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**Hybrid Data and Text System for Downgrading Sensitive Documents**  
by M. J. Atallah and V. Raskin (with C. F. Hempelmann and D. Mohamed)

Center for Education and Research

Information Assurance and Security

Purdue University, West Lafayette, IN 47907-2086

# **Hybrid Data and Text System for Downgrading Sensitive Documents**

**Victor Raskin, Mikhail J. Atallah,  
Christian F. Hempelmann,  
Dina H. Mohamed**

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[The draft below is still a work in progress. It will be finalized by June 30, 2001, at which time it will obtain a CERIAS TR number and a link from the CERIAS Web site. In the meantime, any feedback on this preliminary draft will be most welcome. Use [vraskin@purdue.edu](mailto:vraskin@purdue.edu) to contact the co-authors by e-mail.—V.R.]

## 1. Introduction

### 1.1 The Problem

Since Executive Order 12958, Classified National Security Information, signed by President Clinton on April 17, 1995, most U.S. Government agencies have faced a monumental problem of declassifying millions of pages of its documentation. Many agencies as well as other organizations and corporations are increasingly facing the need of downgrading or sanitizing information that they need or have to share with their various coalition partners, e.g., within the NATO alliance. Requirements of enhanced security as well as changing technologies and intelligence data make it necessary to revise existing criteria of declassification as well as to doublecheck that the libraries of presumably open documents do not indeed contain any sensitive information. It is equally important to assure that no such information is inadvertently revealed in e-mail and other online communications.

The related security problems can be classified as follows in the increasing order of complexity:

- **weak declassification:** dividing a set of documents into definitely open ones and others, with a reasonable degree of accuracy;
- **strong declassification:** determining the status of each document as unclassified or classified without any margin of error;
- **downgrading/sanitizing:** strong declassification coupled with a seamless modification of each classified document to an unclassified version;
- **on-the-fly downgrading/sanitizing/surveillance:** filtering out electronic communication in real time.

The information in the documents may be presented in at least two different ways, textually and as data, and this proposal will address both of them but not images. Yet another dimension of the problem is provided by the fact that each agency and organization operates in a domain of its own and with a different set of declassification rules. There is also the important educational and training component in the security concerns.

The security problems will be only one in a class of possible applications resulting from this work. Because the addressed research problem is, basically, that of intelligent information retrieval and data mining based on an innovative ontological semantic method of variable-depth penetration into the meaning of the documents, a wide host of important results and possible applications will be enabled by the described work.

### 1.2 State of the Art

The rules of declassification, when compiled, run into many hundreds, and human implementation of declassification is slow and very costly. In downgrading, the rules are often not even codified. There are no rules for compiling a declassified copy. And as to e-mail, no work to our knowledge has been done to filter it on the fly.

In general, the US government requires the following kind of information to be classified (EO 12958):

### **Sec. 1.5. Classification Categories.**

Information may not be considered for classification unless it concerns:

- (a) military plans, weapons systems, or operations;
- (b) foreign government information;
- (c) intelligence activities (including special activities), intelligence sources or methods, or cryptology;
- (d) foreign relations or foreign activities of the United States, including confidential sources;
- (e) scientific, technological, or economic matters relating to the national security;
- (f) United States Government programs for safeguarding nuclear materials or facilities; or
- (g) vulnerabilities or capabilities of systems, installations, projects or plans relating to the national security.

The classification recognizes three levels:

### **Sec. 1.3. Classification Levels.**

(a) Information may be classified at one of the following three levels:

- (1) "Top Secret" shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause exceptionally grave damage to the national security that the original classification authority is able to identify or describe.
- (2) "Secret" shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause serious damage to the national security that the original classification authority is able to identify or describe.
- (3) "Confidential" shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause damage to the national security that the original classification authority is able to identify or describe.

(b) Except as otherwise provided by statute, no other terms shall be used to identify United States classified information,

(c) If there is significant doubt about the appropriate level of classification, it shall be classified at the lower level.

A detailed description of a real-life declassification/downgrading process can be found at: <http://www.dtic.mil/dpmo/foia/index.htm>.

The most relevant portion, if only for the insights it provides into the bureaucratic and general human effort involved, reads:

If the document is classified, the declassifier must determine whose equities exist within the document. Equities are classified information in documents that are originated by a single agency or multiple agencies. Equities contain sensitive information, for example, on sources, methods of collection or on-going operations. Equities may be reviewed and declassified only by the originator(s), and only the originator(s) is/are authorized to release their own documents. When classified equities are redacted (removed), the document is declassified and can continue through the process. If, however, the DPMO declassifier determines that a document contains equities of another agency, the document must be referred (sent) to that agency or agencies for review, declassification and release. Upon an agency's release, the document is returned to DPMO. In some rare cases declassification and release are denied. The DPMO can request a review of the denial but does not have the authority to direct release of the document. The DPMO and other reviewing agencies apply the principles and guidelines prescribed by Executive Order (EO) 12958, Classified National

Security Information (April 20, 1995), for determining the releasability of information.

The final step in the process requires the DPMO declassifier to review the unclassified or declassified document for privacy considerations (b6) and names of other unaccounted-for personnel whose PNOK has denied public release. In either or both cases the privacy information and names are redacted and forwarded to the requester or provided for public access as shown on the Decision Logic.

In partially automatized textual declassification, there have been two primary approaches to the problem. The keyword- based approach is exemplified by the TapUltra-UltraStructure approach developed for the Department of Energy (see NRC 1995, DPRC 2000 in lieu of unavailable regular publications). The approach is based on an assumption that the classified element will appear as an anticipated word or string of words in the text. This assumption is not always correct, and the result is insufficient accuracy which is unlikely to be improvable in principle. The statistical tagging approach cleverly divides the entire corpus of documents into the training and testing subcorpora. Humans tag the training corpus in a variety of ways and divide it into classified and unclassified subsets. A sophisticated statistical procedure attempts then to relate certain tag clusters to the classified nature of a document and to tag the testing corpus automatically as well as to divide it into the classified and unclassified subsets. If this task is achieved with a high degree of accuracy, the approach succeeds (Hochberg 1999, 2000). In reality, however, no accuracy higher than 70-80% has been achieved. We are not planning to work on the improvements of either of these approaches but we will include them in the proposed comprehensive approach in an auxiliary status.

Data products (macrodata or tabular data and microdata or raw data records), are designed to inform public or business policy, and research or public information. Securing these products against unauthorized accesses has been a long-term goal of the database security research community and the government statistical agencies. Solutions to this problem require combining several techniques and mechanisms. Recent advances in data mining and machine learning algorithms have, however, increased the security risks one may incur when releasing data for mining from outside parties. Issues related to data mining and security have been recognized and investigated only recently. We have been dealing with the problem of limiting disclosure of sensitive rules (see Atallah et al. 1999a). In particular we attempt to selectively hide some frequent itemsets from large databases with as little as possible impact on other (non-sensitive) frequent itemsets. We will do it both computationally and in combination with the ontological semantic framework.

The following three steps emerge as the integral parts of downgrading a document from the above discussion:

**1. defining illegal information** (discussed briefly in 2.1)

**2. analyzing the text** (discussed extensively in 3.)

The main part of this report will carry on the discussion on partial semantic analysis. The main assumptions are that we need to analyze the only partially with the NLP application based on ontological semantics, that keyword search will only be useful in a supplementary role to trigger the partial ontology-based analysis.

**3. downgrading the text** (discussed in 4.)

The downgrading includes the following two steps:

- a. deleting any contents of the slot (and possibly all subslots contained therein: is this really necessary. It seems that it is too costly in terms of damage done to the text. We need to find a method to define more discretely what has to be purged and what hasn't.), or
- b. generating new text to:

- replace the contents of the slot a with more generic filler, and possibly
- add other types of masking texts in gaps created by deletions

### 1.3 Ontological Semantic Approach

The existing approaches share an important principle: They do not try to follow the declassification rules for human workers because, of course, humans understand the rules and these approaches do not. The proposed ontological semantic approach, both for text and for data, is based on the computer understanding of the information, which does make it possible to follow the prescribed declassification rules in every sensitive detail as well as to dynamically modify these rules. The impression that understanding a text automatically is either impossible in principle or is “decades down the road” prevailed for decades but it ignores the new technologies of the 1990s that have provided a breakthrough in computational semantics, and our approach will take full advantage of that.

The ontological semantic approach (see Nirenburg and Raskin 2001a,b) uses three major static resources, the lexicon (see Nirenburg and Raskin 1987, 1996 and Viegas and Raskin 1998), the ontology (see Mahesh 1996), and the text-meaning representation (TMR) language (see Onyshkevych and Nirenburg 1995). The lexicon contains words of a natural language, whose meanings are explained in terms of an ontological concept and/or its property. The ontology contains a tangled hierarchy of concepts, each containing a set of properties with filler specifications (see the simplified example below). The TMR language composes the sentential meaning out of ontological concepts and their properties evoked by the words of the sentence with the help of a special formal syntax.

A set of such resources, consisting of a number of large-scale lexicons for English and a dozen other languages, the language-independent large-scale ontology, and a specific TMR syntax, was developed for MikroKosmos, the first comprehensive knowledge- and meaning-based system of machine translation developed at the Computing Research Laboratory at NMSU in collaboration with the Purdue Natural Language Processing Laboratory, as well as for a family of other NLP projects dealing with information retrieval, summarization, data mining, and other NLP applications.

The approach has been implemented in a number of domains. One purpose of the proposed research is to advance the approach further by enlarging both the domains of its application and the scope and detail of coverage by expanding both the ontology and the English lexicon as well as perfecting the methodologies for lexical and ontological acquisition and providing more detailization for TMR syntax. Another purpose is to develop an innovative approach for partial use of the ontological semantic approach for selective TMR representation, TMR-lite, as it were.

Table 1 below summarizes the ways the ontological semantic approach adjusts to address the issues of declassification:

#### *The Use and Adjustment of Ontological Semantic Resources for Declassification*

<i>Resource</i>	<i>Degree of Use</i>	<i>Comments; Adjustments for Classification, If Necessary</i>
<i>Ontology</i>	<i>Partial</i>	<i>Use for crucial terms and concepts only; possible addition of a few domain-specific nodes and/or properties of nodes</i>
<i>Lexicon</i>	<i>Partial</i>	<i>Use for crucial terms only; possible but rare addition of a terminological lexical entry or</i>

<i>TMR</i>	<i>Partial to full</i>	<i>sense</i> <i>Use primarily for critical terms but ready for any paraphrase; no adjustment anticipated</i>
<i>Analyzer</i>	<i>Partial to full</i>	<i>Full readiness for any paraphrase</i>
<i>Generator</i>	<i>Partial</i>	<i>Downgrading and surveillance only</i>

## 2. Defining the illegal information

As noted above (see 1.2), the first step of deciding which information is required to be replaced or eliminated in order for a document to be reclassified or downgraded is the task of the customer. He or she has to decide on the type and tokens of information that are not to be part of the text meaning. This step is completely dependent on the specific downgrading task at hand and hardly generalizable. The definition of illegal information must be translated into ontological concepts.

