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LEARNING NON-VERBAL RELATIONS UNDER OPEN INFORMATION EXTRACTION PARADIGM

CLARISSA CASTELLÃ XAVIER

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Supervisor: Prof. Vera Lúcia Strube de Lima

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Profa. Dra. Vera Lúcia Strube de Lima -   PPGCC/PUCRS
Orientadora

Profa. Dra. Renata Vieira -   PPGCC/PUCRS

Profa. Dra. Viviane Pereira Moreira -   UFRGS

Profa. Dra. Helena de Medeiros Caseli   UFSCAR

Homologada em 5/3/15, conforme Ata No. 02 pela Comissão Coordenadora.

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To Letícia and Rodrigo
for all their support, patience, and love.

Como uma onda

Nada do que foi será
De novo do jeito que já foi um dia
Tudo passa
Tudo sempre passará

A vida vem em ondas
Como um mar
Num indo e vindo infinito

Tudo que se vê não é
Igual ao que a gente
Viu há um segundo
Tudo muda o tempo todo
No mundo

Não adianta fugir
Nem mentir
Pra si mesmo agora
Há tanta vida lá fora
Aqui dentro sempre
Como uma onda no mar

Like a wave of the sea

Nothing will be
Again the same way it was some day
Everything passes
Everything will always pass

Life drifts away in waves
As the sea
Coming and going away incessantly

All we see now is not
The same we saw
a second ago
Everything changes, all the time,
in the world

It's worthless to escape
Or lie
to yourself now
There is so much life outside
Here inside it will always pass
Like a wave of the sea

Lulu Santos

"There is nothing permanent except change"

Heraclitus of Ephesus

ACKNOWLEDGEMENTS

APRENDIZAGEM DE RELAÇÕES NÃO-VERBAIS POR MEIO DO PARADIGMA *OPEN INFORMATION EXTRACTION*

RESUMO

O paradigma *Open Information Extraction - Open IE* (Extração Aberta de Informações) de extração de relações trabalha com a identificação de relações não definidas previamente, buscando superar as limitações impostas pelos métodos tradicionais de Extração de Informações como a dependência de domínio e a difícil escalabilidade. Visando estender o paradigma *Open IE* para que sejam extraídas relações não expressas por verbos a partir de textos em inglês, apresentamos CompIE, um componente que aprende relações expressas em compostos nominais (CNs), como (*oil, extracted from, olive*) - (óleo, extraído da, oliva) ˉ do composto nominal *olive oil* - óleo de oliva, ou em pares do tipo adjetivo-substantivo (ASs), como (*moon, that is, gorgeous*) - (lua, que é, linda) - do AS *gorgeous moon* (linda lua). A entrada do CompIE é um arquivo texto, e sua saída é um conjunto de triplas descrevendo relações binárias. Sua arquitetura é composta por duas tarefas principais: Extrator de CNs e ASs (1) e Interpretador de CNs e ASs (2). A primeira tarefa gera uma lista de CNs e ASs a partir do corpus de entrada. A segunda tarefa realiza a interpretação dos CNs e ASs gerando as triplas que descrevem as relações extraídas do corpus. Para estudar a viabilidade da solução apresentada, realizamos uma avaliação baseada em hipóteses. Um protótipo foi construído com o intuito de validar cada uma das hipóteses. Os resultados obtidos mostram que nossa solução alcança 89% de Precisão e demonstram que o CompIE atinge sua meta de estender o paradigma *Open IE* extraindo relações expressas dentro dos CNs e ASs.

Palavras Chave: Extração de Informação Aberta; Extração de Informação; Extração de Relações; Processamento da Linguagem Natural.

LEARNING NON-VERBAL RELATIONS UNDER OPEN INFORMATION EXTRACTION PARADIGM

ABSTRACT

The Open Information Extraction (Open IE) is a relation extraction paradigm in which the target relationships cannot be specified in advance, and it aims to overcome the limitations imposed by traditional IE methods, such as domain-dependence and scalability. In order to extend Open IE to extract relationships that are not expressed by verbs from texts in English, we introduce CompIE, a component that learns relations expressed in noun compounds (NCs), such as (*oil, extracted from, olive*) from *olive oil*, or in adjective-noun pairs (ANs), such as (*moon, that is, gorgeous*) from *gorgeous moon*. CompIE input is a text file, and the output is a set of triples describing binary relationships. The architecture comprises two main tasks: NCs and ANs Extraction (1) and NCs and ANs Interpretation (2). The first task generates a list of NCs and ANs from the input corpus. The second task performs the interpretation of NCs and ANs and generates the tuples that describe the relations extracted from the corpus. In order to study CompIE's feasibility, we perform an evaluation based on hypotheses. In order to implement the strategies to validate each hypothesis we have built a prototype. The results show that our solution achieves 89% Precision and demonstrate that CompIE reaches its goal of extending Open IE paradigm extracting relationships within NCs and ANs.

Keywords: Information Extraction, Natural Language Processing; Open Information Extraction; Relation Extraction.

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LIST OF ABREVIATIONS

AN - *Adjective Noun*

AUC – *Area Under the Curve*

CRF - *Conditional Random Fields*

IE – *Information Extraction*

JSD - *Jensen-Shannon divergence*

LVC - *Light Verb Constructions*

NB - *Naïve Bayes*

NC – *Noun Compound*

NLP – *Natural Language Processing*

Open IE – *Open Information Extraction*

POS - *Part Of Speech*

PR - *Precision-Recall*

WUP - *Wu and Palmer*

WS4J - *WordNet Similarity for Java*

CONTENTS

1. INTRODUCTION

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."
— *Marie Curie*

1.1. Research Context

Relations are the connections we perceive among concepts, entities, events, and also by means of attributes. A relation can be referred either according to its type, by means of meronymy or hyponymy, or to its instance, with arguments accompanying the relation name, such as *chocolate contains caffeine.* Semantic relations describe interactions, relations between meanings. These relations may connect nominals in a text or concepts in knowledge representation to the level at which the interactions occur [NAS13].

Information Extraction (IE) systems aim to learn semantic relations from texts. According to Jurafsky and Martin [JUR09], the process of Information Extraction (IE) turns the unstructured information embedded in texts into structured data. Automatic information extraction from corpora is a well-known field of research with many applications, which is relevant to disciplines such as interpretation and generation of natural language, knowledge management, e-commerce, machine translation and information retrieval [RUI07].

IE methods can be employed in applications that use knowledge representation models describing relations between words, such as ontologies or semantic networks. Also, according to Jiang [JIA12], "IE has applications in a wide range of domains. The specific type and structure of the information to be extracted depend on the need of the particular application". Abreu *et al.* [ABR13] clarify: "a good example is the business intelligence domain, in which financial professionals often need to seek specific information from news articles to help making their everyday decisions. Another possible application is in the intelligence area, where analysts review large amounts of text to search for information, such as on people involved in terrorism events, the weapons used, and the targets of the attacks".

According to Fader *et al.* [FAD11], IE systems typically learn an extractor for each target relation from labeled training examples. IE systems are usually domain-dependent, and their adaptation to a new domain requires manual labor comprising specification and implementation of new patterns of relationships or training corpora annotation, since

usually, task‑specific extraction rules are automatically acquired by means of Machine Learning algorithms, which use large corpora of topic relevant documents that need to be collected and annotated by a topic expert [EIC08]. Moreover, this approach is not scalable to corpora with a large number of target relationships or where the target relationships cannot be specified in advance [ETZ11].

The task of acquiring information from a large volume of data, such as for intelligence and terrorism prevention, has brought the need for systems that extract quality and structured information from enormous data sets of any domain [MAU12]. Aiming to overcome this knowledge acquisition bottleneck, the Open Information Extraction (Open IE) approach was introduced in 2007 in conjunction with the TextRunner system [BAN07]. Open IE emerged to deal with the heterogeneous nature of the Web and its enormous amount of data, where relations of interest are unpredictable and varied [BAN09].

Unlike the IE methods focused on a pre-defined set of target relations, Open IE aims to identify as many relations as possible in the text. Furthermore, it should not be restricted to a specific domain of knowledge. According to Li *et al.* [LI11] "Open IE is a domain independent information extraction paradigm which uses some generalized patterns to extract all potential relations between named entities", though we emphasize that Open IE extracts relations between any noun phrases, not just between named entities.

1.2. Motivation

Motivated by the increasing use of knowledge structures, particularly ontologies and the difficulty of their manual creation, the lack of available structures, as well as the amount of content available on the Web and Wikipedia, we started investigating the possibilities of exploration of Wikipedia for ontologies extraction [XAV10] [XAV11] [XAV12]. Evolving in this research, we envisioned building a solution for extracting ontological structures from Wikipedia that would be fully automatic and domain-independent [XAV12]. We found in this study that the identification of relations in texts represents a great challenge and would require a detailed study.

So we started with a study regarding relation extraction methods. We ended up focusing our attention on this subject, so that it became the central theme of our research. The search for domain-independent methods directed us to the Open IE paradigm. Through this study, we found a number of unresolved issues in this area, revealing a broad research field.

Particularly, we believe that approaches that provide solutions for the extraction of relations not expressed by verbs are very promising, since they have the potential to bring a significant contribution to the improvement of the state-of-the-art results obtained by the current Open IE methods, as raised in [ETZ11] [GAM12] [MAU12].

A noun compound (NC) is a sequence of nouns that act together in order to constitute a single meaning, e.g., *chocolate cake*. An adjective-noun pair (AN) is a noun phrase formed by an adjective as the modifier and a noun as the head, e.g., *salty cake*. Both NCs and ANs contain relations within them. For example, a *chocolate cake* is a *cake made with chocolate* and a *salty cake* is a *cake whose attribute is being salty*. Thus there is the relation *made of* between *cake* and *chocolate* and the relation *attribute of* between *salty* and *cake*.

Since Open IE aims to learn as much relations as possible from a corpus, and adjective-noun pairs (ANs) and noun compounds (NCs) contain relations within them, learning these relationships will benefit the performance of Open Extractors, by increasing the number of relations obtained.

1.3. Research Problem

The state-of-the-art Open IE methods focus on learning relations that are expressed by verbs. Etzione *et al.* [ETZ11] claim that it is important to extend Open IE range by extracting noun-based relations. Since verbs are not the only way to express relations between nouns in a text, it is important to create alternatives to learn other relations. For example, learning the relations between two nouns, in a noun compound (NC) as *glass vase* (*vase, made of, glass)*. Also, adjective-noun pairs (ANs), such as *raw food* formed by an adjective (*raw*) and a noun (*food*) could be interpreted by the relation (*raw, is an attribute of, food*), also enriching the set of relations extracted. That is, learning the relations within NCs and ANs and describing them in form of tuples as (*raw, is an attribute of, food*). This tuple is formed by two arguments (*raw, food)* and a verbal phase (*is an attribute of*) that describes how the arguments are related to each other*.*

According to Nakov [NAK13], compounds cannot be ignored by natural language processing (NLP) applications, since they are abundant in English written text. In fact, this issue is not new and has a long history of study [VAN94] [BAR98] [ROS01] [LAP02] [NAS03a] [NAS03b] [MOL04] [GIR05] [KIM05] [ROS05] [NAK06] [GIR07] [BUT08] [KIM08] [NAK08a] [NAK08b] [NUL09] [BUT10] [LI10] [NUL10] [WUB10] [KIM13] [NUL13] [SEA13]

[UTS13]. James Allen [ALL94] indicates the importance and the challenge of detecting the semantic relationship between the modifying and the modified noun. However, as stated by the same author, "noun-noun modifiers are notoriously difficult to analyze". Thus, despite NC interpretation is a well-studied subject, the findings are still to be improved due to the difficulty of the task. ClausIE [COR13] performs non-verb-mediated extractions in a limited extent for appositions and possessives. However, we are not aware, to the time of this study, of any Open IE solution that extracts relations from NCs or ANs.

1.4. Solution, Results, and Evaluation

Our goal is to evolve the Open IE state of the art by learning relations within NCs and ANs that are not yet extracted. With this purpose, we arrived at CompIE (**Comp**ounds based open **IE**), a component that extracts noun-based relations under Open IE approach.

Butnariu *et al.* [BUT10] explain that NCs provide a concise means of evoking a relationship between two or more nouns. We extend the concept of interpretation of the relations within NCs to the ANs as well. So, to accomplish the task of extracting noun-based relations CompIE learns relations within NCs and ANs. That is, given a NC or an AN, CompIE discovers what is the relationship within it, and generates a tuple comprising arguments (*arg1*, *arg2)* and a verbal phrase that describes the connection between the arguments (*rel*).

To put this idea into practice, CompIE was conceived in two main components: NCs and ANs Extraction and NCs and ANs Interpretation. The first component builds up the basis for the whole procedure, generating a list of NCs and ANs from an input corpus. The second component performs the NCs and ANs interpretation and generates the tuples that describe relations in the form (*arg1, rel, arg2*). To accomplish this goal, we designed a solution comprising three main tasks: ANs interpretation using a rule proposed in this dissertation from the features of the internal constitution of an AN. NCs interpretation uses two approaches: one that relies on lexical databases dictionaries (WordNet[1], Wiktionary, DBpedia[2]), and other based on databases of relations. Finally, the triples unification task unifies the sets of triples generated by each interpretation technique in a final set of relations that is CompIE output. For instance, CompIE generates the triple

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[1] http://wordnet.princeton.edu/
[2] http://dbpedia.org

(company,that_sells,oil) from the NC *oil company.*

To appraise CompIE, we perform an evaluation based on hypotheses. To implement the strategies to validate each hypothesis, we have built a prototype. The ReVerb test set composed by 500 sentences from various domains was used as test corpus [ETZ11]. Our goal is to verify CompIE ability to improve Open IE results by extracting relations not yet extracted by the available state-of-the-art extractors. We measure the number of new relations extracted and calculate Precision.

Two linguists have analyzed the systems results. They independently judged the output as correct or incorrect. The results demonstrate that CompIE complements OLLIE and ClausIE results without decreasing their Precision. The results are also significant regarding the triples extracted by CompIE that are not learned by the other compared systems (considering the McNemar test with a binomial distribution and a significance level of $p < 0.001$).

Regarding the Precision achieved by each interpretation method, ANs interpretation reached a better result than NCs interpretation - 98% against 46%. This happends both regarding the use of the triples in the final result set (99% for ANs versus 66% for NCs) and in relation to the amount of interpretations (323 versus 92). This shows that the NCs extraction still has a scope for improvement.

We have also calculated CompIE's Recall. Our component achieved 43% of Recall. As OLLIE and ClausIE do not inform this metric, it was not possible to compare this result with those state-of-the-art systems.

1.5. Organization

This document is organized in six chapters, the first being this introduction, followed by references. The chapters are divided as follows:

- Chapter 2 presents Open Information Extraction (Open IE), the IE paradigm used in this dissertation for relation extraction, and a discussion about the notion of relation used in Open IE. In addition, it presents the state of the art in this research field and a discussion about evaluation in this area. At the end of this chapter, we bring considerations about the open problems in the area, the main challenges, and the issues we want to address with this work.
- Chapter 3 introduces the concept of compounds in English, focusing on the noun-noun (noun compound, NC) and adjective-noun (AN) combinations. We present

methods for computational understanding of NCs, focusing on NCs and ANs interpretation techniques.

- Chapter 4, core of this work, introduces CompIE, a component that learns relations expressed in NCs and ANs under Open IE paradigm. We present and detail CompIE's architecture, which comprises two main tasks: NCs and ANs Extraction and NCs and ANs Interpretation.

- Chapter 5 presents the evaluation of the solution proposed in this dissertation. We start by showing our evaluation framework. To implement the strategies to validate each hypothesis, we have built a prototype. We present the technical resources used to implement the prototype. Then, we summarize each hypothesis, describing how the validation was performed and showing the results. We close the chapter discussing the results and performing an error analysis.

- Chapter 6 presents our conclusions and future work.

2. OPEN INFORMATION EXTRACTION

"Any fact becomes important when it's connected to another."
— Umberto Eco, Foucault's Pendulum

This chapter introduces Open Information Extraction (Open IE), a paradigm that enables domain-independent discovery of relations directly from a large body of text. Open IE has been designed to address the specific challenges outlined for extraction over very large corpora, as the Web, namely, automation, domain-independence, and scalability [BAN09].

We start this chapter by presenting a general overview about relation extraction, traditional IE, and Open IE. We continue discussing the notion of relation used in Open IE and position it within the grounded literature in the area of automatic relation extraction from text. Then we present works that report the construction of relation extractors using Open IE paradigm, focus of our dissertation. We close the chapter discussing the main challenges of the area.

2.1. Open IE General Overview

Information Extraction (IE) systems aim to learn semantic relations from texts. IE techniques are used to extract limited kinds of semantic content from text, turning the unstructured information embedded in texts into structured data. For instance, IE is an effective way to populate the contents of a relational database [JUR09].

IE systems are usually domain-dependent, and their adaptation to a new domain requires manual labor comprising specification and implementation of new patterns of relationships or corpora annotation [EIC08]. Moreover, this approach is not scalable to corpora with a large number of target relationships or where the target relationships cannot be specified in advance [ETZ11].

Open Information Extraction is an approach to extract relations from texts, regardless the domain and without pre-defining the relations to be learned. Wu and Weld [WU10] define an Open IE extractor as a function from a document, d, to a set of triples (*arg1, rel, arg2*), where *arg* is a noun phrase and *rel* is a textual fragment indicating an implicit semantic relation between the two noun phrases.

The Open IE idea of semantic relation is very broad. Relations are understood as the

connections we perceive among concepts, entities, events and also those expressed by means of attributes. For example, the sentence *Joe bought a beautiful home* informs relations such as *(Joe, bought, a beautiful home)*, *(Joe, bought, a home)*, *(beautiful, is a property of, home)*. Thus, in this context, a more adequate concept is the one from Khoo and Na [KHO06] which states that "semantic relations are meaningful associations between two or more concepts, entities, or sets of entities".

The relations extracted by an Open IE application in the form of triples (*Caesar, was born, Rome*) can be taken as propositions, where each proposition consists of a subject (*Caesar*), a relational phrase or simply a relation (*was born*), and an argument (*Rome*) [COR13].

In short terms, Open IE systems use three main routes to implement relation extraction. The first one is machine learning, i.e., to automatically learn the patterns from a training corpus. The second one is based on heuristics and aims at identifying the occurrence of specific patterns in the text. The last one is the combination of the first two approaches into a hybrid one.

Generically, open extractors based on machine learning work by performing a two main steps process [ETZ11]:

1. Learning: sentences are automatically labeled with extractions using heuristics or distant supervision. A relation phrase extractor is learned using a sequence-labeling graphical model (e.g., CRF).

2. Extraction: a sentence is taken as input, a candidate pair of NP arguments *(arg1, arg2)* is identified from the sentence and then the learned extractor is used to label each word between the two arguments as part of the relation or not. The extractor is applied to the successive sentences in the corpus, and the resulting extractions are collected.

The heuristic based open extractor works basically by performing a two steps process:

1. Parsing: sentences are parsed aiming to obtain syntactic information as POS labels, chunks, and parse trees.

2. Extraction: pre-defined patterns, in form of regular expressions are applied to each sentence in order to identify triples that describe this relation in the text.

For example Figure 1 shows how the heuristic extractor DepOE [GAM12] works for the sentence *The coach of Benfica has held a press conference in Lisbon* and the output of each step.
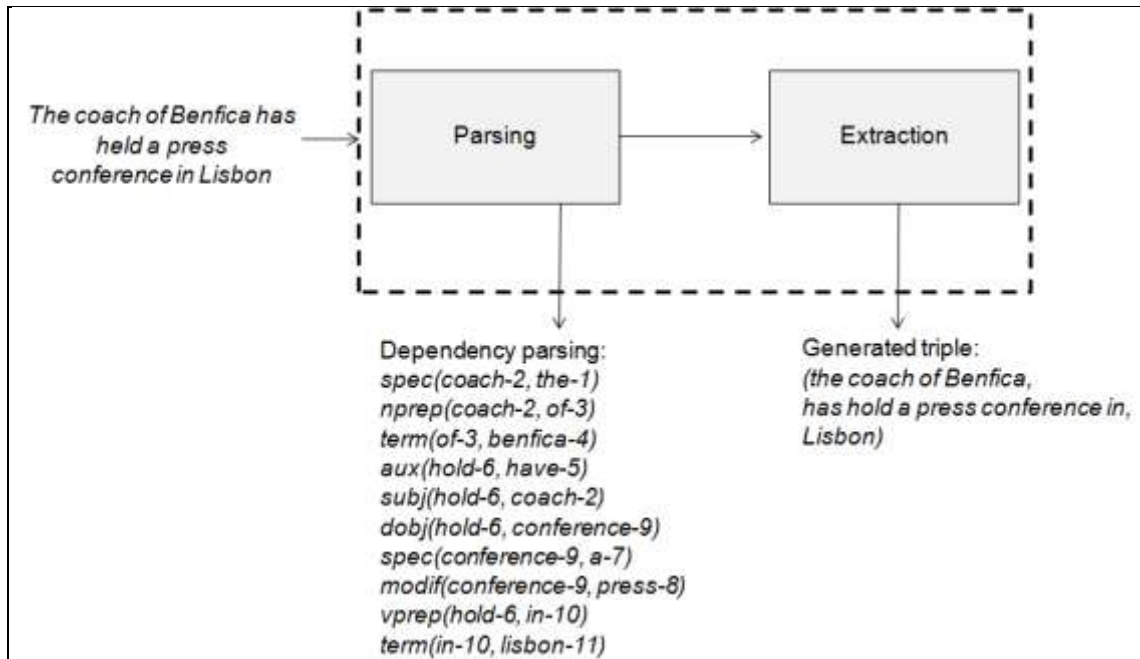
Figure 1.Example of how an heuristic-based extractor (DepOE) works, presenting an input sentence and the system output for each step of the process - example from [GAM12]

Hybrid extractors are based on a three steps process:

1. Learning: seed tuples are used to build a bootstrap training set and learn open pattern templates.

2. Parsing: sentences are parsed aiming to obtain syntactic information.

3. Extraction: The patterns learned in the first step plus other pre-defined patterns in form of regular expressions are applied to individual sentences to learn tuples.

The information extracted by an Open IE extractor may be used in different types of applications. Angeli and Manning [ANG13], for example, propose to use it to enlarge databases of known facts and to predict facts, introducing the notion of fact similarity.

Table 1 - Contrast between traditional and Open IE – reproduced from [BAN09]

	Traditional IE	Open IE
Input	Corpus Labeled Data	Corpus Domain-Independent Knowledge
Relations	Specified in Advance	Discovered Automatically
Development Cost	O(R), R relations	O(1)
Runtime	O(RD) D documents, R relations	O(kD) D documents, small, fixed k^3

Table 1 shows the main differences between traditional and Open IE according to

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[3] k = number of passes over the document collection.

