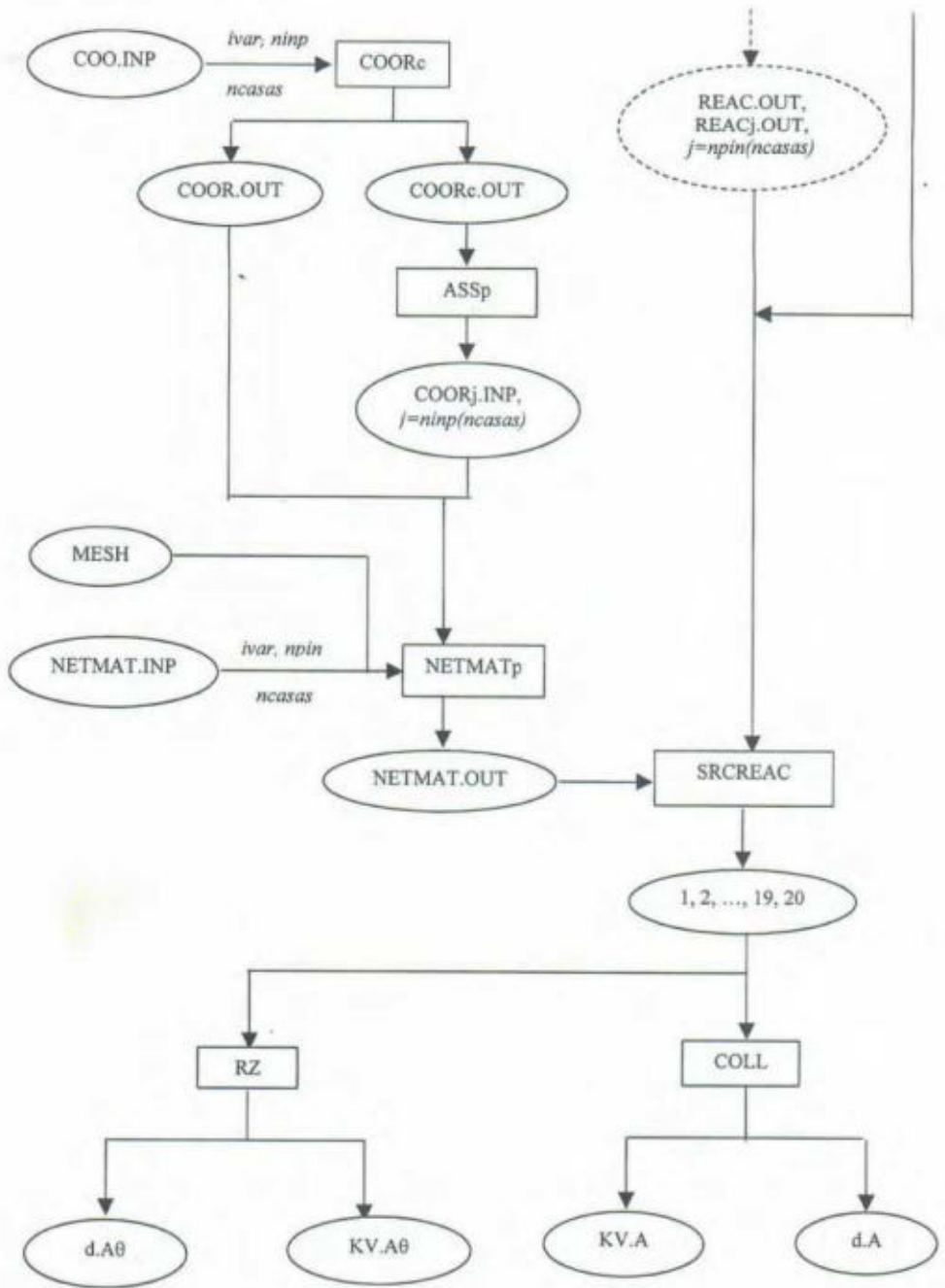
The RZ module selects all axial level data for given azimuth direction θ . It records them to files: Kv/Co/Mn/Nb.A θ . These output files data are recorded in 96** card format used for DORT code input.

3. IMPROVEMENT OF THE INTERFACE SOFTWARE PACKAGE

The interface software package has been enhanced in a way to process the data for assembly-wise as well for pin-wise source presentation from the new version of PYTHIA/DERAB code. Its output data file contains normalized assembly- and pin-wise power distribution and fuel burn-up data. The different PYTHIA/DERAB output files appropriate for standard core loading of VVER-1000 and VVER-440 as well as for dummy-cassettes core loading of VVER440 could be processed. The neutron source is represented in (r, θ ,z)-geometry in the input format of DORT/TORT/ASYNT for neutron fluence calculation. The interface software package (fig. 1) is additionally improved in order to eliminate handmade intervention into output files of codes.

FIGURE 1: THE INTERFACE SOFTWARE SCHEME





$d = Co/ Mn/ Nb$
 $\theta = nang(a), a=1, nangle$

The interface package is enhanced by new module's structure. The application of such module's structure is allowed for changing the output file structure of reactor core code or other structure elements, to modify only the relevant module of the interface package.

A new module RD_DRB is included in the package. This module selects the following data: type of assembly, normalized power distribution, fuel element burn-up and steady state history in real and full power days. This information is read from the PYTHIA/DERAB code output file and put into files with definite format. This module adds the zero power states to the power history as well.

The PYTHIA/DERAB code output data is stored in sets of files. The number of sets depends on the number of assemblies for which pin-wise calculation is performed. Each file of a set has to be renamed by fixed name ASSi.j, where: i is the file number in the set, and j is the number of pin-wise calculated assembly. The RD_DRB output files for reactor unit number n, cycle number k and number of pin-wise calculated assembly j, are: UnCk and UnCkAj. The file UnCk contains assembly normalized power distribution and burn-up data relevant to the assembly, axial level of the reactor core and steady state of the cycle. The files of type UbCkAj contain the pin distribution of the same data for the j-assembly.

The module SRC_HEX creates additional output files REACj.OUT with pin-wise data for the neutron source and activity source of the iron, copper and niobium detectors.

The ASSP module generates COORj.INP file with polygons coordinates describing pins geometry for certain assembly, which are, input data for the NETMATp module. The last module generates factors determining the impact of every pin or assembly to discrete ordinates, mesh interval and put them into file NETMAT.OUT.

The SKV module summarizes the cycles' sources for assembly as well as for pin-wise data.

Additional improvements have been performed for completing the QA requirements. The processing of PYTHIA/DERAB output files is combined with new input files that provide the needed information and comments in

such a way as to eliminate the possible handmade errors or mistakes. All needed data: number of PYTHIA/DERAB output files in the set, unit number, cycle number, amount and number of pin-wise presented assembly, date of cycle beginning, date of cycle end, keyword for dummy-cassette availability, number of zero power states during the cycle, date beginning of zero power state, date of zero power states end, is recorded in the input file RD_DRB.inp. The input file SKV.inp contains the number of cycles for summarizing, number of activation detectors and time intervals between the cycles.

4. DEVELOPMENT OF SOFTWARE FOR EXPERIMENTAL DATA STATISTICS PROCESSING

New software for statistical processing of experimental data from activation detectors irradiated behind RPV is developed. The experimental data is statistically processed before their application in the verification procedure in order to obtain data with minimized uncertainty.

The space detectors' activity distribution is adjusted by a linear form of orthogonal-normalized polynomials. These polynomials provide less error in rounding off than the standard polynomial application. The coefficients of the linear form are determined using the Least Square Method. The determination of the orthogonal-normalized polynomials is based on the recurrent relation of Forsythe [6]. The coefficients in linear form are calculated using the experimental data.

Hypothesis testing of "coefficient equal to zero" is carried out for determining the optimal polynomials' degree (which gives sufficient adjustment to the data). It is, performed by applying the Fisher's criterion [7] to the ratio between the coefficients' square and dispersion because both quantities are statistically independent and distributed as χ^2 . The linear form with so determined polynomial degree describes the adjusted experimental data. The uncertainty of this adjusted data is less than the uncertainty of the initial experimental data.

The experimental data for ^{60}Co , ^{54}Mn and $^{93\text{m}}\text{Nb}$ activities for axial and azimuth situated detectors are recorded in input files Zexp.prn and Texp.prn.

The Least Square Method has developed the MNK module for statistical processing of the data. The results of this processing are recorded in the R&C2.res file which contains tables with coordinates of measurement points, experimental data values, values of adjusted activity and their uncertainty at the points of calculation.

The application of this adjustment procedure allows obtaining with lowest uncertainty the measured activity of wire. This procedure is important for the verification of calculated results as well as for developing of generalized adjustment methodology for obtaining the "best estimated" neutron fluency onto RPV [8].

5. CONCLUSION

The software package for processing of data for neutron fluency estimation was modified for implementation of improvements corresponding to QA requirements.

The module's structure of interface software package was enhanced. The new module's structure allows modifying only of the relevant module of interface package when the output file structure of reactor core code is changed. Handmade editing of the codes and module's output files is eliminated. The needed information and comments are recorded in input files in order to avoid the possible handmade errors or mistakes.

New software for statistical processing of activation detector experimental data is developed. This processing provides results with the possible lowest uncertainty that is important for calculation verification.

The improved software will be implemented into the INRNE neutron fluency methodology and respectively applied in future RPV neutron fluency analyses for Kozloduy NPP.

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EUCLIDEAN GEOMETRY: FROM THE ABOLITION TO THE RESTORATION IN THE SECONDARY EDUCATION

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ABSTRACT

This paper attempts to give a spherical perspective of the history of Euclidean Geometry in the Secondary Education. The content of Euclid's Elements is examined as well as its effect on other sciences and Philosophy. The reasons of abolition of Euclidean Geometry from the Secondary Education are discussed, in conjunction with the consequences of this action. Moreover, the status quo of the level of mathematical knowledge of the students in the secondary education is evaluated. The paper finishes with suggestions of what should be done to improve contemporary mathematical thinking.

1. INTRODUCTION

No other book has reached so closely to earning the title of The Bible of Mathematics as Euclid's *Elements*. That's why when king Ptolemaios A' asked Euclid if there is a shortest way for somebody to learn Geometry, other than the one offered in his *Elements*, Euclid answered that there isn't a royal path to the learning of Geometry.

Euclid, the Elementor, the Phedias of Geometry, managed in his *Elements*, a huge collection. This collection, is divided in thirteen books with four hundred sixty five propositions, regarding space, stereometry and number theory, to collect a lot of Eudoxos' theorems, to perfect Theaititos' work and to prove his

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ancestors' Mathematics in a clear, well organized and strict way. His work constitutes an elegant, harmonic set and is expressed in a perfectly pedagogical way. Fairly his name has become synonym to "the key of Geometry".

Euclid in his *Elements* gave strict proofs to already known but not strictly proven theorems. No ulterior mathematician has achieved in overreaching Euclid's *Elements* as far as regarding the completeness and perfection of the strict systematic proof.

The *Elements* start from basic principles and with strict evidential method result in specific mathematical propositions. Every partial proposition is true, when it can be reached from the general principles progressively with a sequence of intermediate propositions, which have been proved. This is how the concepts of proof, theorem and axiomatic reasoning are born. The whole of *Elements'* geometric system is based on underlying principles that Euclid differentiates in definitions, corollaries and common concepts - axioms.

Apart from the apparent influence of Euclidean Geometry in Mathematics, a direct impact is observed and in other fields of sciences, such as Physics, as well as Philosophy. The use of the term *common concepts* proves that those can be used as such and from other sciences apart from Geometry.

In an era of very profound doubts in the mid sixties, the propaganda of a group of French Mathematicians to put Euclidean Geometry aside the Secondary Education, and its replacement with modern Mathematics, which have to do with abstract concepts, as well as the resonance that this ideology had in Western Europe and Northern America countries, led to calamitous consequences regarding the level of general mathematical knowledge, and mathematical education of the Secondary Education's graduates.

Modern Mathematics were not capable to substitute Euclidean Geometry since they took away from the student the satisfaction to draw in order to see the issue to be proved. The voices of the academics that call for the restoration of the Euclidean Geometry in the Secondary Education become more and more intense. The reason for this, is because they have realized that the Euclidean

Geometry is the only way by which students can have a better understanding of the concepts of proof and theorem and learn to explain what they do in every step of a proof and why, after first having released the mechanical use of formulae and recipes for exercise solving. The importance of the Euclidean Geometry in Mathematics is huge. Just a simple reminder of the fact that the first mathematical proof of all times based on an axiomatic foundation which was given by Thales from Militos was a geometric one, can reveal the necessity of the correct and strictly founded learning of Euclidean Geometry.

The mathematical knowledge according to Plato can only be gained with reasoning. That is why a restoration in the teaching system of geometry in the Secondary Education is mandatory, aiming to the learning of the strict and well founded mathematical thinking which is going to give the students the possibility of having well structured thinking and thus to acquire what is called mathematical culture which is based exactly on the axiomatic reasoning of the Euclidean Geometry.

2. WHAT IS EUCLIDEAN GEOMETRY?

Is exactly the Geometry, which is met in Euclid's *Elements*, a system of mathematical propositions based on axioms as well as later works of Greek mathematicians such as Apollonius, Archimedes and Diofantus. With the term *Elements* Euclid published everything that the Greek science in Geometry and Number Theory had produced from Thales until 300 B.C.

But who was Euclid, the man whose name was related, as nobody else's with the axiomatic reasoning and the escape from the lack of strictness which was dominant until then.

Euclid lived in Alexandria in the 4th century BC (330-275 BC). We do not know much about his life. He had probably studied in Athens' Academy. He taught at the well-known Alexandria's pedagogical foundation "Museum". He was very familiar with Plato's philosophy. According to Pappus, Euclid "... was very lenient and benefic towards all who could contribute to the

development of Mathematics as he should have been and he was not at all offensive. He was exact on the one hand, but not haughty on the other...".

The reasons that led Euclid in writing *Elements* were according to P. Tannery two. On the one hand the collection of geometrical knowledge and on the other hand the creation of the appropriate background to the understanding of the construction of platonic shapes, the five regular polyhedrons. Euclid collected The Pythagorean' and other ancestors' works in a whole. The *Elements* are the model for the development of every mathematical work. They are the bases of Modern Mathematics. Euclid starts his *Elements* by defining the terms point- whatever does not occupy space-, line- length without width- straight line- the line that lies at same distances with respect to its points. To continue, he described the basic concepts, which he thought they needed no proof. He then split those simple things in corollaries and axioms. Based on those corollaries and axioms, Euclid proceeded to prove with an apparently simple way the known basic triangle of Geometry. From triangles he then moved to solid bodies and ended in the construction of regular polyhedrons.

The *Elements* consists of 13 books. Six of them deal with Plane Geometry. The syllabus on which they extend is approximately equivalent to what is taught today on the same subject in the Secondary Education. In the next three books Number theory is examined. The tenth book examines non-symmetric ratios, irrational numbers- numbers that cannot be written as integers' ratio. The last three books deal with Solid Body Geometry- Stereometry. Books one, two and four are attributed to the Pythagorean. The fifth and part of the sixth book are attributed to Eudoxus. Books ten and thirteen are attributed to the Pythagoreans, Theaititos and Eudoxus to whom theorems 11-15 of the twelfth book are attributed. Euclid's other works are *The Known Data*, *Regarding Division*, *Regarding Conic Sections*, *Psedaria*, *Loci with respect to Surface*, *Porismata*.

Today we know Mathematics as a system of axioms, definitions and propositions. The content of each concept cannot be known with simply the help of some shape. Every concept must be defined explicitly. The Greeks had been convinced that Mathematics must be independent from knowledge that is

empirically acquired and thus built Geometry based on a system of propositions founded on axioms and simple definitions.

3. HOW WERE THE CONCEPTS OF PROOF, THEOREM AND AXIOMATIC REASONING BORN THROUGH EUCLIDEAN GEOMETRY AND HOW ARE THEY UNDERSTOOD?

Euclid gave us an excellent axiomatic development of Geometry and this makes his work exceptional. He started his *Elements*, with some basic notions: 23 definitions, 15 corollaries and 5 common concepts- axioms. These were the building blocks, the inputs of his system. He could use them at any time he wished. From these basics, he proved his first proposition. With the already present feedback he could mix the definitions, the corollaries, the common concepts and his first proposition to reach the proof of his second proposition and so on. As a consequence, Euclid did not give simple proofs. He built his proofs through a very strict axiomatic framework.

The advantages of such development were very important. At first, inaccuracy is avoided and there exist no doubt of the proof. For each proposition, there exists a clear thread of predecessors, which leads to the initial axiom. It is worth knowing that *Elements* is the first objective source of knowledge, which has been widely used by all future generations and has influenced the evolution of Mathematics as no other book. The same essence of Mathematics, the concept of proof and logical arrangement of theorems has become popular through the study of Euclidean Geometry and their contents have become known through a continuous procedure of sequential thinking that occurs through a series of logical propositions. Even though the propositions, which are present in *Elements*, are not attributed to Euclid, the format of thought building, that is the presentation of axioms, definitions and the well ordering of theorems are due to Euclid. The theorems are ordered in such a way so as to start from the simplest and move to more and more complicated conclusions.

The modern strict definition of proof starts from Euclid. Proof, is a finite sequence of propositions P_1, P_2, \dots, P_v where P_v can be proved to be true if each one of P_1, P_2, \dots, P_{v-1} is either an axiom, or an already proved proposition, or occurs from previous propositions of the sequence through simple, logical rules.

Whoever has an understanding of computer software, can make a flow diagram showing exactly the results used for the proof of a given theorem. This approach is certainly more advanced than proving a proposition, which is not clear and its results may or may not be used. A great danger which is eminent if we start from the middle of a proof is the proof of theorem A we may need to use result B which may be impossible to be proved without the use of theorem A. This leads to an infinite procedure, which is obviously not permissible in Mathematics. The axiomatic approach has one more advantage. Since we can easily go to the previous steps, which lead to the proof of a proposition, we have a direct sense of what is going on and we are capable of knowing if there is any need to change or discard some of the initial conditions set which may be redundant.

Even though Euclid did not manage to completely eliminate the vagueness in Mathematics, the high standards of logical reasoning and his apparent success in putting together the different pieces of Mathematics in a continuous spectrum starting from the initial conditions to end up in more complicated conclusions, serves as a model for the forthcoming route of Mathematics. It's not accidental that in the non-ending oceans of Topology, Abstract Algebra and Functional Analysis the mathematicians first present their axioms and then proceed step by step to build their wonderful theories. This is Euclid's echo, which still echoes twenty-four centuries after his death.

4. THE EFFECT OF EUCLIDEAN GEOMETRY ON SCIENCES AND PHILOSOPHY

Apart from the presentation of a more complete, strict, adequate and systematic proof, Euclidean Geometry has influenced sciences and philosophy to a great degree.

The first mathematical proof given by Thales from Militos was geometric. Ancient Egyptians', Phoenicians and Mesopotamia's Mathematics were computational and approximations. Based on empirical data they reached geometric and algebraic conclusions. The Greeks first gave the concept of proof of empirical results that already existed like Pythagora's Theorem. Through Euclidean Geometry and the use of infinite division in an isosceles triangle taking the ratio of the hypotenuse with respect to the perpendicular and with the aid of triangles' similarity it comes up that $\sqrt{2}$ is an irrational number.

Axiomatic reasoning and proof procedures have been the milestones of great considerations and interest for the ancient Greeks as well as contemporary philosophers. In ancient Greeks' philosophic works many of the basic mathematical problems are either mentioned or implied. Plato's dialogues *Timeos*, *Theetitos*, *Sofistis* and *Filibos*, are examples of such works.

The discovery of asymmetric ratios which comes out of the study of right angle triangles and especially the infinite division is just one of the many subjects which are mentioned in philosophical writings. The fact that the numbers $\sqrt{3}$, $\sqrt{5}$, $\sqrt{6}$, $\sqrt{7}$, $\sqrt{8}$, $\sqrt{10}$, $\sqrt{11}$, $\sqrt{12}$, $\sqrt{13}$, $\sqrt{14}$, $\sqrt{15}$, $\sqrt{17}$ are irrational numbers is mentioned in *Theetitos*. It is worth noting that the platonic dialect, which is present in *Theetitos*, is very much alike with the geometric method of proof for the existence of irrational numbers. Aristotle's *Logic* is based on the geometric proof methods too.

Many modern philosophies and scientific theories are based on *Elements*. Newton's *Principia* (1697) had exactly the same format as

Elements. In *Ethics*, (*Ethica Ordine Geometrico Demonstrata*), a philosophic work of Baruch Spinoza (1632-1677) many propositions of philosophical nature are proved through axioms. It is worth noting that even in the modern era there exists an influence of Euclidean geometry. Many of Abraham Lincoln's political arguments adopt the logical rationale of Euclidean propositions.

5. WHY WAS EUCLIDEAN GEOMETRY ABOLISHED FROM THE SECONDARY EDUCATION?

One can definitely ask: Why since Euclidean geometry had contributed so much in the understanding of the concepts proof, theorem, axiom and had offered so much in the area of Mathematics was abolished from the secondary education?

The "evil" started in the West around the sixties when a group of French Mathematicians, the Bourbaki team, among the divisions of which many great Mathematicians of that era belonged such as Jean Dieudonne and Andre Weil- who were great supporters of the demolition of Euclidean Geometry in the Secondary Education using the argument that is impossible after the huge evolution of mathematics to still use Euclidean Geometry as the basic tool to the secondary Education. The Bourbaki team wished the replacement of Euclidean Geometry with Abstract Mathematics such as Set Theory, Mathematical Logic, Analytical Geometry and Algebraic Structures.

The general trend for replacement of Euclidean Geometry with Abstract Mathematics had echoed beyond France to whole Western Europe and North America. This phenomenon has been transferred to Cyprus the last fifteen years from some secondary education's officers who had their postgraduate education in these countries. In the school manuals very little importance is given in the proofs whereas more emphasis is given in the calculations. The proofs are no longer part of the syllabus to be examined in the University Entry Examinations and no emphasis is given in teaching

them. The adoption of foreign educational systems has led to a gradual negligence of the role of Euclidean Geometry as a vital element in the configuration of Mathematical Education.