Let us consider a hypothetical example, in which the system is instructed to allow mentions of nuclear submarines but not their specific deployment, reactor capacity, or mode of refueling.

Focusing just on the first of these for the moment, instructing the computer to look for *nuclear submarine* and *deploy* in the text will fail the instruction in many different situations, e.g., when both occur in the text but not in the same sentence or adjacent sentences, and *deploy* does not pertain to the vessel. At the same time, the classified information may be given without using any form of *deploy* but rather with such words as *location*, *is*, or even simply *at*. It is very hard to anticipate all the synonymic substitutions and paraphrases as well as permitted uses with just key-word combinations.

### 3.1 Analyzing the text through ontological semantic

One would think that simple syntactic parsing will solve at least the question of whether *deploy* pertains to nuclear submarine in a sentence. But, besides the fact that syntactic parsing needs then to be used globally and rather expensively, it will misinterpret such a simple sentence as *Nuclear submarines will be deployed nearby to support ground forces in case of military emergencies.*

In case of the occurrence of *nuclear submarine* in the three narrowly defined contexts, this is how the system utilizes the resources. When the analyzer spots *nuclear submarine* or even just *submarine* in a sentence, it immediately evokes the appropriate lexical entry, which, in turn, produces the corresponding ontological concept, which will look, in much simplified form, as follows:

<i>SUBMARINE</i>	
<i>(isa</i>	<i>warship)</i>
<i>(theme-of</i>	<i>build, commission, decommission, deploy, destroy, attack)</i>
<i>(instrument-of</i>	<i>attack, support, transport, threaten)</i>
<i>(manned-by</i>	<i>naval crew)</i>
<i>(propel-mode</i>	<i>surface, sub-surface)</i>
<i>(engine-type</i>	<i>nuclear-engine)</i>
<i>(range</i>	<i>N &lt; x &lt; M)</i>
<i>(speed</i>	<i>K &lt; y &lt; L)</i>
<i>(current-location</i>	<i>body-of-water and/or geographic point and/or coordinates</i>
	<i>and/or relative, time-range)</i>



<i>(prior-location</i>	<i>body-of-water and/or geographic point and/or coordinates</i> <i>and/or relative, time-range)</i>
<i>(next-location</i>	<i>body-of-water and/or geographic point and/or coordinates</i> <i>and/or relative, time-range)</i>
<i>(current-mission</i>	<i>Z)</i>

Most of the slot fillers (as well as some of the slot names) are ontological concepts as well. In full MT and other applications, the analyzer attempts to utilize the syntactic structure of the sentence and the lexical items in it to fill all the slots it can. In the proposed system, it is interested only in the filler for the location slots and perhaps, more narrowly, only the CURRENT LOCATION (as well in the TYPE-OF-ENGINE slot if its filler is NUCLEAR-ENGINE - this will be established immediately if the triggering string is *nuclear submarine*; if it is just *submarine* the analyzer will look around for *nuclear* or equivalents). If the slot is empty, the red flag will not come up and the text will be passed down unmodified--unless any one of the other two restricting contexts is present.

The system cannot access the other two contexts from the SUBMARINE concept alone but it can from the concept of NUCLEAR-ENGINE used as the filler for TYPE-OF-ENGINE property slot. The property slots for NUCLEAR-ENGINE will include REACTOR-CAPACITY and REFUEL-MODE, and if the analyzer succeeds in filling either of these slots, the sentence (or, depending on the downgrading instructions, the entire document) will be barred from the downgraded version.

In this example, we have to go one level below the ontological concept itself for the one context and two levels for the other two. In principle, the depth of meaning penetration is infinite, but just like in the inference search in artificial intelligence, we will have to limit the depth we utilize. At this stage, we are considering limiting it to 3, with a possible enhancement to 5 later on.

It is notable that the same approach is easily and pretty obviously applicable to non-textual data as well simply because they are also anchored in the ontology: in other words, there are ontological concepts which correspond to each item in a database.

This report will continue to document the initial research towards a methodology for implementation of the system on a proof-of-concept basis. The focus will lie on the outline of a minimal analysis application.

Almost all changes in our earlier sample analyses pertained to actual lexical items, because we defined the information to be filtered that way. We focussed on individual lexical units or groups of them to be purged and thus could have worked with the simple keyword search procedure instead of requiring any understanding of the text.

## **3.2 Minimal Analysis**

In this section we will present four case studies that will illustrate different facets of the minimal analysis approach and its overall feasibility.

### **3.2.1 Super Bowl 2001**

Let us consider a detailed report on a sports event, for example the 2001 Super Bowl, and considering any information that makes one of the two teams identifiable as illegal. To make the task even harder, we choose the winning team, the Baltimore Ravens, and

downgrade a Reuters after-game report published in the sports news section of yahoo.com on 1-29-01.

We assume that the recipient of the sanitized version of the reports has access to all previous coverage on the NFL, but no knowledge of who made it to the Super Bowl or won it.

The obvious references that identify the winning team are [replacement choice is given in square parentheses, omission is indicated by Ø]

1. the team's name: Ravens [the winning team; the team; Ø (when used as premodifier or in an adjunct prepositional phrase)]
2. the team's base (mostly used metonymically): Baltimore [the winning team; the team; Ø (when used as premodifier or in an adjunct prepositional phrase)]
3. names of players: Ray Lewis, Shannon Sharpe, Jamal Lewis, Peter Boulware, Trent Dilfer, Duane Starks, Brandon Stockley, Matt Stover [Ø (when used as premodifier or in an adjunct prepositional phrase); position they play, e.g., linebacker, quarterback, tight end; player; winning team's player; winning team (when player is part of the body of the team)]
4. references to player's past
  - a. football performance and status: "Shannon Sharpe, who won his third Super Bowl in four years;" "Rookie running back;" "one year after being run out of town by the local Buccaneers for not being good enough to take that team to a Super Bowl;" or
  - b. private life: e.g., Ray Lewis' indictment of murder: "one year after being arrested and spending 15 days in jail in connection with a double murder on the night of last year's Super Bowl;" [Ø] "who was later cleared of the charges," [Ø]; and his age and Christian faith: "Lewis, 25, who added that he believed that God, ``never will take you through Hell without bringing you to triumph." " [Ø]; "After everything he has been through;" [Ø]
5. names of other people involved with the team: Art Model, Brian Billick [Ø (when used as premodifier or in an adjunct prepositional phrase); function they have in team (owner, coach)]
6. reference to these people's past: "his first Super Bowl championship in 40 years as an NFL owner" [Ø]; "who guided his team to a Super Bowl in just his second season as head coach;" [Ø]
7. reference to team's past and/or typical performance: strong defense [performance in general]: "Best Defense Ever" [Best Performance Ever] "record-setting defense" [Ø]; "the Ravens allowed a mere 23 points total, hard facts to back up their claims that they might be the best NFL defense of all time." [the team performed extremely well]; "Someone tell me they're not, [the best NFL defense of all times]" [someone tell me they're not a good team]; "we're the best defense ever to play this game" [we're the best team to ever play this game]; "Baltimore's smothering defense"[the winning team's outstanding performance];

The following analyzes the depth in which the information is embedded in relation to the matrix concept "TEAM" from the ontology:

1. the team's name: sidestep to the onomasticon
2. the team's base: LOCATION (1 level)
3. names of players: MEMBER (1 level)
4. references to player's past
  - a. football performance and stats: ATHLETE-MATCH-STATS subclass of SPORTS-RESULT-COMPONENT result-measure of SPORTS-RESULT agent of which is TEAM (3 levels)
  - b. private life: TEAM has MEMBER ... (2+ levels): "one year after being arrested and spending 15 days in jail in connection with a double

murder on the night of last year's Super Bowl;" TEAM has MEMBER is involved with MURDER (path not found, MURDER not in database); and his age (2 levels) and Christian faith (3 levels): "Lewis, 25, who added that he believed that God, ``never will take you through Hell without bringing you to triumph." "

5. names of other people involved with the team: TEAM has OWNER, has COACH (1 level)
6. reference to these people's past: (see 4.)
7. reference to team's past: (see 4).

Types of information in this example that are hard to identify are cases of metonymy. Easier to block is any look up in the onomasticon, which could be replaced by the corresponding ontological concept.

### 3.2.2 "I Have a Dream"

Another complex task of downgrading would be sanitizing Dr. Martin Luther King, Jr.'s famous "I Have a Dream" speech from any reference to African-Americans as the oppressed segment of society for whose liberation he pleads.

For the sake of making this task at all feasible, we assume certain facts about the possible world in which this kind of sanitizing might be necessary. "Segregation" is assumed to stand for the distinction of any segment of the population from the rest of it and accordingly not taken out. The use of the word "race" in the United States is taken to stand specifically for the distinction between what is assumed to be the different "white" and "black races." For all other distinctions "ethnicity" seems to be the preferred term. Accordingly, "race" is eliminated.

Any reference to the struggle of African-Americans in the recent history of the US is assumed to be unavailable to the target audience of the downgraded document. The audience is to assume that African-American emancipation was completed successfully in the 19th century. The speech is to be presented as a document of the ongoing struggle for freedom of any oppressed citizen typical for a country based on freedom, like the United States.