Banko [BAN09] that states that "traditional IE methods learn distinct models for individual relations using patterns or labeled instances, thus requiring manual labor that is linear in the number of relations. Open IE learns a single domain-independent extraction model that discovers an unbounded set of relations with only a one-time cost".

Traditional IE systems must process a corpus of D documents for every relation of interest. This architecture results in a O(RD) runtime that scales linearly with R, the number of relations in D. Given that R is large, to guarantee scalability along with the size of the document collection, Open IE is designed to run independent of the number of relations R. An open extractor takes k passes over the document collection D, where k is fixed and small, enabling the extraction of a large number of relations at Web-scale [BAN09].

Closely related to Open IE, "Read the Web"[4] is a research project that attempts to create a computer system that learns to read the web over time. The system that is also known as NELL created a large corpus of triples. It uses Distant Supervision (DS), to extract instances of relations that are not predefined, the same purpose as Open IE. The key idea behind DS is that training examples for sentence-level extraction models can be automatically distilled from an unlabeled text corpus through the use of a repository of out-of-context facts, called a knowledge base (KB). Instead of using linguistic patterns to extract strings describing the relation directly from the text, as in Open IE, DS relies on a schema or ontology to define the relations to be extracted. For example, suppose the goal is to learn a model for recognizing instances of the *president_of* relation and that a KB contains the fact *president_of (Barack Obama,United States)*. This fact is used to automatically identify which sentences in a text corpus can provide useful signals to the learning process of this relation [BET14].

2.2. Open IE Systems

Here we present works that report the construction of relation extractors using Open IE paradigm. We start with TextRunner system and its adaptations. Then we describe ReVerb and DepOE, two rules-based systems. Finally, we describe OLLIE and ClausIE, the two systems that, to the best of our knowledge, configure the state of the art in the area. We conclude with considerations on related work and the possible directions for research on

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[4] http://rtw.ml.cmu.edu/rtw/

the subject.

2.2.1. TextRunner and its adaptations

TextRunner system was the first with reference to the use of the Open IE paradigm. It was presented in the demo description "Open Information Extraction from the Web" [BAN07] and in the article "TextRunner: open information extraction on the Web" [YAT07] and detailed in the Ph.D. dissertation "Open Information Extraction for the Web" [BAN09].

TextRunner includes an unsupervised learning module that operates in two stages. First, it automatically identifies and labels its own training examples of relationships as positive or negative by using the parser described in [KLE03]. Figure 2 graphically describes the operation of the system and its output: the set of raw tuples extracted and the final set of treated and scored tuples.
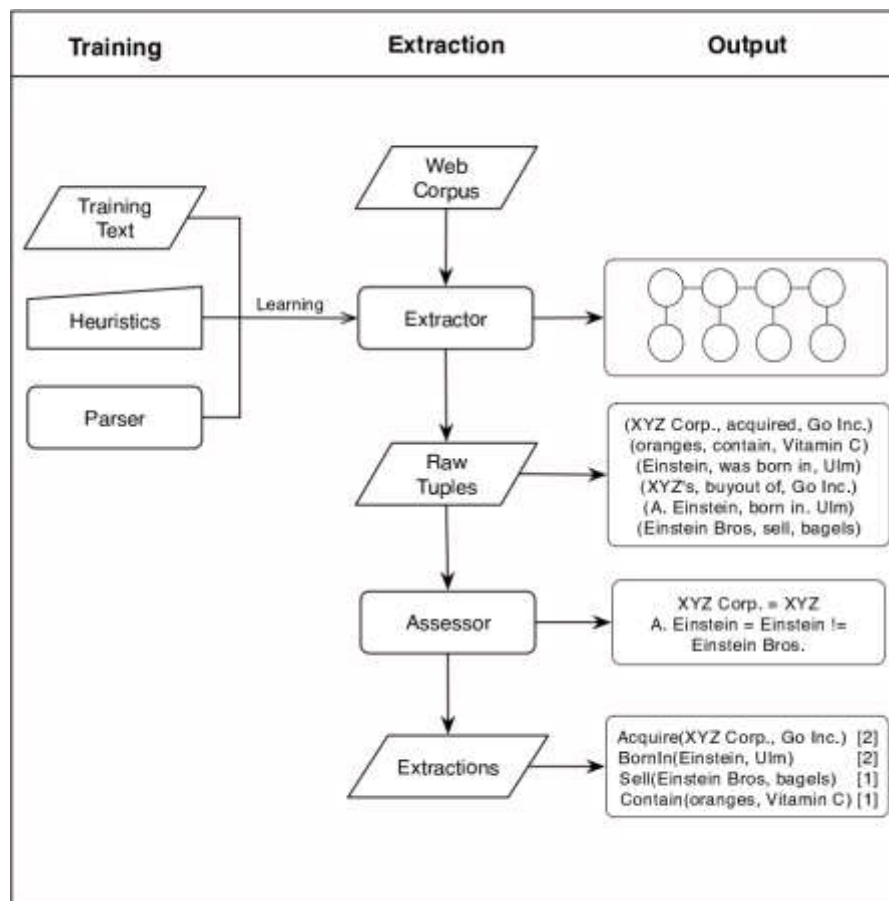
Figure 2. TextRunner architecture – extracted from [BAN09]

Before extracting the relationships in large scale, TextRunner applies a series of heuristics on a set of parsed sentences and obtains a set of labeled examples in form of

tuples representing relations. The heuristics capture dependencies across relational parsed and semantic role labeled[5] sentences.

The heuristics used to identify positive examples allow the extraction of noun phrases participating in a subject-verb-object relationship and predicate-argument structures expressing location, time, manner, direction, etc. For instance, *Einstein received the Nobel Prize in 1921* yields two positive tuples: *(Einstein,receive, Nobel Prize)* and (*Einstein, receive Nobel Prize in, 1921*) [BAN09].

For each sentence in the input corpus, TextRunner identifies the entities in phrases through a maximum-entropy-based model of phrases. Then, it identifies possible examples of relationships between each pair of possible entities. TextRunner authors developed two different extractors: O-NB and O-CRF.

O-NB treats Open IE as a classification problem by using a set of labeled examples to learn a Naïve Bayes classifier. This classifier provides tokens of two neighboring entities heuristically selected indicating, or not, a relationship.

The O-CRF runs a single scan over the documents, marking the sentences with morphosyntactic tags and extracting the noun phrases. Relations are found by analyzing the text between noun phrases. For each pair of noun phrases, the system applies a CRF classifier [SUT12] indicating, or not, a relationship between these phrases.

Once the extractor is applied to the input corpus, the post-processing steps normalize the triples and check for extractions that may express the same fact and then assign them a score using a redundancy based method.

The evaluation of the results was performed using the Penn Treebank[6] as input for the training, generating about 180,000 samples, out of which 15% were automatically labeled as positive. TextRunner was evaluated using a test corpus of 9 million Web documents, and it extracted 7.8 million tuples.

To measure Precision and Recall, they used a random sample of 500 manually labeled tuples. O-CRF obtained Precision of 88.3% and Recall of 45.2%. O-NB obtained 86.6% and 23.2% Precision and Recall, respectively.

WOE [WU10] is a continuation of TextRunner including changes in the training data. This new system uses heuristic correspondences between values of attributes in Wikipedia infoboxes and sentences in order to build training data. It operates in two

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[5] The semantic roles are identified according to the tags described in the Penn Treebank: Penn part-of-speech tags: Annex C (http://www.ling.upenn.edu/courses/Fall_2003/ling001/penn_treebank_pos.html)
[6] http://www.cis.upenn.edu/~treebank/

modes: the first (WOE[pos]) restricted to POS tagging functions and the second (WOE[parser]) using dependency parse functions. [WU10] reports experiments comparing TextRunner, WOE[parser] and WOE[pos] performance. The authors argue that WOE[pos] reached F-measure between 15% and 34% higher than TextRunner, and that WOE[parser] reached F-measure between 79% and 90% greater than TextRunner. The performance improvement was mainly due to better training data from Wikipedia and WOE heuristics to label positive examples.

Based on TextRunner, the article "The Tradeoffs Between Open and Traditional Relation Extraction" [BAN08] proposes a comparison of traditional IE paradigms and Open IE. The reported experiments focused on demonstrating the benefits of Open IE extraction with predetermined and non predetermined relations. The work concludes that Open IE is essential when the number of relationships of interest is massive or unknown, and traditional IE is more appropriate for "targeted extraction" when the number of relations of interest is small and one is willing to incur the cost of acquiring labeled training data.

TextRunner is a very significant system for Open IE, since it was the first one to use this paradigm. Banko and Etzioni [BAN09] proposed adaptations that have kept the core of the original method, refining and improving the results. However, it still requires the solution of two major problems: incoherent and uninformative extractions [ETZ11].

Incoherent extractions occur when the extractor takes a sequence of bad decisions about where to include each word in the extracted relation, resulting in meaningless relationships. Uninformative extractions occur if the extractor omits critical information. For example, taking the phrase *Hamas Claimed responsibility for the Gaza attack*, TextRunner obtained the triple (*Hamas, claimed, responsibility*), while the correct extraction would be (*Hamas, claimed responsibility for, the Gaza attack*). This type of error is caused by improper handling of light verb constructions (LVC). Etzione *et al.* [ETZ11] explain that "an LVC is a multi-word predicate composed of a verb and a noun, with the noun carrying the semantic content of the predicate".

2.2.2. ReVerb

Aiming at going beyond TextRunner, the papers "Open Information Extraction: The Second Generation" [ETZ11] and "Identifying Relations for Open Information Extraction" [FAD11] describe the ReVerb system. The main difference between ReVerb and TextRunner lies on the methodology, focused on the linguistic analysis of random

sentences. This linguistic analysis is based on simple rules that identify how the relationships are expressed by English verbs.

ReVerb searches for relations, instead of arguments, by avoiding that a noun that is part of the expression that entails the relationship is mistaken by an argument. For example, this is the case for the noun *responsibility* in the relation *claimed responsibility for*.

ReVerb input sentences chunked and POS (Part-Of-Speech) labeled using OpenNLP[7]. The algorithm first identifies relations by detecting the phrases that satisfy a syntactic and a lexical constraint and then extracts the arguments of these relations, seeking a pair of arguments for each relational phrase. Finally, it is assigned a confidence score for each resulting extraction.

$$V \mid VP \mid VW^*P$$
$$V = \text{verb particle? adv?}$$
$$W = (\text{noun} \mid \text{adj} \mid \text{adv} \mid \text{pron} \mid \text{det})$$
$$P = (\text{prep} \mid \text{particle} \mid \text{inf. marker})$$

Figure 3. Regular expression used to reduce the number of incoherent extractions – reproduced from [ETZ11]

The syntactic restriction requires that the sentence containing a relationship matches to one of the regular expressions in Figure 3. The authors explain that "the pattern limits relation phrases to be either a simple verb phrase (e.g., *invented*), a verb phrase followed immediately by a preposition or particle (e.g., *located in*), or a verb phrase followed by a simple noun phrase and ending in a preposition or particle (e.g., *has atomic weight of*). If there are multiple possible matches in a sentence for a single verb, the longest possible match is chosen. Finally, if the pattern matches multiple adjacent sequences, we merge them into a single relation phrase (e.g., *wants to extend*)".

The lexical restriction aims at filtering potential relationships based on statistics over a large corpus. This restriction is intended to eliminate very specific relations, since the corpus may contain sentences that satisfy the syntactic restriction, but do not represent useful relations. The restriction identifies the valid relations based on the intuition that a valid relationship should appear several times in a large corpus.

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[7] http://opennlp.apache.org/
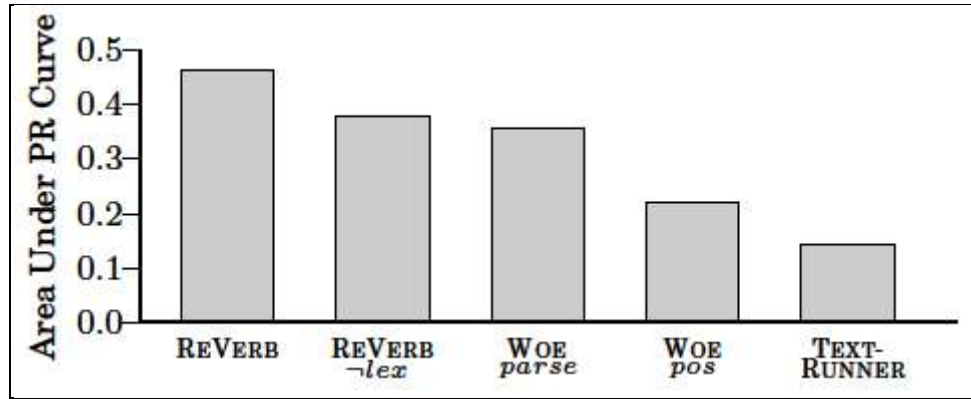
Figure 4.Comparison of AUCs values for ReVerb, ReVerb$^{\neg lex}$, TextRunner, WOE^{parser} and WOE^{pos} – reproduced from [ETZ11]

ReVerb results were compared to those from the systems ReVerb$^{\neg lex}$ (ReVerb itself without lexical constraints), TextRunner [BAN07], WOE^{pos}, and WOE^{parse} [WU10]. The reported experiment used a set of 500 sentences collected from the Web. After executing each extractor, two human judges evaluated each extraction as correct or not. The judges reached an agreement of 86%. The results (Figure 4) refer to this set of extractions. The authors reported that ReVerb reached AUC (Area Under Precision and Recall Curve) more than twice that achieved by TextRunner or WOE^{pos}, and 30% higher than WOE^{parse}. The lexical filtering provides a significant boost in performance, with ReVerb achieving an AUC 23% higher than ReVerb$^{\neg lex}$.

The R2A2 system, described in [ETZ11], combines ReVerb relation phrases with an argument identifier, ArgLearner, to better extract the arguments for the relation phrases. ArgLearner uses patterns as features to identify arguments, seeking to reduce errors associated to the arguments of the relations obtained. ArgLearner works in two tasks: (1) detecting Argument 1; (2) detecting Argument 2. Each task is subdivided again to identify the left and right boundaries of each argument. ArgLearner employs three classifiers for this purpose. Two of these identify the left and right boundaries of Argument 1, and the last classifier identifies the right boundary of Argument 2. Since Argument 2 almost always follows the relation phrase, R2A2 do not separate its left bound classifier.

R2A2 and ReVerb were tested over a 200-sentence corpus from the New York Times and a corpus of 200 sentences obtained from the Web. Three human evaluators judged the results, pointing out whether each tuple was correct; if so, they indicated whether the relationship arguments were correct. The result of this evaluation (Figure 5) was an AUC area almost twice as large as ReVerb.
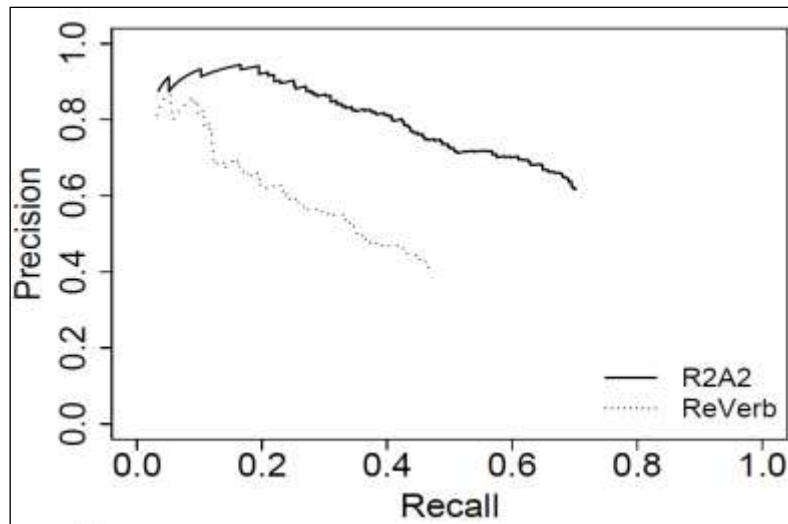
Figure 5.Comparison of AUCs of R2A2 and ReVerb – reproduced from [ETZ11]

2.2.3. DepOE

In the article entitled "Dependency-Based Open Information Extraction" Gamallo *et al.* [GAM12] propose the improvement of Open IE methods and the extraction of relations in other languages than English. DepOE performs "unsupervised extraction" of triples and multilingual extraction (English, Spanish, Portuguese and Galician) by using a rule-based parser. The extraction method operates in three steps: dependency analysis, identification of the clausal components, and application of extraction rules.

To perform the dependency analysis in the first step, each sentence is treated using the multilingual parser DepPattern[8], which represents the sentences as dependency trees.

The second step identifies the clauses in each sentence and then for each clause, the participant verbs, including associated components such as: subject, direct object, and prepositional complement. For example, in the sentence *The coach of Benfica has held a press conference in Lisbon* there is only a clause containing a verbal phrase (*have hold)* and three participants: the subject *coach of Benfica,* the direct object *press conference*, and the prepositional phrase *in Lisbon*. Thus, the dependency path generated in the first step produces a partial tree where only the clause constituents are selected. The verbal phrase is similarly constructed.

In the third step the extraction rules are applied. The rules shown in Table 2 are applied to the constituent clauses in order to extract the triples. The output is a triple consisting of

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[8] htpp://gramatica.usc.es/pln/tools/deppattern.htm

tokens along with (some) linguistic information such as lemma, POS tags, etc. The simplest rule is applied to only one sentence containing a subject and a direct object. In such case, the two components are the arguments of the triple, and the verbal phrase is the relation.

Table 2 - DepOE extraction rules used to generate triples – reproduced from [GAM12]

Patterns	Triples
subj-vp-dobj	Arg1 = subj Rel= vp Arg2 = dobj
Subj-vp-vprep	Arg1 = subj Rel= vp+prep (prep from vprep) Arg2 = np (from vprep)
subj-vp-dobj-vprep	Arg1 = subj Rel= vp+dobj+prep Arg2 = np (from vprep)
subj-vp-attr	Arg1 = subj Rel= vp Arg2 = attr
subj-vp-attr-vprep	Arg1 = subj Rel= vp+attr+prep(from vprep) Arg2 = np (from vprep)

As previously mentioned, in the sentence *The coach of Benfica has held a press conference in Lisbon*, the detected clause contains three arguments: subject (*coach of Benfica*), direct object (*a press conference*), and a prepositional complement (*in Lisbon*). In this case, the extraction strategy is similar to the one used by ReVerb, that is, to consider a relation a verbal phrase followed by a noun phrase and delimited by a preposition. Thus, the sentence elements are classified by DepOE as reported in Figure 6.

the coach of Benfica: subj
have hold: vp
a press conference: dobj
in Lisbon: vprep

Figure 6. Sentence *The coach of Benfica has held a press conference in Lisbon* elements classified by DepOE.

Table 3 - Pattern used by DepOE in the sentence The coach of Benfica has held a press conference in Lisbon [GAM12].

subj-vp-dobj-vprep	Arg1 = subj Rel= vp+dobj+prep Arg2 = np (from vprep)

According this classification, DepOE can apply more than one of the patterns in Table 2

to extract relations from the sentence, but [GAM12] reports that only the pattern in the third line is applied, as presented in Table 3, and illustrated by Figure 7.

ARG1: *the_DT coach_N-H of_PRP benfica_N*
REL: *have_V hold_V-H a_DT press_N confer-ence_N-H in_PRP*
ARG2: *Lisbon_N-H*

Figure 7.Elements that constitute the relationship in the sentence *The coach of Benfica has held a press conference in Lisbon* – reproduced from [GAM12]

DepOE was used to extract triples from Wikipedia texts in English, Spanish, Portuguese, and Galician. Qualitative evaluation was reported only for English data, comparing the results with those from ReVerb. The authors used a test set of 200 sentences randomly selected from Wikipedia. Each extraction was independently analyzed by two judges under two different aspects: the quality of the relationships identified and the quality of the total uptake, i.e., the extracted triples (relation and arguments). In total, the DepOE extraction presented Precision of 68%, while ReVerb reached 52% Precision. These results are shown in Figure 8.
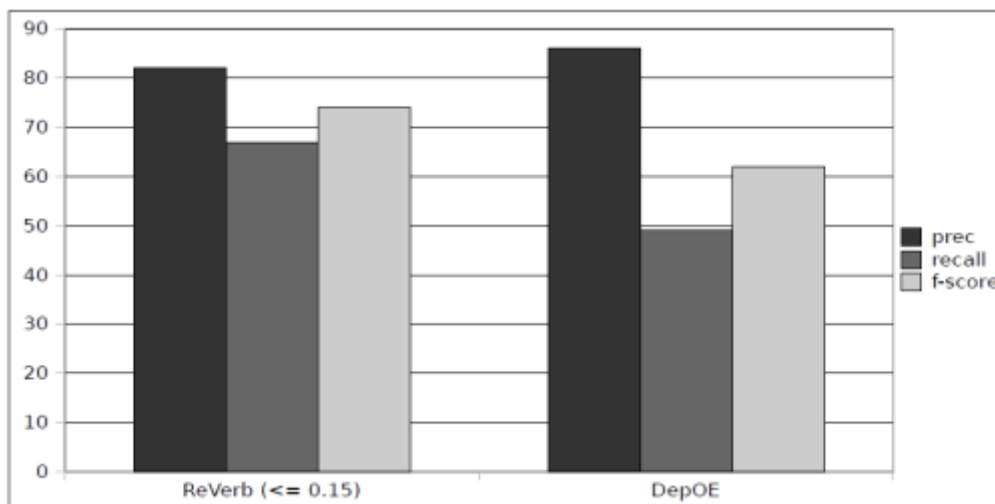
Figure 8.Evaluation of the relation extraction performed by DepOE and ReVerb (with a confidence score >= 0.15) - reproduced from [GAM12]

2.2.4. OLLIE

The paper "Open Language Learning for Information Extraction" [MAU12] presents OLLIE, an extractor that aims at improving Open IE by expanding the syntactic scope of the phrases that express the relations, obtaining a larger number of relations and adding

contextual information such as attribution and signaling clausal modifiers.

Aiming at automatically creating a large training set, the system starts with a set of seed tuples from ReVerb to bootstrap a training set used for learning pattern templates. For each seed tuple, the system retrieves in a Web corpus all the sentences that contain all content words in the tuple. Thus, it obtains a total of 18 million sentences. The bootstrapping hypothesis is that "all these sentences express the information of the original seed tuple" [MAU12]. In order to reduce the bootstrapping errors, additional dependency restrictions are added to the sentences, only allowing sentences where the content words from arguments and relation can be linked to each other via a linear path of size not larger than four in the dependency parse tree.