6. THE CONSEQUENCES OF THIS ABOLITION IN THE SECONDARY EDUCATION.

The abolition of Euclidean Geometry in the Secondary Education had disastrous consequences on the students. Always looking at the Cyprus case there has been observed a decline of the level of mathematical knowledge of the first year students in the University of Cyprus. The fact that the students are very familiar with exercises which have to do with formulae's applications and the use of a computer or calculator coexist with the weakness and the great difficulties that they face in solving an exercise in which the thing to be proved is a result of a sequence of propositions or occurs from previous propositions through logical rules.

Even though the students are very experienced and capable of the mechanical application of recipes and formulae for problem solving, they do not have a clear understanding of what they do, why they do it and when they are allowed to use these recipes. A general weakness in written reports of mathematical thinking is observed. Cypriots feel that they are in a disadvantageous situation compared to the Greeks, since they give the impression that they have never been taught how to describe what they do in the exercises. They have only learned to use mechanically some methodologies for solving exercises without having the faintest intuition and understanding of what they do.

An evidence to support this claim is the ascertainment of the associate professor of University of Cyprus, Dr. George Smyrlis who was surprised to find out that his students in the following exercise:

- Calculate the definite integral $\int x^{-1} dx$ on the interval $[-2,1]$, everybody gave the answer -1.5 and in the professor's question, "How can the integral

of a positive function to be negative?" nobody answered that the integral is undefined since the function x^{-1} is not defined at zero.

A weakness is often observed in the use of Greek to explain a result of a problem in words and a difficulty in the justification to the question of the professor why was the certain procedure used. This is to be completely attributed to the fact that no emphasis is given in the objective but an effort to memorize the method used for problem solving without any understanding of what the students do and why they do it. Besides, this is due to the students' weakness to write in words the different theorems they use even if they use them correctly.

A direct consequence of the abolition of Euclidean Geometry and the introduction of Abstract Mathematics in the syllabus, was the abolishment of proofs since the lack of an optical intuition in Abstract mathematics make the proofs be very difficult and the axioms not at all ostensive. That's why we have weakness in students getting familiar with the concepts of proof, theorem, and axiom. Exactly because of the non-tangible structure of Abstract Mathematics we have the weakness in the students' understanding for the necessity to prove propositions and axioms regarding abstract Mathematics. The fact that the students are not familiar with the idea behind the different methods of proof leads to the weakness of not being able to produce proofs of theorems.

Apart from the sole emphasis in exercise solving and the students' preparation for specific exams in a tutorial way it has been observed that Cyprus, as well as all the other countries that have abolished Euclidean Geometry from the Secondary Education, had a decrease in the number of students who excelled in Mathematical Olympiads compared to countries in which Euclidean Geometry has never been abolished as Eastern European countries and Vietnam. It's not by chance, but due to the simplification and the adoption of foreign exemplars that Cyprus took the last position in an International Mathematics Competition for Gymnasium's students in 1996. The adoption of foreign patterns (northern American and western European) led to the simple mechanical learning of recipes and the surface coverage of

more subjects. This surface knowledge without the strict axiomatic reasoning and proofs has motivated the students to satisfy the methodology of exercise solving. A direct consequence of the abolition of Euclidean Geometry in the secondary education was the fact that the proofs stopped being part of the examined syllabus and stopped being taught in lyceums. And there comes the apparent question whether the newcomers in the Universities are judged with the appropriate criteria.

The difficulty in finding exercises that involve proofs in Abstract Mathematics that would constitute an evaluation criterion and a mean of knowledge give a minimum contact with a variety of exercises, which are of much importance and provide intuition. From this it is obvious that the difficulty in understanding the necessity of the concept of axiom in Mathematics from the inexperienced student in Abstract Mathematics is not at all accidental since it requires a long mathematical experience. An instructor's task becomes more fascinating and the student's interest becomes more vivid, when they deal with tangible concepts with visual intuition. It is also worth noting the absence of the History of Mathematics and the boost of mathematical culture in general in the Secondary Education.

7. BUT WHAT IS HAPPENING TODAY?

In a time span of less than twenty years the ascertainment that the Euclidean Geometry cannot be replaced, by Modern Mathematics because these do not provide the appropriate model for proofs' teaching. In France, there has already been a partial recall of Euclidean Geometry in the Secondary Education and an abandonment of Modern Mathematics. In California, the return of the teaching of Mathematics utilizing the pattern used in the beginning of the century has been approved. In Greece, they've already started the printout of handbooks based on Russian exemplars. In Cyprus, although Euclidean Geometry was not completely abolished, its total recall in the secondary education is a matter under to talk about.

8. WHAT SHOULD BE DONE NOW?

And there comes the question: What should be done now since Abstract Mathematics failed to be an alternative in the Secondary Education?

The restoration and the use of Euclidean Geometry on students' assessment in the Secondary Education are mandatory. The systematic teaching of mathematical reasoning and proof is necessary in the Secondary Education. The ideal thing would be an introduction to the proof methodology from the smallest possible age. The introduction of proofs from the lower education would help the student to become more familiar and acquainted with the Euclidean Geometry. The incorporation of Euclidean Geometry in the secondary Education as a model to the tuition of proofs, theorems and axiomatic reasoning would help not only thought's enhancement but also student's intuition. It is the instructor's obligation to exhort students to draw so as to have a better understanding of what to be proved via an optical image. In accordance with the encyclopedic coverage of many field of Mathematics, it would have been reasonable to go through a deeper study for some of them. In addition to this, the tuition of the History of Mathematics could be a start for an enhancement of the mathematical culture. The incorporation of proofs in the Universities Entrance Examinations' syllabus could have been a motive to the tuition of proofs. A very positive development would have been achieved if more importance has been given in the proofs instead of calculations in such kind of examinations. It is mandatory to increase the amount of time available for the tuition of geometry and proofs in the secondary Education. What needs to be done is a change in mathematical knowledge's approach. A very deep re-engineering of the educational system with ultimate goal the enhancement of mathematical thinking must start.

When one of Euclid's students who had just learned his first theorem asked:

"And now, what do I get from this?"

The Euclid called one of his servants and told him:

"Give him three abols because he wants to be paid for what he learns".

The restoration of Euclidean Geometry in the secondary education is mandatory to take action now so the future generations be able to see the beauty and admire the lordliness of axiomatic reasoning which opened amazing horizons not only in modern Geometry, but also in the broader world of Mathematics.

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CLONING: BLESSING OR CURSE

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ABSTRACT

No one thinks that the mechanics of cloning are very hard given to what researchers have learned since Dolly. The consensus among biotechnology specialists is that within a few years the news will break of the birth of the first human clone. However, simple it may look, it is still early days for such an attempt. Cloning human beings is a dangerous task and even more, it is extremely unethical. Cloning of cells but not humans should only be valid for the therapy of the so far untreated diseases such as Alzheimer's and Parkinson's. The world community should conceptualise the benefits from such application and the destructive causes of cloning human beings.

Before we assume that the market for human clones consists mainly of, narcissists who think the world deserves more of them, or neo-Nazis who dream of cloning Hitler or crackpots and mavericks and mischief makers of all kinds, it is worth taking a tour of the marketplace. We might just meet ourselves there.

Imagine for a moment that your daughter needs a bone-marrow transplant and no one can provide a match; that your wife's early menopause has made her infertile; or that your five-year-old has drowned in a lake and your grief has made it impossible to get your mind around the fact that he is gone forever. Would the news then really be so easy to dismiss that around the world, there are scientists in labs pressing ahead with plans to duplicate a human being, deploying the same technology that allowed Scottish scientists to clone Dolly the sheep five years ago?

All it took was that first headline about the astonishing ewe, and fertility experts began to hear the questions every day. Our two-year-old daughter died in a car crash; we saved a lock of her hair in a baby book. Can you

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clone her? Why does the law allow people more freedom to destroy fetuses than to create them? My husband had cancer and is sterile. Can you help us?

Given what researchers have learned since Dolly, no one thinks the mechanics of cloning are very hard: take a donor egg, suck out the nucleus, and hence the DNA, and fuse it with, say, a skin cell from the human being copied. Then, with the help of an electrical current, the reconstituted cell should begin growing into a genetic duplicate. The consensus among biotechnology specialists is that within a few years -some scientists believe a few months- the news will break of the birth of the first human clone.

The meaning of what it is to be human -which until now has involved, at the very least, the mysterious melding of two different people's DNA- will shift forever, along with our understanding of the relationship between parents and children, means and ends, ends and beginnings. And as a result, the conversation that has occupied scientists and ethicists for years, about how much man should mess with nature when it comes to reproduction, will drop onto every kitchen table, every pulpit, and every politician's desk. Our fierce national debate over issues like abortion and euthanasia will seem tame and transparent compared with the questions that human cloning raises.

Even if all these headlines are hype and we are actually far away from seeing the first human clone, the very fact that at this moment, the research is proceeding underground, unaccountable, poses a real threat. The risk lies not just with potential babies born deformed, as many animal clones are; not just with desperate couples and cancer patients and other potential "clients" whose hopes may be raised and hearts broken and life savings wiped out. The immediate risk is that a backlash against renegade science might strike at responsible science as well.

The more scared people are of some of this research, scientists worry the less likely they are to tolerate any of it. Yet variations on cloning technology are already used in biotechnology labs all across the country. It is these techniques that will allow, among other things, the creation of cloned herds of sheep and cows that produce medicines in their milk. Researchers also hope that one day, the ability to clone adult human cells will make it possible to "grow" new hearts and livers and nerve cells.

But some of the same techniques could also be used to grow a baby. Trying to block one line of research could impede another and so reduce the chances of finding cures for ailments such as Alzheimer's and Parkinson's, cancer and heart disease.

Still, cloning is the kind of issue so confounding that you envy the purists at either end of the argument. For the Roman Catholic Church, the entire question is one of world view: whether life is a gift of love or just one more industrial product, a little more valuable than most. Those who believe that the soul enters the body at the moment of conception think it is fine for God to make clones; he does it about 4,000 times a day, when a fertilized egg splits into identical twins. But when it comes to massaging a human life, for the scientist to do mechanically what God does naturally is to interfere with his work, and no possible benefit can justify that presumption.

On the other end of the argument are the libertarians who don't like politicians or clerics or ethics boards interfering with what they believe should be purely individual decisions. Reproduction is a most fateful lottery; in their view, cloning allows you to hedge your bet. While grieving parents may be confused about the technology--cloning, even if it works, is not resurrection--their motives are their own business.

In the messy middle are the vast majority of people who view the prospect with a vague alarm, an uneasy sense that science is dragging us into dark woods with no paths and no easy way to turn back. Ian Wilmut, the scientist who cloned Dolly but has come out publicly against human cloning, was not trying to help sheep have genetically related children. He was trying to help farmers produce genetically improved sheep. And surely that's how the technology will go with us too. Cloning is not simply this isolated technique out there that a few deluded folks are going to avail themselves of, whether they think it is a key to immortality or a way to bring someone back from the dead. It's part of a much bigger project. Essentially the big-picture question is: "To what extent do we want to go down the path of using reproductive technologies to genetically shape our children?"

In fact the risks involved with cloning mammals are so great that Wilmut, the premier cloner, calls it "criminally irresponsible" for scientists to be experimenting on humans today. Even after four years of practice with

animal cloning, the failure rate is still overwhelming: 98% of embryos never implant or die off during gestation or soon after birth. Animals that survive can be nearly twice as big at birth as is normal, or have extra-large organs or heart trouble or poor immune systems.

Dolly's "mother" was six years old when she was cloned. That may explain why Dolly's cells show signs of being older than they actually are - scientists joked that she was really a sheep in lamb's clothing. This deviation raises the possibility that beings created by cloning adults will age abnormally fast.

If infertile couples avoid the complications of choosing which of them to clone and instead look elsewhere for their DNA, what sorts of values govern that choice? Do they pick an uncle because he's musical, a willing neighbour because she's brilliant? Through that door lies the whole unsettling debate about designer babies, fuelled already by the commercial sperm banks that promise genius DNA to prospective parents. Sperm banks give you a shot at passing along certain traits; cloning all but assures it.

One obvious way is to point to the broader benefits. Thus cloning proponents like to attach themselves to the whole arena of stem-cell research, the brave new world of inquiry into how the wonderfully pliable cells of seven-day-old embryos behave. Embryonic stem cells eventually turn into every kind of tissue, including brain, muscle, nerve and blood. If scientists could harness their powers, these cells could serve as the body's self-repair kit, providing cures for Parkinson's, diabetes, Alzheimer's and paralysis.

Cloning is at its early infancy and although it holds great promise for the future in medicine it has to be optimised for successful results. As with all the new technologies it is possible that cloning might eventually fall into the wrong hands. It is up to the individual governments to force new legislation against the uncontrollable use of cloning.

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POSITION OF CYPRUS TOURISM: A CRITICAL STUDY WITH REFERENCE TO EURO-MEDITERRANEAN DESTINATIONS

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ABSTRACT

This paper introduces Cyprus as a main Mediterranean destination and the possibility to differentiate the tourism product. We first present Cyprus Cultural and Historic value in the past and present. The evidence obtained from the W.T.O statistics report strongly supports that Cyprus's rosy period will continue with a stable increase up to 2020. We use the information collected from the W.T.O and C.T.O to structure a S.W.O.T analysis for the tourist product that Cyprus has to offer in comparison to Euro-Mediterranean destinations.

1. INTRODUCTION

Cyprus is the third largest island in the Mediterranean, with a unique proximity to Europe, Asia and Africa. Cyprus has been coveted, won and lost by countless civilizations over the centuries, all of which left their mark here and helped to shape the island's special character. Cyprus is the island chosen by the mythical gods and goddesses of Ancient Greece. They indulged themselves here in sports, pleasure and tragedy: Aphrodite the goddess of love and beauty, emerged from the Pafos foam to become a famous cult figure – center of attraction for the first visitors who flocked to the island to worship her.

The people of Cyprus are warm, friendly and hospitable in the nature. It is a genuine pleasure for us to welcome visitors – perhaps because we have been doing so for thousands of years. Cyprus is an island of great beauty and endless variety. Golden beaches and rugged coastline are contrasted with the

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impressive backdrop of unusual mountain ranges. Greek temples, Roman remains, Byzantine churches and Crusader castles, inspire fascinating excursions.

With such a historic and legendary background it is hardly surprising that Cyprus has developed such a character, which is quite unique. With these benefits Cyprus could implement a more effective position and strategically would achieve sustainable tourism.

This study based on information collected from all major Mediterranean destinations tried to locate the position of Cyprus' tourism. The aim of this analysis is to identify the key elements that can be improved, in order to Cyprus, to be a leading tourism destination in the near future.

The layout of this study starts with a literature review to Cyprus's tourism and an analysis of the past and present. For this analysis the statistics of World tourism Organization have been used. A survey concerning the Mediterranean destinations has been used for comparison with the Cyprus findings in order for the authors to illustrate a better image of Cyprus' position in present and future. The findings will reveal a SWOT analysis of Cyprus' tourism. This will enable the authors to suggest methods that are essential for the Cyprus tourism product to compete and grow.

1.1. Review of Cyprus tourism

The foundations of Cyprus' tourism were laid in the early sixties. Its progress had been smooth and successful until the summer of the 1974 when the Turkish invasion took place. All economic activities came to a standstill and the tourism sector suffered a devastating blow when the two highly developed regions of Famagusta and Kyrenia fell in the hands of the invaders. This had the loss of 13.000 beds constituting 71.7% of the total bed capacity at the time, plus 5.000 beds under construction and about 40% of the island's tourist¹ facilities in restaurants, cafes, bars and night-clubs as a result. (PIO-Cyprus).

The government, through the Cyprus Tourism Organization, a semi-government organization responsible for the planning, promoting and marketing of the tourist industry on one hand, and the island's hoteliers and other related tourist professionals on the other hand, worked hard for the reactivation of tourism in the free areas of the republic and the re-establishment of Cyprus on the world tourist map.

The Cyprus Tourism Organization was established in 1969 by the Government of the Republic of Cyprus as a statutory body responsible for the promotion and marketing of tourism, planning, regulations and development of the tourist product.

The Cyprus Tourism Organization is a semi-government organization that provides assistance to professional bodies, companies and individuals related to tourism in Cyprus.

1.2. Major tourist markets

The major share of the tourist traffic into Cyprus originates from Central and Northern Europe. In 1998 the United Kingdom remained the major source of tourist traffic followed by Germany and Central Europe. Compared to 1997, in 1998 there was an increase of tourist traffic from the UK, Nortek Countries, Greece, Holland, Italy and a decrease from Germany, France, Russia and Switzerland.

The contribution of tourism to the economy of the country is of vital importance. In 1998 the total revenue reached CY £879 million, which represents the 20% of the Gross Domestic Product (GDP). In addition, 40,000 jobs are directly or indirectly related to tourism.

1.3. Particular forms of tourism

In the general effort for upgrading tourism, great emphasis is placed on the further development of particular forms of tourism such as conference tourism,

winter tourism, agro tourism and special interests tourism. Their development and expansion can potentially alleviate the present problem of season ability and may be a step towards a more rational utilization of bed capacity, which could lead to a balanced disbursement of accommodation.

1.4. Growth of Cyprus Tourism product

Efforts to facilitate the growth of tourism have been enforced by the island's nature and history. Sandy beaches, a warm sea and invariably reliable sunshine are a major attraction for sun-seeking Europeans. Also thousands of years of civilization have left a heritage of Greco-Roman archaeological sites, mediaeval castles and Byzantine churches which tourists find equally irresistible.

Hard work and the Cypriot temperament have also played a role. Luxurious hotels, a well organized tourist back-up service industry, sports and conference facilities have provided comfort and the necessary infrastructure and variety. A time-honored tradition of hospitality ('freigner' and 'guest' mean the same thing in Cyprus) guarantees a warm welcome to visitors.

Travelers were relatively late in discovering Cyprus. The island of Aphrodite has been more popular with conquerors than tourists. A few distinguished travelers did make it to Cyprus, among them Leonardo da Vinci and Archduke Louis Salvator of Austria. With British rule in 1878 the island gently eased its way onto the Grand European tour and in the mid-20th century the island's mountain resort of Platres became popular with Egyptian visitors, including King Faruk. Popular tourism really took off with the Independence in 1960.

Turkish invasion rocked the very foundations of the tourist industry and set its development back by years. Seventy per cent of the island's tourist capacity, including the two major tourist resorts of Famagusta and Kyrenia, came under occupation. The island's only airport on the outskirts of Nicosia fell into disuse and only 3.000 beds were left in the Government-controlled area. Key sites, such as the legendary city kingdom of Salamis, the celebrated Mediaeval

Abbey of Bellapais and the Monastery of Apostolos Andreas, became inaccessible to locals and visitors. As a result, tourist arrivals, fell to 47,000 by 1975. The revival was equally dramatic. New hotels were built, previously unexplored areas boomed, forgotten coastline was rediscovered (e.g. Protaras area) and money was poured into advertising and promoting by private and public sector operators. (spearheaded by the Cyprus Tourism Organization). By the late 1980s arrivals had surpassed the one million mark. One of the most distinctive factors of the new boom was the fact that 40% of tourists returned to the island for second, third and more visits.

2. FORECASTING OF CYPRUS' TOURISM - 2020

In the year 2000, 2.7 million tourists visited the island compared to 2.43 million the previous year, which resulted in an increase in jobs by 10.5 percent, while revenue in the same year reached 1.18 billion pounds as opposed to 1.02 billion pounds in 1999, an increase of 15.5 percent. In the year 2000 compared to 1977, tourist arrivals and revenue show an overall increase of 29 percent in arrivals and 38 percent in revenue. Table 1² below, shows the position of Cyprus among the Euro-Mediterranean destinations. The data of table 1 shows a 2.5% stable annual growth rate of Cyprus tourist arrivals for the period 1995-2020.

**TABLE 1: TOURISTS ARRIVALS IN MEDITERRANEAN DESTINATIONS
AVERAGE GROWTH RATE 1995-2020**

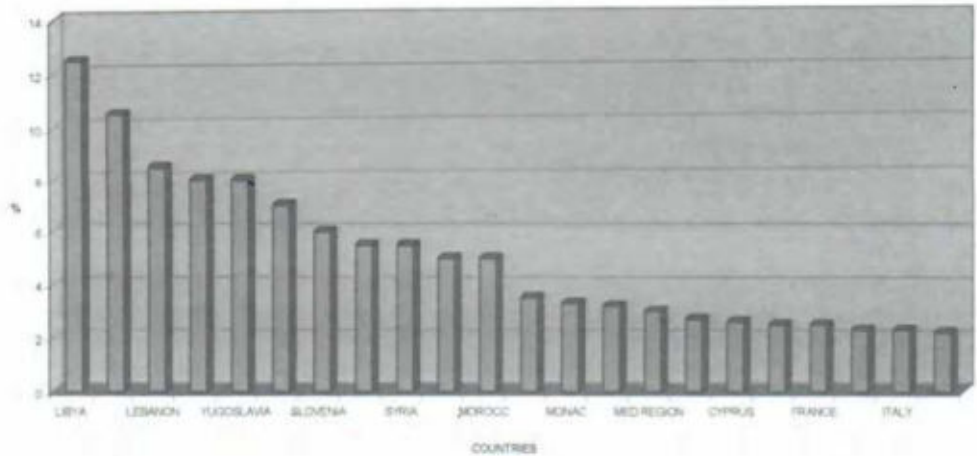


Table 2 shows the major tourist markets for the last decade for Cyprus³ seem to be Europe and Middle East. Based on C.T.O statistics of 1999, the authors would like to indicate some of the major inbound tourism countries. Analysis of arrivals shows that a majority of the tourists (80.4 percent) were residents of the European Union. United Kingdom visitors led with 46.6 percent, Germany with 15.1 percent, Russia with 4.0 percent, Greece with 3.9 percent, and Sweden with 2.8 percent and Israel with 2.4 percent.