The following changes are needed:

#### *Generalization:*

- Fivescore years ago > In the past
- Nineteen sixty-three > This year
- the Emancipation Proclamation > important documents
- Negro slaves > oppressed citizens
- Negro > oppressed citizen
- racial justice > justice
- the Negro community > the community of oppressed citizens

#### *Defocusing:*

- black men as well as white men > all men
- her citizens of color > some citizens
- the Negro people > some of its people
- white brothers > brothers
- white people > members of the oppressing segment of our society
- a biracial army > an army of all citizens
- civil rights > liberty
- ghetto > segregated area
- Negro spiritual > song
- the state of Mississippi > the worst state

- the color of their skin > any criterion used by bigots
- the South > the more oppressive areas

As concepts are still being added to the ontology, we may propose the following concepts to be added in order to help us make the necessary changes:

**Concept: African-American**

Definition An American of African ancestry; an Afro-American  
 IS-A SOCIAL-ROLE  
 Subclasses NEGRO  
 AGENT-OF EVENT  
 THEME-OF EVENT  
 AGE (> 0)  
 COLOR BLACK

**Concept: NEGRO**

DEFINITION A member of a major human racial division traditionally distinguished by physical characteristics such as brown to black pigmentation and often tightly curled hair, especially one of various peoples of sub-Saharan Africa.  
 IS-A S OCIAL-ROLE  
 AGENT-OF EVENT  
 THEME-OF EVENT  
 EXPERIENCER-OF OP PRESSION  
 COLOR black  
 LOCATION P LACE

**Concept: OPPRESSION**

DEFINITION the act of subjugating by cruelty  
 IS-A S OCIAL EVENT  
 INVERSE-OF EMA NCIPATION  
 LOCATION P LACE  
 RESULT-OF racial injustice  
 RESULT SL AVE  
 REASON COLOR  
 TIME (> 0)

Thus we can use these concepts to find the path between them and the matrix concept 'AFRICAN-AMERICAN' as follows:

1. 'negro' is found as a SUBCLASS of *AFRICAN-AMERICAN* ( 1 level).
2. 'emancipation' is (3levels) from the matrix concept:

*AFRICAN-AMERICAN*  
 SUBCLASSES NEGRO  
*NEGRO*  
 EXPERIENCER-OF OP PRESSION  
*OPPRESSION*  
 INVERSE-OF EMA NCIPATION

3. all references to time are (3 levels) from the matrix concept:

*AFRICAN-AMERICAN*  
 SUBCLASSES NEGRO  
*NEGRO*  
 EXPERIENCER-OF OP PRESSION  
*OPPRESSION*  
 TIME

4. any reference to race is ( 3 levels ) from the matrix concepts:

*AFRICAN-AMERICAN*  
 SUBCLASSES NEGRO

- NEGRO*  
 EXPERIENCER-OF OP *PRESSION*  
*OPPRESSION*  
 RESULT-OF racial                      injustice
5. references to places are (3 levels) from the matrix concept:  
*AFRICAN-AMERICAN*  
 SUBCLASSES NEGRO  
*NEGRO*  
 EXPERIENCER-OF OP *PRESSION*  
*OPPRESSION*  
 LOCATION
6. 'color' is ( 3 levels ) from the matrix:  
*AFRICAN-AMERICAN*  
 SUBCLASSES NEGRO  
*NEGRO*  
 EXPERIENCER-OF OP *PRESSION*  
*OPPRESSION*  
 REASON CO                      LOR

Thus we can handle almost all changes that we need to make by only using these three concepts which are all accessible using the matrix concept *African-American*.

### 3.2.3 Dartmouth Murders

The text is taken from the Washington post archive section. It's about a murder that two teenagers committed at their school. They tried to escape after committing the crime, but they were caught.

Let's suppose that we are allowed to talk about the general situation: that there are two suspects who tried to escape, as well as how they were caught. But we're not allowed to mention anything that helps to reveal their identities, age or the nature of the crime. This means we should suppress any items that have to do with this information, directly or indirectly.

For example, we have to delete the name 'Casey Purcell', simply because people knowing Purcell might know his friends and thus can figure out the identity of the suspects.

#### **We have to make the following changes:**

1. The following changes are made to hide the identity of the suspects:
  - a. names of the suspects:  
 replace 'Tulloch' with 'the first suspect,' replace 'Parker' with 'the second suspect'  
 replace 'Tulloch and Parker' with 'the suspects'
  - b. concepts indicating their age:  
 replace 'teenagers,' 'youths,' and 'boys' with 'the suspects'
  - c. any information about their lives, e.g. their school, where they live, their friends.  
 delete 'Robert Tulloch, 17, a high school honors student in Chelsea, Vt., and classmate James Parker, 16,' delete 'Casey Purcell,' delete 'Chelsea,' 'Dartmouth,' 'of Hanover,' 'from Vermont': (though we are not directly required to suppress the information about where the crime took place, we have to do so, because people could easily relate this information to the information we need to suppress.)
2. the following information are needed to hide the nature of the crime:

- a. nature of the crime, e.g. 'killings,' 'murder,' 'slayings,' 'stabbings'  
 replace 'the killings' with the generalized term 'the crime'  
 delete 'from charges of first-degree murder in the Jan. 27 slayings of Half Zantop, 62, and his wife, Susanne, 55, in Hanover, N.H.'  
 delete 'The suspects have been accused of repeatedly stabbing the professors in the head and chest.'
- b. the expected punishment:  
 delete the last paragraph: 'New Hampshire authorities said Tulloch will automatically be charged as an adult and will face up to life in prison without parole if convicted. A hearing will have to be held for Parker to certify him as an adult because he is only 16.' (by talking about the expected punishment, it could be figured out that the crime was a murder.)

The following shows how we can use our approach in identifying the information we need to suppress. This information can be found as slot fillers of the matrix concepts: 'company' ('CORPORATION') and 'crime' ('FELONY').

1. names of the company and of the neighboring company are found (1 level) from *CORPORATION* as the filler of the slot HAS-NAME.
2. names of the victims and the name of the suspect are found (2 levels) from *CORPORATION*  
 HAS-MEMBER HUM AN  
 HUMAN  
 HAS-NAME
3. all descriptions of the suspect are (2 levels) from *CORPORATION*:  
 HAS-MEMBER HUM AN  
 Then *HUMAN* has AGE, HEIGHT, WEIGHT, and FATTINESS.
4. type of business (e-business) is found (3 levels) from *CORPORATION*:  
 AREA-OF-BUSINESS-ACTIVITY WOR K-ACTIVITY  
*WORK-ACTIVITY*  
 AREA-OF-ACTIVITY FIEL D-OF-STUDY  
*FIELD-OF-STUDY*  
 SUBCLASSES
5. the state and places and cities in this state could be found (1+ levels) from *FELONY* as the fillers of LOCATION.
6. names of people and officers living in the state can be found (3 levels) from *FELONY*:  
 LOCATION P LACE  
*PLACE*  
 HAS-MEMBER HUM AN  
 HUMAN  
 HAS-NAME

Here also by just using two matrix concepts we can make all the needed changes.

### 3.2.4 7 Die in Massachusetts Office Shooting

This is another crime text taken from the Washington post archive. An employee shot dead 7 co-workers in the offices of an internet company. We need to suppress any information that shows in which state and company this accident took place ( maybe to save the reputation of the company).

Thus not only we would suppress the occurrence of any information about the place of the accident, but naturally, we would have to suppress the identification of the suspect as well, thus taking out or replacing any description of the suspect.

**Changes to be made:**

1. to hide the state where the crime took place:
  - a. names of the officers and people living there, for example, knowing that Doherty is the police chief of this place could lead to knowing which state it is:
    1. delete the names when they are mentioned for the first time (when they are written in full, first and last name):  
'Martha Coakley,' 'Stephen Doherty,' 'Mike Stanley,' 'Ron Fuccilo,' 'Nancy Pecjo,' 'Shirley Singleton,' 'Saburo Imura,' 'Michael Brownson'
    2. replace the names with their position when only the last names are mentioned:  
'Coakley' with the county district Attorney,' 'Doherty' with 'the Police Chief',' 'Stanley' with the team project leader,' 'Fuccilo' with 'the chief financial officer,' 'Singleton' with '(the company's) chief executive,' 'Imura' with 'the condo's owner,' 'Haverhill' with 'another place,' 'Brownson' with 'the insurance agency owner,' 'Pecjo' with 'an employee' or 'the employee.'
  - b. any mentioning of cities or places in the state:  
delete 'Wakefield,' 'Mass ', 'Middlesex,' 'Boston,' 'East Weymouth,' 'Monica ,'  
'Marjorie Richardson,' 'St. Joseph's'  
' known as Harvard Mill'  
'Located on the fringe of the high-tech corridor that rings the city, Wakefield is a picture- postcard New England town with a small lake for windsurfing in the summer and homes dating to the 18th century.'  
'in the Wakefield area far from East Weymouth'
2. to hide in which company this shooting took place :
  - a. the identity of the suspect because this could easily be used to figure out which company it is:  
delete ' Michael M. McDermott ', or replace ' Michael M. McDermott ' with ' the suspect'  
delete ' described as a large man who stands 6-foot-2 and weighs nearly 300 pounds '  
delete 'was a big guy with a beard'  
delete 'who has worked as a software tester at the company since at least March':
  - b. names of the victims  
delete 'The victims were identified as Jennifer Bragg-Capobianco; Janice Hagerty, a receptionist; Louis Javelle; Rose Manfredi, 49, an accountant; Paul Marceau; Cheryl Troy, human resources director; and Craig Wood, 29. Hometowns and some ages were not immediately released, AP said.'
  - c. name of the company:  
replace 'Edgewater' with 'the company'  
delete 'in the first-floor offices of Edgewater Technology Inc., an Internet consulting firm about 10 miles north of downtown Boston.'
  - d. any indication that the company is an internet company:  
replace 'e-business' with 'this kind of business'  
delete 'internet,' delete 'in the offices of a suburban Boston Internet company'
  - e. name of the neighboring company:  
replace 'Select Appointments North America' with 'the firm'

The following shows where the information that we need to suppress are found in the ontology in relation to the concept MURDER ('*FELONY*):

1. type of the crime should be found in SUBCLASSES (1 level) from *FELONY* (but it is not there yet).
2. the place of the crime is found ( 1 level ) from *FELONY* as the filler of LOCATION.
3. information about the suspects all begin with:

*FELONY*

AGENT H

UMAN

Then the different information are found in different paths from *HUMAN*:

a. names of the suspects ( 2 levels ) as fillers of HAS-NAME.

b. their age (2 levels ):

AGE

c. their friend's name (3 levels ):

INTIMATE-WITH H

UMAN

HAS-NAME

d. their city of origin ( 2 levels ):

HAS-RESIDENCE-CITY

e. their location (2 levels ): LOCATION

In this section, we discussed four case studies and proposed a minimal analysis based on the ontological semantic approach.

In the following section, we will discuss some of the problems that we may face if we only adopt the minimal analysis. We will also show that these problems can be handled if we adopted a sophisticated level of analysis.

### 3.3 Sophisticated Analysis

#### 3.3.1 Problems

There are two types of problems that were encountered: those that have to do with literal meaning and those that have to do with non-literal meaning.