Next, it learns general patterns that encode ways of expressing relations named *open pattern templates*, which are mappings from a dependency path to an open extraction, i.e., ReVerb patterns that identify both the arguments and the exact relation phrase. To learn the pattern templates, first it is extracted the dependency path connecting the arguments and relation words for each seed tuple and the associated sentence. Then, the relation node in the path is POS-tagged and annotated with the exact relation word (as a lexical constraint). After that a relation template is created from the seed tuple by normalizing "is"/"was"/"will be" to "be", and replacing the relation content word with {rel}. Next, several syntactic checks are performed on each candidate pattern. These checks are supposed to look for the constraints in very general patterns, which can generalize to other unseen relations.

After, these patterns are applied to binary relations extraction. First, OLLIE matches the open patterns with the dependency parse of the sentence and identifies the base nodes for arguments and relations. Then it expands them, to convey all the information relevant to the extraction.

Finally, it analyzes the context around the tuples in order to add information by using a confidence function with a supervised logistic regression classifier. Cases in which OLLIE extends the tuple representation include conditional truth and attribution. Consider the sentence *Early astronomers believed that the earth is the center of the universe*. It is not asserting that *the earth is the center of the universe*. In that case, OLLIE adds an AttributedTo field, which makes the final extraction valid. This field indicates who said, suggested, believes, hopes, or doubts the information in the main extraction. The triple generated is: ((*the earth; be the center of; the universe*) AttributedTo *believe*; *Early astronomers*).
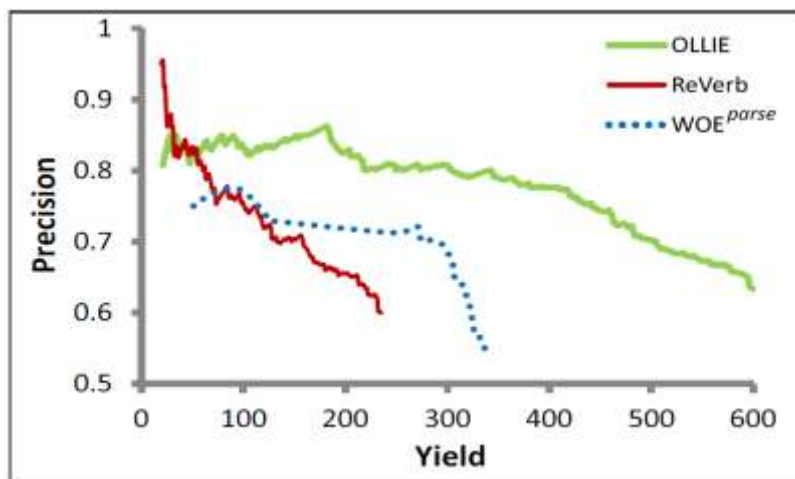
Figure 9.Comparison of OLLIE and other Open IE systems – reproduced from [MAU12]

For the evaluation the authors used a dataset of 300 random sentences from three sources: News, Wikipedia, and a Biology textbook. They ran three systems: OLLIE, ReVerb, and WOEparse. As presented in **Erro! Fonte de referência não encontrada.**, the authors report that the system obtains a 1.9 to 2.7 times larger area under Precision-Yield curve, if this one is compared to those from ReVerb and WOE.

They explain that 40% of the OLLIE extractions that ReVerb misses are due to OLLIE's use of parsers, since ReVerb misses those because its shallow syntactic analysis cannot skip over the intervening clauses or prepositional phrases between the relation phrase and the arguments. About 30% of the additional Yield is formed by extractions where the relation is not between its arguments. The remaining 10% are due to other cases such as OLLIE's ability to handle relationships mediated by nouns and adjectives, or ReVerb's shallow syntactic analysis, etc. In contrast, OLLIE misses very few extractions returned by ReVerb, mostly due to parser errors.

Regarding WOE^{parse} they explain that it misses extractions found by OLLIE for a variety of reasons. The primary cause is that WOE^{parse} does not include nouns in relation phrases. It also misses some verb-based patterns, probably due to training noise. In other cases, WOE^{parse} misses extractions due to ill-formed relation phrases.

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2.2.5. ClausIE

ClausIE extractor, presented in the paper "ClausIE: clause-based open information extraction" [COR13], separates the detection of clauses and clause types from the generation of the proposition. The authors define a clause as part of a sentence that expresses some coherent piece of information; it consists of subject, verb, and

complement, and one or more adverbs. The proposition is the tuple that describes a relation.
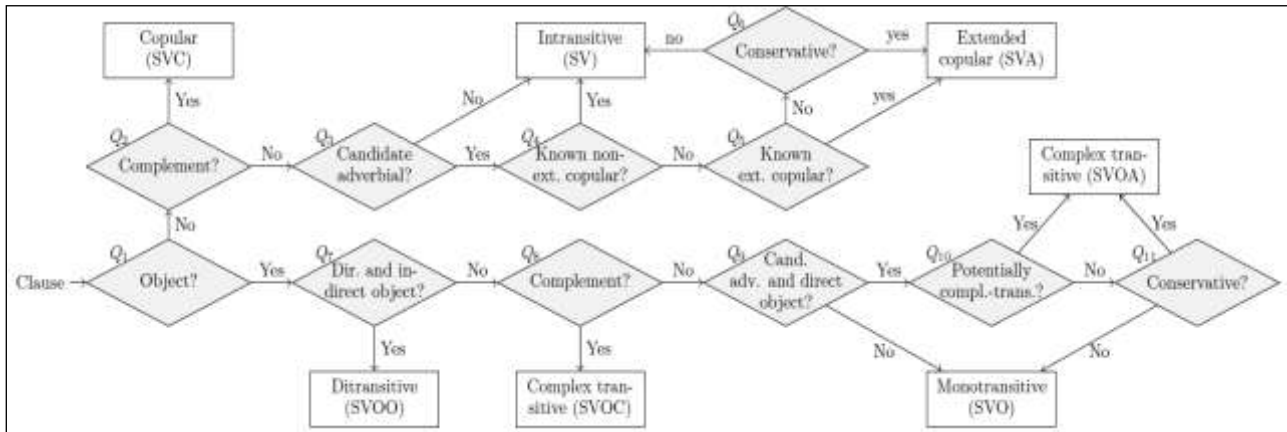
Figure 10.Flow chart for verb-type and clause-type detection – reproduced from [COR13]

For each input sentence, ClauseIE:

1. Parses the sentence with Stanford dependency parser[9].

2. Determines the set of clauses by identifying the clauses in the input sentence. For example, it obtains the clause (S: *Bell*, V: *makes*, O: *products*), (S: *Bell*, V: *based*, A: *Angeles*), (S: *Bell*, Vc: \is", C: *company*) from the sentence *Bell, a telecommunication company, which is based in Los Angeles, makes and distributes electronic, computer and building products*. For that, it maps the dependency relations of the sentence parse tree to clause constituents.

3. Identifies the type of each clause, combining knowledge about properties of verbs with knowledge about the structure of the input clause. The approach to clause-type detection can be viewed as a decision tree (represented in Figure 10), i.e., a number of questions whose answers ultimately determine the clause type.

4. Generates propositions first by deciding which (combinations of) constituents form a proposition, in a process closely related to text simplification where the resulting clauses can be viewed as simpler versions of the original clauses; and second, by generating propositions for each selected subset of constituents.

ClausIE handles non-verb-mediated extractions in a limited extent creating synthetic clauses for appositions and possessives using an artificial verb such as *is* and *has*. For example, from the sentence *Bell, a telecommunication company, which is based in Los*

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[9] http://nlp.stanford.edu/software/stanford-dependencies.shtml

Angeles the clause (*S: Bell, Vc: "is", O: company*) is learned this way, where words within quotation marks refer to an artificial verb (*"is"*) and without quotation marks refer to a word in the original sentence.

Table 4 - Number of correct extractions / total number of extractions (division result - corresponding to Precision between parenthesis) – data from [COR13]

Dataset	ClausIE	OLLIE	ReVerb	WOE	TextRunner trained with ReVerb	TextRunner
ReVerb	1706/2975 (0.57)	547/1242 (0.44)	388/727 (0.53)	447/1028 (0.43)	343/837 (0.41)	286/798 (0.36)
Wikipedia	598/1001 (0.60)	234/565 (0.41)	165/249 (0.66)	not evaluated	not evaluated	not evaluated
NYT	696/1303 (0.53)	211/497 (0.43)	149/271 (0.55)	not Evaluated	not evaluated	not evaluated

The authors report tests using three different datasets: 500 sentences from ReVerb test dataset (dataset 1), 200 random sentences from Wikipedia (dataset 2) and 200 random sentences from the New York Times (dataset 3). Table 4 shows the total number of correct extractions as well as the total number of extractions for each method and dataset, as reported in [COR13].
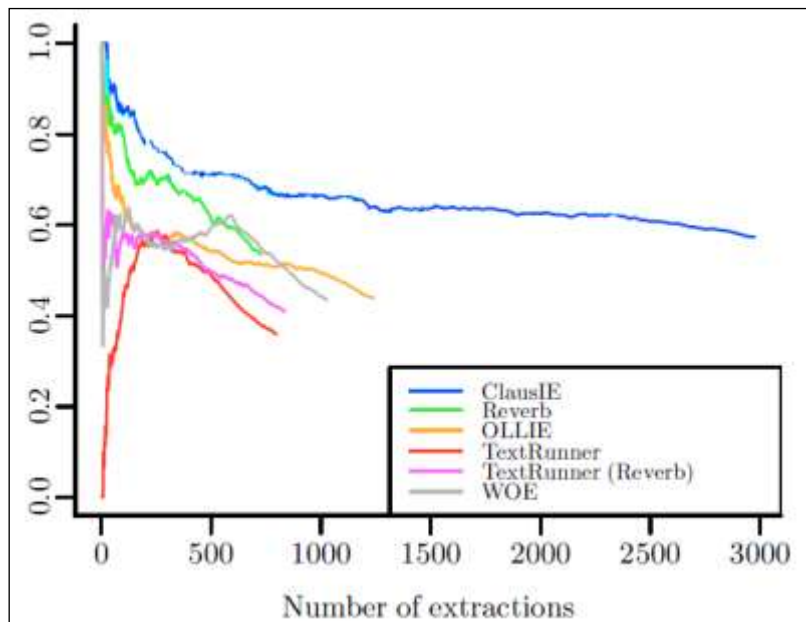
Figure 11.Comparison of ClausIE to other Open IE systems using the ReVerb input corpus – extracted from [COR13]

Corro and Gemulla [COR13] declare that ClausIE achieved higher precision and recall than the other extractors when using ReVerb corpus, as shown in Figure 11. The article does not report specific Recall numbers, only the data tabulated in the chart. Specifically, ClausIE produced 2.5-3.5 times more correct extractions than OLLIE, the best-performing

alternative method. The authors claim that the increase in recall is obtained because ClausIE considers all adverbials in a clause (instead of only the one following the verb), handles non-verb-mediated extractions in a limited extent and detects non-consecutive constituents, processes coordinated conjunctions, and outputs triples with non-noun-phrase arguments.

2.2.6. Evaluation in Open IE

Open IE evaluation is strongly based on Information Retrieval evaluation strategies. We describe F-measure, Precision, and Recall by adapting the concepts of Manning *et al.* [MAN08] to the context of Open IE.

Precision (P) is the fraction of extracted relations that are correct.

$$Precision = \frac{\#(correct\ relations\ extracted)}{\#(all\ relations\ extracted)}$$

Recall (R) is the fraction of correct relations that are extracted.

$$Recall = \frac{\#(correct\ relations\ extracted)}{\#(correct\ relations)}$$

F-measure (F1) is the weighted harmonic mean of Precision and Recall.

$$F\text{-}measure = \frac{2 * Precision * Recall}{Precision + Recall}$$

The use of the Yield metric in Open IE is introduced by Mausam *et al.* [MAU12]. The authors argue that evaluating Recall is difficult in Open IE systems, given the volume of relations that are extracted. They claim that the Yield value is proportional to Recall.

Yield (Y) is calculated by multiplying the total number of extractions by the Precision.

$$Yield = \#(relations\ extracted) * Precision$$

The Open IE literature reveals the use of the following measures to evaluate the effectiveness of the extractors: Precision [ETZ11] [FAD11] [GAM12] [MAU12] [COR13], Recall [FAD11] [GAM12] [ETZ11], F-measure [GAM12] [ETZ11], Yield [MAU12], AUC (Area Under the Precision and Recall Curve) [ETZ11] [FAD11] [COR13] and Area Under the Precision-Yield Curve [MAU12]. Those are set-based measures computed using unordered sets of relations.

According to Boyd *et al.* [BOY13], the area under the Precision-Recall (PR) curve (AUC) is a single number that summarizes the information in the PR curve. A PR curve is built by first plotting Precision-Recall pairs that are obtained using different thresholds and

then plotting the points in the PR space. From that, a curve is drawn, and the AUC is computed. Open IE uses the confidence score of each extraction as this threshold. For instance, ReVerb [ETZ11] and OLLIE [MAU12] assign for each extraction a confidence score using a logistic classifier[10] trained on random Web sentences with shallow syntactic features, and ClausIE [COR13] takes the confidence score of the dependency parses generated by the Stanford Parser as the confidence score of each extraction.

2.3. Open Issues

Unlike relation extraction methods focused on a pre-defined set of target relations, Open IE aims at identifying all types of relationships found in the text. The goal of an Open IE system is to extract a large number of tuples describing as many relations within the text as possible with a high Precision. So far Open IE systems have focused on verbal phrases as indicators of relationships.

From the Open IE works [BAN07] [YAT07] [BAN08] [BAN09] [WU10] [ETZ11] [FAD11] [GAM12] [MAU12] [COR13], we realize that the extraction of relations from a text is a challenging issue that is still far from being completely addressed.

The two tools that make up the Open IE state of the art, OLLIE [MAU12] and ClausIE [COR13], intend to address the previous system's higher flaw in identifying the arguments of relations. Mausam *et al.* [MAU12] and Corro and Gemulla [COR13] claim that most of the extraction errors are due to two problems: parsers failures and inability to express the relationships in the texts into binary relations, i.e., if the relationships in the text do not involve specifically two arguments, the extracted relations turn out to be incorrect because the extractors are focused on the learning of binary relationships.

An important issue in the ClausIE and OLLIE state-of-the-art systems is that, aiming at extracting the largest number of relations from the same sentence, they lose Precision. They generate triples that are near to reproductions of the text and contain arguments that are not necessarily one single noun phrase. For instance, Table 5 presents the triples extracted from the sentence *tax revenue is the income that is gained by governments through taxation. Just as there are different types of tax, the form in which tax revenue is collected also differs.*

Table 5 - Triples extracted by ClausIE and OLLIE from the sentence tax revenue is the

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[10] Multinomial logistic regression model with a ridge estimator.

income that is gained by governments through taxation. Just as there are different types of tax, the form in which tax revenue is collected also differs.

ClausIE : (*types of tax , differs , ´*) (*tax revenue , is , the income just as there are different types of tax differs*) (*the income just as there are different types of tax differs , is gained , by governments through taxation*) (*the income just as there are different types of tax differs , is gained , by governments*) (*tax , is , the form*) (*tax revenue , is collected , also in the form*) (*tax revenue , is collected , in the form*)
OLLIE: (*tax revenue; is; the income that is gained by governments through taxation*) (*tax revenue; is collected also; differs*) (*tax revenue; is collected also differs in; the form*)

Table 5 shows that OLLIE extracted 3 sentences and out of those only one was considered correct (informative), i.e., 33% of Precision. ClausIE extracted 7 relations, being 3 considered correct (informative) and 4 incorrect (non-informative), achieving a Precision of 43%.

Focusing on the gaps in the extraction of arguments, Gamallo *et al.* [GAM12] state that ReVerb and DepOE do not differ significantly in the type of problems in identifying the arguments. Altogether, 65% of relationships incorrectly extracted by ReVerb represent cases in which the heuristic arguments identification screwed. An example of mistake for ReVerb is the extraction of the triple (*I, gave, him*) from the sentence *I gave him 15 photographs* (as mentioned in [ETZ11]).

Regarding the failure to extract the relations between the arguments, the two most significant problems are: incoherent extractions and uninformative extractions. Incoherent extractions are those that do not have a meaningful interpretation. According to Etzione *et al.* [ETZ11], for instance, from the sentence *the guide contains dead links and omits sites* it would be inconsistent to extract the relation *contains omits*. An example of an uninformative relation would be *is* in place of *is the author of.*

Recently, Bast and Haussmann [BAS14] sought to minimize the uninformative extractions problem proposing the use of inference rules to improve the informativeness of extracted triples. They claim that, for Information Retrieval applications, some of the abstract tuples extracted by the Open IE systems are useless. Notice that the notion of informativeness used by Bast and Haussmann is stricter than the one proposed by Fader *et al.* [FAD11]. Particularly, they consider a triple as uninformative if "there is a more precise triple that should be extracted instead". However, we argue that the notion of

informativeness is prone to application biases, since it may be improper to compare different systems and applications necessities.

Another issue in the Open IE literature is the discrepancy of the evaluation measures and results. This situation can be illustrated with the different measures used to evaluate and report results. Etzione *et al*. [ETZ11] report their results using the Area under Precision and Recall Curve. Gamallo *et al*. [GAM12] report Precision, Recall, and F-Score. Mausam *et al*. [MAU12] work with the Area under Precision and Yield Curve. Finally, Corro and Gemull [COR13] present results using a Precision x Number of extractions representation and a table with the Number of correct extractions / total number of extractions.

According to Etzione *et al*. [ETZ11], there are three key points that must be addressed to improve the results of Open IE techniques.

Extracting n-ary relations, since not all relationships expressed in a text are binary. For example, from the sentence *The first commercial airline flight was from St. Petersburg to Tampa in 1914*, we can learn two or three triples from the relational sentences as: *(the first commercial airline flight, was from, St. Petersburg), (the first commercial airline flight, was to, Tampa), (the first commercial airline flight, was in, 1914)* [GAM12]. Trying to address this issue, Akbik and Alexander [AKB12] present an initial stage work performing the extraction of n-ary relations based on heuristic rules applied to POS tagged and dependency parsed sentences. ClausIE [COR13] also handles this issue and generates *n-ary* facts.

Learning relationships that are not expressed by verbs, as the relation (*Bloomberg, is the Mayor of, Seattle*) that can be inferred from the sentence *Seattle Mayor Bloomberg said that...* Extractions such as in the example, based on NCs, are difficult to obtain with high Precision, given the complexity of determining the semantics embedded in noun-noun sequences. Other important point to address is the representation of the relations present in ANs. For instance, the sentence *the blue car leaves the garage*, presents a relation between *car* and *garage*, but also *car* has the property of being *blue*, that can be interpreted as a relation, as we will see in more detail in Chapter 3.

Extending Open IE systems to other languages than English. In this sense, Gamallo *et al.* [GAM12] reported the extraction of relations in other languages in addition to English, although they do not present qualitative assessment of these extractions.

In addition to the points raised by Etzione, we consider it would be important to minimize the number of relations containing pronouns as arguments, since they are unclear outside the context of the sentence. The use of coreference resolution would

increase the number of informative relations.

From this analysis of Open IE methods, we believe that a solution that includes the extraction of relationships not expressed by verbs is essential. Mausam *et al.* [MAU12] claim that current systems miss "important information mediated via other syntactic entities such as nouns and adjectives". Furthermore, improving the learning of consistent and informative relations from verbs is also important. In order to put this into practice, we consider the use of heuristics and the generation of compounds interpretations are appropriate to this task.

2.4. Considerations

In this chapter, we introduced the Open IE approach to extract relations from texts and presented works that report the construction of extractors using this paradigm. Since our goal is to improve Open IE, we focused the background work on this subject, which is the basis of our study.

We made our considerations on the different forms of evaluation adopted, which lead to a variety of strategies that, in most cases, hinder comparisons among results. We also discussed about the issues that still need to be addressed.

In the next chapter, we will present the concept of compounds in English, focusing on the noun-noun and adjective-noun combinations (NCs and ANs) and on their interpretation.

3. INTERPRETATION OF NOUN COMPOUNDS AND ADJECTIVE-NOUN PAIRS

> *"I don't talk things, sir. I talk the meaning of things."*
> — *Ray Bradbury, Fahrenheit 451*

This chapter presents a study about compounds in English. Our goal is to explore possibilities of the computational learning of relations within Compounds especially to apply them to the Open IE area. As compounds, in this dissertation we focus on the noun-noun (noun compound, NC) and adjective-noun (AN) combinations. The relations within a NC or AN compound, as pointed by Mausam *et al.* [MAU12], Etzione *et al.* [ETZ11] and Gamallo *et al.* [GAM12], are an open problem that needs to be addressed in the Open IE research field.

We extend the Open IE current approach, which in most cases explores the relation concept as a surface verbal connection between entities, in order to contemplate NCs and AN relations. We include in this extension, connections as links between entities that form a single meaning (as in *ceramic vase - vase made of ceramic*) or attribution relations that characterize a noun preceded by an adjective (as in *beautiful girl – beautiful, is attribute of, girl*).

The modification of an adjective by an adverb (such as in *very beautiful* or *considerably high*) is not addressed in our studies. The case of adjective sequences preceding a noun (as in *deep blue sky*) is also outside the extent of this dissertation. Those cases represent a group of problems that needs to be addressed in a future work.

In the following sections, we introduce the central ideas on the NC and approach the current efforts to computationally understand the relations within it. We also bring a discussion on the AN combination and provide means to perceive and represent the attributive relation between noun and adjective. We close the chapter with a set of considerations that are important to contextualize NCs and ANs interpretation for extracting the relations within compounds under the Open IE paradigm.

3.1. Noun compounds

NCs are sequences of nouns that act together in order to constitute a single meaning. A NC is formed by a head (e.g., *bracelet* in *diamond bracelet)*, which is a noun, and its

modifier, which is also a noun (e.g., *diamond* in *diamond bracelet)*. NCs with more than one modifier noun, as *support vector machine*, can also be found. NCs provide a concise way of evoking a relationship between two or more nouns [BUT10] and the extraction of this relationship may deliver important semantic information, which confirms interest in using NC interpretation for Open IE systems.

Nakov [NAK13] claims that "an important characteristic of scientific and technical literature is the abundance of long sequences of nouns that act as a single noun, known as noun compounds, e.g., *bone marrow, project management practices, internet connection speed test,* etc". Linh [LIN10] emphasizes the abundant presence of NCs in technical texts with an example of a technical sentence with three compounds: *one application of filter circuits is in the "conditioning" of non-sinusoidal voltage waveforms in power circuit.*

Compounds are inherently language-dependent in a way that what is considered a compound in one language might not be a compound in another language [NAK13]. In general, for all Germanic languages*,* the core of a NC is the word that is on the rightmost position of the compound. The modifiers would hence occupy the position on the left of the core, being called pre-modifiers[11].

NCs are abundant in English. Baldwin and Tanaka [BAL04] studying multiword expressions in texts calculate that 3.9% of the tokens in the Reuters corpus[12] and 2.6% of the tokens in the British National Corpus[13] are part of NCs.