TABLE 2: WTO TOURISM STATISTICS

CYPRUS							
Basic Indicators	Units	Code	1995	1996	1997	1998	1999
Inbound Tourism							
Visitors	thousands	1.1	2,253	2,089	2,194	2,357	2,578
Tourists(overnight visitors)	thousands	1.2	2,100	1,950	2,088	2,223	2,434
Same-day visitors	thousands	1.3	153	138	106	134	143
Cruise passengers	thousands	1.4	39	41	55	75	77
Arrivals by region							
Africa	thousands	2.1				6	9
Americas	thousands	2.2				26	31
Europe	thousands	2.3	1,840	1,773	1,979	2,112	2,312
East Asia and the Pacific	thousands	2.4				10	11
South Asia	thousands	2.5				11	13
Middle East	thousands	2.6	105	105	53	51	56
Arrivals by mode of transports							
Air	thousands	3.1	1,857	1,744	1,836	1,989	2,166
Rail	thousands	3.2					
Road	thousands	3.3					
Sea	thousands	3.4	396	344	358	368	412
Arrivals by purpose of visit							
Leisure, recreation and holidays	thousands	4.1				2,102	2,308
Business and professional	thousands	4.2				121	126
Other	thousands	4.3					
Overnight stays and length of stay							
Length of stay							
Overnight stays in H&S	thousand nights	5.1	14,202	12,702	13,193	14,442	
Overnight stays in CE	thousand nights	5.2	14,222	12,718	13,206	14,456	
ALS of non resident tourists	Nights	5.5	11.51	10.92	11.5	11.27	11
Tourism expenditure							
	US\$	Million					
In the country of reference	8.1		1,788	1,669	1,639	1,696	1,878
DOMESTIC TOURSIM							
Overnights stays							
Overnights stays	stays in H&S	Thousand nights	5.3	354	486	529	575
Overnights stays in CE		Thousand nights	5.4	374	511	554	594
OUTBOUND TOURISM							
Departures	thousands	6.1	360	365	422	417	470
Tourism expenditure in other Countries	US\$Million	8.2	241	263	278	276	289
TOURISM ACTIVITIES							
Hotels and similar establishments							
Number of rooms	H&S	7.1	35,075	35,932	35,742	36,383	34,122
Number of rooms	H&S	7.2	77,259	83,537	83,288	85,161	84,173
Occupancy rate	Percent	7.3	58.6	52.74	52.23	55.65	
Average length of stay	Nights	5.6	11.02	10.41	10.87	10.62	11

ECONOMIC AGGREGATES						
US\$ Million						
Gross National product (GNP)	9.1	8.443	8.959	9.068	8.975	9.086
US\$ Million						
Exports (F.O.B)	9.2	1.231	1.391	1.25	1.062	997
US\$ Million						
Imports	9.3	3.694	3.983	3.665	3.687	3.618

Source: World Tourism Organization (WTO)

2.1. The Mediterranean as a tourism destination

The Mediterranean⁴ region is the leading tourist destination. Tourism is mainly concentrated in the coastal areas, which receive 30% of the international tourist arrivals. The most widely used tourism development model used in the region is based on seaside summer holidays and the attainment of quantitative goals. Of the total 46.000 km of coastline, 25.000 km has been urbanised and has already exceeded a critical limit.

International tourist arrivals (excluding domestic arrivals) in 1999 totalled 219.6 million (4.7% increase over 1998). Projections show that this figure could reach 350 million by 2020. 84% of the tourists in the Mediterranean come from Europe, mostly from northern and western countries. Germany is the largest market followed by the United Kingdom, France and Italy. Spain, France, Italy and Greece receive almost 80% of the Mediterranean tourism.

The Mediterranean region receives 1/3 of the income of the international tourism. Tourism receipts in 1999 totalled US\$ 131.8 billion. Over the last three years, 2/3 of the income returned to the hands of less than 10 tour operators from northern Europe.

2.2. Euro-Mediterranean forecasts

The most frequently used words by all Western economic gurus are these days, 'by the second half of 2002'. Thus, by the second half of 2002 we could expect the economy of the USA and EU to pick up its habitual rhythms of growth, say Mr. Greenspan and EU Commission representatives. Also by the

second half of 2002 we can expect stabilization on the oil market, say oil producers and consumers alike. So it's completely familiar to hear that the World Tourism Industry in general and the tourist industry in Europe in particular, are also expected to pick up by the second half of 2002. The last statement is part of the preliminary industry results for 2001 and the outlook for 2002, released on 29th January by the World Tourism Organization (WTO). Such suggestions have no particular importance because they assume that everything will go as it is and the recovery will inevitably follow the crisis (it always did in the past sooner or later). Such forecasts don't take in account any sudden change in the future that can affect the tourism industry – more terrorist attacks, wars near the main tourist destinations, major airline bankruptcy (remember Sabena, Swissair), disease outbreaks (foot-and-mouth) etc. Any of these changes can modify the market or at least some regional segments of it, which will result in a less rosy picture.

According to these preliminary results for 2001 Europe suffered both from the global economic downturn and the terrorist attacks. The number of international tourist arrivals decreases by 0.7% (increase by 1.7% in January-August and decrease by 6% in September-December). In America the number of tourist arrivals dropped by 7% (in North America by 8.2%) and in the world in general the fall in 2001 was 1.3%.

Three out of five top tourist destinations are European countries – France, Spain and Italy with a total market share of 24% of the global tourist market. The average development on the European market hides the different trends in specific countries and regions of the continent. Some countries in the Mediterranean region, Central and South-Eastern Europe gained additional market share. The growth was particularly strong in Bulgaria (14%), Slovakia (13%), Turkey and Croatia (12%) and Slovenia (11%). On the other end, UK and Italy suffered big losses in 2001. -6.6% and -5% respectively.

Another major cause for problems in the European tourist industry was the outbreak of foot-and-mouth disease in the UK, Ireland and the Netherlands, especially in the first 8 months of the year.

The list of reasons that can negatively affect the tourist industry in Europe in 2002 is very long. That's why the rosy prediction of WTO to see the light at the end of the tunnel 'by the second half of 2002' is only a speculation, the final result will depend on too many factors that develop independently beyond the reach of industry itself. It will be wiser to expect that the European tourist industry decrease of 2002 will be two times more than 2001 decrease and the major changes will occur not on continental but on national level.

2.3. Mediterranean forecasts

Based on W.T.O statistics, of the 637 million international tourist arrivals worldwide in 1998, over 197 million visited the Mediterranean region. Over the period 1995 to 2020, it's expected that the average annual growth rate of tourist arrivals to the 21 countries bordering with the Mediterranean Sea, will be 3%. By 2020, this will account for 346 million arrivals or 22% of all global arrivals. Despite the continuing growth as the world's largest receiving region, the Mediterranean's share of global tourism is expected to decrease over the next two decades. The optimistic message of W.T.O forecasts for Cyprus shows that it is among the few countries with a stable growth rate. Based on table 3, the growth rate of Cyprus remains 2.5% p.a. The position of Cyprus in the Mediterranean statistics of W.T.O creates a lot of questions for the survival of a sun-sea destination. What makes Cyprus different from other sun-sea Mediterranean destinations?

TABLE 3: WTO TOURISM 2020 VISION: FORECAST OF INTERNATIONAL TOURIST ARRIVALS IN MEDITERRANEAN DESTINATIONS.

	ACTUAL	FORECASTS			GROWTH RATES (% p.a.)	
	1995	2010	2020	1995-2020	2000-2010	2010-2020
TOTAL	166.562	268.775	345.974	3	2,6	2,6
Albania	40	51	133	4,9	7,5	10
Algeria	520	1.009	1304	3,7	3,3	2,6
Bosnia	37	248	444	10,5	7,5	6
Herg						
Croatia	1.324	7.454	10.017	8,4	4,3	3
Cyprus	2.100	3.041	3.893	2,5	2,5	2,5
Egypt	2.872	8.693	17.100	7,4	7	7
France	60.033	88.237	106.093	2,3	2,1	1,9
Greece	10.130	14.315	17.111	2,1	2	1,8
Israel	2.215	3.055	3.910	2,3	2,5	2,5
Italy	31.052	43.881	52.451	2,1	2	1,8
Lebanon	450	1.716	3.704	8,8	9	8
Libya	56	416	1.079	12,6	12,5	10
Malta	1.116	1.502	1.831	2	2	2
Monaco	233	381	512	3,2	3	3
Morocco	2.602	5.465	8.692	4,9	4,9	4,8
Slovenia	732	1.920	3.128	6	5	5
Spain	38.803	61.798	73.867	2,6	2,2	1,8
Syria	815	1.577	3.102	5,5	5	7
Tunisia	4.120	6.305	8.916	3,1	3,4	3,5
Turkey	7.083	17.068	27.017	5,5	5,3	4,7
Yugo/via	228	643	1.669	8,3	8	10

Source: World Tourism Organization (WTO)

3. SWOT ANALYSIS OF CYPRUS TOURISM PRODUCT

The problems of Tourism in Cyprus are not current but have been growing for years. The tourism industry in Cyprus has been forced to mature very quickly without having the chance to be studied and improved. Apart from the experience of more than 30 years of successful tourism destination, Cyprus has to deal with the weaknesses and problems that have accumulated over the years of rapid growth.

Strong points

- Rich culture and history
- Attractive natural environment
- Good climate
- Hospitable and safe environment
- Established sun-sea destination
- Short distances
- Good hotel infrastructure

Weak points

- Lack of long term strategy and implementation mechanisms
- Weak presentation of culture and history
- Tendency to imitate
- Lack of activities for the visitor
- Insufficient regulation for environmental management
- Weak marketing
- Limited direct flights

Opportunities

- Increase demands of tourism for culture and environment
- Opportunity of differentiation of sun-sea destination and establish a clear and distinctive image
- Technological development
- Mature tourist industry

Threats

- Political situation of Cyprus and the Middle East
- Increase of competitive destinations
- Lack of human force/labour
- Price competition

3.1. Cyprus Marketing Strategy

For Cyprus, 1999 was the starting year for the new ten-year tourism plan, which was designed to promote Cyprus, not only as a sun-sea destination, but as a country of history, culture, scenery, and high quality tourism product. The authorities are actively improving the country's infrastructure to cope with tourists' expectations, particularly from the US and Japanese markets. Furthermore, given the importance of tourism to the Cypriot economy and the intention to increase the number of tourists from two to three million per year by 2003, additional attractions are being developed. The prime developers are big money earners such as golf courses, casinos and theme parks. Limassol is undergoing significant improvement and a major water theme park opened, with another five such parks planned around the island. It is hoped that the ability to cruise from Limassol to Israel and Egypt will give the town a tourism boost. Other issues that are seen as particularly attractive to the Cypriot authorities are the promotion of its archaeological sites, at one end of the spectrum and to the increased development of all-inclusive holidays at the other. Agro-tourism is another focus, with the number of agro-tourism sites rising from 294 to 700 over the next five years. Cyprus is also trying to extend its attraction to travellers with year round activities. The number of walking trails has increased from 10 to 50 in the last three years. Bird watching and mountain biking are also subject to a marketing campaign. To add some weight to their convictions, five extra theme parks (with historical and mythological themes) are planned, whilst six new marinas (with a capacity for 4.000 vessels), four new golf courses, and a casino are in the pipeline.

4. DISCUSSION

Despite the success, Cyprus must not rest on its laurels. Development projects and promotion from the Cyprus Tourism Organisation are needed. Fewer and fewer hotels tend to close their doors during the winter months as a new type of tourists – sometimes labelled “third age” travellers have emerged alongside the sun seekers. This is a new market that Cyprus’ tourism industry can invest for future stability into the tourism product that Cyprus has to offer. New programmes can be introduced such as Greek dancing, wine-tasting along with vineyard tours, cooking lessons, hikes through the forests, more events and festivals as well as other forms of rural tourism.

More recently, special priority has been attached to the promotion of conference and incentive tourism. Major hotels in Nicosia, Limassol, Larnaca, Ayia Napa and Paphos find that their sophisticated conference facilities for corporate meetings and seminars are much in demand. The International Conference Centre in Nicosia, with a capacity of 12.000, allowed local travel agents to bid for very large conferences. These new facilities can open a new market for Cyprus and create a conference destination on the Mediterranean map.

The limited number of direct air services to and from Cyprus creates a huge barrier for long distance visitors such as the Japanese.

In the longer term, Cyprus Government must recognise that the demands of modern tourism must not be allowed to endanger the island’s environment. Generally, Cyprus is now giving emphasis on the quality of services offered rather than on quantitative expansion of the Tourism Product.

NOTES

1. Tourist; a visitor who stays at least one night in a collective or private accommodation in the country visited (Recommendations on Tourism Statistics-WTO / United nations-1993).
2. The use of international tourist arrivals as the parameter for WTO's forecasts in necessitated by the fact that this category of data most widely reported by countries using the most standardized definitions. The number of arrivals for Cyprus.
3. This table refers only to the part of Cyprus that is under government control of the Republic of Cyprus.
4. Mediterranean region refers to the following countries: Albania, Bosnia Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Palestine, Slovenia, Spain, Syria, Tunisia, Turkey, Yugoslavia.

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THE RISK-ADJUSTED PERFORMANCE OF CLOSED-END FUNDS AND THE IMPACT OF DISCOUNTS

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ABSTRACT

We examine the monthly performance of 452 closed-end funds over the December 1993 to July 1999 period. Our results suggest that, on average, closed-end funds are not good investment alternatives to similar (identical) open-end funds on a risk-adjusted basis. However, funds that are trading at greater discounts, especially those trading at high discounts relative to their average discount, do offer above-average risk-adjusted rewards. The implication for investors is that some closed-end funds may be attractive investments; however, their attractiveness will depend upon the absolute and relative size of their discount, as well as other factors.

1. INTRODUCTION

There has been an abundance of research devoted to determining the reasons why closed-end funds trade at a discount from their net asset value (NAV).¹ Possible explanations refer to the existence of agency costs, tax timing issues, and liquidity issues. We examine the behavior of closed-end funds from a different perspective – one that is of greater interest to investors. In particular, we examine *why investors should (or should not) purchase closed-end funds, based on their risk-adjusted performance.*

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Investors may be attracted to closed-end funds for several reasons, including:

- (1) They are unable to buy the underlying assets by any other means (E.g., closed-end foreign market funds);
- (2) They believe closed-end funds trading at a discount provide a good "Yield" pay; and
- (3) They believe closed-end funds offer potentially greater returns due to the discount.²

Since there is no obvious solution to the first reason above, we do not address this issue and turn our attention to the third reason, since it implicitly encompasses the second reason. In other words, investors who receive higher yields will experience higher returns, unless of course, they experience abnormal capital losses.

In order to evaluate the performance of closed-end funds, we need a benchmark i.e., we need to compare the investment results of purchasing closed-end funds against comparable investments). Rather than compare to traditional benchmarks such as market indexes, or fund-category benchmarks, we compare the performance of the closed-end fund prices, to the performance of their NAV, which proxies for a similar (identical) open-end fund. This approach ensures that we are comparing similar funds, which is not always the case when control samples or indexes are used, due to the wide discrepancy in fund compositions that typically exist within given fund type classifications.

We examine the monthly performance of 452 closed-end funds over the December 1993 to July 1999 period. Our results suggest that, on average, closed-end funds are not good investment alternatives to similar (identical) open-end funds on a risk-adjusted basis. However, funds that are trading at greater discounts, especially those trading at high discounts relative to their

average discount, do offer above-average risk-adjusted rewards. The implication for investors is that some closed-end funds may be attractive investments; however, their attractiveness will depend upon the absolute and relative size of their discount, as well as other factors.

The remainder of this paper is organized as follows. Section 2 provides motivation for the present study and reviews the relevant literature. Section 3 describes our sample, as well as the methodology employed. Section 4 provides results for the entire sample, and for funds that are classified into groups based on their absolute and relative discounts from NAV. Finally, Section 5 concludes.

2. MOTIVATION AND LITERATURE REVIEW

Closed-end funds differ from open-end funds in that they have a fixed number of units outstanding. Their price is then determined by the supply and demand for these units. Typically this price differs from the Net Asset Value (NAV) of the fund. Bers and Madura (2000) find an average discount to NAV of 3.6% in a sample of 384 funds over the time period January 1976 to December 1996. A large amount of research has attempted to explain why this discount exists. The three main explanations deal with agency costs, tax timing issues, and liquidity issues.

If closed-end fees are high and/or future expected management performance is low, this could explain why a fund would trade at a discount. Empirical evidence, however, does not support this hypothesis. Malkiel (1977) finds no correlation between the size of the discount and the fees of a fund. Similarly, Lee, Shleifer, and Thaler (1990) finds no significant relationship between the discount and future fund performance (a proxy for expected management performance.)

An alternative explanation for the discount is that there are tax liabilities associated with unrealized capital gains and loss of investor control over tax-

timing transactions. While there is evidence to support this hypothesis (Brickley, Manaster and Schallheim (1991) and Kim (1994), it does not seem that the effect is large enough to explain the entire discount. This is confirmed by Seyhun and Skinner (1994) who show that only 5-7% of investors time their trades to minimize tax liabilities. The vast majority (approximately 90%), simply follow a buy and hold strategy without considering tax-timing issues.

Discounts from NAV may exist due to errors in calculating NAV. This may occur if restricted or less-liquid shares are recorded at the same price as more liquid, publicly traded stocks. Malkiel (1977), finds a significant correlation between the discount and the proportion of restricted stock in a fund; however, Lee, Shleifer, and Thaler (1990), argue that liquidity cannot be a major component of the discount as most funds have very limited restricted stock holdings (although this would not necessarily be true of foreign closed-end funds).

While numerous papers have hypothesized other reasons for the discount, there has been no consensus as to what really drives the price of closed-end funds to typically trade lower than their NAV. This paper is not attempting to explain the closed-end fund discount, but given its empirical existence, attempts to determine if investors can use a funds discount to earn abnormal risk-adjusted returns. As such, it is more related to the work on exploiting the discount.

A major problem underlying many of the papers attempting to measure abnormal returns from discounts on closed-end funds is the joint hypothesis test problem. That is, these tests are a joint test of market efficiency and an asset-pricing model. For instance, Thompson (1978) finds that US closed-funds trading at a discount accrued an abnormal risk-adjusted return of approximately 4% between 1940 and 1975. He is careful to state, however, that it is unclear if this return is caused from mispricing (i.e., market inefficiency) or errors in the method for risk-adjustment (i.e., the asset-pricing model).

Pontiff (1995) avoids this problem by comparing returns of discounted funds with returns of non-discounted funds. He finds that funds with a discount of 20% performed 6% better over the next year compared to non-discounted funds. By comparing our returns to a similar open-end fund (based on NAV returns), we also avoid the dilemma of the joint hypothesis test.

Implicit in all of the studies of how the discount affects returns is that the discount is non-static. If the discount remains constant, it will have no effect on the return on the fund. Several papers have examined the mean-reverting aspects of the discount. Minio-Pauello (1998) divides a sample of closed-end funds into deciles based on the size of the discount. She finds that the discounts of the funds in the smallest discount decile tend to increase while the discounts of the funds in the largest discount decile tend to shrink. Cheng, Copeland, and O'Hanlon (1994) use the idea of mean-reversion to derive a trading strategy of selling low-discount funds and buying high-discount funds. Although not adjusted for risk, they find this strategy yields significant returns.

3. DATA AND METHODOLOGY

The data set includes price and NAV information for closed-end mutual funds gathered from the Research Insight (U.S. Compustat) database. The sample includes monthly observations for 452 funds over the December 1993 to July 1999 period. Observations were deleted if the value for price or NAV for a particular month was zero, or if they were missing values. Thus, we do not have a "balanced" panel data set, and we will not have the same number of observations for each fund. In order to eliminate extreme observations, the sample was truncated at the 1st and 99th percentiles on each of: NAV return; price return; and, price-to-net asset value.

The funds were classified into fund categories, based on their fund categorization according to Morningstar. Based on these categorizations, we divided our sample into the following categories: unclassified (18); balanced funds (10); domestic bond funds (302); foreign bond funds (22); domestic

equity funds (31); and foreign equity funds (69). Portfolios of funds are then constructed for the entire sample, and within each fund category, with each of the individual funds being weighted equally. In other words, each time series observation for a given fund category represents the cross-sectional mean of all funds within that category that have a valid observation during that period. The standard deviations are calculated based on the deviations in the time series of cross-sectional means for a particular fund category.

4. RESULTS

Table 1 provides summary statistics for the average price-to-net asset value for the entire sample, as well as for our six fund categories. The average discount from NAV is 5.21%, which is consistent with previous evidence regarding the discounts associated with closed-end funds. The discounts range from 11.47% for unclassified funds to 1.65% for balanced funds. One might expect to observe higher average discounts for foreign funds based on the liquidity argument discussed in Section II. While we find this to be the case, the difference is not very pronounced. In particular, foreign bond funds traded at an average discount of 5.58% versus 3.88% for domestic bond funds, while foreign equity funds traded at a slightly higher discount (9.26%) than domestic equity funds (9.13%).

Table 1 verifies that our sample consists of closed-end funds that trade at a discount on average. We now address the issue of interest in this paper. Namely, can investors exploit the existence of this phenomenon to earn risk-adjusted abnormal returns. We begin by estimating the mean returns and median returns provided by our funds, as represented by the change in fund prices. We compare these statistics to those provided by the NAVs of these funds, which represents the returns to holding identical open-end funds. We also present information regarding the riskiness of the fund prices and their NAVs, as measured by their standard deviations. Finally, we present the associated Sharpe ratios, which represent a common measure of risk-adjusted returns for investment portfolios.