Let us have a look at those related to literal meaning. A basic problem is determining the exact circumscription of the part to be deleted or replaced. To hide some kind of information, we need to suppress any element that might help others to figure out this information. But to do this, we might need to delete or replace one or more words, sentences, or paragraphs. Thus how can we set our tools to cut or replace all and only the parts that have to do with this information? Also, how can we determine what kinds of modifications we need to make after suppressing the information we need to suppress in order not to destroy the structure of the text? For example, deleting '*Vermont*' in "*A friend of the first suspect from Vermont, told investigators the two suspects left in the days after the crime, returned two or three days later and then left home again.*" should be followed by deleting '*from*' because '*from*' cannot stand alone without a complement. After identifying the textual element or elements that have to be sanitized, the downgrading component of the system needs to have the syntactic knowledge that only complete phrases and only those that are adjuncts, not complements, to other constituents, can be deleted without replacement.

Another problem is the generality of the type of illegal information. For example, in the *Super Bowl 2001* report the identity of the winning team can be inferred from almost any detail of its components and their past. If a document is downgraded for a type of information that was the purpose for its creation, replacements and omissions bereave it of much of its information value. In the Super Bowl example, 'the team performed extremely well' is a rather bland general substitute for the original 'the Ravens allowed a



mere 23 points total, hard facts to back up their claims that they might be the best NFL defense of all the time.’

The problem of the *I have a dream* text is the specific format of the text, a linguistically not clearly describable set of features that constitute its rhetorically high status. For example, some repetitions not present in the original document will stand out here (“*oppressed citizens*”), while the erasure of rhetorically motivated repetition will diminish its impact (“*let freedom sing...*”).

In sum, even with literal use of language, we have a number of yet unsolved issues:

1. Not everything can be deleted or replaced in a sentence, only elements clearly circumscribed syntactically are interchangeable.
2. Information can lie at the “core” of a text, that is, the purpose of the text has been to relate that very information and elaborate on facets of it. This “central information” is obviously hard to obscure.
3. If too much information is deleted or replaced it becomes obvious that the text has been tampered with.
4. If the text is of any poetic or rhetoric nature, any change to the wording will affect it negatively. In view of the expected clients for this application this latter effect is hopefully of minor significance.

Secondly, we have the problems of non-literal language. The following example shows the importance of inferences.

*I just read about the wedding of Michael Douglas and Catherine Zeta-Jones. It was beautiful, and I don't for one minute resent the money they spent. Then I came to the story of Sal Dimiceli and the poverty in Pembroke Township. Thank God for people like Mr. Dimiceli, who has the wealth and spreads it around.*

This excerpt is taken from the mail section of a popular magazine.

The importance of non-literal language is very obvious here. If we depend on the literal meaning, we would say that the reader doesn't object to the wedding at all (“*It was beautiful, and I don't for one minute resent the money they spent*”). And we wouldn't figure out what the relation between this situation and the following one (of Dimiceli) is.

To interpret the attitude of the author of the letter correctly, we need real-world knowledge as well as knowledge of the context. This is provided to a sufficient degree by the TMR analysis, but it requires more than just locally triggered analysis. We will discuss this issue in the following section

### **3.3.2 Proposed Solutions**

#### **3.3.2 Proposed Solutions**

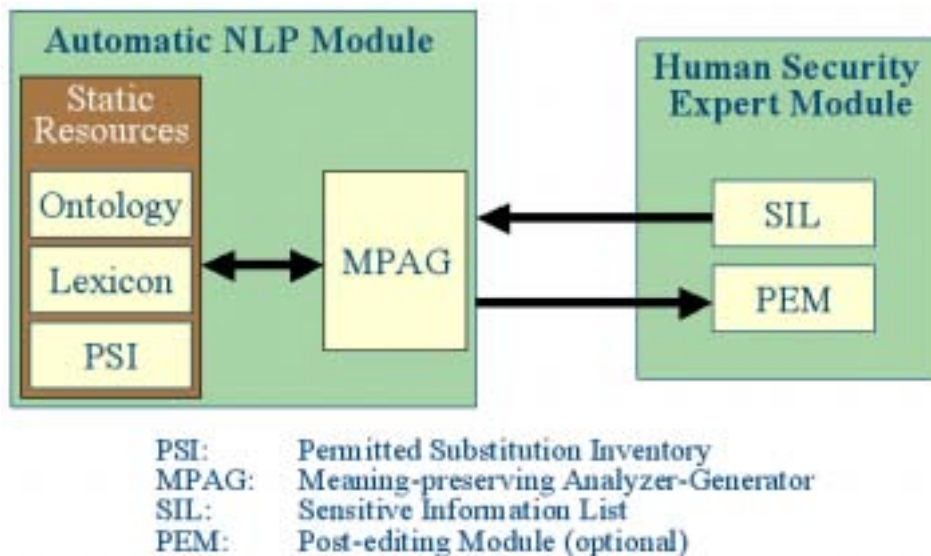
Given a matrix concept about which certain information cannot be revealed, if we know what surfacing of subslots and in what combination makes the illegal information available, we can explicitly search for that. For example, for the quarterback of a football team, if his previous illegal activities are not to be revealed, than any mention of such activities with the quarterback as agent would qualify as an entry for this case of downgrading task.

It will be shown that these problems can be handled too, albeit in a more costly fashion, because we need to add different modules to the analyzer. An approach that makes use of different levels of sophistication is suggested to identify instances of illegal information.

A full analysis of the section would be required. And without limiting the scope of the analysis at all, the full text, in this case of the popular magazine, would have to be analyzed, to make sure we have all necessary information to infer the attitude of the author of the letter. This is exactly what we want to avoid, because it is too costly.

A first step to minimize the damage posed by this issue is that when the minimal analyzer is unable to handle a passage, we circumscribe a limited amount of surrounding text to be fully analyzed into the TMR. This would go beyond the slots of an individual concept as in the standard minimal analysis, but for practical purposes would be restricted to the text in the same paragraph or within five sentences above and beyond the uninterpretable passage, whatever encompasses less text.

In sum, we have to temporarily abandon the idea of minimal analysis and take one or both of the following routes: We either have to do a full semantic analysis, but in order to minimize the cost, we must circumscribe a relevant text portion in order not to have to extend this full analysis to the whole text. Or we have to step down from the automatized analysis and involve postediting. The interaction of modules of the sophisticated analysis is summarized in the following graphic:



#### 4. Downgrading the text

We have decided on general strategies as a goal in downgrading texts. First, we should suppress any illegal information. This is predictable since this is the main goal of downgrading. As we indicated above, deciding what kind of information is illegal is the task of the customer. Second, we should keep as much of the original wording as possible when rewording is necessary. Third, when we have to reword, we should try to keep the changed wording as consistent as possible throughout the text. Finally, after suppressing a certain kind of information, we should make the necessary modifications to make up for any damage done to the text. An example of such modifications is the combination of sentences or phrases which share information.

These strategies involve changes of the general three kinds of changes listed below:

- a) The relevant word or phrase is simply deleted. This is only possible, when the remaining text does not require the item at hand for syntactic or semantic purposes.

Deletion can be of a single lexical item, more than one lexical item, a whole sentence, or even a whole paragraph, e.g.

According to press reports, the missing computer hard drives contain the so-called safe and arming information DOE's nuclear emergency safe team has on all nuclear weapons, both ours and theirs.

According to press reports, the missing computer hard drives contain the so-called safe and arming information DOE's team has.

Here we omit any items that show that the information on the hard drives are concerned with nuclear secrets of the country.

The principal role of Joint Task Force Flexible Anvil was to execute a limited strike option using *Tomahawk Land Attack Missiles* [...].

The principal role of Joint Task Force Flexible Anvil was to execute a limited strike option using *missiles* [...].

Here the additional replacement of the capitalized letter at the beginning of "missile" must be taken care of.

b) The relevant word or phrase is replaced by a more generic synonym. This is analogous to taking one or more steps upward in the ontology. E.g., if no specific weapon system should be mentioned, any such instance can be replaced by the generic term "weapon system:"

This was helped, in part, by the addition of the *C-17* to the strategic airlift fleet.  
This was helped, in part, by the addition of the *new transport aircraft* to the strategic airlift fleet.

The information that the C-17 is a member of the class of transport aircraft must be known to the program, that is, stored in the onomasticon, as well as that it is a new addition to the arsenal.

The term "low-incidence disability" means a visual or hearing impairment, or simultaneous visual and hearing impairments, a significant cognitive impairment, or any impairment for which a small number of personnel with highly specialized skills and knowledge are needed

The term "low-incidence disability" includes certain sensory impairments, a significant cognitive impairment, or any impairment for which a small number of personnel with highly specialized skills and knowledge are needed

c) Additions would be required to compensate for the deletion or replacement of items which need some other items to complete the syntactic or semantic structure. The most regular examples are the additions of articles. Rarely we need the addition of a clause, e.g.,

The navy will maintain 11 aircraft wings, 12 amphibious ready groups, 12 aircraft carriers, 55 attack submarines, and 116 surface combatants. Compared to 1999, the number of aircraft carriers and amphibious ready groups remain at 12, surface combatant ships active and reserve remain at 116, and there are 2 fewer attack submarines.

The navy will maintain aircraft wings, amphibious ready groups, aircraft carriers, attack submarines, and surface combatants.

There will be a number of aircraft carriers and amphibious ready groups, surface combatant ships active and reserve, and there are attack submarines.

We have to add text to compensate for the deletion of the clause in order to complete the syntactic structure.

Not taking into account the problems of identification of the individual items that have to be deleted, of the 77 downgrading changes in a 194 pages document 46 were simple omissions and 31 replacements with more generic terms. None required adding text to compensate for missing material. Only ten of the changes involve minor adjustments of the surrounding text, e.g., capitalization.

## 5. Conclusion

The proposed approach for downgrading uses degrees of automation. First we have the manual stage. Here we define illegal information, we determine what is classified and how it should be treated. Then we have an optional post-editing step, where we double-check that the automatic NLP module did everything right. Second, we have the automatic stage where we find the NLP implementation. This stage consists of all the modifications of the sensitive (illegal) data as per human definitions above.

## 6. Appendix

### 6.1 Super bowl 2001

#### a. downgraded text:

##### **Winning Team Back Up Boasts with Super Bowl Demolition**

*By Bill Berkrot*

TAMPA, Fla. (Reuters) - The brash winning team backed up their boasting and then some, scoring on offense, defense and special teams to record a crushing 34-7 victory over the New York Giants in Super Bowl XXXV Sunday.