 NCs generally denote specific concepts for which there is no equivalent single-word formulation. In the same scope of multiword expression studies, Ramisch [RAM14] explains that multiword terms are a special type of NCs "with the specificity of being used in a specialized domain to denote a specific concept". In the present work we focus on the more general concept of NC, which itself includes multiword terms.

Taking syntactic considerations into account, it can be said that compounds behave as words units, so that it is not possible to insert other words between the elements of a compound without changing meaning. You cannot modify a component without changing the whole compound. Semantically, NCs are reference units, i.e., they consist of two words or more, but they represent only one referent.

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[11] In Portuguese and other Latin languages, the opposite composition (head + modifier) is frequent, as in *palavra chave*.
[12] http://about.reuters.com/researchandstandards/corpus/
[13] http://www.natcorp.ox.ac.uk/

Nominal compounds formed by juxtaposition of nouns (represented as an only token, as *cookbook*) or hyphenated (as *father-in-law)*, are usually treated as a lexical unit and POS-tagged as nouns. Although the comprehension of the semantics within these NCs may improve or even determine the extraction of certain relations in a text, it requires additional semantic information and analysis and it is outside the extend of this dissertation.

Semantic relations between the components of a NC are not specific [JOH96], so that the NCs may have different interpretations. Finin [FIN80] presents the following examples: the compound *woman doctor* can describe a *doctor who is a woman* or a *doctor whose patients are women*. Likewise, *Chicago flights* may be those *bound to Chicago*, *coming from Chicago* or even those *which are making a stop in Chicago*.

Compounds oscillate between semantic transparency, as in *cheese cake*, in which it is possible to recognize each element separately and get evidences to obtain the compound meaning, and opacity, as in *soap opera*, where only by the approximation of the elements it is possible to have such a specific meaning.

When a compound is semantically transparent, the NC meaning can be grasped through its individual constituents, such as in *cream cheese*.

In the case of opaque NCs*,* the use of the head alone leads to a different meaning from the NC. It is important to note that this type of NC is metaphorical and, as such, it requires additional linguistic processing to have its meaning extracted.

3.1.1. Computationally understanding noun compounds

To understand the syntax and the semantics of compounds is a difficult but important task for many NLP applications, such as question answering, machine translation, information retrieval, and information extraction. Learning the relation within a compound is a challenge for NLP systems. Nakov [NAK13] presents the following example: how to learn the syntactic structure of the compound *colon cancer tumor suppressor protein*? It may be [[*colon cancer*] [[*tumor suppressor*] *protein*]] or [[[*colon cancer*] [*tumor suppressor*]] *protein*] or [[[[*colon cancer*] *tumor*] *suppressor*] *protein]*, etc. Are *Cancer in the colon, cancer that occurs in the colon* possible paraphrases to *colon cancer*? The relation between *colon cancer* and *tumor suppressor protein* and among *colon* and *cancer* may be *a tumor suppressor protein, a kind/type of tumor suppressor*, *a kind/type of suppressor*, etc. All these are challenges to the area of Information Extraction and its applications.

It is not possible to understand the meaning of a compound only by analyzing its components grammatically. For instance, a *cheese knife* is a *knife to cut cheese* but *kitchen knife* is not a *knife to cut kitchen*. According to Séaghda and Copestake [SEA13], to understand the NC's meaning it is necessary to explore the meaning of each word, context, etc. The relational meaning needs to be decoded using a combination of lexical clues, analogical reasoning, knowledge about language use, and knowledge about the world.

Nastase *et al.* [NAS13] claim that "much of the debate on the correct representation of semantic relations has played out with regard to characterizing the interpretation of noun compounds". There are two broad strategies for capturing the relationships present in NCs: a top-down approach based on inventory and a bottom-up strategy based on paraphrasing interpretation [BUT08].

According to Butnariu *et al.* [BUT09], strategies based on inventory are those where "the semantic relations that implicitly link the nouns of an NC can be adequately enumerated via a small inventory of abstract relational categories". For instance, Rosario and Hearst [ROS01] use a set of 19 relations (Table 6) to identify the relationship within NCs in a corpus of the medical domain using an automatic classifier.

The main criticism on the inventory model is founded on the argument that it is impossible to generate a list that exhausts the variety of relations in NCs (considering the recursive aspects of the language). Nakov [NAK13] claims that the interpretation of NCs using fixed inventory is potentially problematic because it is unclear which relation inventory is the best to use in general and for a particular task. Furthermore, being both abstract and limited, such relations capture only part of the semantics. For example, classifying the NC *malaria mosquito* as (*mosquito, CAUSE, malaria)* obscures the fact that mosquitoes do not directly cause malaria, but transmit it.

The bottom-up strategy is based on paraphrasing such that the interpretation of NCs is made by associating them to explanatory sentences. For example, the NC *iron pot* can be expanded to "*pot made of iron*" [BUT09]. Several initiatives [VAN94] [NAS03a] [NAS03b] [KIM05] [KIM06] [NAK06] [BUT08] [NAK08a] [NAK08b] [BUT09] [BUT10] [KIM13] [NUL13] explore the creation of paraphrases for the interpretation of NCs.

In the next section, we present initiatives to automatically interpret NCs that are relevant to our study.

Table 6 - Relations and examples of the respective NCs from the medical domain
used by Rosario and Hearst – extracted from [ROS01][14]

Relation	Examples
Wrong parse	exhibit asthma, ten drugs, measure headache
Subtype	headaches migraine, fungus candida, hbv carrier, giant cell, mexico city, t1 tumour, ht1 receptor
Activity/Physical process	bile delivery, virus reproduction, bile drainage,headache activity, bowel function, tb transmission
Produces (on a genetic level)	polyomavirus genome, actin mrna, cmv dna, protein gene
Cause	asthma hospitalizations, aids death, automobile accident heat shock, university fatigue, food infection
Characteristic	receptor hypersensitivity, cell immunity, drug toxicity, gene polymorphism, drug susceptibility
Defect	hormone deficiency, csf fistulas, gene mutation
Person afflicted	aids patient, bmt children, headache group, polio survivors
Attribute of clinical study	headache parameter, attack study, headache interview, biology analyses, biology laboratory, influenza epidemiology
Procedure	tumor marker, genotype diagnosis, blood culture, brain biopsy, tissue pathology
Frequency/time of	headache interval, attack frequency, football season, headache phase, influenza season
Measure of	relief rate, asthma mortality, asthma morbidity, cell population, hospital survival
Instrument	aciclovir therapy, chloroquine treatment, laser irradiation, aerosol treatment
Object	bowel transplantation, kidney transplant, drug delivery
Purpose	headache drugs, hiv medications, voice therapy, influenza treatment, polio vaccine
Topic	time visualization, headache questionnaire, tobacco history, vaccination registries, health education, pharmacy database
Location	brain artery, tract calculi, liver cell, hospital beds
Material	formaldehyde vapor, aloe gel, gelatin powder, latex glove
Defect in Location	lung abscess, artery aneurysm, brain disorder

3.1.2. Related Work

Rosario and Hearst [ROS01] [ROS05] developed a corpus-based technique for identifying semantic relations within NCs. They used a classification algorithm for identifying the relationships between two-word NCs. They identified the 38 relations that correspond to the ones proposed by Levi [LEV78] and Warren [WAR78]. However, for the automatic classification task they selected 19 relations (indicated in Table 6) for which an

[14] We reproduce the first line with *Wrong parse* as reported in [ROS01], even understanding that it does not represent a relation in the scope of the present study.

adequate number of examples were found in the corpus.

The idea presented in Nakov and Hearst's [NAK06] article entitled "Using Verbs to Characterize Noun-Noun Relations" is to substitute the modifier with a suitable post-modifying relative phrase, e.g. interpreting the NC *tear gas* by*"gas that causes tears"*. For that, they use Google[15] to find the best matches between the NC header and modifier using all possible inflections of both nouns from WordNet by applying the * operator: "noun2 THAT * noun1".

The summaries of the text snippets from Google that match the expression above are collected (up to 1,000 per query), and only the ones in which the sequence of words following noun1 is not empty and contains at least one non-noun are kept. This aims to ensure that the snippet includes the entire noun phrase. Then, the results are POS tagged and shallow parsed, and the verb forms and the following preposition, if any, between "THAT" and "noun1" are extracted.

Nakov and Hearst [NAK06] report several evaluation scenarios, one of them comparing the obtained results with Berkeley FrameNet[16]. They expected similarities in the relations between the entities in the manually created frames of FrameNet and the ones automatically generated: in particular, there should be some overlap between the automatically generated verbs and the ones listed in the corresponding FrameNet frame. As a preliminary investigation of the potential of these ideas, they compared the verbs generated for four relations (*cause, use, have* and *make*) and the verbs listed on FrameNet for the frames corresponding to these relations. The results vary across relation, but the average overlap is over 50%.

Table 7 - Systems participating in the 2nd SemEval - task 9 - extracted from [BUT10]

System	Description
NC-INTERN	Unsupervised model using verb-argument frequencies obtained from passages of the Web and WordNet
UCAM	Unsupervised model using verb-argument frequencies from the British National Corpus
UCD-GOOGLE-I	Unsupervised probabilistic model using frequencies patterns estimated from the Google N-Gram corpus
UCD-GOOGLE-II	Classification model of paraphrases learned from training data
UCD-GOOGLE-IIII	Combination of UCD-GOOGLE-I and UCD-GOOGLE-II
UCD-PN	Based on the classification of the probability that a paraphrase is placed in the same set that other given paraphrases
UVT-MEPHISTO	Supervised model based on the use of resources of the Google N-Gram corpus and WordNet

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[15] http://www.google.com
[16] https://framenet.icsi.berkeley.edu/

Task 9 of the 2nd SemEval [BUT09] [BUT10] attempted to explore the creation of NC paraphrases using verbs and prepositions. Given an NC and a set of verbs and prepositions to paraphrase, the task was to provide a classification similar to the one made by human evaluators. The organizers of the task provided a set of manually prepared data for development and testing containing: 250 NCs, the verbs and prepositions related as paraphrases and for each paraphrase, the number of assessors who have made the association. For example, the following NCs were associated to the NC *nut bread*: *contain* (21), *include* (10), *be made with* (9), *have* (8), *be made from* (5), etc. The value in brackets indicates the number of assessors who have made each association. The participant systems listed in Table 7 used a variety of sources and methods (second column) as extracted from [BUT10].

The winner system, UVT MEPHISTO, gets information from Google N-Gram corpus[17] and WordNet, and uses machine learning to determine, for each pair of verbs describing an NC, which verb is best classified. The UCD-PN system, ranked as the second in the same contest, predicts the plausibility of a paraphrase by simply knowing which paraphrases were present in the test corpus examples, regardless their frequencies. The results from the other participants in Task 9 (all unsupervised systems) were comparable to those from UVT-MEPHISTO according to [BUT10].

The baseline was drawn by estimating the paraphrases by the sum of the frequencies of all NCs in the test dataset, and the paraphrases of the test examples were scored according to their distribution.

Table 8 - Results of 2nd SemEval – task 9 - extracted from [BUT10]

	System	Supervised?	Hybrid?	Spearman
1	UVT-MEPHISTO	Yes	No	0.450
2	UCD-PN	No	No	0.441
3	UCD-GOOGLE-I	Yes	Yes	0.432
4	UCD-GOOGLE-II	Yes	No	0.418
5	UCD-GOOGLE-IIII	No	No	0.380
6	UCAM	No	No	0.267
7	NC-INTERP*	No	No	0.186
	Baseline	Yes	No	0.425
	UVT and UCD-PN combination	Yes	Yes	0.472

[17] http://storage.googleapis.com/books/ngrams/books/datasetsv2.html

The results of this task are shown in Table 8. The official measure for the construction of an evaluation ranking was the Spearman coefficient [MAR81], which measures the degree of correlation between sets of items. The baseline was outperformed by the three systems. In an evaluation using Spearman coefficient, the winning system was UVT MEPHISTO, which scored 0.450.

The article "A Lexical Semantic Approach to Interpreting and Bracketing English Noun Compounds", by Kim and Baldwin [KIM13], presents a method to automatically interpret NCs from lexical similarity with tagged NCs, using lexical similarity measures derived from WordNet. To measure the semantic similarity between NCs, those authors calculate the lexical similarity between the corresponding components (head nouns and modifiers, respectively, of the two NCs). To accomplish this task it is necessary to previously generate a list of pre-classified compounds. The similarity is computed using Wu and Palmer (WUP) [WU94] measure as implemented in WordNet::Similarity using WS4J (WordNet Similarity for Java) [PAT03]. The word similarity is modeled by the union of the senses of each word and average across the word pairing. They tested the approach over a dataset of 2-term NCs used in SemEval-2007 Task 4 [GIR07]. In this test, the system achieved 52.8% of Accuracy[18] in a seven-way classification task and 65.0% of Accuracy in a two-way classification task.

3.1.3. Datasets of relations within NCs

Some authors compiled datasets containing nominal compounds and the relations embedded within them, some of which are freely available on the web. These datasets can be extremely useful as source for learning relationships within compounds, as well as for test sets for machine learning (as a set of examples used to assess the performance of a fully-trained classifier), and semantic similarity calculation.

These datasets were compiled from data generated by different methods of relations learning from NCs, both based on inventories or paraphrases (Figure 12). Along the current research we managed to download from the web the following datasets: Nastase and Szpakowicz, 2003 [NAS03b], Kim and Baldwin, 2005 [KIM05] and Séaghdha and Copestake, 2007 [SEA07]. Next, we give an overview of each dataset.

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[18] The Accuracy metric measures the proportion of true results (both true positives plus true negatives) and the sum of true positives, false positives, false negatives and true negatives in the population.
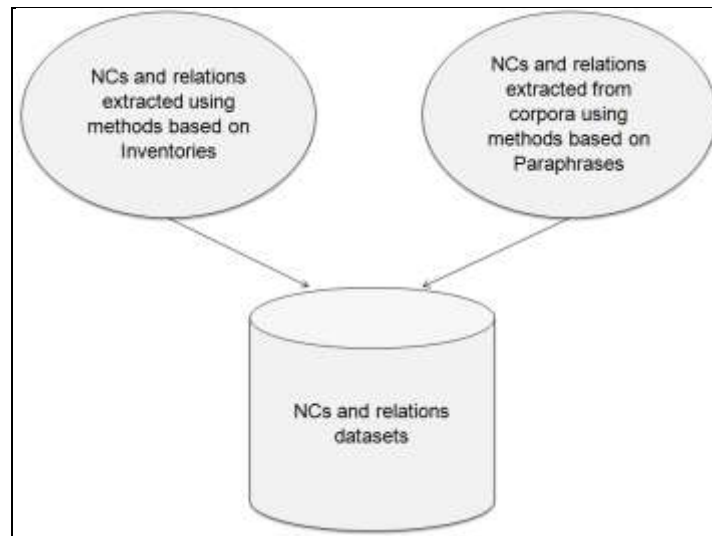
Figure 12. Building principle for the available datasets of NCs relations

Nastase and Szpakowicz [NAS03b] explore the semantic similarity between noun phrases in clusters determined by a set of semantic relations using machine learning tools to find combinations of attributes that explain the similarities in each category. From that study the authors provide a dataset[19] containing 600 (word1, word2, relation) triples.

Kim and Baldwin also describe a method of automatic interpretation of NCs built around word similarity based on WordNet::Similarity, as in [KIM05] [KIM13]. From these works the authors made available two datasets[20]: one containing 1,088 training instances and the other with 1,081 test instances, both from the Wall Street Journal in the Penn Treebank.

The studies reported in the papers "Co-occurrence contexts for noun compound interpretation" [SEA07] and "Semantic Classification with Distributional Kernels" [SEA08] use distributional measures of lexical similarity together with kernel methods for classification, to introduce distributional kernels that compare co-occurrence probability distributions. They present the results on datasets for three semantic classifications: noun compound interpretation, identification of semantic relations between nominals, and semantic classification of verbs. The most recent of these works [SEA08] reports 71.4% of Accuracy and 68.8% F-score using JSD (Jensen-Shannon divergence) kernels, a method for measuring the similarity between two probability distributions.

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[19] http://www.cs.utexas.edu/~mfkb/nn/data/vivi.tar.gz
[20] http://www.csse.unimelb.edu.au/research/lt/resources/ncompound/ncompound.tgz

3.2. Adjective-noun pairs

A noun phrase is a nominal-centered structure. In a simple form, the relations within a noun phrase are between the noun, which is the head, and its modifiers that, among others, may be adjectives (*happy girl*) or nouns that assume an adjectival function (*stone wall*) [NAS03b]. An adjective-noun pair (AN) *is* a noun phrase formed by an adjective as the modifier and a noun as the head, e.g., *relaxing music*. Importantly, an AN is not an adjective phrase (AP). An AP is a phrase where the head word is an adjective, as *the least expensive* or *very happy* where the heads are also adjectives [JUR09].

The focus of the present work is the ANs, i.e. pairs of words where one adjective precedes and associates a property to the noun that is the head of the phrase. However, a noun can be preceded by more than one adjective, as in the phrase *large and bright red cross*. Sometimes, the compounding process may end up as one single word, two words or as a hyphenated composition, such as in *baby blanket*, *large-scale* and *greenhouse*.

Several papers reporting the interpretation of relations within NCs also deal with the relations present in ANs. For instance, the paper "Exploring Noun-Modifier Semantic Relations" [NAS03b] presents the *Property* relation within the ANs, for example within the ANs *raw meat* and *blue book*. The book "Semantic Relations Between Nominals" [NAS13] lists selected relations among nouns in WordNet 3.0, separating relationships between nouns, and relationships related to other parts of speech, presenting as example the *Attribute* relation for the adjectives *speed* and *fast*.

We can apply the interpretation approach used to learn relations within NCs to ANs. Thus, the relation found between noun and adjective within an AN pair is treated according to the same principle used to deal with NCs. Like the NCs, ANs are also restated in sentences with an explicit relationship.

For instance, in the sentence *Joe saw a bright light*, the AN *bright light* can be restated as *bright is a property of light* where we can learn the relation (*bright, is a property of, light*). We emphasize that in addition to the property relation, it is possible to learn the relations (*Joe, saw, a light)* or *(Joe, saw, a bright light)* from the same sentence.

The *Property* relationship is linked to the context in which the sentence is uttered. From the previous example, we find that the relationship (*bright, is a property of, light*) is useful in the situation described by the sentence, but this does not mean that all the lights that may be seen by Joe will be bright. On the other hand, it is a useful description of the attributes that can be linked to a noun.

3.3. Considerations

In this chapter we introduced the concept of compounds in English, focusing on the noun-noun (noun compound, NC) and adjective-noun (AN) combinations. We presented methods for computational understanding of NCs, focusing on techniques based on their interpretation. We studied datasets available for download containing nominal compounds and the relations embedded within them. We also discussed the issues about the interpretation of ANs.

Mausam *et al.* [MAU12] claim that by extracting only relations that are mediated by verbs Open IE extractors miss important information mediated via other syntactic entities such as nouns and adjectives. This is the reason why we concentrate on the subject of automatic comprehension of the relations within compounds.

The automatic interpretation of NCs is complicated due its heterogeneous nature [NAK13]. There are two main approaches for capturing the relationships present in NCs: one based on inventory and other based on paraphrasing interpretation [BUT08]. The main difference between the approaches is delimiting, or not, the type of relationships among the components of the NCs.

The interpretation approach seems more attractive to us because it is the most adequate in the Open IE scenario, where the relations should not be defined in advance. However, the results achieved until now by the researchers, mainly in terms of Precision, are far from ideal. We need to be careful in the use of the current interpretation techniques, since the lack of Precision may negatively affect the final performance of the application that uses them.

We believe that the interpretation of NCs and ANs will enable Open IE extractors to learn relations not described by verbs, which is currently an important claim in the area. We realize that the use of external data sources, such as WordNet and DBpedia, are crucial to carry out this task. It is important to emphasize that our work proposes the use of different interpretation techniques of NCs as a tool for improving the results of Open IE systems.

We tested the following approaches for NCs: Adjective-Noun Interpretation; Noun Compound Interpretation with WordNet; Noun compound analogy-based interpretation; Noun compound interpretation using Google * operator; Noun compound interpretation using Google Hits; Noun Compound Interpretation with Wiktionary; Noun Compound

Interpretation with DBpedia; search in datasets of relations within NCs. From the analysis of the Precision reached by those approaches by two linguists, we selected the following techniques to compose CompIE (**Comp**ounds Based Open **IE**) prototype: Adjective-Noun Interpretation; Noun Compound Interpretation with WordNet; Noun Compound Interpretation with Wiktionary; Noun Compound Interpretation with DBpedia; search in datasets of relations within NCs. We discarded Google * operator and NC interpretation using Google Hits. The description of how these implementations were made and their results are included in Chapter 4.

Next we will present CompIE, an Open IE component that performs rules-based extraction of triples from NCs and ANs.

4. COMPIE

"Everything must be made as simple as possible. But not simpler."
— Albert Einstein

State of the art Open IE focuses on extracting relationships expressed by verbs, in most cases missing important information mediated by nouns and adjectives. To address this problem we present CompIE (**Comp**ounds based Open **IE**), an Open IE component to extract relations within NCs and ANs.

CompIE input is a text corpus, and the output is a set of triples describing binary relations within the sentences of this corpus. Since it follows the Open IE paradigm, CompIE is fully automatic, domain-independent, and scalable. Its architecture comprises two main tasks responsible for (Figure 13): NCs and ANs Extraction (1) and NCs and ANs Interpretation (2).

The first task builds up the basis for the whole procedure. The goal is to provide a list of NCs and ANs from the input corpus. The second task performs the NCs/ANs interpretation and generates the tuples that describe the relations extracted from the corpus. The next sections describe each task and give details on the extractor built.
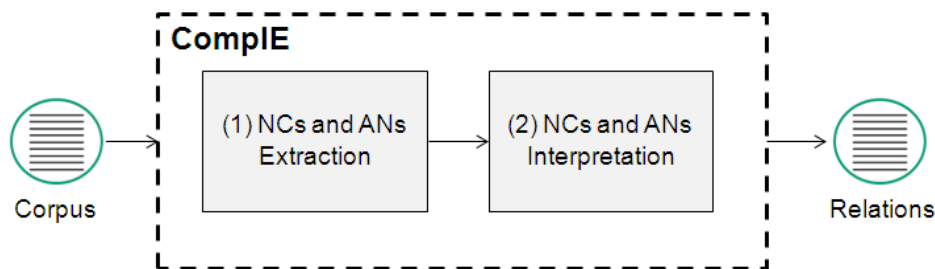
Figure 13. CompIE architecture

4.1. NCs and ANs Extraction

The goal of this task is to identify the NCs and ANs in the corpus. The input is a textual corpus, and the output is a set of NCs and ANs.