The first panel of Table 2 presents the results for the entire sample. We find that the mean return for the closed-end funds is actually significantly less than the mean NAV return, which suggests that, on average, closed-end funds provide lower returns than corresponding open-end funds. We also find that the fund price returns are significantly more volatile than the NAV returns, as measured by their standard deviations. Combining these two results, we find that the Sharpe ratio for our sample of closed-end funds is significantly lower than the ratio for their NAVs. This suggests that investing in closed-end funds over this period would have produced abnormally inferior risk-adjusted performance to that provided by identical mutual funds. We now explore whether this result holds for each of our fund categories.

The remaining panels of Table 2 show that the mean fund return is less than the mean NAV return for all categories, except for domestic bond funds, where the fund returns are significantly greater (at the 1% level). The difference in mean returns is insignificant for unclassified funds and foreign bond funds, is significant at the 10% level for balanced funds and for domestic equity funds, and is significant at the 1% level for foreign equity funds. Table 2 also shows that the standard deviation of fund returns is significantly higher than for NAV returns for all six fund categories, just as was the case for the entire sample. The differences are significant at the 1% level for each category, except for foreign bond funds, where it is significant at the 5% level. This strongly suggests that closed-end funds are riskier than similar open-end funds, regardless of the type of fund.

The Sharpe ratios presented for the various fund categories in Table 2 are lower for the funds than for their NAVs, with the exception of the ratio for domestic bond funds, where the NAV ratio is slightly lower (0.042 versus 0.043) and the difference is insignificant. The Sharpe ratios are significantly higher at the 1% level for domestic equity funds and foreign equity funds, at the 5% level for balanced funds, and at the 10% level for foreign bond funds. All of this suggests that closed-end funds do not appear to offer superior risk-adjusted investment opportunities, on average. In fact, the risk-adjusted performance is significantly inferior for most fund categories.

While the investment performance of the average closed-end fund is inferior, it still may be possible to earn abnormal risk-adjusted performance if we focus on sub-groups of closed-end funds that trade at "larger" discounts. To this end, we classify funds with respect to the size of the beginning of period discount of their price from their NAV. We classify funds into quintiles, based on the size of this discount, with quintiles 1 including those funds that trade at the greatest discount and quintile 5 including those that trade at the smallest discount. It has been argued that it is not only the absolute size of the discount that is important, but the relative amount of the discount, as measured by the size of the discount relative to some "normal" discount amount. We measure the size of this relative or abnormal discount, by subtracting a fund's average discount over the period from the discount observed in a particular month.

Table 3 presents Sharpe ratios for fund returns and NAV returns for quintiles within each fund category based on the actual beginning of period discount (or absolute discount). The results suggest that funds trading at the greatest discount (i.e., quintile 1) produced higher Sharpe ratios than did their NAVs, with the exception of balanced funds, where the difference was insignificant. The difference in Sharpe ratios was significant at the 1% level for domestic bond funds and for foreign equity funds, at the 5% level for domestic equity and unclassified funds, and at the 10% level for foreign bond funds.

At the other end of the spectrum, funds trading at the smallest discount (i.e., quintile 5) produced lower Sharpe ratios than for their NAVs in all categories. The differences were significant at the 1% level for all categories except balanced funds, where the difference was insignificant. Overall, the results in Table 3 suggest that closed-end funds trading at high absolute discount levels perform better than those trading at lower discounts, and provide superior risk-adjusted performance than identical open-end funds, while those trading at lower discounts produce abnormally poor risk-adjusted performance.

Table 4 presents evidence regarding the impact of the size of relative or abnormal discounts on closed-end fund performance. The trend is similar to those reported in Table 3, but the impact of the abnormal discount is stronger

than the impact of the absolute discount. In particular, the Sharpe ratios for funds trading at the largest discount from their average discount (i.e., quintile 1) are significantly higher than for their NAVs. The difference is significant at the 1% level for all six categories. We also observe a monotonic decline in the Sharpe ratios for the quintiles within each category as we move from quintile 1 to quintile 5. In addition, we see that the fund Sharpe ratios are all significantly lower than the NAV Sharpe ratios (at the 1% level) for funds trading at the smallest abnormal discount (i.e., quintile 5). Sharpe ratios are also smaller for quintile 4 funds in all categories, although not all of the differences are significant.

In short, the results provided in Table 2, suggest that, on average, closed-end funds would not have been good alternatives to similar (identical) open-end funds on a risk-adjusted basis. However, Tables 3 and 4 suggest that closed-end funds that are trading at greater discounts, especially those trading at greater relative discounts (from their average discount), do offer above-average risk-adjusted rewards.

5. CONCLUSIONS

While there has been an abundance of research devoted to determining the reasons *why* closed-end funds trade at a discount from their NAV, there has been less attention devoted to the issue of *why investors should (or should not) purchase closed-end funds, based on their risk-adjusted performance*. We evaluate the performance of closed-end funds by comparing the performance of their prices, to the performance of their NAVs, which we use as a proxy for the performance of similar (identical) open-end funds. This approach ensures that we are comparing similar funds, which is not always the case when control samples or indexes are used, due to the wide discrepancy in fund compositions that typically exist within given fund type classifications.

We examine the monthly performance of 452 closed-end funds over the December 1993 to July 1999 period. Our results suggest that, on average,

closed-end funds are not good investment alternatives to similar (identical) open-end funds on a risk-adjusted basis. However, funds that are trading at greater discounts, especially those trading at high discounts relative to their average discount, do offer above-average risk-adjusted rewards. The implication for investors is that some closed-end funds may be attractive investments; however, their attractiveness will depend upon the absolute and relative size of their discount, as well as other factors.

NOTES

1. See Dimson and Minio-Kozerski (1999) for a review of this literature.
2. For example, see "Closed-end funds offer investment bargains," USA Today, December 10, 1999, John Waggoner.

APPENDIX A: TABLE 1 DISCOUNTS TO NET ASSET VALUE

The discount is measured for each fund each month by price/NAV. The figures presented are the cross-sectional/time series mean for all funds within each category.

Fund Type	Mean of price/net asset value
All funds	0.9479
Unclassified	0.8853
Balanced	0.9835
Domestic Bond	0.9612
Foreign Bond	0.9442
Domestic Equity	0.9087
Foreign Equity	0.9074

APPENDIX B: TABLE 2
SUMMARY STATISTICS

The table contains cross-sectional means for each variable. * denotes the difference is significant at the 10% level, while ** and *** indicate it is significant at the 5% and 1% levels, respectively.

Entire Sample (N=452)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.466	0.500	(2.34)** [0.13]
monthly excess return (%)	0.054	0.087	(2.34)** [0.13]
standard deviation (%)	4.064	2.959	(-29.74)*** [-17.3]***
Sharpe measure	0.030	0.043	(3.95)*** [3.80]***
correlation (fund returns and NAV returns)	0.4135		

Unclassified Funds (N=18)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.765	0.687	(-0.94) [-0.72]
monthly excess return (%)	0.348	0.271	(-0.94) [-0.72]
standard deviation (%)	4.684	3.630	(-5.19)*** [-3.42]***
Sharpe measure	0.080	0.082	(0.12) [0.20]

Balanced Funds (N=10)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.639	0.744	(2.13)* [1.78]*
monthly excess return (%)	0.227	0.332	(2.13)* [1.78]*
standard deviation (%)	4.215	2.899	(-4.59)*** [-2.80]***
Sharpe measure	0.055	0.123	(3.09)** [2.40]**

Domestic Bond Funds (N=302)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.535	0.489	(-5.81)*** [-5.47]***
monthly excess return (%)	0.123	0.077	(-5.81)*** [-5.47]***
standard deviation (%)	3.062	1.915	(-30.40)*** [-14.69]***
Sharpe measure	0.043	0.042	(-0.14) [-0.47]

Foreign Bond Funds (N=22)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.858	0.919	(1.47) [0.18]
monthly excess return (%)	0.443	0.504	(1.47) [0.18]
standard deviation (%)	4.706	4.190	(-2.63)** [-2.22]**
Sharpe measure	0.090	0.106	(1.92)* [1.54]

Domestic Equity Funds (N=31)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	0.823	0.955	(1.74)* [2.25]**
monthly excess return (%)	0.413	0.545	(1.74)* [2.25]**
standard deviation (%)	5.117	4.332	(-4.96)*** [-4.17]***
Sharpe measure	0.078	0.123	(2.83)*** [2.98]***

Foreign Equity Funds (N=69)

	Closed-end funds	Net Asset Values	(t-stat. for means) [z-stat. for medians]
monthly return (%)	-0.223	0.126	(5.46)*** [4.89]***
monthly excess return (%)	-0.637	-0.289	(5.46)*** [4.89]***
Standard deviation (%)	7.592	6.351	(-9.62)*** [-6.33]***
Sharpe measure	-0.084	-0.034	(5.20)*** [4.86]***

APPENDIX C: TABLE 3

SHARPE MEASURES BY QUINTILE PORTFOLIO - BASED ON ABSOLUTE DISCOUNT

Stocks within each fund type are ranked by their discount the previous month. Equally weighted portfolios are formed based on quintiles of this measure. The quintiles are recalculated each month and the portfolio rebalanced. The numbers in the table are the Sharpe Measures for these portfolios and for NAV's for these portfolios. Statistics to test difference in Sharpe's are taken from Jobson and Korkie (JF, 1981). * Denotes the difference is significant at the 10% level, while ** and *** indicate it is significant at the 5% and 1% levels, respectively.

Fund type	Quintile	Sharpe-fund	Sharpe-NAV	Difference	test statistic
A. Unclassified	1. (largest discount)	0.1201	-0.1260	0.2460	2.36**
	2	0.2617	0.0515	0.2102	1.89*
	3	0.0717	0.1368	-0.0650	-0.74
	4	-0.0032	0.1713	-0.1745	-1.40
	5 (smallest discount)	-0.0277	0.3634	-0.3911	-2.79***
B. Balanced	1. (largest discount)	0.0499	0.0910	-0.0411	-0.29
	2	0.1974	0.2212	-0.0238	-0.14
	3	0.1184	0.0220	0.0964	0.62
	4	-0.0579	-0.0486	-0.0093	-0.06
	5 (smallest discount)	-0.0520	0.1585	-0.2105	-1.49
C. Domestic Bond	1. (largest discount)	0.3186	-0.0548	0.3734	2.87***
	2	0.1443	0.0214	0.1229	1.04
	3	0.0169	0.0390	-0.0221	-0.18
	4	-0.0946	0.0650	-0.1596	-1.41
	5 (smallest discount)	-0.2069	0.1622	-0.3691	-3.04***
D. Foreign Bond	1. (largest discount)	0.1420	-0.0725	0.2145	1.87*
	2	0.0453	-0.0147	0.0600	0.51
	3	0.1255	0.1266	-0.0011	-0.01
	4	0.0782	0.1462	-0.0679	-0.65
	5 (smallest discount)	-0.0787	0.1144	-0.1931	-2.04**
E. Domestic Equity	1. (largest discount)	0.1798	-0.0823	0.2621	2.37**
	2	0.1826	0.1500	0.0326	0.32
	3	0.0267	0.1742	-0.1475	-1.42
	4	0.0990	0.2383	-0.1393	-1.17
	5 (smallest discount)	0.0142	0.4198	-0.4055	-3.22***
F. Foreign Equity	1. (largest discount)	0.0807	-0.2561	0.3368	2.85***
	2	-0.0571	-0.1026	0.0455	0.45
	3	-0.0269	0.0662	-0.0931	-0.87
	4	-0.2170	-0.1047	-0.1123	-1.02
	5 (smallest discount)	-0.3749	0.0025	-0.3774	-3.47***

APPENDIX D: TABLE 4
SHARPE MEASURES BY QUINTILE PORTFOLIO - BASED ON ABNORMAL DISCOUNT

Stocks within each fund type are ranked by their abnormal discount, the discount last month minus the average discount for that fund. Equally weighted portfolios are formed based on quintiles of this measure. The quintiles are recalculated each month and the portfolio rebalanced. The numbers in the table are the Sharpe Measures for these portfolios and for NAV's for these portfolios. Statistics to test difference in Sharpe's are taken from Jobson and Korkie (JF, 1981). * Denotes the difference is significant at the 10% level, while ** and *** indicate it is significant at the 5% and 1% levels, respectively.

Fund type	Quintile	Sharpe-fund	Sharpe-NAV	difference	test statistic
A. Unclassified					
	1. (largest discount)	0.2943	-0.1054	0.3997	3.49***
	2	0.2267	-0.0152	0.2418	2.24**
	3	-0.0043	0.0347	-0.0390	-0.35
	4	0.0768	0.3023	-0.2255	-1.85*
	5 (smallest discount)	-0.1561	0.3156	-0.4716	-3.64***
B. Balanced					
	1. (largest discount)	0.4604	-0.0050	0.4654	3.54***
	2	0.0403	0.1265	-0.0862	-0.77
	3	0.0053	0.0784	-0.0732	-0.61
	4	-0.1785	0.2379	-0.4164	-3.16***
	5 (smallest discount)	-0.0845	0.3176	-0.4020	-3.17***
C. Domestic Bond					
	1. (largest discount)	0.4260	-0.1152	0.5412	3.77***
	2	0.2270	-0.0044	0.2315	1.94*
	3	0.0708	0.0608	0.0099	0.09
	4	-0.1349	0.0949	-0.2299	-1.99**
	5 (smallest discount)	-0.5031	0.1937	-0.6968	-5.51***
D. Foreign Bond					
	1. (largest discount)	0.2027	-0.1589	0.3616	3.36***
	2	0.1179	0.0366	0.0813	0.79
	3	0.0904	0.1704	-0.0800	-0.83
	4	0.0475	0.1743	-0.1268	-1.27
	5 (smallest discount)	-0.1765	0.2356	-0.4121	-4.26***
E. Domestic Equity					
	1. (largest discount)	0.3537	-0.1911	0.5448	3.74***
	2	0.1923	0.0517	0.1406	1.39
	3	0.1129	0.2589	-0.1459	-1.35
	4	-0.0315	0.2593	-0.2908	-2.67***
	5 (smallest discount)	-0.1162	0.3797	-0.4960	-4.56***
F. Foreign Equity					
	1. (largest discount)	0.0339	-0.2773	0.3112	2.76***
	2	0.0052	0.0005	0.0048	0.05
	3	-0.0955	-0.0730	-0.0224	-0.20
	4	-0.1619	-0.0203	-0.1417	-1.40
	5 (smallest discount)	-0.3924	0.0162	-0.4086	-3.70***

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POWER TOOLS FOR BANKING SERVICES: GETTING INFORMATION IS ONE THING, MAKING IT WORK FOR THE BENEFIT OF YOUR COMPANY IS ANOTHER

YIANNIS PAPAMICHAEL*

ABSTRACT

Customers are hot! Why? Because they are the precious metal of today's economy!

Both business practitioners as well as academics have acknowledged the primacy of information as a strategic weapon for the 21-century organization. Under the current economic climate, senior executives are under pressure to extract the maximum value from the banks of data they hold. The most meaningful way to differentiate one's organization from competition is to do an outstanding job with information.

This paper aims to introduce the concept of Customer Relationship Management (CRM), drawing particular attention to the particulars of banking service operations.

1. INTRODUCTION

Banks seem to have been struggling for years to leverage the promise of *Customer Relationship Management* technology and translate the tons of hardware and software into realizable profits. Despite enormous changes in the banking industry, the 'job' still remains at large to minimize risks and increase profitability. But the industry's structural changes are creating an ever-increasing hyper-competitive environment that makes tasks more difficult than ever. With a variety of banking products becoming commodities, in a sense, how would you be able to differentiate? Or, alternatively, when customers are cooperating with all your departments around the globe through the usual channels, as well as new ones, such as the Internet, how would you improve

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customer service, strengthen the bond with your most 'preferred'-targeted-customer segments, and, ultimately strengthen your competitive stand?

Gathering customer information and applying it to specific campaigns in a timely, effective manner, has certainly posed a challenge to modern banking operations. To target customers with a personalized service and thereby encouraging brand loyalty and strength positioning, banking corporations all over the world invest in central Customer Relationship Management (CRM) solutions.

1.1. The aims of customer relationship management solutions

Their prime aim is to accumulate and scrutinize as many customers related information as possible, that appeals to the right people, at the right time, for the right reasons, to aid informed business decisions. It aims to create the whole picture of a given customer, bringing together consistent, comprehensive and credible information on all aspects of the existing relationship, such as profitability information, risk profiles and cross-sell potential. This can prove invaluable for their operations, as it would allow banks to quickly identify meaningful behavioral shifts-ones that signal new sales opportunities and thereby, ones that identify with competitive edge advantages.

2. THE CRM EMBRACE

The market for Customer Relationship Management solutions has continued to grow at steady pace, as evident by the speakers at the recent CRM Conference and Exposition in San Francisco (as per *Intelligent Enterprise*) According to the outcome of the conference, CRM has been defined as "the implementation of customer-centric business strategies; which drives redefining of functional roles; which demands reengineering work processes; which is supported, not driven, by CRM technology; which aids efficient and effective decision making."

2.1. The CRM solutions

Most organizations including banks are indeed making an effort to improve their customer focus through IT and Internet applications. As a result CRM seems to have become a popular application initiative, much like Enterprise Resource Planning (ERP) was in the last few years. Further research (as per *Internet Week*) indeed suggests that percentage of companies that will spend more on customer relationship management in 2002 than in 2001 is around 74%; and that the number of Internet users expected to seek customer service on line by 2005 will be 33 million.

Riding the wave of enthusiasm and hype, hundreds of CRM software vendors, integrators and consultants seem to have entered the market during the past five years. Adding to this highly competitive world of CRM, it got even more interesting recently when Microsoft finally lifted the veil off its CRM offering, slated to ship by year's end.

As it is customary with such a well-publicized trend, CRM has come to mean 'many things to many people'. The approaches, (and ultimately the solutions necessary to implement CRM) are now varying widely, with some being more successful than others. No two CRM applications seem to look alike, but most of them observe similar principles in their basic designs and ground principles of operation.

Most systems use rule-based Java technology, designed to bring all the channels in line and capture (analyze) transactional information from all legacy sources. Thus, it allows banks to quickly identify meaningful behavioral shifts, and indeed, usually ones that signal new sales opportunities. Designed to be 'easily' custom programmed with a visual, 'drop and drag' style interface, the system is envisioned to sit as a hub that feeds from every system in the operation from billing and general ledger systems to ATMs, e-mail, and call centers, websites, and wireless devices. The system then delivers relevant information back into marketing systems creating a "closed loop cycle" to drive everything from campaign decision-making to the drafting of sales support

materials. Specialized agents monitor the ongoing stream of front- and back-office transactions.

2.2. CRM principle applications

- ***Collaborative CRM:*** The interaction between a company and its customers. This area encompasses many communications media including voice calls, fax, e-mail, collaborative browsing and text chat;
- ***Operational CRM:*** The front and back office data systems and IT infrastructure consolidating disparate databases and systems. These databases store the historical information necessary for an organization to construct a view of the customer;
- ***Business Process CRM:*** Automation rules for transacting business, tracking process events and providing the management tools to measure improvements;
- ***Analytical CRM:*** A collection of tools where data is combined with logical rules and turned into insight. Specific rules for acting on insight are also maintained in this area.

2.3. CRM proactive steps of adoption

- ***Find and Maintain your focus:*** A primary goal of CRM is 'getting to know' your customers. That is, understand how they interact with you and why, so that you can provide targeted information and offers, as well as, ongoing service and support that will grow and enhance the relationships. To achieve this goal banks should develop an integrated view of each customer based on all information collected as part of their banking operations. To improve the project's chance of success (due to the apparent large volumes of data collected by many different operational systems within the banking umbrella) one should prioritize the collection and integration of data and build the CRM incrementally.

*Power Tools For Banking Services:
Getting Information Is One Thing, Making It Work For The Benefit Of Your
Company Is Another*

- ***Keep CRM in its place:*** Telemarketers and Internet-based businesses arguably have an advantage over more established firms in that they can 'start from scratch' and collect and build integrated customer databases to support CRM activities. In order to use data efficiently, banks should rely, therefore, on a 'proper' customer data architecture that separates operational from informational data.
- ***Balance detail vs. summarization:*** Although data enhancement (by summarizing or coding) is valuable for focusing and supporting specific analyses, it can come at 'too high a cost' if you do not retain the original detail. Questions about customer behavior and buying patterns of specific banking services will definitely change over time; if details are lost, answers to these new questions will be impossible.
- ***Using the right data for the job:*** CRM initiatives might involve a variety of analytic applications. The most familiar business implementation areas are customer segmentation and campaign management. The customer information required for these analyses overlaps considerably. Thus a 'proper' architecture for the CRM environment might comprise of a common warehouse of customer data that supports the creation of many different analytic data views (data marts).
- ***Stay in sync:*** Vendors of CRM technology products are aggressively trying to market their systems. As a result, many companies might select a CRM product or implement an application only to find out that the selected ones only support a small portion of their overall CRM needs. Banks in general, should clearly and intimately understand their business objectives and priorities, and with these in mind develop an overall CRM strategy before focusing on technology.
- ***Plan for today, anticipate for tomorrow:*** A CRM strategy should not be limited to the current view of the world. It should be sufficiently flexible to support new ways of interacting with customers- via e-mail or by live chat over the Internet. If banks in general, fail to think ahead, they could end up

with an application selection that limits future choices or imposes a high cost in upgrading the solution to cover 'new ways' of doing business.