The team did what it has done all year, shut down the opposition, force turnovers and dominate the game from start to finish.

The team's sensational linebacker was named the game's Most Valuable Player.

The linebacker had seven tackles, tipped passes, harassed New York quarterback Kerry Collins and seemed to be everywhere at once, keeping the Giants from going anywhere.

"If you put this in a storybook, nobody would believe it," said the linebacker.

"What a day for the linebacker," said the team's tight end. "He deserves this."

The team had the audacity to predict their performance could shut out the Giants. They just about did as New York managed its lone touchdown on a Ron Dixon kickoff return.

"This win is something they can't take away from us," said the beaming linebacker.

"We're the best ever."

The linebacker had help from the team's other players in giving the owner the Super Bowl championship.

The team's running back ran 27 times for 102 yards and one touchdown and another player ran back a kickoff 84 yards for a score.

Best Performance Ever

In four post-season games on the way to their first championship, the team performed extremely well.

"Someone tell me they're not a good team," said the coach. "I'll argue it to the death."

Added the team's other linebacker: "We proved to the world we're the best team ever to play this game."

The game also marked a storybook homecoming for its quarterback, who led his team to the championship in Tampa.

"If you face adversity head on, this is what you come out with on the other end," said the quarterback, holding the Lombardi trophy over his head. "I've never felt anything this good."

The quarterback completed 12-of-25 passes for 153 yards and a 38-yard first-quarter touchdown pass that got the rout underway.

**Collins Nightmare**

Collins, just two weeks after enjoying the game of his life in leading New York to a 41-0 romp over Minnesota, endured a nightmare day.

He tied a Super Bowl record by throwing four interceptions, including one that was returned 49 yards by a player of the winning team for a touchdown. He threw several more passes that were nearly picked off as the Giants turned over the ball five times.

"This is the most disappointing loss I've ever been involved with," Collins said. "There wasn't a whole lot good about what I did today."

The Giants were forced to punt a Super Bowl-record 11 times, another example of New York's futility in the face of the winning team's outstanding performance.

"This is a hard one to swallow right now," said Giants coach Jim Fassel. "I thought we would play much better."

The predicted struggle appeared to be taking shape in the first quarter. But even early on the winning team seemed to have more intensity as they continuously pinned the Giants deep in their own end.

"It was going to be a field position battle, it was going to be a turnover battle and we lost both of those," said Giants defensive end Michael Strahan.

Predictions that the first team to score would win did hold up. But no one could have imagined that the winning team could add 27 points to that first touchdown.

An apparent game-tying score by New York in the second quarter, when Jessie Armstead intercepted a pass and ran untouched into the end zone, was nullified by a penalty and things just went downhill from there for the Giants.

"That was a big play," said Armstead. "It was a play that probably changed the game. It got called back and you have to live with it."

The winning team added a field goal with 1:48 left in the half for a 10-0 lead, and a desperate attempt by the Giants to put points on the board before intermission ended with a Collins interception near the goal line.

With 3:58 left in the third quarter, disaster struck again for the Giants as the winning team's interception that made it 17-0.

Dixon's Super Bowl record 96-yard kickoff return finally gave the Giants something to celebrate. It could not have been a more short-lived celebration, however, as the winning team returned the very next kickoff for a touchdown and a 24-7 lead in a stunning exchange.

The winning team added a 3-yard touchdown run in the fourth quarter and a 34-yard field goal to complete the rout.

"We had a great year but almost all of it is forgotten because of this," lamented Armstead. "I'm hurting."

## **b. original report:**

### **Ravens Back Up Boasts with Super Bowl Demolition**

*By Bill Berkrot*

TAMPA, Fla. (Reuters) - The brash Baltimore Ravens backed up their boasting and then some, scoring on offense, defense and special teams to record a crushing 34-7 victory over the New York Giants in Super Bowl XXXV Sunday.

Baltimore's record-setting defense did what it has done all year, shut down the opposition, force turnovers and dominate the game from start to finish.

In an amazing reversal of fortune, Baltimore's sensational linebacker Ray Lewis was named the game's Most Valuable Player one year after being arrested and spending 15 days in jail in connection with a double murder on the night of last year's Super Bowl.

Lewis, who was later cleared of the charges, had seven tackles, tipped passes, harassed New York quarterback Kerry Collins and seemed to be everywhere at once, keeping the Giants from going anywhere.

"If you put this in a storybook, nobody would believe it," said Lewis, 25, who added that he believed that God, "never will take you through Hell without bringing you to triumph."

"What a day for Ray Lewis," said Ravens tight end Shannon Sharpe, who won his third Super Bowl in four years. "After everything he has been through, he deserves this." The trash-talking Ravens had the audacity to predict their defense could shut out the Giants. They just about did as New York managed its lone touchdown on a Ron Dixon kickoff return.

"This win is something they can't take away from us," said a beaming Lewis. "We're the best ever."

Lewis had help from Baltimore's other Lewises in giving Ravens owner Art Modell his first Super Bowl championship in 40 years as an NFL owner.

Rookie running back Jamal Lewis ran 27 times for 102 yards and one touchdown and Jermaine Lewis ran back a kickoff 84 yards for a score.

Best Defense Ever

In four post-season games on the way to their first championship, the Ravens allowed a mere 23 points total, hard facts to back up their claims that they might be the best NFL defense of all time.

"Someone tell me they're not," said Brian Billick, who guided his team to a Super Bowl in just his second season as head coach. "I'll argue it to the death."

Added Baltimore linebacker Peter Boulware: "We proved to the world we're the best defense ever to play this game."

The game also marked a storybook homecoming for quarterback Trent Dilfer, who led his team to the championship in Tampa one year after being run out of town by the local Buccaneers for not being good enough to take that team to a Super Bowl.

"If you face adversity head on, this is what you come out with on the other end," said Dilfer, holding the Lombardi trophy over his head. "I've never felt anything this good." Dilfer completed 12-of-25 passes for 153 yards and a 38-yard first-quarter touchdown pass to Brandon Stokley that got the rout underway.

Collins Nightmare

Collins, just two weeks after enjoying the game of his life in leading New York to a 41-0 romp over Minnesota, endured a nightmare day.

He tied a Super Bowl record by throwing four interceptions, including one that was returned 49 yards by Duane Starks for a touchdown. He threw several more passes that were nearly picked off as the Giants turned over the ball five times.

"This is the most disappointing loss I've ever been involved with," Collins said. "There wasn't a whole lot good about what I did today."

The Giants were forced to punt a Super Bowl-record 11 times, another example of New York's futility in the face of Baltimore's smothering defense.

"This is a hard one to swallow right now," said Giants coach Jim Fassel. "I thought we would play much better."

The predicted defensive struggle appeared to be taking shape in the first quarter. But even early on the Ravens seemed to have more intensity as they continuously pinned the Giants deep in their own end.

"It was going to be a field position battle, it was going to be a turnover battle and we lost both of those," said Giants defensive end Michael Strahan.

Predictions that the first team to score would win did hold up. But no one could have imagined that the Ravens could add 27 points to that first touchdown.

An apparent game-tying score by New York in the second quarter, when Jessie Armstead intercepted a Dilfer pass and ran untouched into the end zone, was nullified by a penalty and things just went downhill from there for the Giants.

"That was a big play," said Armstead. "It was a play that probably changed the game. It got called back and you have to live with it."

The Ravens added a Matt Stover field goal with 1:48 left in the half for a 10-0 lead, and a desperate attempt by the Giants to put points on the board before intermission ended with a Collins interception near the goal line.

With 3:58 left in the third quarter, disaster struck again for the Giants as Starks's interception that made it 17-0.

Dixon's Super Bowl record 96-yard kickoff return finally gave the Giants something to celebrate. It could not have been a more short-lived celebration, however, as Jermaine Lewis returned the very next kickoff for a touchdown and a 24-7 lead in a stunning exchange.

Jamal Lewis added a 3-yard touchdown run in the fourth quarter and Stover a 34-yard field goal to complete the rout.

``We had a great year but almost all of it is forgotten because of this," lamented Armstead. ``I'm hurting."

Take out any reference as to what segment of the population the speech focuses on.

## 6.2. "I Have a Dream"

### a. downgraded version:

#### I HAVE A DREAM

I am happy to join with you today in what will go down in history as the greatest demonstration for freedom in the history of our nation.

In the past, many great Americans, in whose symbolic shadows we stand today, signed important documents. These momentous decrees came as a great beacon light of hope to millions of oppressed citizens who had been seared in the flames of withering injustice. They came as a joyous daybreak to end the long night of their captivity.

But today, the oppressed citizen still is not free; today, the life of the oppressed citizen is still sadly crippled by the manacles of segregation and the chains of discrimination; today, the oppressed citizen lives on a lonely island of poverty in the midst of a vast ocean of material prosperity; today, the oppressed citizen is still languished in the corners of American society and finds himself in exile in his own land.

So we've come here today to dramatize a shameful condition. In a sense we've come to our nation's capital to cash a check. When the architects of our republic wrote the magnificent words of our Constitution and the Declaration of Independence, they were signing a promissory note to which every American was to fall heir. This note was the promise that all men, yes, all men, would be guaranteed the unalienable rights of life, liberty, and the pursuit of happiness.

It is obvious today that America has defaulted on this promissory note in so far as some citizens are concerned. Instead of honoring this sacred obligation, America has given some of its people a bad check ; a check which has come back marked "insufficient funds." We refuse to believe that there are insufficient funds in the great vaults of opportunity of this nation.

And so we've come to this hallowed spot to remind America of the fierce urgency of now. This is no time to engage in the luxury of cooling off or to take the tranquilizing drug of gradualism. Now is the time to make real the promises of democracy; now is the time to rise from the dark and desolate valley of segregation to the sunlit path of justice; now is the time to lift our nation from the quicksands of injustice to the solid rock of brotherhood; now is the time to make justice a reality for all God's children. It would be fatal for the nation to overlook the urgency of the movement. This sweltering summer of the oppressed citizens' legitimate discontent will not pass until there is an invigorating autumn of freedom and equality.

This year is not an end, but a beginning. And those who hope that the oppressed citizen needed to blow off steam and will now be content, will have a rude awakening if the nation returns to business as usual.

There will be neither rest nor tranquility in America until the oppressed citizen is granted his citizenship rights. The whirlwinds of revolt will continue to shake the foundations of our nation until the bright day of justice emerges.

But there is something that I must say to my people who stand on the warm threshold which leads into the palace of justice. In the process of gaining our rightful place we must not be guilty of wrongful deeds.