According to Figure 14, that illustrates the task architecture, the application of a POS tagger and a NP chunker over the input corpus are the first step in this task. For example, the raw sentence *The two-year note's yield was unchanged at 5.95 percent* is represented in the POS tagged corpus as "The DT two-year JJ note NN 's POS yield NN was VBD

unchanged JJ at IN 5.95 CD percent NN . . " and in the NP_Chunked Corpus as "[The two-year note's yield][was unchanged at][5.95 percent]".
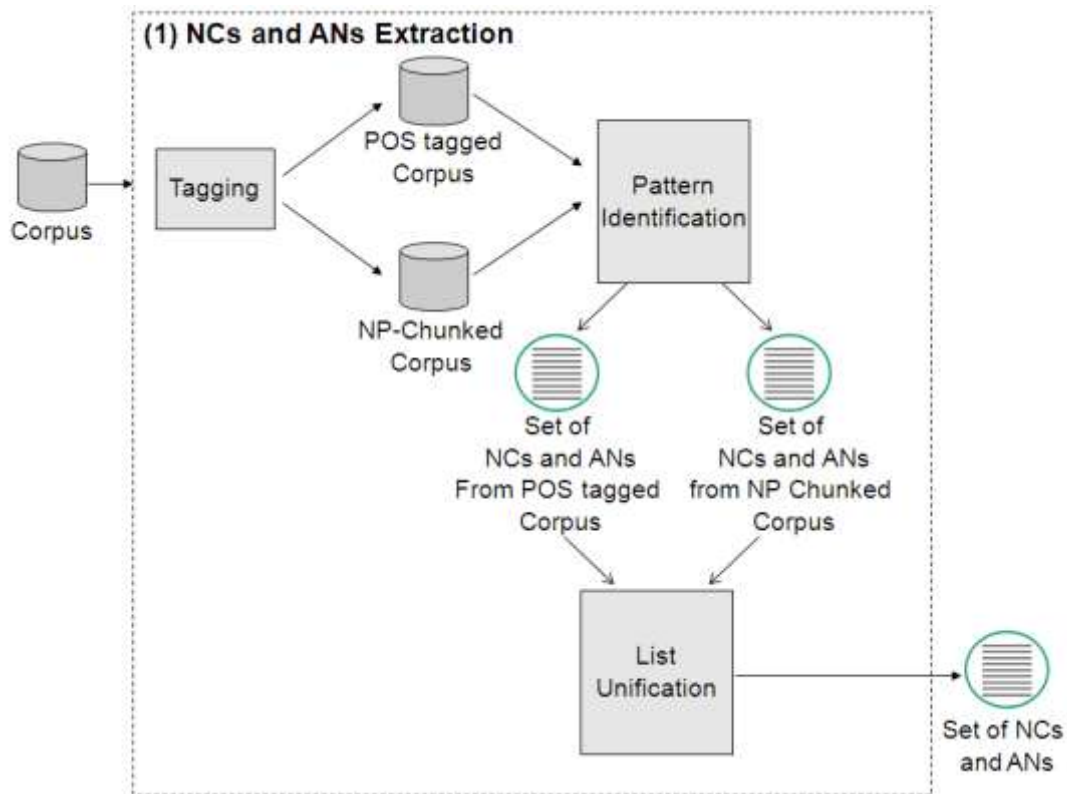
Figure 14.NCs and ANs Extraction task

The second step is to identify NCs and ANs over the labeled texts using the set of patterns shown in Table 9 and Table 10 and producing two lists, one for each set of patterns. The patterns use the following:

[word] = sequence of one or more characters ([\\w]* in Java)

NNP = Penn part-of-speech tag for proper noun, singular

NN = Penn part-of-speech tag for noun, singular

NNS = Penn part-of-speech tag for noun, plural

JJ = Penn part-of-speech tag for Adjective

[/] = space character

Table 9 - Patterns to identify NCs and ANs in POS tagged sentences[21]

```
ProperNoun = ([word]*[/ ]*(NNP[/ ]))
Noun = ([word]*[/ ]*(NN[/ ]|NNS[/ ]))
Adjective = ([word]*[/ ]*(JJ[/ ]))
Extraction Pattern 1 = (Adjective Noun) | (Noun Noun) | (ProperNoun Noun)
```

Table 10 - Patterns to identify NCs and ANs in chunked sentences

```
sub1 = ((NNS|NN|NNP|JJ) [/ ] [word]*)
sub2 = ((NNS|NN) [/ ] [word]*)
Extraction Pattern 1 = sub1 [/ ]* sub2
```

The last step is to unify the two lists producing a single list, without repetitions, performing a simple union operation of the two sets. It generates the final set of ANs and NCs, which is the output of the task.

For example, the sentence *news and information directly to computer users* is POS tagged as *news NN and CC information NN directly RB to TO computer NN users NNS* and chunked as *[NN news CC and NN information][NN computer NNS users]* in the first step of the task.

Then, in the second step, the passage [NN computer NNS users] matches parts of the pattern to identify NCs and ANs in chunked sentences. These are underlined bellow:

sub1 = ((NNS|<u>NN</u>|NNP|JJ) [/] <u>[word]</u>*)

sub2 = ((<u>NNS</u>|NN) <u>[/]</u> <u>[word]</u>*)

Extraction Pattern 1 = <u>sub1 [/]* sub2</u>

The passage *computer NN users NNS* matches parts of the pattern to identify NCs and ANs in POS tagged sentences, as underlined bellow:

ProperNoun = ([word]*[/]*(NNP[/]))

Noun = (<u>[word]</u>*[/]*(<u>NN[/]</u>|<u>NNS[/]</u>))

Adjective = ([word]*[/]*(JJ[/]))

Extraction Pattern 1 = (Adjetive Noun) | (<u>Noun Noun</u>) | (ProperNoun Noun)

4.2. NCs and ANs Interpretation

The aim of the second task is to automatically interpret the NCs and ANs identified by the extraction task and generate triples that describe the relations within them. To

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accomplish this goal, we designed the architecture illustrated in Figure 15. The component consists of three main tasks: ANs interpretation, NCs interpretation, and triples unification, as described below.
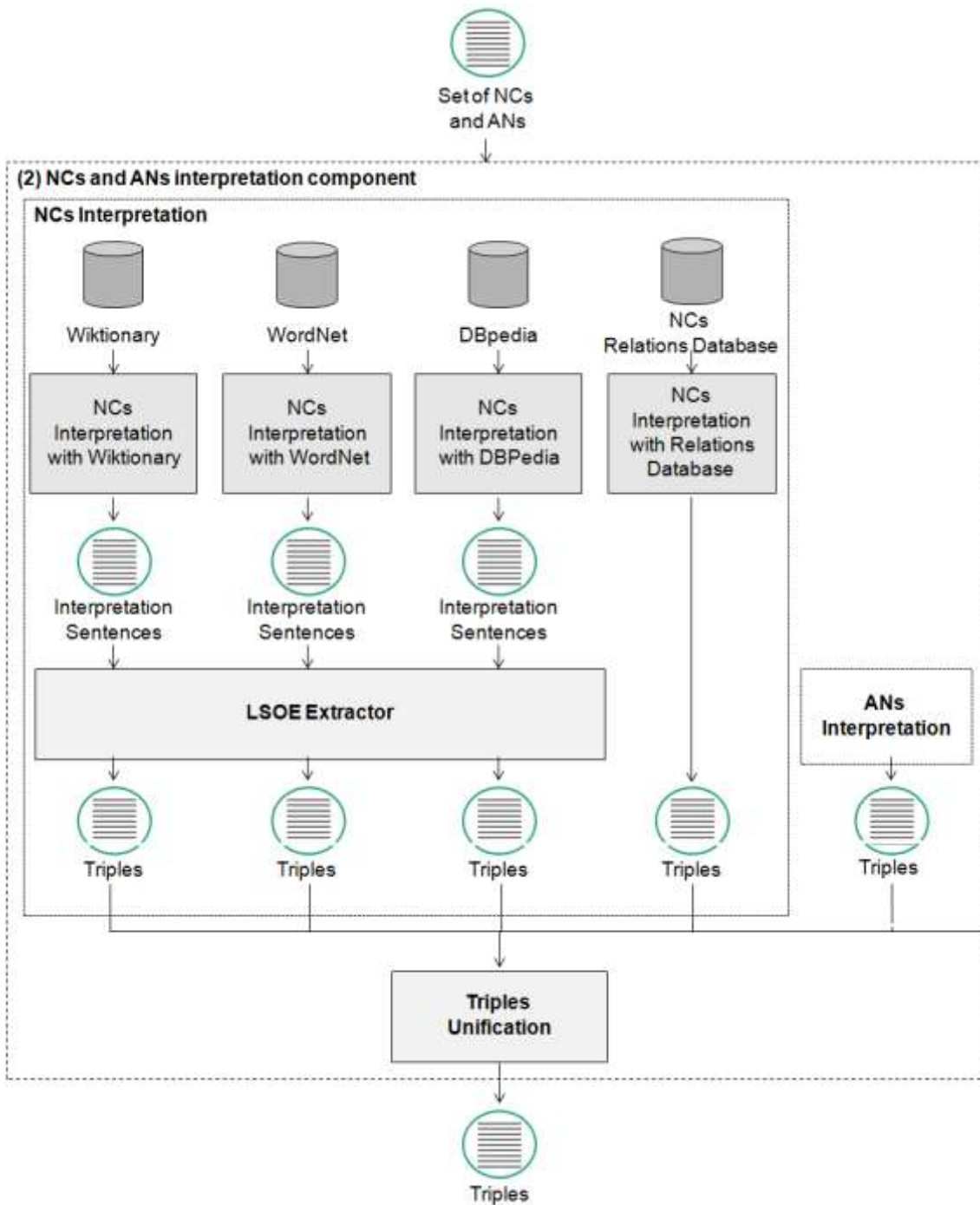


Figure 15. NCs and ANs Interpretation task

4.2.1. ANs Interpretation

The adjectives are defined as words that describe the attributes of nouns, such as beauty, color, age, goodness, and size. In English the adjectives precede the noun whose

attributes they describe. For instance, Casagrande and Hale [CAS67] provide a list of 13 relations between words, being attributive the relation between a noun and an adjective, as *toad* and *small*. In WordNet 3.0 the attribute relation (*attr_of)* connects noun and adjectives, in a more sophisticated approach. For instance, the noun *weight* is an attribute for which the adjectives *light* and *heavy* express values.

In [NAS13] the description of the relations within an AN pair is based on the following statements:

1. An AN pair is composed by an adjective and a noun.
2. The adjective describes an attribute of the noun.

Thus, for each AN from the input set a triple *arg1, rel, arg2* is generated where *arg1* is the adjective, *arg2* is the noun, and *rel* is represented as *is attribute of*. For instance, to describe the relation within the AN *blue car*, the component generates the triple *(blue, is attribute of, car)*.

Although it is a simple solution to the problem of the interpretation of the relations between noun and adjective, the result of our experiments (as reported in Section 5.3) demonstrates the efficiency of this approach in terms of Precision, as it could be anticipated. Additionally, these new relations extracted consistently improve Open IE expected results.

4.2.2. NCs Interpretation

One of the major challenges of our project was to put into practice a way to interpret NCs in a fully automatic way. We decided to avoid proposing a new method to perform this task and using existing techniques for our solution due to the nature of the problem, so broad and complex that would characterize a new dissertation itself.

As previously presented in Chapter 3, literature reports a variety of approaches to handle with the NC interpretation problem. However, finding out an approach that is fast, generates high Precision results and works strictly with the available resources is a challenge.

In order to perform the NCs interpretation, we tested several methods, and on the basis of the Precision of each method we selected the following techniques to organize CompIE, divided into two approaches. The first approach relies on lexical databases dictionaries (WordNet, Wiktionary, DBpedia), and the second one is based on databases of relations. Next, we describe each technique.

4.2.2.1 NCs Interpretation with WordNet

This approach interprets the NCs with the aid of WordNet, a large lexical database of English, containing information about nouns, verbs, adjectives, and adverbs. Entries in WordNet are organized in terms of their semantics. They are grouped into sets of cognitive synonyms (synsets), each expressing a distinct concept. Synsets are interlinked by means of conceptual-semantic and lexical relations [FEL98].

In [PRI14] we found that "WordNet superficially resembles a thesaurus, in that it groups words together based on their meanings. However, there are some important distinctions. First, WordNet interlinks not just word forms − strings of letters − but specific senses of words. As a result, words that are found in close proximity to one another in the network are semantically disambiguated. Second, WordNet labels the semantic relations among words, whereas the groupings of words in a thesaurus do not follow any explicit pattern other than meaning similarity".

Each synset contains a brief definition ("gloss") and, in most cases, one or more short sentences illustrating the use of the synset members [FEL98].

The interpretation is made as follows: if there is a synset in WordNet corresponding to the NC, its short definition is associated to the NC as its interpretation. For instance, the *oil industry* synset short definition is *industry that produces and delivers oil*. So, this sentence would be selected as the interpretation of the *oil industry* NC.

4.2.2.2 NCs Interpretation with Wiktionary

The NCs are interpreted with the support of Wiktionary, very similarly to the approach grounded on WordNet. It works searching for an entry corresponding to this NC in the dictionary. In case this entry is found, its content is taken as the NC interpretation. For instance, Wiktionary defines the NC *blood pressure* as *the pressure exerted by the blood against the walls of the artery|arteries and veins*. So, that entry is assumed as the NC interpretation.

4.2.2.3 NCs Interpretation with DBpedia

Here we use DBpedia as an auxiliary resource to interpret the NCs, very similarly to the

approaches grounded on WordNet and Wiktionary. If there is an entry in DBpedia corresponding to the NC, the first sentence of its definition is assumed as the NC interpretation. For instance, the first sentence corresponding to the NC *blood pressure* in DBpedia is *blood pressure (bp) is the pressure exerted by circulating blood upon the walls of blood vessels, and is one of the principal vital signs.* So, that definition is associated to the NC as its interpretation.

4.2.2.4 NCs Relations Database

Several studies have led to the creation of datasets containing noun compounds and the relations within them [KIM05] [GIR07] [ROS01] [SEA07] [BAR98] [NAS03a] [NAS03b] [VAN94]. However, to the development of our work, a few of these datasets were available.

We were able to get Kim and Baldwin [KIM05], Séaghdha and Copestake [SEA07] and Nastase and Szpakowicz [NAS03b] datasets. Table 11 shows the number of entries in each dataset. In practical terms, we group those datasets in a single database used as an auxiliary tool to interpret the NCs. In case of duplicates, both registers were maintained.

If there is one or more records in the compounds database corresponding to the NC, we use them to generate the NC triple. For instance the NC *advertising agency* has two entries in the database: *(agency, is an actor of, advertising)* and *(advertising, is a topic of, agency)*. In this case, both tuples are inserted in the list that will be evaluated in the triples unification task (Section 4.2.4), and the final output for the NC *advertising agency* would be *(advertising, is a topic of, agency).*

Table 11 - Number of entries in each dataset

Dataset	Number of entries
Nastase and Szpakowicz, 2003	595
Kim and Baldwin, 2005	1088
Ó Séaghdha and Copestake, 2007	1443

4.2.3. Triples Generation

This task generates triples that describe the relations within the NCs. Each interpretation sentence in the sets produced by the techniques described in Sections 4.2.2.1, 4.2.2.2 and 4.2.2.3 is processed by a relations extractor based on verbs (LSOE,

described in Section 4.3). This extractor generates the correspondent triple for the interpretation sentence. The idea is that this triple describes the relation within the NC.

4.2.4. Triples Unification

The input of this task are the list of triples generated by each interpretation technique, and the result is the final set of relations that is CompIE final output. This final set contains just one triple for each NC or AN, without duplicates.

If the interpretation tasks return more than one triple associated to a NC or AN, this task automatically selects the most appropriate one. We propose an algorithm that selects the triple that contains a verb and, if more than one triple falls in this situation, it selects the smallest triple (based on the number of characters).

Since an empirical analysis demonstrated that smaller triples tend to be more accurate than larger ones, we implemented this method, rather than using a more sophisticated, and therefore costly analysis.

4.3. The LSOE Extractor

Searching for an efficient and simple alternative to perform relations extraction under Open IE paradigm without data preprocessing or machine learning, we proposed LSOE (**L**exical-**S**yntactic patterns based **O**pen **E**xtractor), an open extractor that learns relations mediated by verbs worked out along in our doctoral research development. In CompIE, LSOE is used to process the explanatory sentences generated by NC interpretation modules (Section 4.2.2). Those sentences are processed by the extractor that generates the triples that describe the relations within the NCs.

LSOE is based on pattern identification and the patterns used to perform the extraction are in the form of regular expressions. The key idea is to provide a simple and effective engine for the automatic extraction of binary relations from texts under Open IE paradigm. The method takes as input a POS-tagged text and returns a set of (*arg1, rel, arg2*) triples that represent verbal relations in the text.

Like Cimiano and Wenderoth [CIM05], we assume that semantic relations can be learned by matching given lexical-syntactic patterns without the use of machine learning. For example, from the POS-tagged sentence *Aristotle NN was VBD born VBN in IN Stageira NN*, LSOE generates the triple *(Aristotle,was_born,Stageira)*, where

arg1=Aristotle, *rel=was_born* and *arg2=Stageira*.

The patterns used to identify relations in texts are based on Cimiano and Wenderoth's work [CIM05] to learn Qualia structure, totaling 3 patterns to recognize Qualia Formal Role and 8 patterns based on the Constitutive Role (Section 4.3). We also introduce 16 generic patterns to identify non-specific relations (Section 4.3.2). When one of these patterns is found in the sentence, the corresponding triple is generated.

4.3.1. Qualia Based Patterns

Pustejovsky [PUS95] aims at providing a "formal statement of language" using the Qualia structure as a level of representation that involves modes of explanation of an object such as its parts, purpose and function, creation mode, etc. These Qualia roles express noun basic semantic features. In Pustejovsky's model, the noun is not only connected to other nouns by traditional lexical relationships, as meronymy and hyperonymy, but also connected to other verbs [BOU02].

Pustejovsky claims that the key aspects of the meaning of a lexical item have very specific roles:

- Constitutive: it expresses the relationship between an object and its physical properties, as weight, parts and components.
- Formal: it identifies the object in a wider domain, as orientation and shape.
- Agentive: it informs the factors involved in the origin of the object, as its creator.
- Telic: it expresses the objective and function of the object.

Table 12 - Patterns used to recognize Qualia Formal Role and identify relations in texts – reproduced from [CIM05]

Example	Pattern	Triple
...works by such authors as Herrick, Goldsmith, and Shakespeare.	SUCH NP AS (NP,)*(OR|AND) NP	(Shakespeare, is a, author)
Bruises, wounds, or other injuries...	NP (,NP)* (,)? (OR|AND) (OTHER|ANOTHER) NP	(wound, is a, injury)
All common-law countries, including Canada and England...	NP (,)? (INCLUDING |ESPECIALLY) (NP,)* (OR |AND) NP	(Canada, is a, country)

For instance, the term *book* is bound in a Telic Role with the predicate *to read* and in the Agentive Role to the predicate *to write*. Table 12 shows the patterns used to extract relationships based on Qualia Formal Role, grounded on Hearst patterns [HEA92], as

claimed by Cimiano and Wenderoth [CIM05]. Table 13 shows the patterns based on Qualia Constitutive Role.

Table 13 - Lexical-syntactic patterns based on Qualia Constitutive Role used to identify relations in texts – reproduced from [CIM05]

Example	Pattern	Triple
A ring is made up of gold	NP IS (MADE UP OF) NP	(ring, made of, gold)
Rings are made up of gold	NP (ARE MADE UP OF) NP	(rings, made of, gold)
Ring is made of gold	NP (IS MADE OF) NP	(ring, made of, gold)
Rings are made of gold	NP (ARE MADE OF) NP	(rings, made of, gold)
The whole comprises the parts	NP (COMPRISES) NP	(parts, comprise, whole)
The members comprise the team.	NP (COMPRISE) NP	(team, comprise, members)
The package consists of brochures	NP (CONSISTS OF) NP	(package, consists of, brochures)
The lands consist of valleys	NP (CONSIST OF) NP	(lands, consist of, valleys)

4.3.2. Generic Patterns

As we are working under the Open IE paradigm, systems are expected to learn not only predefined, but also non-specified relationships. For this task, we propose the use of generic lexical-syntactic patterns based on the sentence structure. These patterns and the corresponding examples are shown in Table 14.