- ***Be prepared to act:*** The ability to integrate, organize mine, and model customer information is Key to most CRM initiatives. The ability to search, segment, and cluster customer information is important and can lead to valuable insight for decision- making. But you do need to go a step further by having a strategic plan to convert those insights into action.
- ***Keep decision makers on the same page:*** It is usually the case that a mere integration of customer data is not enough to give a 'single view of the customer'; but, one must also ensure, that data definitions are also consistent and clear with a high quality source attached to them. These data definitions must be documented in generally accepted business terms, with a common level of understanding by all.
- ***Tear down those walls:*** CRM is all about sharing information so that all parts of the organization see a 'common' view of the customer. For example by calling the credit division of your bank, the call-center agent may not be aware that you also hold deposit accounts and a mortgage. To achieve the full value of CRM, one must therefore eliminate these boundaries and artificial constraints and 'relax' the availability of customer information.
- ***Remove Channel blinders:*** A key for achieving profitability is encouraging collaboration across departmental and geographic boundaries to leverage intellectual capital and company expertise. Customer relationship management solutions support this by doing what is called 'knowledge management'. For instance, to understand the profitability picture of a multinational commercial customer, one needs to consolidate all the transactions, differentiated by departments/lines of business and region. Ultimately, CRM is intended to offer the customer a consistent experience without regard to the specific channel involve. Rather, that consistency should depend on a CRM strategy and implementation that is coordinated across overall channels and that information is shared and available, regardless of which channel the customer uses.

3. THE CHALLENGE

3.1. *The Internet challenge*

In today's world, where mountains of internet-induced information about customers, business partners and internal processes are constantly acquired, businesses in general are expected to use their 'intelligence' to provide a better service in line with technological advancements. While Internet technologies are widely spread within the enterprise, they are evolving more and more to integrate CRM functions and other challenging technological advances. In addition, the popularity of the Internet presents a new set of challenges for companies trying to generate prospects and retain their competitive advantage. A consistent, company-wide, Internet-ready messaging system is a good starting place, because it encourages staff communication and teamwork key elements of all responsive, innovating organizations. From there on, every company is faced with the ever-challenging experience of 'technological changes' in an ever-changing competitive market scenario. The power to improve is derived from such challenges.

4. SUMMARY AND CONCLUSIONS

This paper has investigated the overall basic veil of CRM applications. The current generation of CRM applications aims, to help Companies gain better understanding of their customers via traditional selling and marketing channels. The acquisition, analysis and sharing of information through specific business CRM applications -and their subsequent 'superior' interaction with customers- will be an important way of gaining a competitive edge advantage and maintaining a loyal customer base.

Financial services such as online banking are set to become even more sophisticated, allowing both residential and corporate customers to analyze their bills for the most pertinent information, such as how much has been spend on business, travel and entertainment. This would be highly valuable to the

customer, which might in turn act as a key driver for loyalty; but also valuable for the company in maintaining a competitive stance in the market place. With CRM a change in lifestyle can be acted on when the customer is most likely to listen.

NOTES

1. (Intelligent Enterprise, June 22, 2001 p.12) An extensive literature is supplied in relation to new technological advances and lectures from distinguished guest speakers.
2. (Internet Week, August 16, 2002 p.17). Studies constructed by Media Matrix and Eye Com, Consulting Services.

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PSYCHOLOGICAL CLIMATE FOR SERVICE SOCIABILITY AND EXTRAVERSION: DETERMINANTS OF EMPLOYEE DISPLAYED POSITIVE EMOTIONS

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ABSTRACT

This study examined empirically whether psychological climate for service sociability and extraversion, positively correlated with employee displayed positive emotions, and whether such displays influence customer purchase decision and reactions, concerning an organisation. Data was collected from 292 clerks in 150 clothing retail stores in the Republic of Cyprus, and from 287 customers who were served by one of the sales clerks. The results indicated a positive relationship between (a) psychological climate for service sociability and employees' displayed positive emotions and (b) between extraversion and employees' displayed positive emotions. It was also concluded that displayed positive emotions from extraverted employees will increase customer willingness to return to the store, pass positive comments to friends, and affect the purchase decision of the customers.

1. INTRODUCTION

In today's competitive environment of contemporary retailing, there is a constant pressure to innovate and develop new ways to improve sales. Attempts, to identify the factors that improve store performance, have linked sales to product variables, store variables, customer preferences and sales personnel variables, and to the interaction of these with financial variables. In this paper, the displayed positive emotions will be studied as one of the sales personnel variables. Robbins (2001) gave the following definitions of emotions and displayed emotions: "*Emotions are intense feelings that are directed at someone or something*". "*Displayed emotions are those that are*

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organisationally required and considered appropriate in a given job. They are not innate; they are learned". The issue of employee-displayed emotions has gained increasing attention from organisational scholars (e.g., Tsai 2001; Locke, 1996; Ashforth & Humphrey, 1995; Brown & Sulzer-Azaroff, 1994; Wharton, 1993; Wharton & Erickson, 1993; Sutton, 1991; Rafaeli & Sutton, 1987, 1989, 1990; Rafaeli, 1989a; Rafaeli, 1989b; Sutton & Rafaeli, 1988; Hoshschild 1983). "Employee displayed emotions" has also been defined as "the act of expressing socially desired emotions during service transactions" (Ashforth & Humphre, 1993: 88-89). It is concerned with an employee's behaviour (Wharton & Erikson, 1993) as displayed through a combination of facial expressions, spoken words, the tone of voice, smiling and thanking (Rafaeli & Sutton, 1987).

Past Research made a distinction between employees' displays of positive versus negative emotions (Rafaeli & Sutton, 1987). The display of positive emotions (i.e. friendliness and happiness) is required in many service occupations, including restaurants, hotels, and flight attendants. In contrast, funeral directors are expected to display negative emotions.

Brown and Sulzer-Azaroff (1994) also examined employee displayed positive emotions. They observed bank tellers' rates of greeting, smiling, and looking at the customers during service transactions and collected customer satisfaction data immediately following the interaction. Results indicated that the teller's greeting correlated positively with the level of customer satisfaction.

A recent study by Wei-Chi Tsai (2001) identified that there is a positive relationship between psychological climate for service friendliness and employees' displayed positive emotions. Tsai (2001) linked displayed positive emotions to a different set of variables, namely, customer-purchase decision and future behavioural intentions (i.e., showing willingness to return and recommend to friends). The results in the context of his study (i.e., shoe stores in Taiwan) indicated that employees' positive emotional displays would increase customer willingness to return to the store and pass positive comments to friends. In his study, any positive relationship between employees' displayed positive emotions and customers' purchase decision was not identified.

Based on the study of Wei-Chi Tsai (2001), this study, empirically seeks to identify additional determinants of employee displayed positive emotions, other than psychological climate for service friendliness. It will seek to identify whether psychological climate for service sociability and extraversion are positively related to employees' displayed positive emotions. Similarly, Rafaeli (1989) noted that extraverted sales clerks are probably more likely to act in a friendly manner toward their customers.

The present study extends Tsai's (2001) study in three ways. **First**, whereas Tsai examined "Psychological climate for service friendliness" as a determinant of displayed positive emotions, this study examines "psychological climate for service sociability and extraversion" as possible determinants of displayed positive emotions, and the consequences of the displayed positive emotions resulted from these determinants. **Second**, in the study of Wei-Chi Tsai (2001), as a result of organisational climate for friendliness, employees' displays of positive emotions were posited to influence customers' intentions, but not the customers' purchase decisions. This study will examine the possibility, if displayed positive emotions from extraverted sales-people can influence customers' purchase decisions. **Finally**, this study examines the hypotheses in another context (clothing Vs shoe stores and banks), in a different country (in Cyprus rather than in Taiwan or the U.S.).

1.1. Determinants of displayed positive emotions

"*Personality*" has been defined as the sum total of ways in which an individual reacts and interacts with others (Robbins 2001). In recent years, research supports that five basic dimensions underlie all others and encompass most of the significant variation in human personality (Barric & Mount, 1991). The Big Five factors are Extraversion-introversion, Agreeableness, Conscientiousness, Emotional stability and Openness to experience (Ewen, 1998).

In the present study Psychological Climate for Service Sociability and Extraversion are chosen to predict employee displayed positive emotions. Extraversion is a personality dimension describing someone who is sociable, gregarious and assertive (Robbins, 2001). Thus, when someone is observed to be talkative and sociable (the so-called "extravert") he or she can be described also as "expressive".

Why will extraversion and psychological climate for service sociability, expected to correlate positively with displayed positive emotions? Rafaeli (1989) noted that **extraverted sales clerks** are probably more likely to act in a friendly manner towards their customers. Extraversion, is sometimes also referred to as social adaptability, though the popularity of this term seems to be waning (Zuckerman, 1991). Extraversion is also defined as "a trait characterised by a keen interest in other people and external events, and venturing forth with confidence into the unknown" (Ewen, 1998, p. 289). From this definition we may assume that extraverts positively judge themselves capable to perform a task successfully. This attitude that is often used in conjunction with motivation to achieve is *self-efficacy* (Bandura, 1977). Bandura (1997) provides extensive evidence and documentation for the conclusion, that self-efficacy is a key factor in the extent to which people can bring significant outcomes in their lives. Considerable evidence for this we find in the area of education as well. For example, Schunk (1989) in a number of studies has shown that children with the same level of intellectual capability differ in their performance as a function of their level of self-efficacy. Thus, we may assume that extraverts with high levels of self-efficacy can display more positive emotions and bring more significant outcomes at their job, from their introvert co-workers or from other extraverts with lower levels of self-efficacy.

L.A.Clark, D. Watson and others (1992) found out that socialising correlated significantly with state measures of Positive Affect and with trait measures of Extraversion/Positive Emotionality. Social activity had no consistent association with measures of Negative Affect or the other personality dimensions. The results supported a temperamental view of extraversion.

Later in 1994, L.A.Clark, D. Watson and S. Mineka also found out that Extraversion or positive affectivity contributes to depression.

Studies by Lucas, Diener, Grob, Suh and Shao (2000) indicated, that only facets that reflect reward sensitivity load on a higher order extraversion factor, and that this factor correlates strongly with pleasant affect. Although, sociability is undoubtedly an important part of extraversion, these results suggested that extraverts' sociability might be a by-product of reward sensitivity, rather than the core feature of the trait. Thus, sociability (the tendency to enjoy social situations simply because they provide the opportunity for social interaction), cannot form the glue that holds the facet of extraversion together. Instead, it appears that sensitivity to rewards (which should theoretically be strongly, related to pleasant affect; Depue and Collins, 1999) provides this glue. Taking into consideration what is mentioned above, it seems that employees who perceive the existence of sociability would believe that their positive emotional displays would lead to desirable outcomes. Consequently, they will display more positive emotions by relating the higher order extraversion factor to the displayed positive emotions.

Studies in displayed emotions, other than that of Tsai (2001), have identified a few contextual variables as determinants of employee displayed emotions. Rafaeli and Sutton (1987) proposed that employees are more likely to display appropriate emotions if they are exposed to **socialisation programmes** emphasising the expression of emotions. Furthermore, Rafaeli and Sutton (1987) argued that, the **use of rewards and punishments** could induce employees to display appropriate emotions. Employees are more likely to maintain such behaviour, because they want to obtain more rewards (e.g. cash prize, praise, and bonuses) while avoiding punishment.

Past research, except that it has linked contextual variables to employees' displays of positive emotions, it has also linked employees' cognitive appraisal of contextual factors in the organisation to employees' displayed positive emotions. Hence it is proposed:

Hypothesis 1: Psychological climate for service sociability will be positively related to displayed positive emotions. Thus, the higher the psychological climate for service sociability is, the more the displayed positive emotions by the employees towards the customers will be.

Taking into consideration that, sociability is an important part of extraversion and also that it might be a by-product to reward sensitivity (Lucas, Diener, Grob, Suh and Shao, 2000), the present study extends previous research by examining whether an extraverted employee's appraisal of sociability in the organisation will influence more his/hers displayed positive emotions. Hence it is proposed:

Hypothesis 2: Extraversion as the core of sociability will be positively related to displayed positive emotions. Specifically, extraverted employees will display more positive emotions than their co-workers will.

1.2. Consequences of displayed positive emotions

Research has shown that positive affective displays in service interactions, such as smiling and conveying friendliness, predict important customer outcomes such as the intentions to return, to recommend the store to others, and the overall service quality (e.g., Parasuraman, et al., 1985; Tsai, 2001).

Appropriate employee displayed positive emotions, would result in some positive consequences for the organisation, including immediate results such as when the customers immediately purchase a product. Rafaeli and Sutton (1987) also proposed that customers may visit the store again or the customers would pass positive comments to friends (encore and contagion gains).

Brown and Sulzer-Azaroff (1994) also examined consequences of employee displayed positive emotions. They found that there is a linkage between displayed positive emotions and customer satisfaction. Would this satisfaction lead to purchase decision? Tsai (2001) tested Rafaeli and Sutton's (1987) relationships at a transaction level of analysis. Tsai (2001) in his study treated each employee-customer transaction as the unit of analysis to test whether an

employee's display of positive emotions will result in customers' purchase decisions, willingness to return to the store, and willingness to pass positive comments to friends. Tsai (2001) in his study found out that, displayed positive emotions were not significantly related to purchase decision. However, his study revealed that displayed positive emotions would be positively related to willingness to return and willingness to recommend. Following the study of Tsai (2001), the present study will test Rafaeli and Sutton's (1987) proposed relationships at a transaction level of analysis. Specifically, this study treats each employee-customer transaction as the unit of analysis to identify the consequences of displayed positive emotions resulted from (a) the existence of psychological climate for service sociability and from (b) extraverted employees. There are also reasons to believe that displayed positive emotions, resulted from the psychological climate for service sociability, and by extraverted employees, are expected to influence customers' purchase decisions as well, and not only their willingness to return and pass positive comments to friends.

First, is the functioning of emotional contagion. This is the individual's tendency to "mimic and synchronise facial expressions, vocalisations, postures, and movements with those of another person and, consequently, to converge emotionally" (Hatfield, Cacioppo & Rapson, 1994, p. 5). Thus, it is likely that during each employee-customer transaction, customers to imitate employees and catch the positive emotions from the employees.

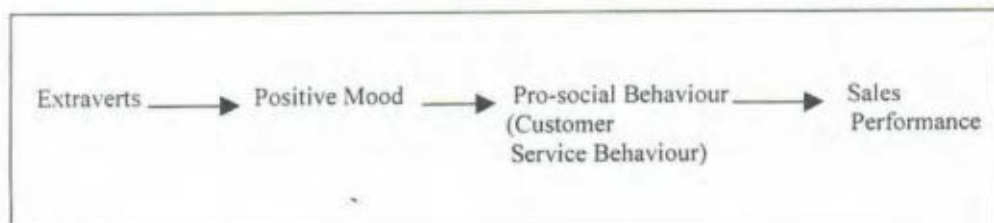
Second, is that the customers' in-store positive emotions will influence purchase behaviour such as spending, and time spent in the store (Donovan, Rossiter, Marcolyn & Nesdale, 1994). Donovan and Rossiter (1982), also found that the in store positive emotions of the customers would affect their reactions towards the store. That is, liking the store and being willing to come again. The positive emotions that the customers experience from employees will increase the possibility to purchase a product, to come again and also to pass positive comments to the environment of the customer.

The third reason why employee displayed positive emotions can be expected to influence customers' decisions can be drawn from the marketing research in service quality. When the positive emotions displayed by employees meet or exceed customer's expectations in relationship with their treatment, this will lead to high service evaluations by the customer. Evidence from empirical research, has related the customers positive attitude towards service quality with purchase decisions, willingness to return and willingness to recommend (Richard & Allaway, 1993; Headley & Miller, 1993; Taylor & Bayker, 1994; Zeithaml et al., 1996). Thus, from the empirical evidence that we have, we may conclude that there is a positive relationship between the purchase decisions of the customers and the positive emotions displayed by the employees.

Another reason that displayed positive emotions can be expected to influence customers' purchase decisions is routed from psychological research. Positive mood at work can be assumed to be directly and positively related to displayed-positive emotions. Further on, positive mood (as an affected state) is significantly and positively associated with the performance of both extra-role and role-prescribed pro-social organisational behaviour. Moreover, positive mood has effects on pro-social behaviour above and beyond the effects of fairness cognition. Also, the form of role-prescribed pro-social behaviour, customer-service behaviour or helpful behaviour directed at customers is positively associated with sales performance (Jennifer M. George 1991). Taking into consideration that, extraverts are talkative and sociable (D. Keirse, 1998), they will most likely demonstrate positive mood. Thus, the following is proposed:

Hypothesis 3: More displayed positive emotions by extraverted sales clerks will be positively related to purchase decision. That is, when extraverted employees display more positive emotions towards customers, the possibility of customers buying the product will be increased (see fig. 1).

FIGURE 1: ROLE-PREScribed PRO-SOCIAL ORGANISATIONAL BEHAVIOUR BY EXTRAVERTS AND SALES PERFORMANCE



Source: Developed by the author.

Hypothesis 4: Displayed positive emotions will be positively related to willingness to return. That is, when employees display more positive emotions towards customers, customers will be more willing to visit the store again.

Hypothesis 5: Displayed positive emotions will be positively related to willingness to recommend. That is, when employees display more positive emotions towards customers, customers will be more willing to pass positive information and comments to their environment.

Findings in the study of Tsai (2001) supported Hypothesis 4 and 5. However, this study will investigate them once again, in relationship to “psychological climate for service sociability” and “extraversion”, under the new context of clothing stores in a different country, in Cyprus. Hypothesis 3 was not supported by the study of Tsai (2001). In this study, the third hypothesis will be tested in relation to extraversion and psychological climate for service sociability, as well as in relation to the new group of displayed positive emotions mentioned in paragraph 2.3.3.

2. METHODS

2.1. Participants

Sales clerks and customers of 150 clothing stores in Nicosia, the Capital of Cyprus, were included in this study. All of them were independent businesses. Two hundred and ninety two (292) clerks participated in this study. Their mean age was 22, and 102 of them (35%) were men. The mean years of work experience in clothing stores were 3.82. In addition, 287 customers served by one of the sales clerks participated in this study. Customers' mean age was 25.35 and 86 of them (30%) were men.

2.2. Procedure

Six research assistants were recruited for this study and they were grouped into three teams. Each of the three teams shared data collection duties. An in-house training session provided opportunities for observers to practice how to accurately rate the displayed positive emotions of a target person playing the role of a sales clerk. This was done in order to reduce any error variance caused by data collector heterogeneity. All research assistants were asked to make field visits to several clothing stores to familiarise themselves with all aspects of the data collection process. Ratings made during these visits were not included in the final analysis.

Even though Rafaeli and Sutton (1990) indicated that norms for displaying positive emotions remain valid only during slow times, observers visited the stores not only during slow times, but also during Saturdays that are considered to be very busy days. They observed the interaction between a sales clerk and a customer, and then independently rated the sales clerk's positive emotions, displayed¹ throughout the entire interaction. After the customer left the store, observers followed the customer, and invited him/her to fill in a structured questionnaire concerning customer reactions towards the store. Of the 320 customers contacted, 287 accepted the invitation, yielding a response rate of

90%. A few minutes later, the research assistants went back into the store, identified the sales clerk who had just been observed and invited him/her to fill in a structured questionnaire as well.

The research assistants distinguished the extraverted sales clerks from others, firstly by observing if they were talkative and sociable (D. Keirse, 1998) during the transaction and secondly by a structured questionnaire which included questions that tapped three types of preference for social interaction (Lucas, Diener, Grob, Suh and Shao, 2000). These preferences are (a) Reverse-scored enjoyment of non-social situations (e.g., "You enjoy being alone," "You enjoy reading quietly"). (b) Preference for specific social situations over equally enjoyable (or non-enjoyable non-social situations (e.g., "You prefer working alone rather than in groups," "When relaxing, you prefer being with others rather than being alone"). And (c) Participation in social activities without describing specific activities (e.g., "You rarely spend time alone," "You always prefer being with others to spending time alone"). Also, one question of confirmatory search (Swann & Giuliano, 1987) was asked: "Do you like parties?" This question was answered in the affirmative, if the target person was an extravert. All the sales clerks observed during a transaction, were interviewed in order to distinguish the extraverts from the non-extraverts, and to identify any other determinants that affect the display of positive emotions. Of the 310 sales people contacted, 292 accepted the invitation, yielding a response rate of 94%. Note that all the questionnaires were in English because, the research team was a diversified one (not only Greek Cypriots) and because, Cyprus being a tourist destination, a number of the customers interviewed were Cyprus' visitors.

2.3. Measures

2.3.1. Control variables

When determinants of displayed emotions were assessed, the control variables used in this study were the same used in the study of Tsai (2001). That is sex of sales clerk, sex of customer, and sex of clerk-customer pair.

Experienced emotions of sales clerk were introduced as another control variable. The Watson, Clark and Tellegen's (1988) PANAS Scales measured this. Ten positive affect terms were used (*i.e., attentive, interested, alert, excited, enthusiastic, inspired, proud, determined, strong and active*). The subjects were asked to rate on a 5-point scale (*slightly or not at all, a little, moderately, quite a bit, and very much*), the extent to which they had experienced each mood state during the past few days.

With respect to consequences of displayed positive emotions, sex of sales clerk, sex of customer, sex of clerk-customer pair, age, years of work experience, professional ability of sales personnel, and ability to influence the purchase decision (convince) of the customers were used as control variables. Years of work experience and professional ability of sales personnel were used because more experience and professionally competent sales clerks could provide the customers with better information about clothing. Professional ability was measured by the same self-rated items used by Tsai (2001).²

Ability to influence was chosen as an additional variable to those chosen by Tsai (2001) because, from the discussion with the store managers and the sales clerks, it was identified that, there are sales clerks who have the ability to positively influence the purchase decision of the customers. Ability to influence was measured by two items. Positive/negative. Positive, when the customer couldn't decide and the sales clerk convinced him/her to buy, when the sales clerk succeeded to alter the purchase decision of the customer, or when the sales clerk convinced the customer to make additional combinations. Negative when the clerk couldn't convince the customer to conclude the purchase.

2.3.2. Psychological climate for service sociability and extraversion

In the study of Tsai (2001) and Schneider et al. (1998) Global Service Climate Scale was used to represent an employee's perception of the store's overall climate for service friendliness. The same scale was used in this study to represent an employee's perception of the store's overall climate for service

sociability. Sample items included in the scale were: "My store manager is committed to improve the sociability of the sales clerks." "My store manager recognises and appreciates sales clerks' efficiency and sociability toward customers." "My store manager asks our external customers to evaluate sales clerks' sociability" and "My store manager conducts internal evaluations of the sales clerks' sociability." "My store manager recognises and appreciates sales clerks who are talkative and sociable, aiming at developing nice impressions by the customer in respect to the product and the store."