Let us not seek to satisfy our thirst for freedom by drinking from the cup of bitterness and hatred. We must forever conduct our struggle on the high plane of dignity and discipline.

We must not allow our creative protest to degenerate into physical violence. Again and again we must rise to the majestic heights of meeting physical force with soul force.

The marvelous new militancy which has engulfed the community of oppressed citizens must not lead us to distrust of all members of the oppressing segment of our society, for many of our brothers, as evidenced by their presence here today, have come to realize that their destiny is tied up with our destiny and they have come to realize that their freedom is inextricably bound to our freedom. This offense we share mounted to storm the battlements of injustice must be carried forth by an army of all citizens. We cannot walk alone.

And as we walk, we must make the pledge that we shall always march ahead. We cannot turn back. There are those who are asking the devotees of freedom, "When will you be satisfied?": We can never be satisfied as long as the oppressed citizen is the victim of the unspeakable horrors of police brutality.

We can never be satisfied as long as our bodies, heavy with fatigue of travel, cannot gain lodging in the motels of the highways and the hotels of the cities. We cannot be satisfied as long as the oppressed citizen's basic mobility is from a smaller segregated area to a larger one.

We can never be satisfied as long as our children are stripped of their selfhood and robbed of their dignity by signs stating "for selected citizens only." We cannot be satisfied as long as an oppressed citizen in a particularly oppressive area cannot vote and an oppressed citizen in a less oppressive area believes he has nothing for which to vote. No, we are not satisfied, and we will not be satisfied until justice rolls down like waters and righteousness like a mighty stream.

I am not unmindful that some of you have come here out of excessive trials and tribulation. Some of you have come fresh from narrow jail cells. Some of you have come from areas where your quest for freedom left you battered by the storms of persecution and staggered by the winds of police brutality. You have been the veterans of creative suffering. Continue to work with the faith that unearned suffering is redemptive.

Go back to where most of us oppressed citizens come from, knowing that somehow this situation can, and will be changed. Let us not wallow in the valley of despair.

So I say to you, my friends, that even though we must face the difficulties of today and tomorrow, I still have a dream. It is a dream deeply rooted in the American dream that one day this nation will rise up and live out the true meaning of its creed - we hold these truths to be self-evident, that all men are created equal.

I have a dream that one day in a particularly oppressive area, sons of former oppressed and sons of former oppressors will be able to sit down together at the table of brotherhood.

I have a dream that one day, even the worst state, a state sweltering with the heat of injustice, sweltering with the heat of oppression, will be transformed into an oasis of freedom and justice.

I have a dream my four little children will one day live in a nation where they will not be judged by any criterion used by bigots but by the content of their character. I have a dream today!



I have a dream that one day every valley shall be exalted, every hill and mountain shall be made low, the rough places shall be made plain, and the crooked places shall be made straight and the glory of the Lord will be revealed and all flesh shall see it together.

This is our hope. This is the faith that I go back to the more oppressive areas with.

With this faith we will be able to hear out of the mountain of despair a stone of hope.

With this faith we will be able to transform the jangling discords of our nation into a beautiful symphony of brotherhood.

With this faith we will be able to work together, to pray together, to go to jail together, knowing that we will be free one day. This will be the day when all of God's children will be able to sing with new meaning-"my country 'tis of thee; sweet land of liberty; of thee I sing; land where my fathers died, land of the pilgrim's pride; from every mountain side, let freedom ring"-and if America is to be a great nation, this must become true.

Let freedom ring from the mountains of areas where there is no oppression. But not only that. Let freedom ring from the mountains of areas where there is the worst oppression. And when we allow freedom to ring, when we let it ring from every village and hamlet, from every state and city, we will be able to speed up that day when all of God's children will be able to join hands and to sing in the words of the old song, "Free at last, free at last; thank God Almighty, we are free at last."

#### **b. original speech:**

#### **I HAVE A DREAM**

I am happy to join with you today in what will go down in history as the greatest demonstration for freedom in the history of our nation.

Fivescore years ago, a great American, in whose symbolic shadow we stand today, signed the Emancipation Proclamation. This momentous decree came as a great beacon light of hope to millions of Negro slaves who had been seared in the flames of withering injustice. It came as a joyous daybreak to end the long night of their captivity.

But one hundred years later, the Negro still is not free; one hundred years later, the life of the Negro is still sadly crippled by the manacles of segregation and the chains of discrimination; one hundred years later, the Negro lives on a lonely island of poverty in the midst of a vast ocean of material prosperity; one hundred years later, the Negro is still languished in the corners of American society and finds himself in exile in his own land.

So we've come here today to dramatize a shameful condition. In a sense we've come to our nation's capital to cash a check. When the architects of our republic wrote the magnificent words of our Constitution and the Declaration of Independence, they were signing a promissory note to which every American was to fall heir. This note was the promise that all men, yes, black men as well as white men, would be guaranteed the unalienable rights of life, liberty, and the pursuit of happiness.

It is obvious today that America has defaulted on this promissory note in so far as her citizens of color are concerned. Instead of honoring this sacred obligation, America has given the Negro people a bad check; a check which has come back marked "insufficient funds." We refuse to believe that there are insufficient funds in the great vaults of opportunity of this nation.

And so we've come to this hallowed spot to remind America of the fierce urgency of now. This is no time to engage in the luxury of cooling off or to take the tranquilizing drug of gradualism. Now is the time to make real the promises of democracy; now is the time to rise from the dark and desolate valley of segregation to the sunlit path of racial justice; now is the time to lift our nation from the quicksands of racial injustice to the solid rock of brotherhood; now is the time to make justice a reality for all God's children. It would be fatal for the nation to overlook the urgency of the movement. This sweltering summer of the Negro's legitimate discontent will not pass until there is an invigorating autumn of freedom and equality.

Nineteen sixty-three is not an end, but a beginning. And those who hope that the Negro needed to blow off steam and will now be content, will have a rude awakening if the nation returns to business as usual.

There will be neither rest nor tranquility in America until the Negro is granted his citizenship rights. The whirlwinds of revolt will continue to shake the foundations of our nation until the bright day of justice emerges.

But there is something that I must say to my people who stand on the warm threshold which leads into the palace of justice. In the process of gaining our rightful place we must not be guilty of wrongful deeds.

Let us not seek to satisfy our thirst for freedom by drinking from the cup of bitterness and hatred. We must forever conduct our struggle on the high plane of dignity and discipline.

We must not allow our creative protest to degenerate into physical violence. Again and again we must rise to the majestic heights of meeting physical force with soul force.

The marvelous new militancy which has engulfed the Negro community must not lead us to distrust of all white people, for many of our white brothers, as evidenced by their presence here today, have come to realize that their destiny is tied up with our destiny and they have come to realize that their freedom is inextricably bound to our freedom.

This offense we share mounted to storm the battlements of injustice must be carried forth by a biracial army. We cannot walk alone.

And as we walk, we must make the pledge that we shall always march ahead. We cannot turn back. There are those who are asking the devotees of civil rights, "When will you be satisfied?": We can never be satisfied as long as the Negro is the victim of the unspeakable horrors of police brutality.

We can never be satisfied as long as our bodies, heavy with fatigue of travel, cannot gain lodging in the motels of the highways and the hotels of the cities. We cannot be satisfied as long as the Negro's basic mobility is from a smaller ghetto to a larger one.

We can never be satisfied as long as our children are stripped of their selfhood and robbed of their dignity by signs stating "for whites only." We cannot be satisfied as long as a Negro in Mississippi cannot vote and a Negro in New York believes he has nothing for which to vote. No, we are not satisfied, and we will not be satisfied until justice rolls down like waters and righteousness like a mighty stream.

I am not unmindful that some of you have come here out of excessive trials and tribulation. Some of you have come fresh from narrow jail cells. Some of you have come from areas where your quest for freedom left you battered by the storms of persecution and staggered by the winds of police brutality. You have been the veterans of creative suffering. Continue to work with the faith that unearned suffering is redemptive.

Go back to Mississippi; go back to Alabama; go back to Louisiana; go back to the slums and ghettos of the northern cities, knowing that somehow this situation can, and will be changed. Let us not wallow in the valley of despair.

So I say to you, my friends, that even though we must face the difficulties of today and tomorrow, I still have a dream. It is a dream deeply rooted in the American dream that one day this nation will rise up and live out the true meaning of its creed - we hold these truths to be self-evident, that all men are created equal.

I have a dream that one day on the red hills of Georgia, sons of former slaves and sons of former slave-owners will be able to sit down together at the table of brotherhood.

I have a dream that one day, even the state of Mississippi, a state sweltering with the heat of injustice, sweltering with the heat of oppression, will be transformed into an oasis of freedom and justice.

I have a dream my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character. I have a dream today!

I have a dream that one day every valley shall be exalted, every hill and mountain shall be made low, the rough places shall be made plain, and the crooked places shall be made straight and the glory of the Lord will be revealed and all flesh shall see it together.

This is our hope. This is the faith that I go back to the South with.

With this faith we will be able to hear out of the mountain of despair a stone of hope.

With this faith we will be able to transform the jangling discords of our nation into a beautiful symphony of brotherhood.

With this faith we will be able to work together, to pray together, to go to jail together, knowing that we will be free one day. This will be the day when all of God's children will be able to sing with new meaning-"my country 'tis of thee; sweet land of liberty; of thee I sing; land where my fathers died, land of the pilgrim's pride; from every mountain side, let freedom ring"-and if America is to be a great nation, this must become true.

Let freedom ring from the mighty mountains of New York.

Let freedom ring from the heightening Alleghenies of Pennsylvania.

Let freedom ring from the snow-capped Rockies of Colorado.

Let freedom ring from the curvaceous slopes of California.

But not only that.

Let freedom ring from the Stone Mountain of Georgia.

Let freedom ring from Lookout Mountain of Tennessee.

Let freedom ring from every hill and molehill of Mississippi, from every mountainside, let freedom ring.

And when we allow freedom to ring, when we let it ring from every village and hamlet, from every state and city, we will be able to speed up that day when all of God's children - black men and white men, Jews and Gentiles, Catholics and Protestants - will be able to join hands and to sing in the words of the old Negro spiritual, "Free at last, free at last; thank God Almighty, we are free at last."

### **6.3 Dartmouth Murders**

#### **a. downgraded version:**

#### **Suspects Are Caught**

##### **2 suspects Lured to Ind. Truck Stop**

CHICAGO, Feb. 19 -- Two hitchhiking suspects who were wanted were captured at an Indiana truck stop today after a sheriff's deputy learned of their whereabouts while monitoring citizens band radio traffic. He then lured them into a trap by offering them a ride to California.