Table 14 - Lexical-syntactic patterns used to identify non-specified relations in texts–
reproduced from [CIM05]

Example	Pattern	Triple
A central branch of metaphysics is ontology	A NP OF NP IS NP	(ontology, is a central branch, metaphysics)
Biology is the study of living things	NP IS THE EXP OF NP	(Biology, study, living things)
Aristotle born in Stageira	NP VERB (IN|AT) NP	(Aristotle, born, Stageira)
Aristotle was born in Stageira	NP (WAS|IS) (IN|AT) NP	(Aristotle, born, Stageira)
sophomore Jason Carter and freshman Reggie McNeal played in the opener	(NP)? NP AND NP VERB (PREPOSITION/SUBORD. CONJ) (THE|A)? NP	(Jason Carter, played in, the opener) (Reggie McNeal played in, the opener)
he would hold tailback Justin Fargas	NP (WORD)? VERB (WORD)? (A)? (WORD)? (ADJECTIVE)?NP	(he, would hold, tailback Justin Fargas)
Lia is a beautiful girl	NP (MODAL)? VERB (PREPOSITION/SUBORD. CONJ)? (A)? (PREPOSITION/SUBORD. CONJ.)? (ADJECTIVE) (NP)?	(Lia, is a, beautiful girl)
Livia lives in a blue house	NP (MODAL)? VERB (PREPOSITION/SUBORD. CONJ)? (A)? (ADJECTIVE) (NP)?	(Livia, lives in a, blue house)
Active is an attribute of oil	(ADJECTIVE) VERB (DETERMINER) NP (PREPOSITION/SUBORD. CONJ) NP	(active, is an attribute, oil)
An organization to gain political power	NP (TO TO) VERB (ADJECTIVE)?NP	(organization, to gain, political power)
Mary McCarty writes for the Dayton Daily News	NP VERB (FOR)? THE NP NP, VERB (A)? NP	(Mary McCarty, writes for, Dayton Daily News)
Taylor missed only one day of school	NP VERB ADVERB (CARDINAL NUMBER)? NP	(Taylor, missed, only one day of school)
The cars are available for use	NP VERB WORD JJ (FOR|TO) NP	(cars, are available, for use)
he decided to attack them	NP WORD VBD (VERB BE, PAST PARTICIPLE)? TO WORD VERB (THE)? NP	(he, decided to, attack them)
republicans that are from Alabama	(NP (THAT|WHICH) (DETERMINER)) VERB ((PREPOSITION/SUBORD. CONJ)? (WORD DT)? NP)	(republicans, that are from ,Alabama)
Farris was replaced by sophomore Dustin Long	NP WAS (VERB PAST) VERB (PREPOSITION/SUBORD. CONJ) NP	(Farris, was replaced by, sophomore Dustin Long)

4.4. CompIE＇s Operation

In order to illustrate CompIE's operation, Figures 16 and 17 show step-by-step the operation of the two tasks that comprise its architecture to the sentence *news and information directly to computer users*.
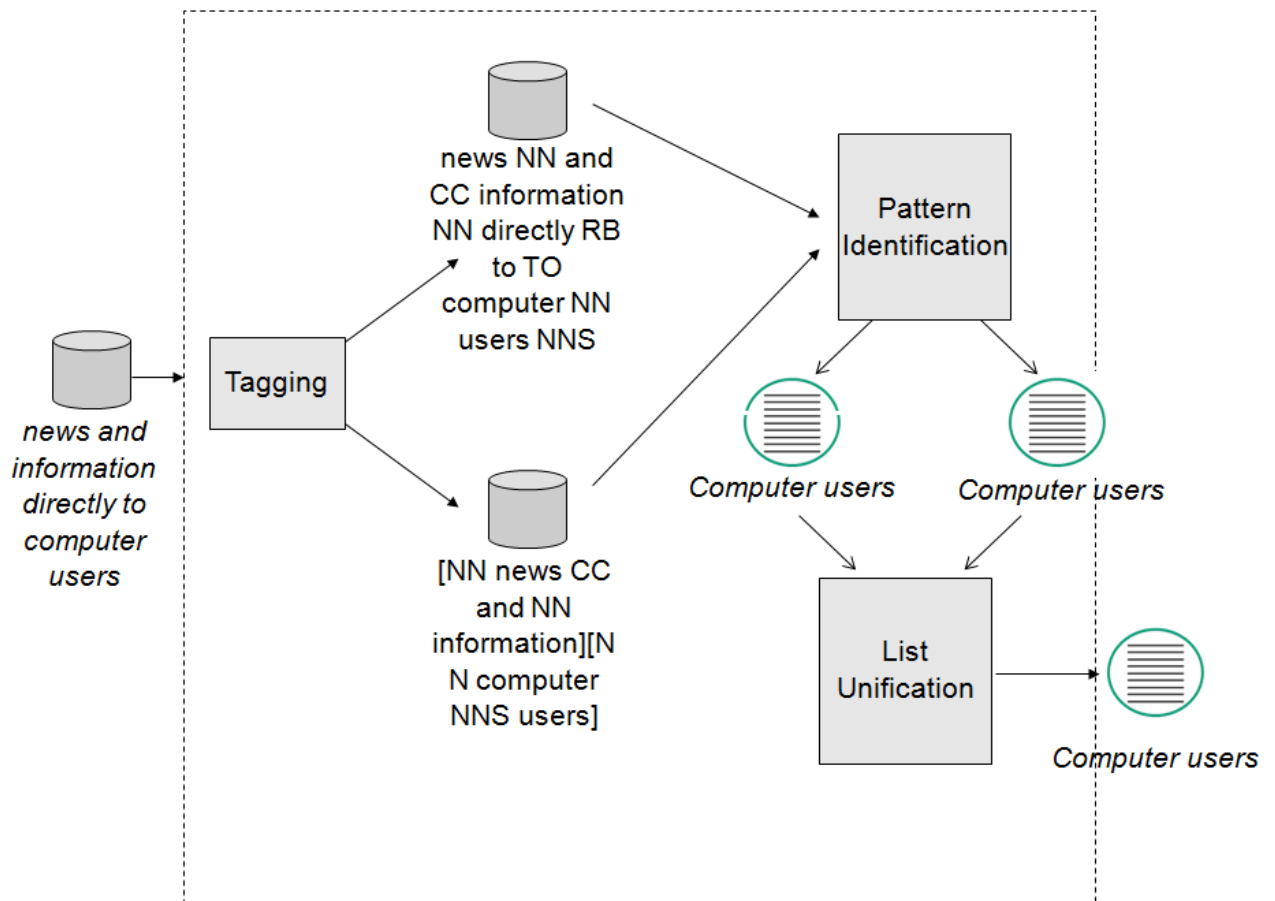

Figure 16.NCs and ANs Extraction for the sentence *news and information directly to computer users*.

In the first task (Figure 16), the sentence *news and information directly to computer users* is POS tagged as "... news NN and CC information NN directly RB to TO computer NN users NNS..." and chunked as "...[NN news CC and NN information][NN computer NNS users]..." in the first step. The second step analyzes these tagged texts and the NC *computer users* is inserted in the two sets of identified NCs. In the third step, only one entry of *computer users* remains in the output set.

In the second task (Figure 17), for the NC *computer users*, the NC's interpretation with WordNet finds the synset *computer user* with the short definition *a person who uses*

computers for work or entertainment or communication or business. This sentence is provided as input to the verbal relations extractor LSOE that extracts the triple (*person, who_uses, computers*) assigned as the triple that describes the relationship within the NC *computer users* in CompIE's output.
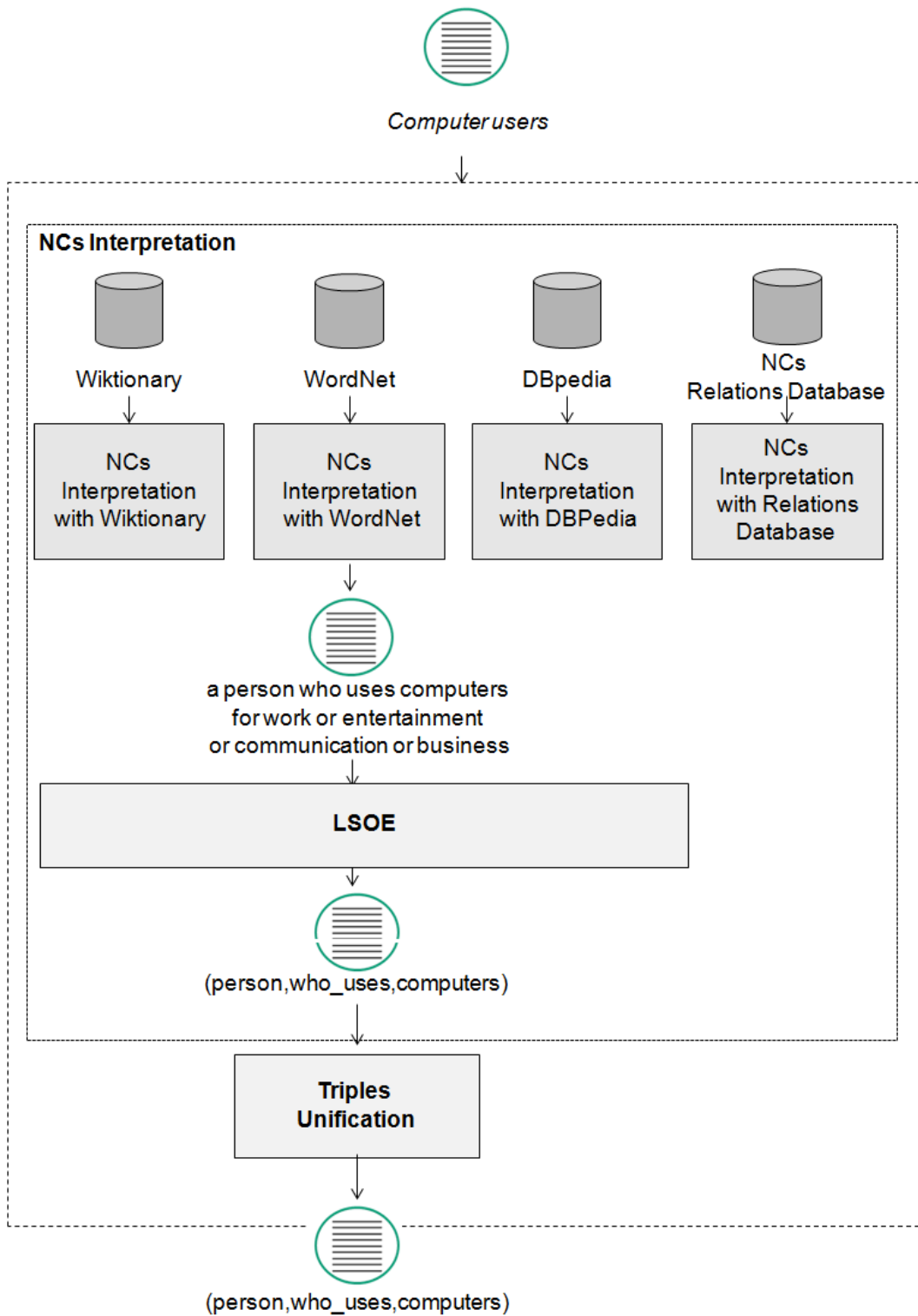

Figure 17.NCs/ANs Interpretation component operation for NC *computer users* from sentence *news and information directly to computer users*.

4.5. Considerations

This chapter presented CompIE, an Open IE component that extracts relations within NCs and ANs, addressing an important gap on state of the art Open IE methods, namely OLLIE [MAU12] and ClausIE [COR13]: the extraction of relations not expressed by verbs. The architecture comprises two main components: NCs and ANs Extraction (1) and NCs and ANs Interpretation (2).

The first component identifies NCs and ANs in a corpus by applying a set of patterns based on POS-tagged and chunked sentences. The second component generates triples that describe the relations within the ANs/NCs identified by the first component.

To represent the relations within the ANs we use the idea that an adjective describes an attribute of the noun, i.e., the triple (*black, is an attribute of, cat)* describes the AN *black cat*. To represent the relationships within the NCs we use approaches supported by lexical databases dictionaries and by datasets of relations.

The interpretation approaches associate the NCs to explanatory sentences. Those sentences are processed by a verb based open extractor (LSOE) that generates the triples that describe the relations within the NCs. LSOE extraction is rule based, working on generic patterns to identify non-specific relations and on Cimiano and Wenderoth proposal [CIM05] to learn Qualia based patterns, grounded on Pustejovsky's work [PUS95].

In order to perform the search on NCs datasets. We import them from Kim and Baldwin [KIM05], Séaghdha and Copestake [SEA07] and Nastase and Szpakowicz [NAS03b] databases and unify them in a single database. The approach works querying the NCs in the database and using the correspondent record as the triple that describes the relations within the NCs.

After performing the NCs and ANs interpretation the component produces a triple unification. In the cases when one NC or AN is associated to more than one triple, this task automatically selects the most appropriate one according to the strategy exposed in Section 4.2.4. The task returns the final set of relations that is CompIE's output.

In the next chapter, we present the strategy to assess the solution presented in this chapter. First, we discuss how the Open IE state of the art systems have their performance evaluated. Then we present our proposal of evaluation based on three hypotheses we intend to validate. Finally, we present the strategies to check the validity of these hypotheses.

5. EVALUATION

"A wise man proportions his belief to the evidence."
— David Hume, An Enquiry Concerning Human Understanding

Evaluation is a fundamental stage of any research. To appraise the solution proposed in this dissertation, it is necessary to show that this solution addresses the problem to be solved. We want to verify if the solution prototyped with CompIE actually increases or outdoes Open IE results.

We start this chapter by presenting a general overview about the evaluation and the technical resources used to implement the prototype. Then we present the evaluation method used in the present work. Next, we describe how the validation strategy was performed and present the results. We close the chapter detailing and discussing the results and performing a thorough study on the errors found in the analysis.

5.1. General Overview

To appraise the solution proposed in this dissertation we perform an evaluation based on hypotheses. To implement the strategies to validate each hypothesis we have built a prototype.

As input data we use the ReVerb[22] test set [ETZ11], composed by 500 sentences randomly extracted from the web by Yahoo Random Pages[23]. This data set contains sentences from various domains, in many writing styles and it has been used to evaluate other Open IE extractors [ETZ11] [COR13].

Two linguist assisted us in the tests acting as judges. They independently judged the relations extracted as correct or incorrect. We consider correct only the relations in which both judges evaluated as correct. The remaining relations were considered incorrect in the assessment.

The prototype was written in Java 1.7. The POS tagger and chunker were OpenNLP[24]. As described in Section 4.2.2, to implement the NCs interpretation component we used external data sources.

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[22] http://reverb.cs.washington.edu
[23] http://random.yahoo.com/bin/ryl
[24] http://opennlp.apache.org/

To perform the interpretation of NCs with the aid of WordNet we used the Java API for WordNet Searching[25] (JAWS) with the database file of WordNet[26] 3.0. A MySQL database accessed via MySQL Connector[27] 5.1.25 was used to implement the solutions that interpret NCs with Wiktionary[28], DBpedia[29] and relations datasets[30,31,32].

5.2. Evaluation Plan

Our purpose is to improve Open IE state-of-the-art results extracting relations not found among those obtained by currently available systems. In this context, we developed a method explained in Chapter 4 and, aiming to experiment our component, we prototyped CompIE as an Open IE extractor.

In a comparison, it would be unrealistic to expect that our approach could extract a higher overall number of relations than the related rule-based systems, since this is not the problem we want to address. Our goal is to evolve the Open IE state of the art by learning relations within NCs and ANs that are not yet extracted. Thus, we need to measure the number of new relations extracted. We also want to evaluate if CompIE complements OLLIE and ClausIE results without decreasing their Precision.

We propose an assessment based on hypotheses formulated according to Basili [BAS96]: "A hypothesis is a tentative assumption made in order to draw out and test its logical or empirical consequence". Below we organize our hypotheses, followed by the strategy adopted to perform their validation.

1st Hypothesis:

CompIE complements the results obtained by the Open IE state-of-the-art extractors Clausie and OLLIE by learning relations that are not yet obtained.

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[25] http://lyle.smu.edu/~tspell/jaws/index.html
[26] http://wordnet.princeton.edu/wordnet/download/
[27] http://dev.mysql.com/downloads/connector/j/
[28] Wiktionary dump from 08/12/2012: http://dumps.wikimedia.org/enwiktionary/
[29] Short abstracts of DBPedia 3.8: http://wiki.dbpedia.org/Downloads38?v=6c5
[30] www.csse.unimelb.edu.au/research/lt/resources/ncompound/ncompound.tgz
[31] http://www.cl.cam.ac.uk/~do242/Resources/
[32] www.eecs.uottawa.ca/~vnastase/Data/nmr_relations.data

1st Hypothesis validation strategy:

Being (for the same input corpus)

A the set of relations extracted by ClausIE

B the set of relations extracted by OLLIE

C the set of relations extracted by CompIE

The expected result is:

$C \setminus A \neq \{\}$

$C \setminus B \neq \{\}$

Where M \ N is the set that contains all the elements of the set M that are not in the set N.

2nd Hypothesis:

CompIE complements OLLIE and ClausIE results without decreasing their Precision.

2nd Hypothesis validation strategy:

Being (for the same input corpus)

$P^{ClausIE}$ the Precision achieved by ClausIE as stated in [COR13]

P^{OLLIE} the Precision achieved by OLLIE as stated in [COR13]

$P^{ClausIE+CompIE}$ the Precision achieved by ClausIE when complemented with CompIE

$P^{OLLIE+CompIE}$ the Precision achieved by OLLIE when complemented with CompIE

The expected result is:

$P^{ClausIE+CompIE} \geq P^{ClausIE}$

$P^{OLLIE+CompIE} \geq P^{OLLIE}$

5.3. Hypotheses Validation

5.3.1. 1st Hypothesis

The 1st hypothesis claims that CompIE complements the results obtained by the Open IE state-of-the-art extractors Clausie and OLLIE by learning relations that are not yet

obtained.

Corro and Gemulla [COR13], as presented in Table 4, report that ClausIE extracted 2975 relations and OLLIE 1242 relations from the Reverb test set. Our experiments shows that CompIE extracts 380 relations from the same test set. All the relations extracted by CompIE are new, i.e. they were not obtained by OLLIE and ClausIE.

Thus, since the hypothesis validation strategy is:

Being (for the same input corpus)

    A the set of relations extracted by ClausIE

    B the set of relations extracted by OLLIE

    C the set of relations extracted by CompIE

and the expected result is:

    $C \setminus A \neq \{\}$

    $C \setminus B \neq \{\}$

And considering that

    A contains elements depicted in Annex A

    B contains elements depicted in Annex B

    C contains elements depicted in Appendix A

We have

A and *C* do not have elements in common, $C \setminus A = C \Rightarrow \boldsymbol{C \setminus A \neq \{\}}$
B and *C* do not have elements in common, $C \setminus B = C \Rightarrow \boldsymbol{C \setminus B \neq \{\}}$

So, the 1st hypothesis is valid.

5.3.2. 2nd Hypothesis

The 2nd hypothesis claims that using CompIE to complement OLLIE and ClausIE does not decrease the extractors Precision.

Corro and Gemulla [COR13], as already presented in Table 4, report that ClausIE extracted 2975 relations and OLLIE 1242 relations, from the Reverb test set. From those, 1706 relations were judged as correct for ClausIE (Precision 57%) and 547 relations were judged as correct for OLLIE (44% of Precision).

Concerning the present work, two judges evaluated each relation extracted by CompIE as correct or incorrect. We consider correct only the relations in which the two judges agreed as being correct. Uninformative and not understandable relations were also rated

as incorrect. Based on these parameters, from the 380 triples extracted by CompIE, 340 were classified as correct and 40 as incorrect.

The Precision is calculated as presented in Section 2.2.6. So, we calculate the Precision of ClausIE complemented with CompIE as:

$$P^{ClausIE+CompIE} = \frac{\text{\#(correct relations extracted by ClausIE + correct relations extracted by CompIE and not extracted by ClausIE)}}{\text{\#(all relations extracted by ClausIE + all relations extracted by CompIE and not extracted by ClausIE)}}$$

We calculate the Precision of OLLIE complemented with CompIE as:

$$P^{OLLIE+CompIE} = \frac{\text{\#(correct relations extracted by OLLIE + correct relations extracted by CompIE and not extracted by OLLIE)}}{\text{\#(all relations extracted by OLLIE + all relations extracted by CompIE and not extracted by OLLIE)}}$$

This calculation is possible due to the fact that CompIE is a component that adds new extractions to those obtained by OLLIE and ClausIE, when running over the same test set.

Using CompIE to complement ClausIE results increases the total of relations extracted to 3355 (2975 + 380) and the number of relations judged as correct to 2046 (1706 + 340). Using CompIE to complement OLLIE results would increase the total of relations extracted to 1622 (1242 + 380) and the number of relations judged as correct to 887 (547 + 340).

The Precision of ClausIE complemented with CompIE is calculated as:

$$P^{ClausIE+CompIE} = \frac{1706 + 340}{2975 + 380} = 0.61$$

The Precision of OLLIE complemented with CompIE is calculated as:

$$P^{OLLIE+CompIE} = \frac{547 + 340}{1242 + 380} = 0.62$$

Thus, since the hypothesis validation strategy is:

Being (for the same input corpus)

$P^{ClausIE}$ the Precision achieved by ClausIE as stated in [COR13]

P^{OLLIE} the Precision achieved by OLLIE as stated in [COR13]

$P^{ClausIE+CompIE}$ the Precision achieved by ClausIE complemented with CompIE

$P^{OLLIE+CompIE}$ the Precision achieved by OLLIE complemented with CompIE

The expected result is:

$P^{ClausIE+CompIE} \geq P^{ClausIE}$

$P^{OLLIE+CompIE} \geq P^{OLLIE}$

We have

$P^{ClausIE+CompIE} = 61\%, P^{ClausIE} = 57\%$, so $P^{ClausIE+CompIE} \geq P^{ClausIE}$

$P^{OLLIE+CompIE} = 62\%, P^{OLLIE} = 44\%$, so $P^{OLLIE+CompIE} \geq P^{OLLIE}$

So, the 2nd hypothesis is valid.

5.4. Discussion about evaluation results and error analysis

Aiming to look more closely at the limitations of CompIE and their possible solutions, we performed an analysis of the results presented in the previous section, considering the issues encountered in the assessment.

5.4.1. NCs and ANs identification

The first component, that identifies ANs and NCs, generated a final set containing 1070 compounds running over ReVerb test set. Out of those, the two linguists that performed the evaluation described in Section 5.3 agreed that 772 compounds were correctly extracted. The identification achieved a Precision of 72% (772 / 1070).

Most errors are due NCs that are in sequence, but do not have a single meaning when united. For example, *eyed romantics* from the sentence "*In a nutshell: Weird mix of redneck humor, girly fantasy and the occasional moment of reality make this Reese Witherspoon vehicle for starry-eyed romantics only*". Other cases are related to expressions in other languages (for example *al sangue* in italian), proper nouns (*John Abraham*) and wrong POS labelling (for example *in level,* where *in* was tagged as noun*).*

5.4.2. Recall

The best result for our experiment would be to get a correct triple to each compound extracted by the ANs and NCs identification component and judged as correct. So, to calculate Recall (formula in Section 2.2.6), we assume 799 as the best number of correct relations. CompIE's output set contains 340 triples judged as correct. So, we assume that CompIE Recall is 43% (340 / 799 = 0.43). As OLLIE and ClausIE do not inform the system Recall, it is not possible to compare CompIE's Recall with theirs.

5.4.3. NCs and ANs interpretation

Focusing on the component that performs the interpretation of compounds, our goal was to provide a completely automated solution that generates reliable compounds interpretation. CompIE's first component extracted a total of 1070 NCs and ANs. From those 380 gave origin to relations. The remaining 690 were not interpreted. This group includes wrongly classified compounds and NCs that were missing in the auxiliary databases (WordNet, DBPedia, Wiktionary and relations database). This reinforces the need to implement new interpretation techniques in addition to those used.

We highlight that, regarding the 380 interpreted compounds, 2 were judged as incorrect

by the judges in the first step of evaluation (Section 5.4.1): *Arab effort* and *model year.*

We evaluated the frequency of use of each interpretation approach, assuming the total set of extracted relations, regardless being correct or not. We want to know from the total of relations generated by each method, what percentage was selected to be in the final set of triples. We also want to know the percentage of triples generated by each method in CompIE's output. Table 16 - s 15 and 16 show the results. As we can see, ANs interpretations contributed with 84% of the triples in CompIE's output and NCs interpretations contributed with 16%.

Table 15 - Number of ANs interpretations and its usage in the final set of triples

Number of Interpretations	Number of Interpretations in the final set of triples	Percentage of utilization	Usage in the final set
323	319	99%	84%

Table 16 - Number of NCs interpretations and its usage in the final set of triples

	Number of Interpretations	Number of Interpretations in the final set	Percentage of utilization	Usage in the final set
WordNet	34	16	47%	4%
DBpedia	35	30	86%	8%
Wiktionary	3	0	0%	0%
Relations Database	21	15	71%	4%

Table 17 shows that ANs interpretation method is very efficient in terms of usage of the relations in the final set, what was clearly expected. This high percentage of use (99%) is due to the fact that the relations in the format (*arg, is an attribute of, arg*) extracted from the ANs are likely to be chosen by the triples unification task, described in Section 4.2.4.