In order to measure the degree by which the displayed positive emotions were affected by the psychological climate for service sociability and extraversion, one question was asked: "If your store manager was not enhancing service sociability were you going to display the same positive emotions?" A grade of "1" was assigned in case that the emotions would have been displayed and a grade of "0" if, they would not have been displayed.

2.3.3. Displayed positive emotions

Sutton and Rafaeli (1988) and Rafaeli (1989a) used the following four criteria for displayed positive emotions: greeting, thanking, smiling and establishing eye contact. In addition to these, in his study, Tsai (2001) added another two criteria specifically asking customers to wait for a while (i.e., asking them to wait while the clerk finds the desired shoes) and employees speaking in a rhythmic vocal tone. In this study in addition to the above criteria mentioned, another two were added - showing enthusiasm in giving information to the customers relevant to the product and the store, and making emotional comments on the fit of clothing. These criteria were added, after the interview of 20 store managers and sales clerks before the study. They emphasised that, enthusiasm in giving information to the customers and delicately participating in the purchase decision of the customers, by making comments on the fit of clothing, creates a friendly and sociable environment that is recommended by the store management. Two observers simultaneously scored the displayed positive emotions of employees. A value of 1 was assigned if, a behaviour was displayed and a value of 0 if, it was not displayed. In this study, 85% of the

observations reflected a perfect agreement between observers. The mean interrater agreement was 87%. The eight criteria were treated as separate indicators of displayed positive emotions. Note that, data was collected only when customers were serious in buying clothes, and not just browsing without requesting anything or trying on any clothes. Thus, the sales clerks had the opportunity to apply all eight criteria of displayed positive emotions in every transaction. This is because, the items "wait for a while", being enthusiastic in giving information, and making emotional comments on the fit of clothing, were applicable only when a customer showed a serious interest in buying clothing or when the customers requested specific information of their interest. A composite was created from the eight criteria of displayed positive emotions. The sum of the scores on eight criteria was computed, and the scores given by the two observers were then averaged. It was found that, each of the eight criteria reflected part of the displayed positive emotion construct, and thus, all were of interest to the study.

In order to identify up to what degree the customers felt the display of positive emotions, and if it was important to them, two items were used in the study – "Did the sales clerk display a positive mood towards you?" "Does the display of positive mood by the sales clerks make any difference to your relations with the store?"

2.3.4. Purchase decision

Regarding purchase decision only one item in the study was used to assess whether customers had purchase a product, no matter that this was already observed by the observers - "Have you bought clothes from this store?" Customers responded positively with a "Yes" or negatively with a "No" answer. A customer share of 55.8% (160 customers out of 287) in the study indicated that they had purchased at least one piece of clothing.

In order to assess the impact of the sales clerk, on the purchase decision of the customers, three items in the study were used: (a) "Did you make these purchases because the sales clerk showed positive mood towards you?" (b) "Did the clerk somehow convince you to buy the items or this was your

individual choice?" and (c) "What was the general impact of the sales clerk on your purchase decision?"

In order to assess the attitude of the customers towards purchase decisions, two items were used: (a) "Did you buy the products because you felt guilty to leave the store without buying anything?" (b) "In general do you feel guilty to leave a store without buying anything, when the sales clerk shows a positive mood and attitude towards you?"

2.3.5. Customer reactions

In the study of Tsai (2001), willingness to recommend and willingness to return initially were treated as two different variables. However the results showed that the two measures were highly correlated ($r = 0.80$ before correcting for unreliability; $r = 0.94$ after correction). Result of a generalised least squares exploratory factor analysis of these two measures suggested a one-factor solution. Thus, the two measures were combined and labelled "customer reactions", something that we also did in this study. This measured consisted of six items, and was used to test the relevant hypotheses (i.e., Hypothesis 3 and 4) – "I would recommend this store to my environment when they need to buy clothing". "I would recommend this store when I chat with my friends about clothing". "I would recommend this store when I chat about service in stores". "If I need to buy clothing, I wouldn't come to this store". "I would come to this store again" and "My relation with the stores, is generally affected by the sales clerks' behaviour and mood towards me".

3. RESULTS

Table 1 contains all the control variables involved in the study.

TABLE 1: CONTROL VARIABLES INVOLVED IN THE STUDY

Variables

-
1. Sex of clerk
 2. Sex of customer
 3. Sex of clerk-customer pair
 4. Age of clerk
 5. Years of experience
 6. Professional ability
 7. Experienced emotions
 8. Extraversion
 9. Psychological Climate for Service Sociability
 10. Displayed Positive Emotions
 11. Purchase Decision
 12. Customer Reactions
 13. Ability to influence
-

The results showed that psychological climate for service sociability existed in all the stores and 100% of the employees perceived the store's overall climate for service sociability.

Hypothesis 1 predicted that psychological climate for service sociability, would be positively related to the display of positive emotions. Results are summarised in Table 2.

Results from Table 2 show that when psychological climate for service sociability was in place, extraverts displayed positive emotions by 87.5% while other personalities displayed positive emotions by 75%. In the case of absence of the psychological climate for service sociability the display of positive emotions in the case of extraverted sales clerks would not be affected when in

good mood. Clerks of other personalities however, would decrease the display of positive emotions by 12.5% when in good mood. When in bad mood however, the displayed positive emotions would have been decreased by a greater percentage (37.5%) in the case of extraverts than other personalities (25%). In both cases the displayed positive emotions would have been decreased in the case of absence of the psychological climate for service sociability. Thus Hypothesis 1 is supported. Psychological climate for service sociability is positively related to displayed positive emotions.

Hypothesis 2 predicted that, extraversion, would be positively related to displayed positive emotions. That is, extraverted sales clerks would display more warm and friendly positive emotions than their co-workers will. Results in table 2 offer support for Hypothesis 2. Positive emotions by extraverted sales clerks are displayed by 87.5%, whereas positive emotions by other personalities are displayed by 75%.

As it is shown in table 2 from the 292 clerks 165 (or 56.5%) are extraverted. From the extraverted clerks, 95 (or 57.6%) are women. From all the female sales clerks 50% were extraverts, whereas from all the male sales clerks, 69% were extraverted.

TABLE 2: THE IMPACT OF PSYCHOLOGICAL CLIMATE FOR SERVICE SOCIABILITY AND EXTRAVERSION ON THE DISPLAYED POSITIVE EMOTIONS

Sales Clerks	Displayed Positive Emotions	The Impact on the Displayed Positive emotions, from the Possible absence of the Psychological Climate for Service Sociability: When In Good Mood / Bad Mood	
Extraverts (165)	0.875	.00	- 0.375
Other Personalities (127)	0.75	- 0.125	- 0.25

Table 3 shows the degree of success, in concluding a sale; extraverted sales-clerks Vs other personalities.

TABLE 3: DEGREE OF SUCCESS OF THE SALES CLERKS

		Customers Served by:	
		Extraverts	Other Personalities
Customers Purchased	90		70
Customers not Purchased	42		85
Total Customers Served	132		155
% of Success In Concluding a Sale	0.68		0.45

Table 4 shows the impact of the sales clerks, who displayed positive emotions, on the sales and the ability of the sales clerks to influence the purchase decisions of the customers.

TABLE 4: IMPACT OF THE SALES CLERKS' ABILITY TO INFLUENCE AND OF THE DISPLAYED POSITIVE EMOTIONS ON THE PURCHASE DECISIONS OF THE CUSTOMERS

Impact on the Sales From The:		
	Displayed Positive Emotions	Ability to Influence
1. Extraverted Sales Clerks	25.6%	41.1%
2. Other Personalities	21.4%	17.14%

From table 4 we see the impact of this specific package of displayed positive emotions on the purchase decisions of the customers. Enthusiasm in giving information relevant to the product, and making positive comments on the fit of clothing were the additional displayed positive emotions to those of Tsai (2001). The ability to influence the purchase decisions of customers (i.e., fostering the purchase decision of the customers by promoting specific combinations of clothing and other methods), is greater in the case of extraverted sales clerks. This is also supported by their ability to display more positive emotions (pro-social behaviour enhanced by enthusiasm, positive mood, interest in customers' satisfaction, and self-efficacy). It has been observed that when the sex of clerk-customer pair was of opposite sex, the influence on the purchase decision of the customer was greater.

From the study, it has been observed that, an extravert sales clerk displayed more positive emotions than sales-clerks of other personalities. And even,

more positive emotions, when the clerk-customer pair was of opposite sex. Rafaeli (1989a), in his study found that, female sales clerks displayed friendlier and warmer emotions, and male customers received higher levels of positive emotional display than the female customers did. In this study, it was observed that female customers also received high levels of positive emotional display from extraverted male sales clerks, as did the male customers from the female sales clerks. In all stores observed, the extraverted sales clerks were more enthusiastic and excited without pretending, and this feeling was passed also to the customers. This passing over the feelings of the sales clerks to the customers was mentioned in the study of George, Jennifer M. (1991) as well.

It has been observed that emotional exhaustion decreases the displayed positive emotions of an extravert, but in relation with other observed emotional exhausted personalities, the extraverts displayed warmer positive emotions. It has also been identified that, an extraverted personality with long work experience has the ability to control emotional exhaustion under work pressure and to display positive emotions with very little variation from his/her personal score. This was identified when the same extraverted sales clerks, were observed both under work pressure and under a more relaxed working environment. The observations were then compared with those of other personalities in the same working environment.

Hypothesis 3 predicted that displayed positive emotions from extraverted sales clerks, would be positively related to purchase decision. From the control variables, the ability to influence was significantly related to purchase decision (see table 4). In addition, making emotional comments on the fit of clothing (displayed positive emotions), significantly influenced the purchase decision of the customer. Due to the new introduced package of displayed positive emotions and the ability to influence (control variable) there was a positive impact on the sales from the extraverted clerks and the not extraverted as well. However, there is a greater impact on the sales from the displayed positive emotions and the ability to influence, from the extraverted sales clerks. Taking into consideration the instinct and the knowledge of the customer, when the delivery of the service was in the form of surface acting, then the customer's decision was not always the purchase of the product (Ekman, Friesen, &

O'Sullivan, 1988). From the observations, the additional displayed positive emotions in this study, were positively related to the purchase decisions of the customers. Thus, displayed positive emotions and the ability to influence were significantly related to purchase decision. From the above mentioned, Hypothesis 3 was supported with the exception that the specific displayed positive emotions by other personalities, had a positive impact on the sales as well.

Hypothesis 4 and 5 predicted that displayed positive emotions would be positively related to customer reactions. That is, willingness to return and willingness to recommend. The sex of customer and the sex of clerk-customer pair were the only control variables significantly related to customer reactions. The observed results suggested that female customer reacted more positively toward the stores. The reactions however, were greater when the clerk-customer pair was of opposite sex and the clerk was an extravert. Comparing the results obtained from other personalities the male customers who were served by extraverted female sales clerk reacted more positively than male customers who were either served by not extraverted clerks or by males. An extravert sales clerk increased the customer reactions of both male and female customers. They reacted more positively than how they would have reacted if served by not an extravert. Yet, the reactions of the female customers in this case again, were more positive toward the stores than those of male customers. Thus, Hypotheses 4 and 5 were supported. Customers' reactions were affected either by the employee displayed positive emotions or by the customer purchase decisions.

4. DISCUSSION

The present study found that extraverted sales clerks would display more positive emotions towards customers. Also, the psychological climate for service sociability is positively related to employees displayed positive emotions towards customers. From the study it was found that other

personalities most probably can display the same positive emotions, but extraverts will display positive emotions at a higher rate.

Overall it was concluded that extraverted employees displayed more positive emotions towards customers and as a result customers were more willing to visit the store again and pass positive comments to their environment. This prediction was also found in the study of Tsai (2001). Further to the study of Tsai (2001), it was also found that not only an employee's thanking and rhythmic tone of voice effectively influenced customer reactions, but also the enthusiasm in giving information to the customer about the fashion, the look, the design, the different combinations and the new arrivals. Once again in this study, the results confirmed Rafaeli and Sutton's (1987) predictions that proposed displayed emotions could be related to organisational benefits. The work of Brown and Sulzer-Azaroff (1994) indicated that, employees' displays of positive emotions could result in positive consequences in the context of a bank. Then the study of Tsai (2001) suggested that positive emotional displays could bring benefits for the organisation in the context of shoe stores in retailing settings. In addition to that, this study suggests that the criteria chosen by the store management for displayed positive emotions, has an impact on the purchase decisions of customers. Thus, it is clear that the display of positive emotions by the employees is not only a desirable action that managers must promote, but the managers should make a careful selection of the criteria of the employees' displayed positive emotions for the benefit of the organisation.

One limitation to the study is that there is the possibility, an extravert to deliver the service either in the form of deep acting or surface acting (Grove & Fisk, 1989; Hochschild, 1983). This was not identified in the study. It would be interesting to investigate the possibility if surface acting by an extravert could lead to burn out.

Given the importance of the displayed positive emotions to the benefits of the organisation, it would be interesting also to investigate any other determinants of displayed positive emotions. A further area of potential work would be to identify the package of displayed positive emotions that would benefit particular businesses.

This study, in the context of clothing stores, contributes to the literature by providing results of an empirical investigation of employee displayed positive emotions. The findings based on this research strategy should add value to literature, by suggesting that, extraverted personalities can display more positive emotions, be more sociable with the customers, and bring organisational benefits.

NOTES

1. Displayed emotions data was collected without receiving consent from sales clerks, but permission from the store management was taken, in order not to cause any negative impressions.
2. The self-rated items were, "I have a great deal of knowledge about how to choose the right clothes for customers," "Customers often like the clothes I recommend," and "I am more competent than my colleagues for choosing the right clothes for customers".

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DEALING WITH DOWNSIZING AS A MOUNTING CRISIS IN THE TOURISM INDUSTRY

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ABSTRACT

It is apparent that new periods can bring about many unpleasant changes to the way organizations are formatted and operated. Downsizing has as its main intention hundreds or even thousands of layoffs and great further gaps to be amplified. The purpose of this paper is to refer to various companies, including Tourism related enterprises, which use downsizing as the only way to achieve mergers and decrease their expenses although no actual positive result does really come out. In addition, to address some of the difficulties of downsizing that do not promise easy or final solutions but rather ambiguous perplexities. This paper does not secure or extract solutions through any complex methodology but rather supports productivity and team working which need to be highly praised and additionally scrutinized.

1. INTRODUCTION

*"Corporate downsizing has a lot in common with dieting. Nearly everyone does it but few get the desired results. Three out of four companies slimmed down their staffs in the last five years but the majority saw little improvement in either business or productivity."*¹

Many corporations decide to give downsizing another meaning or other fancy titles such as "Rightsizing", or "Corporate Restructuring". It is of course apparent that Downsizing helps many companies to reduce their expenses especially when financial misfortune strikes them or when sales do not encounter projected figures or even to their wishful profit maximization. The director offers early retirement packages to reduce salary contracts of

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older, costly employees. They also offer yearly salary contracts to keep employee expenses like benefits and other coverage to a minimum.

Nevertheless, the employees often feel insecure and dissatisfied for what otherwise is known as layoff, especially without any further notification. It is far beyond the truth as stated above that profit takes the first place in the business sector. But what about the Human factor? We should not ignore that when employees are fired, parents, spouses with real living expenses, lives and feelings are affected. Unfortunately, wherever top level executives take decisions most of the time they neglect the ethics revolving the human factor.

Where is the social responsibility when thousands of people in the United States or in Europe are put out of work? The employees are not only capital investments and health benefits. Hasty decisions should be avoided without insulting the code of ethics and social responsibility, since it is mentioned in any companies' mission statement. Companies, can thus, survive longer and maintain company loyalty, which means the employees stay good corporate citizens and hopefully increase productivity.

2. THE PROS AND CONS: FURTHER SUGGESTIONS AND SOLUTIONS

The Travel Industry, coming off one of its best years, was already seeing the effects of a non-steady economy. Add to that the devastation of September 11 and thus the state of the industry today. The statistics are everywhere, hotel bookings are down, destinations are partnering with other destinations within their region to attract the drive market, tour operators are looking to plan itineraries that don't include air travel and are shorter and closer to home.

The Conde Naste Traveler magazine has projected online some notable results. Seventy-one percent of its readers have flown since September 11 for a leisure trip and 71% have booked a leisure trip to take place in the next six months. In addition, 78% of the respondents stated that travel is their ultimate passion and nothing will stop them from travelling. One thing to

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keep in mind, however, is that *Conde Naste Traveler* readers are typically more affluent, educated and adventurous than the typical traveller.²

It was found peculiar, by many observers, why many companies still continue to use Downsizing as the only way to decrease their expenses, since no actual positive result does really come out. It is without further doubt that with the advent of the Internet, companies are spending their major income on computers, software, and communication equipment by making in this way a better use of the outside information technology. That fact does not necessarily change the opinion and the views of many Travel companies that their only possible leeway to success is continued Reengineering or Downsizing whenever they think it is possible.

It is also sensible for companies to avoid hiring new employees. Besides, retraining the same employees on the new business trends, can be timely and costly efficient. It is lastly optional where the companies are not unionized, to delay or even cut the employees' pay, instead of dismissing them, in cases when the employer is in financial constraint or difficulty.

Such a serious crisis exists in the Travel Industry that, for the first time ever, the entire Airline Industry nearly collapsed and required government generated support to keep operating. The Tourism industry is so interdependent that the airlines' success or failure plays a sudden role in lodging's success or failure, too.

Companies, particularly in the Travel Industry where many employees are accustomed to seasonal work, can look for alternatives to across-the-board layoffs. One tour operator asked employees to voluntarily cut one workday from their workweek. They worked, and were paid, for 32-hour weeks instead of 40 and, as it turned out, they did not want to go back to 40-hour workweeks when the tough times ended.

But what should actually every employee do to minimize "the pain" after the termination of an employment contract? Apparently a lot. Especially when the burden of a family is pleasant but also heavy for every sincere employee that cares for his/her family. Here are some suggestions: It is important to know how much will the employee get and whether the amount is taxable or not.

1. Any cash settlement or transfers to other plans derived from the employee's pension benefits are rights that should be asked as well.
2. It goes without saying that minimizing the costs, by getting extra lines of credit, not paying bills until their "expiry date" are some clever ways to overcome the rough times to come.
3. It is also wise to avoid any possible overloading of taxes if possible. Experts always know efficient and available ways to succeed this.

Within organizational teams, companies can sustain a high unity among all the stakeholders. Sharing information can help teams to understand their part of the business and how it fits in with the bigger organizational strategy. In a team based organization the team is far less dependent on the leader telling them what to do and far more dependent on her listening and facilitating discussions, that lead to the group contributing ideas, for more and comprehensive solutions.

In addition, all major Tourism organizations and the people involved should look for ways to better serve their customers in a more cost-effective manner on a constant basis. It is apparent that the organizational teams should be formed to offer their commitment to all areas concerned; work processes, products or customers. The fact that many employees quit, retire or die is unavoidable. What can be avoided is to hire new employees for a certain period and implement attrition to reduce their payroll. Many Travel companies may choose to divide the work among many workers, thus eliminating overtime, something that may only benefit certain employees.

Another effective solution or way to postpone or even avoid the painful after-effects of the Downsizing is to establish a plan to transfer the employees to other companies' locations. Many employees have tried or are still trying to fight the exploitation that they face in large organizations. As in the past, the Travel Industry experiences several ups and downs, periodic disorder, hereafter since our world is changing. The overall directional thrust wouldn't change, but in the future, objectives and strategies will constantly need refashioning to meet changing needs.

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Unfortunately, in various Travel companies, another wave of Downsizing and cost reduction programs may be needed to trim the scope of operations and seek alignment with likely business volumes. As hard as it is to say, everyone is best served by a speedy implementation of strategies, as opposed to any long, drawn-out process. Consolidation strategies and bad news behind as quickly as possible and refocus on positive programmes that lead to recovery.⁴

To remedy the situation, local hotel executives with their staff, public relations teams and budgets could energise their lodging associations, convention and visitors' bureaus, chambers of commerce, local airline sales representatives, and other tourism groups. Thus, to package attractive, discounted travel promotions to attract scores of travellers by air, train and auto to each city. They could enlist television, radio and newspapers as promotional partners in the local travel recovery programmes.

Companies, particularly in the Travel Industry where many employees are accustomed to seasonal work, can look for alternatives to across-the-board layoffs. An example is from a related Airline Industry. After September 11 and the reduction in people flying, Continental had to layoff pilots, attendants, phone operators and reservation agents. A spokesman for Continental said laid-off employees receive preferential treatment when the airline begins hiring. In addition, Continental's Human Resources staff, in partnership with business in its hub cities, set up job fairs to help furloughed employees to find other work.⁵

3. CONCLUSION

While Downsizing an organization is unquestionably a repulsive overall experience affecting a massive amount of human beings, it is sometimes an economic urgency. On the magazine "Fortune" Thomas Pierson manager of Human Resource planning says: *"Clearly, it's cheaper to terminate a person in one place and hire another one at the other end. But these investments bring a tenfold return in terms of employee loyalty, creativity and productivity."*

It is therefore absolutely a necessity for Travel Organizations that have experienced this method or think they might have to, consider the performing of a team-based culture to help the surviving employees confront with emotional repercussion of loss as to refocus their attention on the future wellbeing of the organization.

When a certain amount of job loss is inevitable, the most important thing is to be as fair and upfront with employees as possible. Layoffs can leave the surviving employees with a lack of trust for management, fear for their own job and an overall decrease in morale. Instead, certain successful training experience and proper guidance along with the individuals' experience can bring a greater measure of achievement. Several times they can reduce fatigue, increase contributions, increase skills, and provide a sense of security for the tasks and knowledge acquired.⁶ An organization gains competitive advantage by using people effectively, drawing their expertise and ingenuity to meet clearly defined objectives.