The suspects were arrested along Interstate 70 about 40 miles east of Indianapolis and held as fugitives from some charges.

Prosecutors and major crimes investigators from New Hampshire flew to Indiana to question the suspects this afternoon. If they waive extradition proceedings, the pair will be immediately transported to New Hampshire for arraignment, authorities said. If not, they will appear in court Tuesday morning for an extradition hearing.

"This is a turning point in this particular case," said New Hampshire Attorney General Philip McLaughlin. "Now we will begin the prosecutorial phase of the case."

Sgt. William Ward of the Henry County Sheriff's Department ended the nationwide manhunt for the two suspects at 4 a.m. after hearing a trucker say over his CB radio that he had picked up two suspects near the New Jersey-Pennsylvania state line who were looking for a ride to California.

The trucker, whom authorities did not name, later told investigators he was unaware the suspects were fugitives and said he felt sorry for them when they told him they were trying to get home after failing to find work in the East.

County Sheriff Kim Kronk, in a telephone interview, said Ward got on his CB radio and, posing as a trucker, said he would pick the suspects up at the Flying J truck stop at I-70 and Route 3 and drive them to California. Kronk said that when Ward came onto his watch earlier, he told other deputies he had seen an FBI alert on television indicating the fugitives might be hitchhiking west and to keep an ear on their CB radios.

"He does that kind of thing quite a bit, always keeping alert for information on radio and television," Kronk said. "It was just great police work."

Ward, a 24-year veteran of the department, told a news conference in New Castle, Ind., that he had a hunch the two fugitives might pass through Henry County on I-70, a major transcontinental highway.

"I just said, 'Why don't you drop them off at the fuel desk and someone will pick them up,' " Ward said. "I actually didn't expect them to be there, but I figured it'd be worth checking out."

Kronk said the trucker dropped the suspects off in the truckstop parking lot and that the youths went to the fuel bays to wait for what they thought would be a ride to California. In the meantime, Ward alerted two other deputies and the three officers went to the truckstop and arrested the suspects without resistance.

A nationwide manhunt for the suspects had been launched over the weekend when they fled their homes Thursday after voluntarily giving police their fingerprints. Authorities have not revealed a motive for the crime, which brought fear to the campus and the normally placid town, where many residents do not bother to lock their doors at night.

Police had been able to track the suspects from a Massachusetts truck stop, where they abandoned the second suspect's mother's car, to a rest stop in New Jersey, where they were spotted by witnesses drinking coffee, smoking, pacing and brushing their teeth. After that tip, authorities surmised the suspects were hitchhiking west and issued the alert that caught Ward's attention.

A friend of the first suspect's, told investigators the two suspects left in the days after the crime, returned two or three days later and then left home again. They reportedly told the friend they wanted to go rock climbing in Colorado but returned home after the first suspect suffered a leg wound, which became infected, while walking in the woods.

#### **b. original text:**

#### **Dartmouth Slaying Suspects Are Caught 2 teenagers Lured to Ind. Truck Stop**

CHICAGO, Feb. 19 -- Two hitchhiking teenagers wanted in the slaying of two Dartmouth College professors were captured at an Indiana truck stop today after a sheriff's deputy learned of their whereabouts while monitoring citizens band radio traffic. He then lured them into a trap by offering them a ride to California.

Robert Tulloch, 17, a high school honors student in Chelsea, Vt., and classmate James Parker, 16, were arrested along Interstate 70 about 40 miles east of Indianapolis and held as fugitives from charges of first-degree murder in the Jan. 27 slayings of Half Zantop, 62, and his wife, Susanne, 55, in Hanover, N.H.

Prosecutors and major crimes investigators from New Hampshire flew to Indiana to question the youths this afternoon. If they waive extradition proceedings, the pair will be immediately transported to New Hampshire for arraignment, authorities said. If not, they will appear in court Tuesday morning for an extradition hearing.

"This is a turning point in this particular case," said New Hampshire Attorney General Philip McLaughlin. "Now we will begin the prosecutorial phase of the case."

Sgt. William Ward of the Henry County Sheriff's Department ended the nationwide manhunt for the two youths at 4 a.m. after hearing a trucker say over his CB radio that he had picked up two teenagers near the New Jersey-Pennsylvania state line who were looking for a ride to California.

The trucker, whom authorities did not name, later told investigators he was unaware the teenagers were fugitives and said he felt sorry for them when they told him they were trying to get home after failing to find work in the East.

County Sheriff Kim Kronk, in a telephone interview, said Ward got on his CB radio and, posing as a trucker, said he would pick the boys up at the Flying J truck stop at I-70 and Route 3 and drive them to California. Kronk said that when Ward came onto his watch earlier, he told other deputies he had seen an FBI alert on television indicating the fugitives might be hitchhiking west and to keep an ear on their CB radios.

"He does that kind of thing quite a bit, always keeping alert for information on radio and television," Kronk said. "It was just great police work."

Ward, a 24-year veteran of the department, told a news conference in New Castle, Ind., that he had a hunch the two fugitives might pass through Henry County on I-70, a major transcontinental highway.

"I just said, 'Why don't you drop them off at the fuel desk and someone will pick them up,'" Ward said. "I actually didn't expect them to be there, but I figured it'd be worth checking out."

Kronk said the trucker dropped the youths off in the truckstop parking lot and that the youths went to the fuel bays to wait for what they thought would be a ride to California. In the meantime, Ward alerted two other deputies and the three officers went to the truckstop and arrested the suspects without resistance.

A nationwide manhunt for Tulloch and Parker had been launched over the weekend when they fled their Chelsea homes Thursday after voluntarily giving police their fingerprints. Sheriff Dennis McClure in Orange County, Vt., said the teenagers became suspects because one had purchased a military-style knife on the Internet.

The suspects have been accused of repeatedly stabbing the professors in the head and chest. Authorities have not revealed a motive for the killings, which brought fear to the Dartmouth campus and the normally placid town of Hanover, where many residents do not bother to lock their doors at night.

Police had been able to track Tulloch and Parker from a Massachusetts truck stop, where they abandoned Parker's mother's car, to a rest stop in New Jersey, where they were spotted by witnesses drinking coffee, smoking, pacing and brushing their teeth. After that tip, authorities surmised the youths were hitchhiking west and issued the alert that caught Ward's attention.

A friend of Tulloch's from Vermont, Casey Purcell, told investigators the two teenagers left Chelsea in the days after the killings, returned two or three days later and then left home again. They reportedly told the friend they wanted to go rock climbing in Colorado but returned home after Tulloch suffered a leg wound, which became infected, while walking in the woods.

New Hampshire authorities said Tulloch will automatically be charged as an adult and will face up to life in prison without parole if convicted. A hearing will have to be held for Parker to certify him as an adult because he is only 16.

## **6.4 Office Shooting**

### **a. downgraded text:**

#### **7 Die in an Office Shooting**

Dec. 26 -- A heavily armed employee shot and killed seven co-workers today, "an incredible workplace tragedy" that may have stemmed from a tax dispute with the IRS, according to prosecutors and witnesses.

Amid Christmas wreaths and other holiday decorations, authorities said, the suspect, was armed with an assault rifle, a 12-gauge shotgun and a semiautomatic pistol as he methodically gunned down colleagues.

Four women and three men were shot dead, but none of the other 80 workers inside the building was injured, officials said.

"It appears to have been aimed at individuals, as opposed to random spraying," The County District Attorney said tonight, calling it "an incredible workplace tragedy." He said detectives are investigating whether the shooting was related to moves by the company and the Internal Revenue Service to garnish the suspect's wages for back taxes, just one of the financial and personal problems that had recently beset him.

The suspect recently skipped out of one apartment while owing rent and moved into a new apartment without his wife, according to acquaintances and officials.

Prosecutors said the rampage began at about 11 a.m. -- more than two hours after the suspect arrived for work -- when he calmly walked into the main reception area and, from 10 feet away, shot the receptionist. The County District Attorney said The suspect proceeded to the nearby accounting section, where he began shooting others using the

assault rifle and the shotgun. Five of the seven killed were in the accounting department, authorities said, and two were in the reception area.

The suspect had an angry outburst in the accounting department last week over the prospect of losing some of his wages, the Associated Press quoted an unnamed employee as saying. He apparently felt the company was not doing enough to take his side against the IRS, the employee said.

In a statement last night, the company said that "his actions apparently stem from occurrences in his personal life. We deeply regret that the suspect's problems manifested in actions against the company and its employees.

"There was no way to anticipate his actions or any apparent reasons to restrict his access to the building."

The gunfire sent workers at the company and neighboring companies scurrying for cover until police and SWAT officers surrounded the three-story building, a converted former factory .

The County District Attorney said officers found the suspect sitting "nonresponsive" in a chair in the reception area, his fully reloaded weapons at his side. He did not say a word as police apprehended him, officials said. The suspect is scheduled to be formally charged with seven counts of murder Wednesday morning.

The slaughter shocked this modest state suburb, which had not had a murder for a dozen years.

"Clearly, it's a horrific event," said the district Police Chief .

Today's killings were the latest in a string of deadly workplace shootings, including a November 1999 rampage in Honolulu that also left seven dead. Others include shootings in July of that year that left nine dead at two Atlanta stock brokerages; shootings that left three people dead in August 1999 at two office buildings in Pelham, Ala.; and a double homicide in Garden Grove, Calif., that same month when a man opened fire in an auto parts store.

A team project leader at the company, told reporters that the suspect had been coming in late and that his performance wasn't as good as it could have been. He said the suspect was kidding around with co-workers not long before the shootings.

"He was joking with a bunch of people before he went on the rampage," the team project leader said. "It seems like a random, ridiculous thing."

But the team project leader also described the suspect as "strange" and "quirky," adding: "Of all the people that I thought could have done this, it was him."

Employees at the firm which occupies the floor above the company where the shooting took place, huddled in the firm boardroom until police swarmed into the building and ordered everyone to leave.

"A number of employees heard the gunshots, but we still didn't realize it was this bad," said the chief financial officer at the firm. "We just thought someone was getting robbed or something, nothing like this. I never in a million years thought something like this would happen."

The chief financial officer said he did not know the suspect well, " We didn't notice anything unusual about him."

A company employee said in an interview at her home after the shooting that the company was a close-knit workplace, but that she knew the suspect only in passing. The employee, who is expecting her second child, began a maternity leave last week.