Table 17 - Number of interpretations distributed by NCs and ANs

	ANs	NCs
Number of interpretations	323	92
Number of Interpretations in the final set	319	61
Percentage of utilization	99%	66%

The most successful NC interpretation approach was the method using DBpedia, from which 86% of the interpretations were in the final list, as we can see in Table 18. The

approach using WordNet has generated almost the same number as DBpedia (34 for WordNet and 35 for DBpedia), but the percentage of its usage in the final result was lower (47%).

In order to illustrate how each interpretation approach works, Table 18 presents examples of relations extracted by each approach. All the relations were evaluated as correct by the judges, except the one obtained using Wiktionary approach.

Table 18 - Examples of relations extracted by each interpretation approach

NC/ NA	Relation	Interpretation Approach
barbecue sauces	(sour_sauce,usually_based,on_catsup)[33]	WordNet
swap rate	(fixed_rate,that_makes,the_market_value)	DBpedia
zip code	(addresses,share,a_certain_five-digit)	Wiktionary
takeover offer	(offer,that_is_about,takeover)	Relations Database
next year	(next,is_attribute_of,year)	ANs

Table 19 - Precision of each compound's interpretation approach

	WordNet	DBpedia	Wiktionary	Relations Database	ANs
Precision (All extractions)	71%	26%	50%	43%	98%
Precision (Relations in the final set)	87%	26%	0%	44%	99%

As we can see in Table 19, ANs interpretation is largely more efficient than NCs interpretation, as expected. This happends both regarding the use of the triples in the final result set (99% versus 66% - Table 18) and in relation to the amount of interpretations (323 versus 92 – Table 17).

Since 61 triples from NCs interpretation approaches were in the final dataset and from those 28 were judged as correct by both judges, the Precision achieved by NCs interpretation approaches in the final set is 46%. Regarding the Precision achieved by each method of interpretation, we can see in Table 21 that, once more, ANs interpretation method achieves a better result than NCs interpretation - 98% of Precision against 71% of the NCs interpretation approach with the best result (interpretation with WordNet).

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[33] As spelled in WordNet.

5.4.4. CompIE's efficiency

Considering the McNemar test [FLE03], that evaluates the efficiency of situations "before" and "after" using the nominal measurement scale to assess changes in the situation "after" in relation to the situation "before", we can statistically evaluate if CompIE really improves the result of the Open IE state of the art systems. We consider as "before" the original results obtained by OLLIE and ClausIE extractors and after the results of the extractors complemented by CompIE.

Our hypotheses are:

H0: CompIE does not complement the state-of-the-art extractor.

H1: CompIE complements the state-of-the-art extractor.

Table 20 - Example of contingence table where applying McNemar's test formula with continuity correction (Yates)

	Value 1	Value 2
Test 1 before	a	b
Test 1 after	c	d

The test formula is applied to a 2 × 2 contingency table, as in Table 20, which tabulates the outcomes of two tests on a sample of n subjects, as follows.

McNemar test formula with continuity correction (Yates):

$$Chi^2 = \frac{(|b - c|-1)^2}{b + c}$$

Table 21 - Number of correct and incorrect extractions generated by OLLIE [COR13] and by OLLIE and CompIE

	Correct	Incorrect
OLLIE	547	695
OLLIE + CompIE	887	711

Table 22 - Number of correct and incorrect extractions generated by ClausIE [COR13] and by ClausIE and CompIE

	Correct	Incorrect
ClausIE	1706	1269
ClausIE + CompIE	2046	1285

Given the data in Table 21, comparing OLLIE results before and after being

complemented by CompIE, McNemar chi-squared statistic with Yates correction of 1.0 is 23.060051 with corresponding p-value[34] is 0.000002. Given the data in Table 22, comparing CompIE results before and after being complemented by CompIE, McNemar chi-squared statistics with Yates correction of 1.0 is 181.651885 and the corresponding p-value is 0.000000. Therefore, we can reject the null hypothesis for OLLIE and CompIE and confirm that CompIE complements both state-of-the-art extractors.

5.4.5. Evaluating the verbal relations extractor LSOE

CompIE includes LSOE, a component that learns relations mediated by verbs. The idea here is to evaluate the extractor performance as a whole, unbounded of CompIE. First we verify if LSOE extracts relations that are not learned by the state-of-the-art systems. In this case, we are focusing on the total number of extractions, regardless being correct or not. To validate this statement, we executed LSOE using the Reverb test set as input.

LSOE extracted 430 triples (Appendix B). ClausIE and OLLIE learned 2975 relations and 1242 relations each [COR13]. Those numbers show that LSOE needs to boost the relations coverage of its method.

Table 23 shows the number of relations that were learned by both extractors: LSOE and ClausIE, LSOE and OLLIE. Table 23 also shows the amount of relations extracted by LSOE that were not learned by ClausIE and the amount of relations extracted by LSOE that were not learned by OLLIE.

Table 23 - Number of relations in the intersection (∩) and complement (\) sets of the relations learned by LSOE, OLLIE and ClausIE

	LSOE	
	Relations learned by both extractors (∩)	**Relations learned by LSOE and not learned by the other extractor (\)**
ClausIE	19	411
OLLIE	16	414

By observing Table 23, we realize that relations extracted by LSOE little recur in OLLIE and ClausIE. LSOE learned 414 new relations that were not extracted by OLLIE and 411

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[34] The p-value is the probability of obtaining the observed sample results (or a more extreme result) when the null hypothesis is actually true. A low value of the calculated p-value (< 0.05) could be considered a significant result, rejecting the null hypothesis [FLE03].

relations not extracted by ClausIE. Thus, OLLIE complements the results obtained by the Open IE state-of-the-art extractors Clausie and OLLIE by learning relations that are not yet obtained.

Aiming to calculate LSOE's Precision, two judges have evaluated the triples generated by the extractor. As in previous tests, we consider correct only the relations in which the two judges agreed in the judgement as correct.

From the 430 triples extracted by LSOE, 190 were classified as correct and 240 as incorrect. We calculate LSOE's Precision using the formula presented in Section 2.2.6. The result is 0.44 (44%). As presented before, ClausIE and OLLIE achieved 57% and 44% of Precision, respectively [COR13]. Therefore, LSOE obtained lower Precision than ClausIE and similar to OLLIE. To enhance LSOE performance we suggest refining the lexical-syntactic patterns that identify the relations.

We detected that several errors in LSOE extractions occurred due to the fact that LSOE did not take punctuation in the heuristics in account. For example, the triple *(Robert Teitelman, managing, editor of institutional)* was generated from the passage "*negotiations with Robert Teitelman, managing editor of Institutional Investor's Americas edition*". The error occurred because the corresponding heuristic did not consider the comma between *Teitelman* and *managing* that indicates that *managing* does not represent an action of *Teitelman*. Thus, it is important to improve the heuristics so that they take into account punctuation in the analysis of the sentences.

Analyzing the relation (*starts, including, a_seventh-place_finish*) incorrectly extracted from the passage "*finishing in the top 35 in three of his last four starts, including a seventh-place finish at last month 's pga championship*" we realize that in this case *starts* is not in the same phrase as *including a seventh-place*, such that the extracted relation does not exist. From this observation, we believe that LSOE would benefit from the use of parse trees.

We also believe that the inclusion of coreference resolution would be very useful to improve the performance of all Open IE methods. We argue that pronoun arguments claim for a broader treatment in the extraction. Without this additional step these relations tend to be less informative or even useless for certain applications.

From those observations we confirm that CompIE helps to fill the gap in the extraction of relations within the NCs and ANs in Open IE. It is a component that added to a state-of-the-art verb based extractor increases the number of extractions by learning relations

within ANs and NCs without compromising Precision. However, NCs interpretation methods still have low Precision and the number of relations extracted from NCs can increase significantly, showing that CompIE still has a large room for improvement.

6. CONCLUSION

"A story has no beginning or end: arbitrarily one chooses that moment of experience from which to look back or from which to look ahead."
— Graham Greene

This concluding Chapter presents a review in Section 6.1, followed by Section 6.2, which introduces ideas of future work. Section 6.3 presents the papers written during these doctoral studies.

6.1. Summary

Open IE extractors have a gap regarding the extraction of relations not expressed by verbs. Mausam *et al.* [MAU12] claim that "this misses important information mediated via other syntactic entities such as nouns and adjectives". In ClausIE [COR13], Corro and Gemulla propose a solution to perform non-verb-mediated extractions in a limited extent for appositions and possessive pronouns, however, we are not aware of any Open Extractor that learns relations from NCs or ANs.

With this work we aimed to complement the Open IE state-of-the-art by learning relations within NCs and ANs. For that, we presented CompIE (**Comp**ounds based Open **IE**), a component that extracts noun-based relations using Open IE paradigm. The intuition behind the solution is that an Open IE extractor can learn non-verbal relations, namely those from NCs and ANs, using compounds interpretation strategies.

We propose three strategies: one based on NCs relations database, association of NCs with explanatory sentences from lexical databases and dictionaries (WordNet, Wiktionary, DBpedia) and extraction of triples from them; and interpretation of ANs using a rule proposed by us.

To conduct this research, we performed a study about Open IE, focusing on works that report the state-of-the-art systems and the issues that still need to be addressed. From this work, we concluded that a solution that includes the extraction of relationships not expressed by verbs was essential.

Thenceforth, we performed a study about compounds in English. As compounds, we focus on the noun-noun (NCs) and adjective-noun (ANs) combinations. Our goal was to explore possibilities of computational learning of relations within them. We verified among

the various methods of NCs interpretation which ones were the most efficient in explaining the relationship within the NCs and produced adequate results for being used in triple generation. That was the most challenging part of the research.

We conclude that different interpretation techniques of NCs need be combined to improve the results of Open IE systems, enabling the extractors to learn relations not mediated by verbs. We realize that the use of external data sources is crucial to carry out this task.

From this basis, we proposed CompIE, whose architecture consists of two main tasks: NCs and ANs Extraction and NCs and ANs Interpretation. The first task builds up the basis for the whole procedure. The goal is to provide a list of NCs and ANs from the input corpus. The second task performs the NCs and ANs interpretations and generates the tuples that describe the relations extracted. CompIE includes LSOE, an Open IE extractor that learns relations mediated by verbs using lexical-syntactic patterns.

To appraise CompIE, we carried out an evaluation based on the following hypotheses:

1. CompIE complements the results obtained by the Open IE state-of-the-art extractors Clausie and OLLIE by learning relations that are not yet obtained.

2. CompIE complements OLLIE and ClausIE results without decreasing their Precision.

To implement the strategies to validate each hypothesis, we have built a prototype. We used as input corpus the ReVerb test set [ETZ11]. The results presented in Chapter 5 confirm the two hypotheses.

CompIE achieved 43% of Recall, as seen in Section 5.4.2. Unfortunately, this measure is not suitable to use in the comparison of our results with others, since OLLIE and CompIE do not report this metric.

Given the Precision values achieved by each interpretation method, ANs interpretation reached a better result than NCs interpretation - 98% against 46%. The high value of CompIE's final Precision is due to the fact that the amount of interpretations of ANs in the final set is much larger than NCs interpretations (319 against 61).

The results demonstrate that CompIE contributes in the challenge of extracting relations within NCs and ANs in Open IE.

6.2. Future Work

In this section, we indicate possibilities for future research:

- Enhancing NCs and ANs identification by refining the lexical-syntactic patterns.

  Since there are more variations in the lexical construction of the ANs and NCs than those which are currently detected by CompIE, it is important to refine the NCs and ANs identification patterns to expand the coverage of the compounds identification.

- Enhancing the NCs and ANs interpretation by implementing other interpretation approaches.

  Approaches that could be applied in this case are NCs interpretation using Google Hits and Google * operator, using stemmers and semantic similarity methods as well.

- Enhancing LSOE performance by refining the lexical-syntactic patterns used in the relations identification, using parse trees and improving the recognition of the arguments of a relation.

- Using named entity recognizers to improve recognition of nouns.

- Developing a method to treat relations containing pronouns as arguments through the use of coreference resolution.

  Since relations containing pronouns as arguments are unclear in some contexts, coreference resolution increases the number of informative relations.

- Treating the modification of an adjective by an adverb (such as in *very beautiful* or *considerably high*) and adjective sequences preceding a noun (as in *deep blue sky*)

- Treating NCs formed by juxtaposition of nouns (as *cookbook*) or hyphenated (as *father-in-law)*.

  The comprehension of the semantics within these NCs may improve or even determine the extraction of certain relations in a text. As these NCs are usually treated as a lexical unit, they require additional semantic information, semantic analysis and, probably, a lexicon.

- Clustering relations for result analysis.

  The idea is to combine this rule-based approach with a non-supervised next step in order to cluster relations and learn more about the resulting groups and common characteristics among them.

- Provide lenient evaluation.

The idea is to consider a less rigorous judgement on the correcteness of the relations extracted. For instance, to consider correct the relations that had at least one evaluation as correct.

6.3. Publications

During the doctoral, the following papers have been published:

- Xavier, C. C.; Lima, V. L. S. "Boosting Open Information Extraction with Noun-Based Relations". In: 9th International Conference on Language Resources and Evaluation, 2014, pp.96-100.

- Xavier, C. C.; Lima, V. L. S.; Souza, M."Open Information Extraction Based on Lexical-Syntactic Patterns". In: 2nd Brazilian Conference on Intelligent Systems, 2013, pp. 19-24.

- Xavier, C. C.; Lima, V. L. S. "A Method for Automatically Extracting Domain Semantic Networks from Wikipedia". In: Portuguese Language 10th International Conference, 2012, pp. 93-98.

- Xavier, C. C.; Lima, V. L. S. "Declaração de Pesquisa: Extração Automática de Ontologias da Wikipédia". In: Encontro Iberoamericano sobre Pesquisa, 2011, 6p.

- Goulart, R. R. V.; Lima, V. L. S.; Xavier, C. C. "A systematic review of named entity recognition in biomedical texts". *Journal of the Brazilian Computer Society*, vol. 17, 2011, pp. 103-116.

- Xavier, C. C.; Lima, V. L. S. "A Semi-Automatic Method for Domain Ontology Extraction from Portuguese Language Wikipedia's Categories". In: 20th Brazilian Symposium on Artificial Intelligence, 2010, 10 p.

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APPENDIX A

CompIE output from ReVerb test set [ETZ11] and evaluation

Column 1: NC/AN extracted
Column 2: triple describing the relation within the NC/AN
Column 3: 1st judge evaluation
Column 4: 2nd judge evaluation
Column 5: final evaluation
Column 6: interpretation approach

NC/AN	Triple	J1	J2	Final Evaluation	Interpretation Approach
20th_century	(20th,is_attribute_of,century)	1	1	1	AN
active_oil	(active,is_attribute_of,oil)	1	1	1	AN
acute_pain	(acute,is_attribute_of,pain)	1	1	1	AN
aggressive_builders	(aggressive,is_attribute_of,builders)	1	1	1	AN
american_boys	(american,is_attribute_of,boys)	1	1	1	AN
american_culture	(american,is_attribute_of,culture)	1	1	1	AN
american_desire	(american,is_attribute_of,desire)	1	1	1	AN
american_flags	(american,is_attribute_of,flags)	1	1	1	AN
american_intelligence	(american,is_attribute_of,intelligence)	1	1	1	AN
american_involvement	(american,is_attribute_of,involvement)	1	1	1	AN
american_power	(american,is_attribute_of,power)	1	1	1	AN
american_support	(american,is_attribute_of,support)	1	1	1	AN
amusement_park	(theme_parks,are,terms)	0	0	0	DBPedia
annual_debt	(annual,is_attribute_of,debt)	1	1	1	AN
annual_maintenance	(annual,is_attribute_of,maintenance)	1	1	1	AN
apparent_rapture	(apparent,is_attribute_of,rapture)	1	1	1	AN
arab_effort	(arab,is_attribute_of,effort)	1	1	1	AN
archeological_treasure	(archeological,is_attribute_of,treasure)	1	1	1	AN
armenian_native	(armenian,is_attribute_of,native)	1	1	1	AN
autistic_twins	(autistic,is_attribute_of,twins)	1	1	1	AN
bad_marriages	(bad,is_attribute_of,marriages)	1	1	1	AN
barbecue_sauces	(sour_sauce,usually_based,on_catsup)	1	1	1	WordNet
beautiful_moments	(beautiful,is_attribute_of,moments)	1	1	1	AN
big_film	(big,is_attribute_of,film)	1	1	1	AN
big_hit	(big,is_attribute_of,hit)	1	1	1	AN
big_play	(big,is_attribute_of,play)	1	1	1	AN
biological_weapons	(biological,is_attribute_of,weapons)	1	1	1	AN
boiled_eggs	(egg,cooked,briefly)	1	1	1	WordNet
bond_market	(participants,can,issue)	0	0	0	DBPedia
brilliant_mark	(brilliant,is_attribute_of,mark)	1	1	1	AN
british_colonialism	(british,is_attribute_of,colonialism)	1	1	1	AN
british_pediatrician	(british,is_attribute_of,pediatrician)	1	1	1	AN
broad_backdrop	(broad,is_attribute_of,backdrop)	1	1	1	AN
broad_terms	(broad,is_attribute_of,terms)	1	1	1	AN
brown_sugar	(brown,is_attribute_of,sugar)	1	1	1	AN
brutal_regime	(brutal,is_attribute_of,regime)	1	1	1	AN
busy_planning	(busy,is_attribute_of,planning)	1	1	1	AN
canadian_destinations	(canadian,is_attribute_of,destinations)	1	1	1	AN
carpet_cleaning	(allergens,can_be,achieved)	0	0	0	DBPedia
casual_fridays	(casual,is_attribute_of,fridays)	1	1	1	AN
chief_economist	(position_job_class,having,responsibility)	1	1	1	DBPedia
chief_executive	(person,who_holds,office_of_head)	1	1	1	WordNet
chinese_emperors	(chinese,is_attribute_of,emperors)	1	1	1	AN
civilian_prisoners	(civilian,is_attribute_of,prisoners)	1	1	1	AN
clear_information	(clear,is_attribute_of,information)	1	1	1	AN
clear_rubble	(clear,is_attribute_of,rubble)	0	1	0	AN
college_students	(student,enrolled,in_a_college)	1	1	1	WordNet
comic_book	(separate_panels,that_represent,individual)	0	0	0	DBPedia
commercial_jets	(commercial,is_attribute_of,jets)	1	1	1	AN
commercial_spine	(commercial,is_attribute_of,spine)	1	1	1	AN

common_cause	(common,is_attribute_of,cause)	1	1		1	AN
communist_sympathizers	(communist,is_attribute_of,sympathizers)	1	1		1	AN
complete_euthanasia	(complete,is_attribute_of,euthanasia)	0	1		0	AN
computer_users	(person,who_uses,computers)	1	1		1	WordNet
confident_diplomats	(confident,is_attribute_of,diplomats)	1	1		1	AN
congressional_conservatives	(congressional,is_attribute_of,conservatives)	1	1		1	AN
corporate_profits	(corporate,is_attribute_of,profits)	1	1		1	AN
corporate_racketeer	(corporate,is_attribute_of,racketeer)	1	1		1	AN
cranky_mood	(cranky,is_attribute_of,mood)	1	1		1	AN
crude_oil	(crude,is_a_property_of,oil)	1	1		1	NCs Relations DB
cuban_town	(cuban,is_attribute_of,town)	1	1		1	AN
cultural_issues	(cultural,is_attribute_of,issues)	1	1		1	AN
current_contract	(current,is_attribute_of,contract)	1	1		1	AN
current_issue	(current,is_attribute_of,issue)	1	1		1	AN
current_law	(current,is_attribute_of,law)	1	1		1	AN
dead_princess	(dead,is_attribute_of,princess)	1	1		1	AN
democratic_president	(democratic,is_attribute_of,president)	1	1		1	AN
different_arrangement	(different,is_attribute_of,arrangement)	1	1		1	AN
different_implications	(different,is_attribute_of,implications)	1	1		1	AN
direct_injection	(direct,is_attribute_of,injection)	1	1		1	AN
diseased_children	(diseased,is_attribute_of,children)	1	1		1	AN
domestic_product	(domestic,is_attribute_of,product)	1	1		1	AN
domestic_routes	(domestic,is_attribute_of,routes)	1	1		1	AN
dubious_prices	(dubious,is_attribute_of,prices)	1	1		1	AN
durable_goods	(durable,is_attribute_of,goods)	1	1		1	AN
easy_fraud	(easy,is_attribute_of,fraud)	1	1		1	AN
easy_questionnaire	(easy,is_attribute_of,questionnaire)	1	1		1	AN
economic_growth	(economic,is_attribute_of,growth)	1	1		1	AN
elegant_souls	(elegant,is_attribute_of,souls)	1	1		1	AN
environmental_liabilities	(environmental,is_attribute_of,liabilities)	1	1		1	AN
environmental_organization	(environmental,is_attribute_of,organization)	1	1		1	AN
environmental_toxins	(environmental,is_attribute_of,toxins)	1	1		1	AN
ethnic_clashes	(ethnic,is_attribute_of,clashes)	1	1		1	AN
european_countries	(european,is_attribute_of,countries)	1	1		1	AN
extra_deliveries	(extra,is_attribute_of,deliveries)	1	1		1	AN
faint_drawl	(faint,is_attribute_of,drawl)	1	1		1	AN
fair_housing	(fair,is_attribute_of,housing)	1	1		1	AN
famous_anthropologist	(famous,is_attribute_of,anthropologist)	1	1		1	AN
fatal_crash	(fatal,is_attribute_of,crash)	1	1		1	AN
federal_action	(federal,is_attribute_of,action)	1	1		1	AN
federal_government	(federal,is_attribute_of,government)	1	1		1	AN
federal_officials	(federal,is_attribute_of,officials)	1	1		1	AN
federal_overseer	(federal,is_attribute_of,overseer)	1	1		1	AN
few_dollars	(few,is_attribute_of,dollars)	1	1		1	AN
few_minutes	(few,is_attribute_of,minutes)	1	1		1	AN
few_photos	(few,is_attribute_of,photos)	1	1		1	AN
few_squalls	(few,is_attribute_of,squalls)	1	1		1	AN
final_competition	(final,is_attribute_of,competition)	1	1		1	AN
financial_categories	(financial,is_attribute_of,categories)	1	1		1	AN
financial_difficulties	(financial,is_attribute_of,difficulties)	1	1		1	AN
financial_well	(financial,is_attribute_of,well)	0	1		0	AN
fiscal_cost	(fiscal,is_attribute_of,cost)	1	1		1	AN
food_coloring	(substance,that_imparts,color)	1	1		1	DBPedia
food_processor	(kitchen_appliance,used_to_facilitate,various)	0	1		0	DBPedia
football_team	(various_team_sports,known,as_football)	0	1		0	DBPedia
foreign_exchange	(foreign,is_attribute_of,exchange)	1	1		1	AN
foreign_ministry	(foreign,is_attribute_of,ministry)	1	1		1	AN
foreign_students	(foreign,is_attribute_of,students)	1	1		1	AN
formal_apology	(formal,is_attribute_of,apology)	1	1		1	AN
former_actress	(former,is_attribute_of,actress)	1	1		1	AN
former_employer	(former,is_attribute_of,employer)	1	1		1	AN
foster_parents	(person,who_acts,as_parent)	1	1		1	WordNet
frantic_photographers	(frantic,is_attribute_of,photographers)	1	1		1	AN
free_agent	(free,is_attribute_of,agent)	1	1		1	AN
free_pants	(free,is_attribute_of,pants)	1	1		1	AN