Every Tour Establishment manager has to be aware of, and exceed his/her best effort, to protect the interest of the company by enclosing the right strategies and using all imaginable ways to develop the business and not implementing easy solutions such as Downsizing. Managers can be honest and explain their moves, and planning for the company as it moves through the coming months, and present the reasons for the Downsizing.

In addition, a full revealing, of the criteria utilized when deciding who stays and who is terminated can at least help heading-off some of the morale problems and further loss of good employees who flee to another company. More creative ways to cut costs should be used and thus avoid making any misinterpretations in order to cut the bottom line, since as many decisions often end up to be detrimental in the long run.

It is obvious that nowadays we can observe three main trends in today's business world: Globalization, Market Maturity and Customer Power. To cope with all these and any other essential trends, the companies ought to manage stress, use ongoing team working methods and empowerment for the benefit of the employees who are the heart of the Travel Industry's operation(s).

Traditional training techniques to spread the usefulness of training are mostly preferred in the Tourism and Hospitality Industry as well. Additionally, computer based techniques can be encompassed as a form of completion to the "traditional training techniques," and a method of cost comparing. Moreover, knowing the customers and what their expectations are, scrutinise the remuneration of strategic partnerships and mergers, converge the Travel Companies' activities closer to the competition-leaders actions, thoroughly and constantly train the old staff and newcomers and minimise any irrational layoffs, seems to be the core way forward.

NOTES

1. See the Democratic Corporation (1994) for further description.
- 2-5. See more articles at the *Conde Naste Traveller* at the www.concierge.com
6. See more examples on the "Human Resource Management in the Hospitality Industry" 6th Edition, 1996, M.J. Boella.

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LEVIS STRAUSS: EXAMINING ITS MARKETING APPROACH IN THE GLOBAL ARENA

DEMETRIS VRONTIS*

ABSTRACT

In their consistent search for growth opportunities, firms are increasingly recognising the benefits of becoming multinationals and expanding internationally. This case study outlines a theoretical exegesis of global standardisation and international adaptation. The debate between these two concepts is explored and their respective benefits considered. Subsequently, the role of the marketing mix and strategy are examined in relation to the above approaches along with the consideration of the various factors, which suggest a particular marketing mix approach. Finally, the feasibility of an overall marketing strategy will be assessed with the assistance of the appropriate theoretical models. In facilitating the comprehension of the above task, Levi's the clothing retailer and their jeans' subdivision is utilised to exemplify all the issues outlined.

Keywords: Adaptation, Standardisation, International, Global, Strategy, Tactics, and Clothing.

1. GLOBAL STANDARDISATION OR INTERNATIONAL ADAPTATION: A THEORETICAL BACKGROUND

With ever increasing improvements in transport, communications, and reduced trade barriers, international trading which was once considered a luxury is now a necessity in many sectors (Vrontis, D. *et al* 1999).

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Once a decision to venture into international markets has been taken, there are two broad strategies, which can be adopted. A fundamental strategic decision has to be made immediately as to whether to employ a uniform marketing mix as part of a global strategy or to adjust the marketing mix to take account of the unique characteristics of each local market.

The supporters of globalisation such as Levit (1983) argue that a corporation should operate as a single entity selling the same items everywhere in the same way. They believe the world is becoming increasingly homogenised in its consumer requirements.

Additionally, there is a variety of motives underlying a firm's decision to trade globally. Such incentives could be the ability to enjoy economies of scale as a consequence of large output, the ability to extend the life cycle of their product in the phase of a mature domestic market and the escape from increasing levels of domestic competition. The unification strategy for the entire international market produces gain of lower costs, consistency of product and promotion and greater uniformity and consistency for the mobile consumers.

On the other hand, the polar opposing views is provided by the internationalisation school of thought which emphasises the various differences between local markets and urges multinational companies to adjust the marketing mix elements and marketing strategies in order to accommodate these differences. The advantage of the specific marketing mix approach is that strategy is tailored to suit local market needs while flexibility and responsiveness are maximised.

However, in reality, neither of these polarised views is feasible or even desirable and it seems that adaptation and standardisation co-exist. It is indicated that the standardisation decision is not rigidly applied as the correct posture as a result of organisational and macro and micro-environmental differences and constraints. Equally important, adaptation is not fully practised as global benefits could offer multinational companies an edge to competitive advantage.

It is evidently proven that adaptation and/or standardisation varies depending on the individual elements of the marketing mix. In certain circumstances it may be appropriate for a company to standardise one element of the mix such as the product while adjusting another element such as the promotional campaign. This integration of adaptation and standardisation driving a company towards optimising performance is extensively researched and defined by Vrontis (2000) as the *Vrontis' AdaptStand* approach in international markets.

In identifying and analysing the level of globalisation and assessing the feasibility of a global marketing strategy and tactics this case study will focus on jeans as a product and specifically Levi jeans as a brand.

Levi has been chosen as a consequence of its widespread penetration of the international jeans market. It is the world's largest manufacturer of trousers, notably blue denim jeans. Initially aimed at cowboys, blue denim jeans spread to the whole US population and were eventually exported world-wide (Britannica Encyclopaedia, 1999).

2. FACTORS AFFECTING STANDARDISATION OR ADAPTATION OF LEVI'S STRATEGY AND TACTICS

A diversity of factors determine whether the marketing mix can be standardised for all customers in the jeans market or whether it needs to be adapted to suit specific market conditions. These include socio-cultural, legal/political, physical environmental, technological, demographic, competition and economic factors.

2.1. *Socio-cultural factors*

Socio-cultural consists of language, religion, ethnics, values and customer perceptions. It heavily affects the product and promotion elements of the marketing mix because they are the most culture-bound aspects. Differences in

culture attitudes lead to enormous variations in product and advertising standards and expectations.

Levi wishes to minimise the degree to which culture prevents them from producing standardised promotional campaigns. This is because of the benefits of economies of scale and the higher quality that can be obtained for a single advert than for a multiplicity of local adverts. Consequently, Levi Strauss paid \$550,000 for one series of T.V. commercials (Jeannet *et al* 1998) to use around the globe.

However, it should be mentioned that Levi's success turns on its ability to create a global strategy that does not stifle local initiative. It is a delicate balancing act, one that often means giving foreign managers the freedom needed to adjust their tactics to meet the changing tastes of their home markets (Business Week, 1990).

In addition to the effect on the design of adverts, cultural differences have a linguistic implication with regard to the product name. The brand name of a product is a key element of its promotion but care has to be exercised to avoid causing offence in translation or using symbols that do not have the same significance world-wide.

Culture can also be a barrier in relation to the suitability of the product in particular local markets. Countries differ in their tastes and fashions, thus, may create the need for adaptation. For example, in Islamic countries females are discouraged from wearing tight fitting attire. Moreover, Japanese consumers prefer tighter fitting jeans than the American counterparts (Czinkota *et al.* 1995). It is therefore evident that fit, design and style of jeans needs to be adapted to meet the requirements of the local buyers.

The appropriate colours used in both the product and the promotional materials also have cultural dimensions. For example, the colour white is associated with death in China but black is a colour of death in Europe.

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Less obviously, the distribution is also affected by cultural norms. Levi Strauss when setting up its own direct sales force, found that the debt collection period was a six month period in Japan compared with a one month period in the home country (Terpstra *et al.* 1994). Adaptation to such local trading customs was necessary in order to penetrate the Japanese market.

Haggling over price is a cultural tradition in many societies such as Africa but rarely used in many European countries. It is therefore important for pricing to take into account cultural habits before setting the final price in different individual markets.

2.2. Legal factors

Promotional activities are regulated in all countries by legislation. One of Levi-Strauss's more famous television commercials used the music of Martin Gaye as a background to a 1950's image of a young man stripping to his boxer shorts and washing his 501's in a laundrette. A variety of adaptations were required in local markets. For example, the original commercial had to be re-shot in Australia and Brazil because the local regulations insisted on domestic produced commercials. Furthermore, many South East Asian countries exercised their censorship power and banned the commercial completely (Jeannet *et al* 1998).

There are relatively few legal restraints upon the choice of a distribution channel. However, there are exceptions such as France and China's prohibition against door-to-door selling which may not be particularly applicable to jeans.

2.3. Physical environmental factors

The different climatic conditions found in different parts of the world have a very significant affect both on the total demand for jeans and in the type of jeans made available. The European climate, particularly in its northern regions is well suited to wearing standard denim jeans. Other hotter climates require thinner denim in brighter colours and possibly in shorts versions. It is therefore

the product element of the marketing mix that is affected by climate factors. The remaining elements of the marketing mix are less affected by climate.

2.4. Technological factors

Technological considerations concern whether the local market has sufficiently developed technologies to take full advantage of the product. High technologies are required to make full use of the variety of promotional methods using alternative advertising media such as television or web sites.

Similar considerations apply to the distribution of the product. For example, whether consumers can utilise on-line home shopping facilities. In less developed countries, for example in Africa, where such technologies are in a rather inchoate stage, adaptation is required such that a greater extent of use is made of more traditional methods. On the other hand, in developed countries Levi make use of the electronic data-interchange system to order and monitor stock levels with their customers such as major department stores in order to avoid costly stock-outs. This is not used in developing or third world countries (Kotler, 1997).

2.5. Demographic factors

Demographic factors and the characteristics of a country's population, for example physical size, can affect the market for jeans. Different global regions are associated with particular average heights of their inhabitants. For example, the Far East Asian market requires shorter inside leg measurements than the Western countries, again emphasising the need for product adaptation.

It is scientifically proven that the human body structure and proportions are not globally identical. Therefore, selling standardised sizes has led many companies to major failure when trading globally. To avoid such failures one should consider the adaptation of local fit and sizing.

2.6. Competitive factors

The nature of competition in different local markets will affect each element of the marketing mix for jeans.

Marketing based pricing strategies will have to take into account the prevailing prices of substitute products, whether imported or domestically produced. A substantial local based industry is likely to create more intensive competition in less developed local markets due to cheaper costs of production.

Similarly, the more intensive the domestic and imported product competition, the higher the quality Levi merchandise needs to be. If however, the only competition is domestically produced and is of an indifferent quality, then quality levels are less significant. Hence, the product will need to be adapted accordingly.

The nature of the promotional campaign will have to be partly derived from the actions of rivals. The advertising budget and media used is sometimes with rival expenditure levels in mind. For example, in advanced countries T.V. is the dominant advertising media and is heavily used by rivals such as Lee Cooper and Wrangler and therefore Levi-Strauss has little option but to follow suit. If the competitive infrastructure were otherwise, this would lightly affect the promotional strategy and tactical approach used.

Distribution may have to be adapted when the manufacturers have exerted pressure on retail outlets to discourage them from selling Levi-Strauss products. Where this arises, adaptation can take the form of switching to direct selling either through opening specific Levi stores and/or using another selling method such as the Internet.

2.7. Economic factors

The economic factor is increasingly important in enhancing adaptation. Local markets vary enormously by their disposable income per capital.

Therefore, standardising prices would mean that poor countries are likely to have a reduced market for jeans.

Different levels of income and changes in income levels will affect both the price that can be charged and the product quality that is appropriate for each local market. Prices for jeans do vary substantially between markets and such price discrimination may be partly for reasons of income but may also be because of the severity of competition and the inaccessibility of the territory. For example, standard Levi jeans in the U.K. sell for approximately £46 whilst in certain US states £20 is the norm.

The nature of the promotional campaign will also be affected by the stage of the economic development of the individual country and therefore require a degree of adaptation. Advertisements for jeans in affluent societies are quite sophisticated and rely on the communication of ideas about lifestyle and imagery. By contrast, advertisements in poor countries are more rudimentarily based upon factors such as function and value for money.

Distribution channels may require adaptation in relation to the stage of development of each local market. Advanced countries possess a multiplicity of different retail outlets while choices are likely to be much more constrained in less developed countries. Therefore the full range of selling patterns employed for advanced markets cannot be deployed in poorer ones. For example in China, department stores only cover 20% of the total market. Therefore, distributing via the traditional market is essential in order to ensure success.

It is illustrated that global standardization and international adaptation do take place, and can bring benefits. However, their extreme practice is not necessarily an optimal approach in all markets, nor is it evident that it is taking place for all the products of the firm, nor necessarily to the same extent across all the elements of the marketing mix.

International practitioners should search for striking the right *Adapt-Standard* balance. This is not a straightforward task, and as identified, the balancing act

between standardization and adaptation is very tricky and indeed a challenging one.

3. TARGET MARKETS AND POSITIONING STRATEGY

In determining a desirable target market, a variety of factors have to be considered in order to define the characteristics of the chosen market segment.

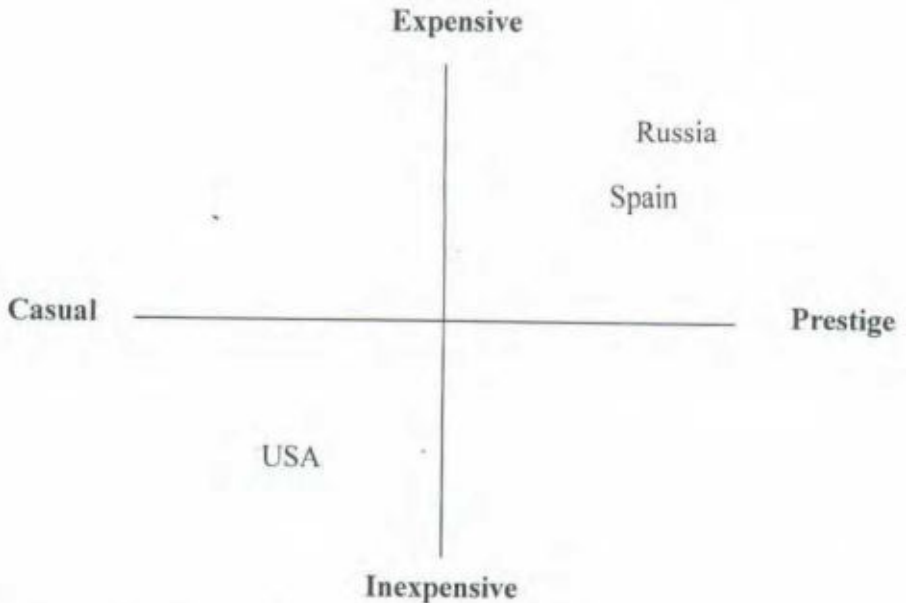
For the product of jeans it is a question of whether the different characteristics of each market segment allow a standardised approach that implies undifferentiated marketing or whether they are so distinct that they require large-scale adaptation implying a differentiating market approach.

It seems to be the case that jeans are uniformly aimed at the youth aged between 16 and 20, regardless of country of origin, yet differences still exist in the positioning of their appeal (Lehone, 1995).

For example, in America and much of Europe, the emphasis is on jeans as casual attire as encapsulated in the freedom of the open road personified through James Dean in an atmosphere of North American Eldorado. Similarly an Indonesian commercial shows Levi clad teenagers cruising around Iowa in 1960's convertibles (Czinkota *et al* 1995).

In contrast, jeans are in short supply in Russia therefore wearing them, indicates fashion awareness and high status (Jeannet *et al* 1998) to society. Similarly, in Spain, the high price of jeans singles them out as fashion items, as opposed to casual dress. Levi's world wide positioning is illustrated in the positioning grid seen in figure 1.

FIGURE 1: POSITIONING GRID



The various factors that define the nature of different markets include socio-economic and demographic variables such as age and sex, which, in the jeans market, are unifying and standardising influences. Such variables, with regard to jeans, allow an undifferentiated approach to marketing the product.

However, other factors such as culture, religion, geographic and climatic conditions act as divisive influences which necessitate an adaptation of the target market, image and positioning of the product.

Thus, an element of both standardisation and adaptation are apparent, necessitating the identification and implementation of the right balance of the Vrontis' AdaptStand level of integration.

4. GLOBAL MARKETING STRATEGY

A global standardisation marketing approach is difficult to achieve. That has already been established from our earlier consideration of the need for adaptation in the marketing mix. Further evidence of this can be found in the various theoretical models used to analyse marketing strategy.

It has already been established that the Product Life Cycle of a product can only be conceptualised within a specific national market. This is because products do not always occupy the same stage in the lifecycle between different countries. Jeans are by common consent in the mature stage in America but in their growth phase in eastern countries. Hence, this could imply the need for the adoption of different marketing strategies for different countries.

Similarly, the matrix used by the Boston Consulting Group implies that the different categories used to describe a company's product cannot be applied across national boundaries. This is because both 'relative markets share' and the 'growth of the market' will vary considerably between countries. For example, for countries that differ in their stage of development, a growth market in one country may constitute a very mature and saturated market in another. A product that falls into the star category in a less developed country may be regarded as a cash cow in a more advanced country.

5. CONCLUSION

On the spectrum of standardisation versus adaptation, a positioning closer to the globalisation polarity appears to be appropriate for Levi Strauss.

It can be seen that there is a global market for jeans and capitalising on their market maximises the ability of Levi Strauss to benefit from economies of scale, global uniformity and consistency with the mobile consumer. A global strategic and tactical approach therefore enables Levi Strauss to maximise competitive advantage across the world market.

However, a complete degree of standardisation is impossible to achieve in the market for jeans. While the target market is similar throughout the world, market positioning and the elements of the marketing mix have to be adjusted in line with a variety of organisational and macro and micro environmental factors.

The objective should be to obtain *AdaptStandardation*; that is an appropriate balance between maximising the gains of standardisation and competitive advantage and maximising market share through adequate adaptation to local market conditions.

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DETERMINING AND CONTROLLING COSTS IN AN INFLATIONARY PERIOD

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ABSTRACT

No problem in recent years has possibly generated so much controversy and lively debate, both at the national and international levels, as the accounting for inflation. Several countries plagued by high rates of inflation have failed to provide for the effects of inflation in their financial and management accounting systems. With so much attention being paid to financial reporting in an inflationary period, why, then, has so little attention being given to management accounting or to financing adjustments for business decision-making purposes? The focus of the present paper will be on a special aspect of management accounting: determining and controlling the cost of goods during an inflationary period. Relying on the historical cost value of goods is problematic in any decision-making process because current decisions require current costs.

In an inflationary environment characterized by both general and specific price changes, adjustments must be made in terms of the actual and standard costs of goods. We have, therefore, recommended the development of standard costs because current decisions require current costs. Once adopted, the standard cost becomes a kind of yardstick for measuring management's performance.

Accountants have already adopted inflation accounting standards for external purposes; they must now adapt a reporting system for management to eliminate the misleading influence of inflation.

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1. INTRODUCTION

Distortions in reporting caused by inflation have generated a great debate over the past few years, especially as they affect financial information and financial statement adjustments. As a result, recommendations concerning them have been adopted by the US *Financial Accounting Standards Board* (FASB), the UK's *Accounting Standards Committee*, (ASC) and the *Canadian Institute of Chartered Accountants* (CICA).

With so much attention being paid to financial reporting in an inflationary period, why then has so little attention been given to management accounting or to financing adjustments for business decision-making purposes? Perhaps the lack of attention can be attributed to the characteristics and objectives peculiar to the two different types of accounting systems—financial and management accounting. The former requires standards to ensure a level of consistency and to offer decision-makers a gauge for evaluating business operations. Management accounting, on the other hand, has always been characterized by its flexibility—primarily because managers have traditionally preferred having access to all of a business' internal information.

The focus of the present article will be on a specific aspect of management accounting: *determining and controlling the costs of goods during an inflationary period*. This is of particular concern to many businesses during an inflationary period because (regardless of their size) their management accounting systems are often limited to costing and control alone. During an inflationary period, the accumulation of the cost of goods can become a mandatory task if a business is to conform with the requirements of Canadian Institute of Chartered Accountants (CICA) Handbook, Section 4510, "*Reporting the Effects of Changing Prices*".

2. THE NEED FOR ADJUSTMENTS

For most industries, determining and controlling the production cost of goods remains a basic function of the management accounting systems. The cost of goods—whether actual or standard—is one of the most important decision-making variables. It can affect price determination policies, transfer prices, production decisions, divisional planning and control decisions, and evaluations of the profitability of goods.

Today's increased competition means management must pay special attention to the cost determination system. The need to revise price determination policies more frequently means that production cost information must be up to date.

During an inflationary period, price fluctuations can render the actual methods of determining and controlling the cost of goods misleading—if not useless. However, relying on the historical cost value of goods is problematic in any decision-making process because *current decisions require current costs, and not historical data.*

3. THE NATURE OF CHANGING PRICES

Accounting literature generally refers to three types of changing prices: *general*, *specific*, and *those that are both*. Inflation affects the conventional measuring unit's value—the *monetary unit*—and, as a result, also affects cost information. During an inflationary period, adding costs from different periods does not make much sense since the cost of goods determined in this way is meaningless.

General price changes affect the economy's overall price levels. Specific price changes in individual goods or services can be caused by fluctuations in supply and demand, technological change, and various other factors.

With the cost of goods, such changes usually occur when the current cost of property, plant, equipment and raw materials exceeds historical cost. Determining the cost of goods on a historical basis in those circumstances will not provide a realistic picture of the goods true economic value. Further, the amount recoverable will never be enough to renew an enterprise's operating capability or to ensure its continuity. Of course, the economic contest for determining and controlling those costs may reflect general and specific changes simultaneously.

Thus, the traditional method of determining the cost of goods during an inflationary period does not reflect the replacement cost. When prices increase, costs will be relatively under valued and any profit made on them will not pay for their replacement or for future production.

4. DISTORTIONS AND THEIR CONSEQUENCES

Because traditional accounting methods distort the economic reality of an inflationary period's spiraling price changes, the following problems arise:

- The accumulation of costs from various periods is expressed in monetary units having different values.
- The cost of some production input components no longer reflects their current cost.
- Costs from different periods are matched with the current period's income.
- The cost of goods is accumulated whose recoverable amount make it impossible to maintain an enterprise's operating capability.