"My friends said it was just horrifying because you could hear the gunshots but you couldn't tell who it was or where it was coming from," said the employee, who visited a local church that had been turned into a staging center for the police investigation into the shooting. "This one was my lucky charm, but I wish I could have done something for the people who were there and couldn't get out of the way."

The company's chief executive, said: "Everyone at the company is shocked and devastated at the loss of our friends today. . . . We extend our deepest sympathies to the victims' families at this tragic time."

Until the end of October, the suspect lived in a rented condominium where he shared a lease with his wife, according to the condo's owner. The suspect and his wife had been

chronically late paying their rent over the years, and the suspect skipped out without paying for September and October, at \$840 a month, the condo's owner said.

"I even offered to sell him the condo, but he said he had a new job", the condo's owner said. "I'm so shocked. Every time I talked to him, he sounded like a very intelligent, sensible guy."

The condo's owner said the suspect and his wife had lived at this address for 10 years and, as far as he knew, were still together when their lease expired.

But the County District Attorney said the suspect lived alone in an apartment in another place. A person, who lives in the same building, agreed that the suspect "was living alone as far as I know" since he moved in about two months ago.

Police investigators obtained search warrants for this apartment this afternoon.

The shooting marked a tragic end to a grim year for the company which is an 8-year-old firm that has seen its stock price plunge to half its peak value of \$12.06 a share in March. A large wreath with red ribbons and gold holiday baubles decorated the lobby, and a white sheet covered the main doorway leading into the company's offices. Employees had fled in a hurry, leaving laptops and briefcases on desks and chairs, phone message lights blinking and computers turned on.

"There was a wall between me and what happened," said one employee, who asked not to be identified. "I just heard gunshots and ran out of the building."

The owner of an insurance agency about 100 yards away, said he hurriedly locked the doors of his office after police cars and ambulances began swarming into the area.

"They started calling for SWAT teams and the homicide unit, so I knew something big was going on," the insurance agency owner said, who had switched on his police scanner. "If there was somebody on the loose, I didn't need my agency as a hideout."

Counselors and members of the clergy from across the area rushed to a nearby Church, where co-workers, family members and friends gathered for support as ambulances idled outside. Police investigators organized the firm employees according to where they were in the offices at the time of the shooting and interviewed them one by one in the church cafeteria.

It has been a difficult year for this kind of business consultants such as this company, which was bought in May 1999 by a larger company that employed about 2,000 people and had revenue last year of about \$ 1 billion.

But since then, it formally changed its name has been selling off its staffing-related businesses to focus on a different business strategy, laying off 80 employees and closing 12 offices in the process, according to industry analysts. This fall, the company announced another 25 layoffs and the move of its headquarters to the new place.

A year ago, this was a brilliant decision," one analyst said, "but by the time they executed it, the party was over" for this kind of business consulting firms.

## **b. original text:**

### ***7 Die in Massachusetts Office Shooting***

WAKEFIELD, Mass., Dec. 26 -- A heavily armed employee shot and killed seven co-workers today in the offices of a suburban Boston Internet company, "an incredible workplace tragedy" that may have stemmed from a tax dispute with the IRS, according to prosecutors and witnesses.

Amid Christmas wreaths and other holiday decorations, authorities said, Michael M. McDermott, 42, was armed with an assault rifle, a 12-gauge shotgun and a semiautomatic pistol as he methodically gunned down colleagues in the first-floor offices of Edgewater Technology Inc., an Internet consulting firm about 10 miles north of downtown Boston. Four women and three men were shot dead, but none of the other 80 workers inside the building was injured, officials said.

"It appears to have been aimed at individuals, as opposed to random spraying," Middlesex County District Attorney Martha Coakley said tonight, calling it "an incredible workplace tragedy."

Coakley said detectives are investigating whether the shooting was related to moves by Edgewater and the Internal Revenue Service to garnish McDermott's wages for back taxes, just one of the financial and personal problems that had recently beset him. McDermott, who has worked as a software tester at Edgewater since at least March, recently skipped out of one apartment while owing rent and moved into a new apartment without his wife, according to acquaintances and officials.

Prosecutors said the rampage began at about 11 a.m. -- more than two hours after McDermott arrived for work -- when he calmly walked into the main reception area and, from 10 feet away, shot the receptionist. Coakley said McDermott proceeded to the nearby accounting section, where he began shooting others using the assault rifle and the shotgun. Five of the seven killed were in the accounting department, authorities said, and two were in the reception area.

McDermott had an angry outburst in the accounting department last week over the prospect of losing some of his wages, the Associated Press quoted an unnamed employee as saying. He apparently felt the company was not doing enough to take his side against the IRS, the employee said.

In a statement last night, the company said that "his actions apparently stem from occurrences in his personal life. We deeply regret that Mr. McDermott's problems manifested in actions against the company and its employees.

"There was no way to anticipate his actions or any apparent reasons to restrict his access to the building."

The gunfire sent workers at Edgewater and neighboring companies scurrying for cover until police and SWAT officers surrounded the three-story building, a converted former factory known as Harvard Mill.

Coakley said officers found McDermott sitting "nonresponsive" in a chair in the reception area, his fully reloaded weapons at his side. He did not say a word as police apprehended him, officials said. McDermott, described as a large man who stands 6-foot-2 and weighs nearly 300 pounds, is scheduled to be formally charged with seven counts of murder Wednesday morning.

The slaughter shocked this modest Boston suburb, which had not had a murder for a dozen years. Located on the fringe of the high-tech corridor that rings the city, Wakefield is a picture-postcard New England town with a small lake for windsurfing in the summer and homes dating to the 18th century.

"Clearly, it's a horrific event," said Wakefield Police Chief Stephen Doherty.

Today's killings were the latest in a string of deadly workplace shootings, including a November 1999 rampage in Honolulu that also left seven dead. Others include shootings in July of that year that left nine dead at two Atlanta stock brokerages; shootings that left three people dead in August 1999 at two office buildings in Pelham, Ala.; and a double homicide in Garden Grove, Calif., that same month when a man opened fire in an auto parts store.

Mike Stanley, a team project leader at Edgewater, told reporters that McDermott had been coming in late and that his performance wasn't as good as it could have been. He said McDermott was kidding around with co-workers not long before the shootings.

"He was joking with a bunch of people before he went on the rampage," Stanley said. "It seems like a random, ridiculous thing."

But Stanley also described McDermott as "strange" and "quirky," adding: "Of all the people that I thought could have done this, it was him."

Employees at Select Appointments North America, which occupies the floor above Edgewater, huddled in the company boardroom until police swarmed into the building and ordered everyone to leave.

"A number of employees heard the gunshots, but we still didn't realize it was this bad," said Ron Fuccilo, chief financial officer at Select Appointments. "We just thought someone was getting robbed or something, nothing like this. I never in a million years thought something like this would happen."

Fuccilo said he did not know McDermott well, only that he "was a big guy with a beard. We didn't notice anything unusual about him."



Edgewater employee Nancy Pecjo said in an interview at her Wakefield home after the shooting that the company was a close-knit workplace, but that she knew McDermott only in passing. Pecjo, who is expecting her second child, began a maternity leave last week.

"My friends said it was just horrifying because you could hear the gunshots but you couldn't tell who it was or where it was coming from," said Pecjo, who visited a local church that had been turned into a staging center for the police investigation into the shooting. "This one was my lucky charm, but I wish I could have done something for the people who were there and couldn't get out of the way."

Shirley Singleton, Edgewater's chief executive, said: "Everyone at the company is shocked and devastated at the loss of our friends today. . . . We extend our deepest sympathies to the victims' families at this tragic time."

The victims were identified as Jennifer Bragg-Capobianco; Janice Hagerty, a receptionist; Louis Javelle; Rose Manfredi, 49, an accountant; Paul Marceau; Cheryl Troy, human resources director; and Craig Wood, 29. Hometowns and some ages were not immediately released, AP said.

Until the end of October, McDermott lived in a rented condominium south of Boston, in East Weymouth, where he shared a lease with his wife, Monica, according to the condo's owner, Saburo Imura. McDermott and his wife had been chronically late paying their rent over the years, and McDermott skipped out without paying for September and October, at \$840 a month, Imura said.

"I even offered to sell him the condo, but he said he had a new job" in the Wakefield area far from East Weymouth, Imura said. "I'm so shocked. Every time I talked to him, he sounded like a very intelligent, sensible guy."

Imura said the McDermott's had lived at the East Weymouth address for 10 years and, as far as he knew, were still together when their lease expired.

But Coakley said McDermott lived alone in an apartment in Haverhill, a suburb near Wakefield. Marjorie Richardson, who lives in the same building, agreed that McDermott "was living alone as far as I know" since he moved in about two months ago.

Police investigators obtained search warrants for the Haverhill apartment this afternoon. The shooting marked a tragic end to a grim year for Edgewater Technology, an 8-year-old Internet firm that has seen its stock price plunge to half its peak value of \$12.06 a share in March.

A large wreath with red ribbons and gold holiday baubles decorated the lobby, and a white sheet covered the main doorway leading into Edgewater's offices. Employees had fled in a hurry, leaving laptops and briefcases on desks and chairs, phone message lights blinking and computers turned on.

"There was a wall between me and what happened," said one employee, who asked not to be identified. "I just heard gunshots and ran out of the building."

Michael Brownson, who owns an insurance agency about 100 yards away, said he hurriedly locked the doors of his office after police cars and ambulances began swarming into the area.

"They started calling for SWAT teams and the homicide unit, so I knew something big was going on," said Brownson, who had switched on his police scanner. "If there was somebody on the loose, I didn't need my agency as a hideout."

Counselors and members of the clergy from across the area rushed to nearby St. Joseph's Church, where co-workers, family members and friends gathered for support as ambulances idled outside. Police investigators organized Edgewater employees according to where they were in the offices at the time of the shooting and interviewed them one by one in the church cafeteria.

It has been a difficult year for e-business consultants such as Edgewater, which was bought in May 1999 by Staffmark Inc. of Fayetteville, Ark., a much larger company that employed about 2,000 people and had revenue last year of about \$1 billion.

But since then, Staffmark formally changed its name to Edgewater Technology Inc. and has been selling off its staffing-related businesses to focus on an Internet business strategy, laying off 80 employees and closing 12 offices in the process, according to

industry analysts. This fall, the company announced another 25 layoffs and the move of its headquarters to Wakefield.

"A year ago, this was a brilliant decision," one analyst said, "but by the time they executed it, the party was over" for e-business consulting firms.

*Ferdinand reported from Wakefield, Egan from Washington. Staff writer Yuki Noguchi and staff researcher Lynn Davis contributed to this report.*

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