A number of large corporations have already adopted (for internal management purposes) formal procedures for adjusting financial information to account for the effects of inflation. According to D. J. Casey and M. J. Sandretto, approximately 50% of a sampling of 262 businesses (all listed in the *Fortune 500*) now provide their Directors with inflation-adjusted financial information.

5. WHEN A PROFIT BECOMES A LOSS?

Some enterprises had already adopted internal accounting procedures during the 1970s to determine, on a current cost basis, the depreciation of production units and the subtraction of the portion attributable to an inventor's increased value from a divisions profits. Such adjustments, however, proved extremely useful in locating or preventing errors in judgment. For example, a business posting a profit of Rs. 19,000,000 (calculated using traditional accounting methods) had actually sustained a loss of Rs. 26,000,000 (as reported in *Business Week*).

Encouraging as that might appear, however, an *Arthur Young Study* of 201 American businesses revealed that only one-third of them planned to adopt the FASB's Inflation accounting recommendations for internal accounting purposes. One might well ask (as *Business-Week* did) how management can be honest with external users of financial information disclosed in financial statements if they are not honest with themselves.

The potential implications are probably much greater and more damaging for businesses whose managers make decisions based on information that does not account for inflation than for shareholders and other external users, since an enterprise's survival depends primarily on the decisions made by its managers. At least those outside the organization can obtain information from other sources, if necessary.

In a UK study, 360 of 400 companies made several adjustments to their systems of cost accumulation and standard cost determination to reflect the effects of inflation. Those adjustments were made primarily to provide more relevant information about management's use of resources.

In short, a cost of goods accumulation based on the traditional approach (historical cost and monetary unit) presents significant drawbacks as soon as an enterprise's economic environment is no longer characterized by stable prices. Relying on erroneous or out-of-date information when making important decisions can have disastrous results.

It becomes essential, therefore, to make the necessary adjustments to traditional accounting methods when determining such costs during an inflationary period. Management's accounting information must remain relevant: a firm's survival depends on it.

6. AVAILABLE SOLUTIONS

Current accounting literature proposes various solutions, depending on how the type of price change is involved. Replacing historical cost by current cost, or replacing the monetary unit (because of its instability) by a constant measuring unit (the purchasing power unit), are the two different suggested options.

For general changes, the method suggested is to index historical costs (expressed in monetary units) and translate into constant rupees. That way, the cost of goods is expressed in purchasing power units. For changes in the prices of specific goods or services, the current cost—rather than the historical cost—should be used as a component of the cost of goods.

Finally, where the economic environment is characterized by both general and specific changes, current cost and the purchasing power unit must be used as the basis for determining and controlling cost of goods.

The modification just outlined above have, in effect, created three new approaches, based on the following:

- (a) The historical cost and purchasing power unit.
- (b) The current cost and monetary unit.
- (c) The current cost and purchasing power unit.

These approaches are described briefly below:

(a) Historical Costs and the Purchasing Power Unit: Using this approach, historical costs (from various periods and expressed in rupees of different

values) are converted on a common basis: the purchasing power of money at the measurements date. The goal, then, is to replace a monetary unit that fluctuates in inflationary periods with a constant one. Under this method, the distortions caused by general price changes are usually correctable. The accumulated costs thus retain their relevance and comparability and, given a general increase in prices, an enterprise can maintain its general purchasing power at the required level.

(b) Current Costs and the Monetary Unit: By taking this approach, the price determination system's purpose is no longer to indicate how much finished goods will cost, but how much it will cost to replace them. Each component's cost is evaluated at the same time as the units of finished goods—when the historical costs of various items (such as raw materials, depreciation, depletion and amortization) are replaced by current costs. Using this method, the distortions caused by specific price change can be corrected.

As specific prices increase, there is a corresponding increase in the funds required to maintain an enterprise's inventory, property, plant and equipment and other assets. Using a current cost basis to determine the cost of goods is the only method that allows a business to maintain its ability to continue production.

(c) Current Costs and the Purchasing Power Unit:

This approach, a combination of the two preceding ones, is the only one that provides a meaningful measure of the cost of goods when an enterprise's economic environment is characterized by general and specific price changes. When such changes increase, a business can maintain its operating capability and purchasing power by accumulating the cost of goods based on current costs and the purchasing power unit.

In short, when prices rise, the cost of goods based on a traditional method (historical costs and the monetary unit) is usually undervalued because it reflects the purchasing price instead of the current cost. That can have a disastrous effect on an enterprise's decision-making ability and the resource allocation. Any funds generated on the basis of those undervalued costs will be

insufficient to acquire the necessary new goods and services to ensure a business' survival.

It is, therefore, essential that the cost of goods sold be adjusted if an enterprise is to avoid management problems and the gradual erosion of its operating capability.

7: DEVELOPING STANDARD COSTS

Standard costs are pre-determined costs, representing the standards to be achieved. They are generally to be used in budgeting, price determination, and cost control. The standard cost of a particular good can be based on the actual cost of the preceding period, on a standard cost of each input and output element of a production system. In the latter case, engineers are consulted to determine the industrial quantities of input and output; the respective costs of the components are then applied to those quantities to obtain the standard cost.

Most accountants prefer the last approach because it provides for greater quality control than the other two. It usually results in a better consensus between an accountant and a production unit's management in terms of the nature and scope of their respective responsibilities and the quantity of input required to attain the chosen level of operations.

Thus, once adopted, the standard cost becomes a kind of yardstick for measuring management's performance. An error or a bias introduced in determining this standard would negate any comparison or evaluation and result in poor decision-making.

8. STANDARD COSTS AND INFLATION

The method used most often in developing standard costs during an inflationary period stems from a general assumption that prices will undergo

only moderate changes during their useful life. That's why standard costs must be determined based on:

- The level of prices at the date of standard costs is determined.
- The adjustment in price levels in terms of known price changes.
- The adjustment in standard costs in terms of forecasted price levels.

According to this method, by applying to the standard cost determination, a correction factor reflecting the average forecast price changes for the coming period, inflation can be taken into consideration. Standard costs based on this method prove inaccurate because they are systematically higher than the actual costs of the period's first half and lower than those of its second-half. The longer the period, the greater will be the distortion. As a result, during an inflationary period, annual standard costs are less appropriate than standard costs on a quarterly basis and less again on a monthly basis.

Standard costs determined using this method are neither an adequate control standard nor a sound basis for budgeting or pricing decisions. The ideal remedy would be to develop standard costs for each complete production cycle. When a cycle is either very short or very long, a standard cost can be developed for a relatively short period—usually on a monthly basis.

Unfortunately, the ideal can prove demanding, costly and impractical in many cases: the costs involved often outweigh the advantages. Developing standard costs more suited to their useful life can be resolved by indexing basic costs at the beginning of each period.

9. PERIODIC ADJUSTMENTS

Standard costs are generally determined at the beginning of a period and are based on available data. During an inflationary period, they can be adjusted by general price change forecasts, specific, anticipated changes or both. When general price changes are forecast for a coming period, basic standard costs

must be adjusted to remain relevant. Indexing the basic standard costs to the period's anticipated price level can do this.

When specific price changes are anticipated, standard costs can be developed based on anticipated current costs. In practice, that adjustment could be determined by using indexes reflecting the expected changes in specific prices. Finally, when both general and specific changes are forecast, standard costs should be developed taking both types of changes into consideration.

10. THE BEST RECIPE

When the economic environment is characterized by stable prices, it is entirely appropriate to determine the cost of goods based on the traditional historical cost method and the monetary unit. When the environment is characterized by variable prices, other methods of accumulating costs and developing standards are suggested. Moreover, when the environment demands the use of one of the alternatives described previously, a rational process for determining and controlling the cost of goods requires that they and standard costs be determined using the same basis and cost accumulation methods. For example, if the cost of goods is based on current costs, then so must their standard costs.

The availability of price data, the organization of an internal reporting system, the types of decisions to be made, and each method's costs and advantages are all factors that should be considered when selecting an alternative form of evaluation.

The continuing inflation of the past 10 years and the corresponding instability of prices have eroded the reliability and accuracy of traditional accounting measures related to the cost of goods.

11. ADOPTING A REPORTING SYSTEM

Accountants have already adopted inflation accounting standards for external purposes; they must now adapt a reporting system for management to eliminate the misleading influence of inflation.

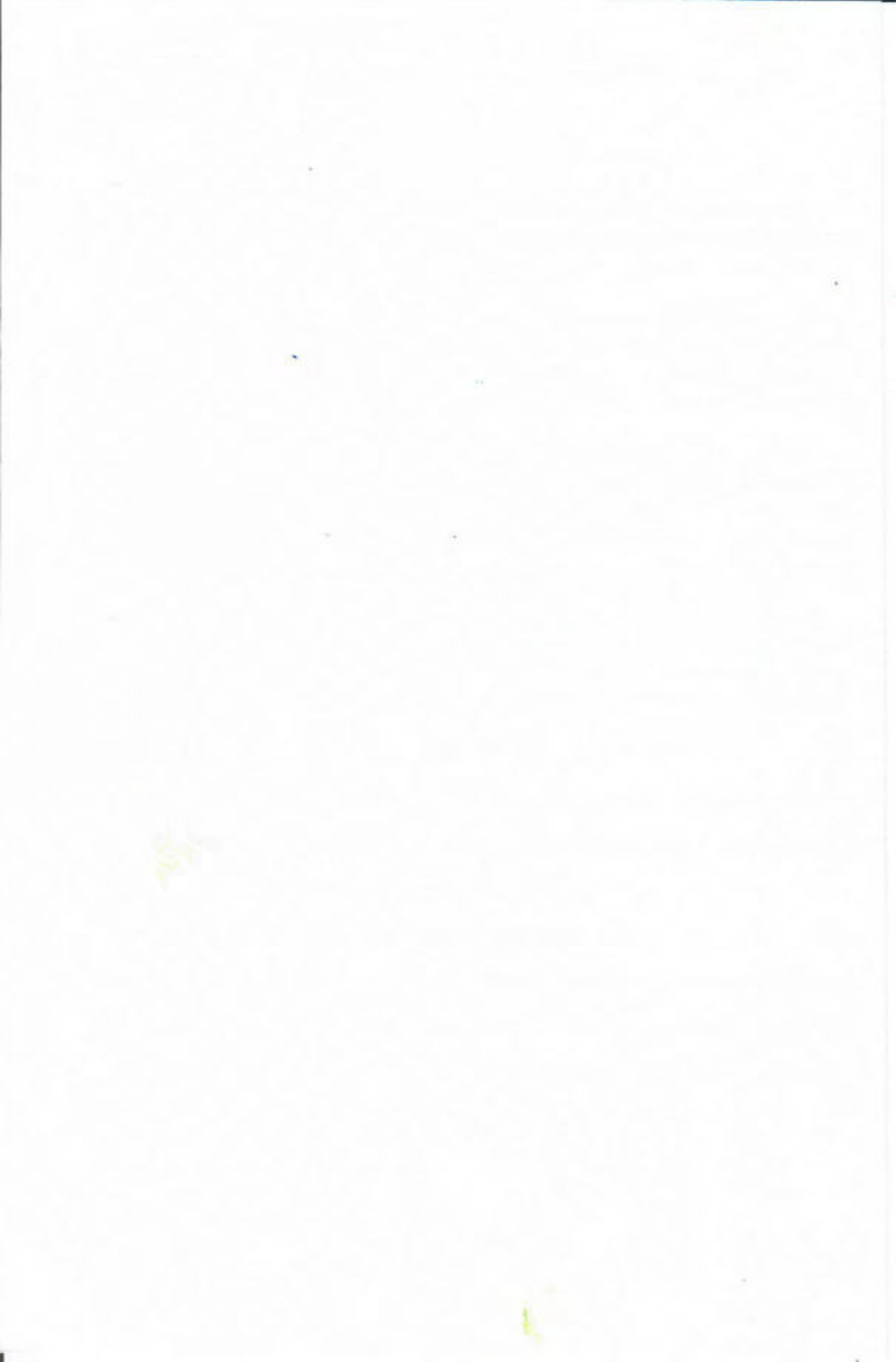
Our current cost accumulation and control system is based on a level of stability that no longer exists. With the significant changes that occur today in different input components and their prices, the fundamental assumptions and concepts traditionally underlying that system have lost some of their validity.

Because a cost accumulation and control system is so fundamental to any enterprise's decision-making process, management cannot allow any deficiencies. The determination and disclosure of periodic and sector-based results require consistency and accuracy: it follows that year-end adjustments are no longer enough.

In an inflationary environment characterized by general and specific price changes, adjustments must be made in terms of the actual and standard costs of goods. Otherwise, a business' cost planning and controlling process can prove misleading if not downright useless.

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SKILL-BASED COMPENSATION: AN ALTERNATIVE TO JOB-BASED PAY

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ABSTRACT

Most organizations have traditionally developed their compensation systems around the job, not around the person who performs the job. In practice, this means that most pay systems are based on job analysis and job evaluation, in which organizations decide how much a particular job is worth and then set a range of pay that an individual can get for performing that job. The intention of this article is to provide the reader with the main characteristics of this alternative compensation approach and identify some advantages and disadvantages as well as some situations in which it seems an advantageous option for Human Resource Managers.

1. INTRODUCTION

During the past decade, an alternative to the job-based compensation system has emerged and is increasingly gaining ground as a novel, more person-oriented system of compensation. Skill based compensation or as otherwise called knowledge-based compensation or skill-based pay has as its main principle to pay employees for their skills and knowledge they master, rather than for the particular job they perform.

Skill-based compensation comes in many flavors, but all share one main ingredient. As the American Management Association explains, they pay

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employees for the range, depth and types of skills they are capable of using. This is where the contrast with the conventional job-based systems appears. One system bases employees' pay on work they are expected to perform (job-based systems) and the other pays for skills they bring to the job (skill-based systems) Ingram, (1990).

Skill-based pay systems start with the identification of those tasks that need to be done in the organization. Next, the skills needed to perform those tasks are identified, and tests or measures are developed to determine whether an individual has learned them. The number and kinds of skills that each individual can learn, given his or her position in the organization, are also determined. (Employees are told that they can learn and master these skills). Individual employees are typically paid only on those skills that the organization needs and that they currently can and are willing to perform (Lawler and Ledford, 1985). In this way, skill-based plans reinforce a human resource management philosophy that promotes the importance of employees' ideas, continuous learning and personal development.

1.1. What skills are important to learn?

Paying for skills becomes an arduous task since it involves the development of a skill-based pay system for all employees of an organization (starting from production workers and going up to include all managers and high management professionals). Here Human Resource managers should decide which skill people should learn. In the case of a production work group in a manufacturing plant for example, it is relatively easy to identify all the tasks that the group must do, and to specify what constitutes skill acquisition (Lawler and Ledford, 1985). When skill-based pay is in place, employees are usually told that they can learn the entire range of skills, and that they will be paid more as their skills increase (Lawler and Ledford, 1985). Thus, employees can get increases at the rate at which they acquire new skills (Lawler and Ledford, 1985). (See table 1).

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TABLE 1: SKILL-BASED PAY RATES

<u>Skills Mastered</u>	<u>Pay Rate Per Hour (\$)</u>
Entry	\$6.00
1	\$6.50
2	\$7.00
3	\$7.50
4	\$8.00
5	\$8.50
6	\$9.00
7	\$9.50
8	\$10.00
All Plant	\$12.00

At the highest of "all-plant", level, the employee can do all the tasks that his or her work group requires. In some skill-based plans, employees are asked to learn all the jobs in the entire plant. They get top pay only when they reach this level competency (Lawler and Ledford, 1985).

It is very important to note that, under skill-based pay, employees can learn both horizontal and vertical skills. This means that they can learn in greater depth, job tasks that are directly related to their jobs (e.g., an accountant could learn more about auditing procedures), and job tasks that are not directly related with their jobs (e.g., a clerk can learn about the company's computer mainframe). Here is important to add that by the time employees have learned all the jobs indicated to them, they continue to rotate among them and therefore they learn every function of those jobs very well.

1.2. How assessment is done

Since skill-based pay is put into practice in a team environment, often team members are asked to assess each other. In fact, skill-based plan designers often construct elaborate peer assessment matrices that give to everyone the right to participate in everyone else's assessment. Dewey, (1994). In doing

this, they also use measurable results, direct observation and tests and base the big portion of assessment on interviews with employees and a review of existing performance documentation. Supervisors of each department or area can help in this process by ensuring the degree to which each employee master the predetermined skills. For example, in the case of an insurance company it should be figured out to what extent an underwriter can do the job of a claims manager.

2. ADVANTAGES AND DISADVANTAGES OF SKILL-BASED COMPENSATION

2.1. Advantages of skill-based compensation

The proponents of skill-based compensation suggest that an organization can enjoy great benefits from the use of this compensation system if it aligns its structures in such a way that they will accommodate changes in assessment measures. Some changes such as the decentralization of planning and decision-making, the construction of self-managed teams and the redefinition of strategies to meet the continuous change in work force demographics are mandatory for the success of the skill-based pay.

For a firm that wants to amplify employee motivation and commitment and improves its competitiveness the use of skill-based pay can offer some very important benefits that include:

- **Staffing flexibility.** It is achieved by utilizing the workforce to perform many tasks, not just one. In this way, since employees are trained for an array of skills, they can be easily used to cover for absenteeism or turnover. In other words if almost all employees can work at any point in the production or service process the organization has a much greater flexibility in performing day to day operations avoiding possible bottlenecking, rework or additional hiring problems.
- **A flatter organization structure and increased incentives to acquire knowledge and skills.** This advantage is a result of the skill-based pay

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because the organization enables more people to participate in decision-making (especially in lower levels with the acquisition of additional skills). This gives employees a new perspective and understanding of organizational operations and provides them with the ability to do a number of things that they could not do without this breadth of understanding and perspective. Lawler and Ledford, (1985).

- **A greater sense of commitment to organizational effectiveness that leads to higher quality and quantity productivity levels.** That is of course a direct positive result from the tangible rewards given when employees grow, learn and master additional skills, which in effect enriches their intrinsic motivation. By the same token, when more informed about the different functions of the entire organization they can communicate more efficiently with people of different departments and solve problems because they are familiar with the entire process and can feel other people concerns.
- **Assistance in the implementation of job-rotation and cross training that are essential to self-managing teams.** Lawler, Ledford and Chang, (1993). This in effect can be very helpful in providing employee suggestions for performance improvements since the employees will indicate the "weak points" of every task they perform. In addition to this, employees' interaction with a lot of tasks and operations can help them become more self-managed and autonomous.

2.2. Disadvantages of skill-based compensation

As any new organizational system or procedure, skill-based pay systems have their own disadvantages. The most important ones include:

- **Lack of experience.** As employees learn and want to utilize new skills they will have to move from one job to another and this leads to production losses because, inexperienced employees who want to try their new skills are performing important tasks of the production process. In order to cure such a problem Human Resource Managers could introduce employees slowly into the duties of a new task and always under the supervision of an experienced trainer.

- **Costs.** Since these new systems typically result in higher than average pay and higher training costs than do traditional plans, Human Resource managers must consider the cost factor. A careful cost-benefit analysis should be made and continually monitored. Luthans and Fox, (1989).
- **Topping Out.** This problem appears usually after some years from the time the skill-based plan had been implemented. It simply means that employees exhaust all the necessary skills in an organization and there is nothing else to learn or master. This can be a problem because employees with high aspirations, that constantly challenge themselves with new knowledge, might become dissatisfied and leave the organization. Here the Human-Resource managers should not try to rush employees in learning a lot of skills at once but rather give them enough time to master each skill to prolong the topping out arrival.
- **Outdated skills and Knowledge.** Due to changes in technology some skills learned and mastered by employees may be unnecessary. Computer technology can many times make certain skills obsolete. This creates a problem for the organization that was paying the employees for the particular skills that are not useful anymore, since they were replaced by more innovative procedures. This can be dealt drastically if the organization announces early enough the need for the abandonment of an old outdated skill. This can be done more efficiently if there is an annual review, of the nature of skills and their applicability to the organization's operations, by the Human Resource department.

3. CASES WHERE SKILL-BASED COMPENSATION IS AN ADVANTAGEOUS OPTION FOR HUMAN RESOURCE MANAGERS

From the previous analysis it is more logical to assume that skill-based compensation is most applicable in situations where productivity depends primarily on the collaborate effort of a teamwork of individuals. Most Literature on skill-based compensation claims that manufacturing firm settings are, more likely than service firms, to utilize effectively and benefit more from this kind of compensation, since their technologies require cooperative employee control and management of the production process. Employees

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perform best when they understand the entire process, and organizations with process technologies, often can realize large gains with skill-based pay and a participative culture. The level of their effectiveness depends on the degree to which employees maintain coordination and teamwork, continually engage in diagnosis and problem solving, and understand the "big picture" concerning the production process. Lawler and Ledford, (1985).

Although rarely tried in nonmanufacturing settings, skill-based compensation can work there too. For example, some banks have considered developing a system for branch banking employees as a way of improving customer service. Tellers could be skilled enough to respond effectively to customer inquiries about the rapidly growing mix of products offered by their organizations, and bank personnel could be moved throughout the workday in response to the shifting patterns of customer traffic (Lawler and Ledford, 1985).

In general, where teamwork is not a vital form of production, and workers work independently, skill-based pay may not be of any use. For example, in selling insurance policy contracts, insurance agents act alone and do not need to master any other skills. Their necessary skills are limited to the effective presentation of the proposed policy and the sales closing with the customer.

4. CONCLUSION

Given the rapid technological advancements in organizations' operations and the need for a more participative culture in those organizations, managers of today can utilize the option of Skill-based compensation and align it with the current corporate strategies. As Barbara J. Dewey, Senior Consultant for the Simpson & Company writes, "Skill-based pay implementation is not simply a matter of announcing the program and distributing communication materials. Skill-based is more than a way to deliver pay. It is a way to manage employee performance, direct employee attainment toward the areas of greatest company need, and, ultimately to increase overall company performance". Dewey, (1994).

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