free_safety	(free,is_attribute_of,safety)	1	1	1	AN
free_savings	(free,is_attribute_of,savings)	1	1	1	AN
front_page	(page,that_is_in,front)	1	1	1	NCs Relations DB
full_season	(full,is_attribute_of,season)	1	1	1	AN
full_story	(full,is_attribute_of,story)	1	1	1	AN
general_manager	(general,is_attribute_of,manager)	1	1	1	AN
genetic_dysfunction	(genetic,is_attribute_of,dysfunction)	1	1	1	AN
genetic_switch	(genetic,is_attribute_of,switch)	1	1	1	AN
german_mark	(german,is_attribute_of,mark)	1	1	1	AN
good_deal	(good,is_attribute_of,deal)	1	1	1	AN
good_time	(good,is_attribute_of,time)	1	1	1	AN
grocery_store	(grocery,is_the_content_of,store)	1	1	1	NCs Relations DB
harsh_criticism	(harsh,is_attribute_of,criticism)	1	1	1	AN
harsh_terrain	(harsh,is_attribute_of,terrain)	1	1	1	AN
health_care	(care,is_the_purpose_of,health)	0	0	0	NCs Relations DB
health_food	(considered,to_be,beneficial)	1	1	1	DBPedia
health_insurance	(health,is_the_purpose_of,insurance)	1	0	0	NCs Relations DB
heavy_rain	(heave,is_the_measure_of,hain)	1	0	0	NCs Relations DB
high_speed	(pinball_game,designed,by_ritchie)	0	0	0	DBPedia
hot_system	(hot,is_attribute_of,system)	1	1	1	AN
hot_wing	(hot,is_attribute_of,wing)	1	1	1	AN
house_management	(house_management,concerns,selling)	1	1	1	DBPedia
human_rights	(person,is,inherently_entitled)	0	0	0	DBPedia
illegal_immigrants	(illegal,is_attribute_of,immigrants)	1	1	1	AN
immediate_coast	(immediate,is_attribute_of,coast)	1	1	1	AN
inescapable_conclusions	(inescapable,is_attribute_of,conclusions)	1	1	1	AN
information_age	(ability_of_individuals,to_transfer,information)	1	0	0	DBPedia
inner_eyes	(inner,is_attribute_of,eyes)	1	1	1	AN
insolvent_banks	(insolvent,is_attribute_of,banks)	1	1	1	AN
intensive_diplomacy	(intensive,is_attribute_of,diplomacy)	1	1	1	AN
intractable_nature	(intractable,is_attribute_of,nature)	1	1	1	AN
italian_colors	(italian,is_attribute_of,colors)	1	1	1	AN
italian_neighborhood	(italian,is_attribute_of,neighborhood)	1	1	1	AN
japanese_automakers	(japanese,is_attribute_of,automakers)	1	1	1	AN
japanese_companies	(japanese,is_attribute_of,companies)	1	1	1	AN
japanese_government	(japanese,is_attribute_of,government)	1	1	1	AN
jewish_affairs	(jewish,is_attribute_of,affairs)	1	1	1	AN
keyless_chuck	(keyless,is_attribute_of,chuck)	1	1	1	AN
korean_leader	(korean,is_attribute_of,leader)	1	1	1	AN
large_amounts	(large,is_attribute_of,amounts)	1	1	1	AN
large_companies	(large,is_attribute_of,companies)	1	1	1	AN
large_groups	(large,is_attribute_of,groups)	1	1	1	AN
large_number	(large,is_attribute_of,number)	1	1	1	AN
large_sport	(large,is_attribute_of,sport)	1	1	1	AN
last_minutes	(last,is_attribute_of,minutes)	1	1	1	AN
last_month	(last,is_attribute_of,month)	1	1	1	AN
last_prisoner	(last,is_attribute_of,prisoner)	1	1	1	AN
last_quarter	(last,is_attribute_of,quarter)	1	1	1	AN
last_week	(last,is_attribute_of,week)	1	1	1	AN
last_year	(last,is_attribute_of,year)	1	1	1	AN
law_enforcement	(maer,to_promote,adherence)	0	0	0	DBPedia
light_heavyweight	(amateur_boxer,who_weighs,no_more)	0	0	0	WordNet
likely_price	(likely,is_attribute_of,price)	1	1	1	AN
main_impulse	(main,is_attribute_of,impulse)	1	1	1	AN
major_airlines	(major,is_attribute_of,airlines)	1	1	1	AN
major_airports	(major,is_attribute_of,airports)	1	1	1	AN
major_currencies	(major,is_attribute_of,currencies)	1	1	1	AN
many_cigars	(many,is_attribute_of,cigars)	1	1	1	AN
many_people	(many,is_attribute_of,people)	1	1	1	AN
many_quarters	(many,is_attribute_of,quarters)	1	1	1	AN
many_years	(many,is_attribute_of,years)	1	1	1	AN
marketing_agreement	(marketing,is_the_purpose_of,agreement)	0	1	0	NCs Relations DB
mass_movement	(movement,which_is,supported)	1	0	0	DBPedia
massive_enforcement	(massive,is_attribute_of,enforcement)	1	1	1	AN
medical_costs	(medical,is_attribute_of,costs)	1	1	1	AN

medical_dramas	(medical,is_attribute_of,dramas)	1	1	1	AN
mental_hospital	(mental,is_attribute_of,hospital)	1	1	1	AN
middle_ground	(ground,that_is_in,middle)	1	1	1	NCs Relations DB
military_attack	(military,is_attribute_of,attack)	1	1	1	AN
military_houses	(military,is_attribute_of,houses)	1	1	1	AN
military_school	(military,is_attribute_of,school)	1	1	1	AN
minor_fender	(minor,is_attribute_of,fender)	1	1	1	AN
model_year	(product,is,a_number)	1	0	0	DBPedia
modest_affair	(modest,is_attribute_of,affair)	1	1	1	AN
monetary_policy	(country,controls,supply)	0	0	0	DBPedia
multiheaded_serpent	(multiheaded,is_attribute_of,serpent)	1	1	1	AN
multinational_companies	(multinational,is_attribute_of,companies)	1	1	1	AN
multiplex_theater	(multiplex,is_attribute_of,theater)	1	1	1	AN
musical_actress	(musical,is_attribute_of,actress)	1	1	1	AN
musical_direction	(musical,is_attribute_of,direction)	1	1	1	AN
myriad_collaborators	(myriad,is_attribute_of,collaborators)	1	1	1	AN
national_elections	(national,is_attribute_of,elections)	1	1	1	AN
national_sample	(national,is_attribute_of,sample)	1	1	1	AN
necessary_reforms	(necessary,is_attribute_of,reforms)	1	1	1	AN
negative_book	(negative,is_attribute_of,book)	1	1	1	AN
negative_news	(negative,is_attribute_of,news)	1	1	1	AN
new_alignments	(new,is_attribute_of,alignments)	1	1	1	AN
new_car	(new,is_attribute_of,car)	1	1	1	AN
new_concessions	(new,is_attribute_of,concessions)	1	1	1	AN
new_coverage	(new,is_attribute_of,coverage)	1	1	1	AN
new_distributors	(new,is_attribute_of,distributors)	1	1	1	AN
new_election	(new,is_attribute_of,election)	1	1	1	AN
new_heads	(new,is_attribute_of,heads)	1	1	1	AN
new_marketing	(new,is_attribute_of,marketing)	1	1	1	AN
new_networking	(new,is_attribute_of,networking)	1	1	1	AN
new_obstacles	(new,is_attribute_of,obstacles)	1	1	1	AN
new_president	(new,is_attribute_of,president)	1	1	1	AN
new_product	(new,is_attribute_of,product)	1	1	1	AN
new_routes	(new,is_attribute_of,routes)	1	1	1	AN
new_socks	(new,is_attribute_of,socks)	1	1	1	AN
new_starts	(new,is_attribute_of,starts)	1	1	1	AN
new_system	(new,is_attribute_of,system)	1	1	1	AN
new_tests	(new,is_attribute_of,tests)	1	1	1	AN
news_agency	(established,to_supply,news_reports)	1	1	1	DBPedia
next_concert	(next,is_attribute_of,concert)	1	1	1	AN
next_day	(next,is_attribute_of,day)	1	1	1	AN
next_play	(next,is_attribute_of,play)	1	1	1	AN
next_spring	(next,is_attribute_of,spring)	1	1	1	AN
next_summer	(next,is_attribute_of,summer)	1	1	1	AN
next_week	(next,is_attribute_of,week)	1	1	1	AN
next_year	(next,is_attribute_of,year)	1	1	1	AN
nonprofit_status	(nonprofit,is_attribute_of,status)	1	1	1	AN
notional_yield	(notional,is_attribute_of,yield)	1	1	1	AN
nuclear_weapons	(nuclear,is_attribute_of,weapons)	1	1	1	AN
occasional_moment	(occasional,is_attribute_of,moment)	1	1	1	AN
oil_company	(company,that_sells,oil)	1	1	1	WordNet
open_training	(open,is_attribute_of,training)	1	1	1	AN
original_basis	(original,is_attribute_of,basis)	1	1	1	AN
orthopedic_surgery	(conditions,involving,musculoskeletal_system)	0	1	0	DBPedia
other_activities	(other,is_attribute_of,activities)	1	1	1	AN
other_companies	(other,is_attribute_of,companies)	1	1	1	AN
other_driver	(other,is_attribute_of,driver)	1	1	1	AN
other_factors	(other,is_attribute_of,factors)	1	1	1	AN
other_foundations	(other,is_attribute_of,foundations)	1	1	1	AN
other_goods	(other,is_attribute_of,goods)	1	1	1	AN
other_half	(other,is_attribute_of,half)	1	1	1	AN
other_name	(other,is_attribute_of,name)	1	1	1	AN
other_person	(other,is_attribute_of,person)	1	1	1	AN
other_regions	(other,is_attribute_of,regions)	1	1	1	AN
other_studies	(other,is_attribute_of,studies)	1	1	1	AN

other_suspects	(other,is_attribute_of,suspects)	1	1	1	AN
other_tobacco	(other,is_attribute_of,tobacco)	1	1	1	AN
other_trustees	(other,is_attribute_of,trustees)	1	1	1	AN
outstanding_stock	(outstanding,is_attribute_of,stock)	1	1	1	AN
overall_passenger	(overall,is_attribute_of,passenger)	1	1	1	AN
own_hands	(own,is_attribute_of,hands)	1	1	1	AN
palestinian_problem	(palestinian,is_attribute_of,problem)	1	1	1	AN
parent_company	(firm,to_control,management)	0	1	0	DBPedia
parliamentary_elections	(parliamentary,is_attribute_of,elections)	1	1	1	AN
peace_treaty	(treaty,to_cease,hostilities)	1	0	0	WordNet
peaceful_world	(peaceful,is_attribute_of,world)	1	1	1	AN
personal_injuries	(personal,is_attribute_of,injuries)	1	1	1	AN
political_aspirations	(political,is_attribute_of,aspirations)	1	1	1	AN
political_coup	(political,is_attribute_of,coup)	1	1	1	AN
political_emotions	(political,is_attribute_of,emotions)	1	1	1	AN
political_leaders	(political,is_attribute_of,leaders)	1	1	1	AN
political_party	(political,is_attribute_of,party)	1	1	1	AN
political_strife	(political,is_attribute_of,strife)	1	1	1	AN
possible_buyers	(possible,is_attribute_of,buyers)	1	1	1	AN
possible_legislation	(possible,is_attribute_of,legislation)	1	1	1	AN
power_companies	(public_utility,that_provides,electricity)	1	1	1	WordNet
practical_considerations	(practical,is_attribute_of,considerations)	1	1	1	AN
precious_metal	(precious,is_attribute_of,metal)	1	1	1	AN
preliminary_interview	(preliminary,is_attribute_of,interview)	1	1	1	AN
previous_games	(previous,is_attribute_of,games)	1	1	1	AN
previous_summer	(previous,is_attribute_of,summer)	1	1	1	AN
price_rise	(rise,is_the_topic_of,price)	1	1	1	NCs Relations DB
prime_minister	(prime,is_attribute_of,minister)	1	1	1	AN
private_practice	(private,is_attribute_of,practice)	1	1	1	AN
private_resolution	(private,is_attribute_of,resolution)	1	1	1	AN
private_siding	(private,is_attribute_of,siding)	1	1	1	AN
productive_imports	(productive,is_attribute_of,imports)	1	1	1	AN
profit_margins	(gross_profits,divided,by_sales)	1	1	1	WordNet
prompt_speculation	(prompt,is_attribute_of,speculation)	1	1	1	AN
psychological_disorders	(psychological,is_attribute_of,disorders)	1	1	1	AN
public_service	(service,which_is,provided)	1	0	0	DBPedia
quarterly_report	(quarterly,is_attribute_of,report)	1	1	1	AN
quick_retort	(quick,is_attribute_of,retort)	1	1	1	AN
quizzical_look	(quizzical,is_attribute_of,look)	1	1	1	AN
reasonable_explanation	(reasonable,is_attribute_of,explanation)	1	1	1	AN
recent_afternoon	(recent,is_attribute_of,afternoon)	1	1	1	AN
recent_disclosure	(recent,is_attribute_of,disclosure)	1	1	1	AN
recent_history	(recent,is_attribute_of,history)	1	1	1	AN
recent_month	(recent,is_attribute_of,month)	1	1	1	AN
recent_years	(recent,is_attribute_of,years)	1	1	1	AN
respective_products	(respective,is_attribute_of,products)	1	1	1	AN
review_panel	(panel,is_an_actor_of,review)	0	0	0	NCs Relations DB
ritz_hotel	(5-star_hotel,located,in_piccadilly)	1	0	0	DBPedia
road_rage	(automobile,is-a,motor_vehicle)	0	0	0	DBPedia
romantic_comedy	(romantic,is_attribute_of,comedy)	1	1	1	AN
russian_population	(russian,is_attribute_of,population)	1	1	1	AN
safe_design	(safe,is_attribute_of,design)	1	1	1	AN
safety_net	(net,to_protect,people)	1	1	1	DBPedia
same_direction	(same,is_attribute_of,direction)	1	1	1	AN
same_men	(same,is_attribute_of,men)	1	0	0	AN
same_rules	(same,is_attribute_of,rules)	1	1	1	AN
same_shows	(same,is_attribute_of,shows)	1	1	1	AN
same_things	(same,is_attribute_of,things)	1	1	1	AN
same_top	(same,is_attribute_of,top)	1	1	1	AN
scant_inflation	(scant,is_attribute_of,inflation)	1	1	1	AN
scientific_experiment	(scientific,is_attribute_of,experiment)	1	1	1	AN
seating_capacity	(terms_of_limitations,set,by_law)	0	1	0	DBPedia
second_half	(second,is_attribute_of,half)	1	1	1	AN
second_possession	(second,is_attribute_of,possession)	1	1	1	AN
second_quarter	(second,is_attribute_of,quarter)	1	1	1	AN

second_setback	(second,is_attribute_of,setback)	1	1	1	AN
second_week	(second,is_attribute_of,week)	1	1	1	AN
senior_buyer	(senior,is_attribute_of,buyer)	1	1	1	AN
several_areas	(several,is_attribute_of,areas)	1	1	1	AN
several_days	(several,is_attribute_of,days)	1	1	1	AN
sharp_drop	(sharp,is_attribute_of,drop)	1	1	1	AN
sharp_pain	(sharp,is_attribute_of,pain)	1	1	1	AN
short_circuit	(electrical_circuit,that_allows,a_current)	0	0	0	DBPedia
short_sales	(short,is_attribute_of,sales)	1	1	1	AN
significant_change	(significant,is_attribute_of,change)	1	1	1	AN
similar_bill	(similar,is_attribute_of,bill)	1	1	1	AN
similar_move	(similar,is_attribute_of,move)	1	1	1	AN
similar_negotiations	(similar,is_attribute_of,negotiations)	1	1	1	AN
simultaneous_explosion	(simultaneous,is_attribute_of,explosion)	1	1	1	AN
single_quart	(single,is_attribute_of,quart)	0	1	0	AN
slow_recovery	(slow,is_attribute_of,recovery)	1	1	1	AN
small_dorm	(small,is_attribute_of,dorm)	1	1	1	AN
small_traces	(small,is_attribute_of,traces)	1	1	1	AN
social_scientists	(social,is_attribute_of,scientists)	1	1	1	AN
southern_stuff	(southern,is_attribute_of,stuff)	1	1	1	AN
spanish_official	(spanish,is_attribute_of,official)	1	1	1	AN
special_offers	(special,is_attribute_of,offers)	1	1	1	AN
steady_decline	(steady,is_attribute_of,decline)	1	1	1	AN
stock_market	(stock,that_is_in,market)	0	1	0	NCs Relations DB
strong_feelings	(strong,is_attribute_of,feelings)	1	1	1	AN
strong_wind	(strong,is_attribute_of,wind)	1	1	1	AN
such_journalism	(such,is_attribute_of,journalism)	1	0	0	AN
such_remarks	(such,is_attribute_of,remarks)	1	0	0	AN
sufficient_lift	(sufficient,is_attribute_of,lift)	1	1	1	AN
surgical_procedures	(surgical,is_attribute_of,procedures)	1	1	1	AN
swap_rate	(fixed_rate,that_makes,the_market_value)	1	0	0	DBPedia
takeover_offer	(offer,that_is_about,takeover)	1	1	1	NCs Relations DB
target_price	(stockholder,is,willing)	0	0	0	DBPedia
tax_revenue	(income,that_is,gained)	1	1	1	DBPedia
technical_problems	(technical,is_attribute_of,problems)	1	1	1	AN
television_advertising	(television,is_an_instrument_of,advertising)	1	1	1	NCs Relations DB
temporary_employment	(temporary,is_attribute_of,employment)	1	1	1	AN
tennis_racket	(used,to_play,teis)	1	1	1	WordNet
terrorist_attack	(terrorist,is_attribute_of,attack)	1	1	1	AN
third_quarter	(third,is_attribute_of,quarter)	1	1	1	AN
third_receiver	(third,is_attribute_of,receiver)	1	1	1	AN
time_slot	(time,assigned,on_a_schedule)	1	1	1	WordNet
tiny_breath	(tiny,is_attribute_of,breath)	1	1	1	AN
tobacco_industry	(products,containing,tobacco)	0	0	0	WordNet
towel_racks	(towels,can_be,hung)	1	1	1	WordNet
traditional_duties	(traditional,is_attribute_of,duties)	1	1	1	AN
traditional_furnishings	(traditional,is_attribute_of,furnishings)	1	1	1	AN
true_essence	(true,is_attribute_of,essence)	1	1	1	AN
tuesday_night	(night,is_the_time_of,tuesday)	1	1	1	NCs Relations DB
turkish_government	(turkish,is_attribute_of,government)	1	1	1	AN
unearned_cynicism	(unearned,is_attribute_of,cynicism)	1	1	1	AN
unexpected_strength	(unexpected,is_attribute_of,strength)	1	1	1	AN
unfair_port	(unfair,is_attribute_of,port)	1	1	1	AN
unknown_quantity	(importance,is,not_apparent)	0	0	0	WordNet
unpopular_agencies	(unpopular,is_attribute_of,agencies)	1	1	1	AN
unskilled_workers	(unskilled,is_attribute_of,workers)	1	1	1	AN
unsolvable_problems	(unsolvable,is_attribute_of,problems)	1	1	1	AN
various_sites	(various,is_attribute_of,sites)	1	1	1	AN
virtual_gift	(virtual,is_attribute_of,gift)	1	1	1	AN
vivid_red	(vivid,is_attribute_of,red)	1	1	1	AN
water_line	(line,is_the_topic_of,water)	0	1	0	NCs Relations DB
weekly_survey	(weekly,is_attribute_of,survey)	1	1	1	AN
white_chadors	(white,is_attribute_of,chadors)	1	1	1	AN
white_elephants	(white,is_attribute_of,elephants)	1	1	1	AN
wholesale_level	(wholesale,is_attribute_of,level)	1	1	1	AN

wide_array	(wide,is_attribute_of,array)	1	1		1	AN
wild_garden	(wild,is_attribute_of,garden)	1	1		1	AN
wonderful_gift	(wonderful,is_attribute_of,gift)	1	1		1	AN
young_mothers	(young,is_attribute_of,mothers)	1	1		1	AN
zip_code	(zip_codes,are,a_system)	1	1		1	DBPedia

APPENDIX B

Sentences from LSOE output from ReVerb test set [ETZ11] and evaluation

Column 1: extracted relation
Column 2: 1st judge evaluation
Column 3: 2nd judge evaluation
Column 4: final judgement

Triple	J1	J2	final judgement
HEALTH_MAINTENANCE_ORGANIZATIONS,WERE,REQUIRED	0	0	0
NEXT_YEAR,RAISE,PREMIUMS	0	0	0
HEALTH_MAINTENANCE_ORGANIZATIONS,WERE_REQUIRED_TO_TELL,THE_FEDERAL_GOVERNMENT	1	1	1
YIELD,WAS,UNCHANGED	0	0	0
BALLOT,WAS,A_LITTLE-KNOWN_CHALLENGER	0	0	0
PRINCIPAL_OPPOSITION_PARTIES,BOYCOTTED,POLLS	1	1	1
BALLOT,WAS,A_CHALLENGER	0	0	0
SERIES_OF_PHENOMENA,THAT_AFFECT,WEATHER	1	1	1
BOX,SITS,HIGH	0	0	0
ANNOUNCEMENT,WAS,A_FIRST_STEP	1	0	0
AOUNCEMENT,WAS,A_FIRST_STEP	1	1	1
AOUNCEMENT,WAS,A_STEP	1	1	1
STABLE_BOND_YIELDS,PROVIDED,SUPPORT	1	1	1
TEAMMATES,INDEED_LOVED,SHOW	1	1	1
CONSUMERS,HAVE,JUST_DECIDED	0	0	0
SCORELESS_IINGS,ENABLING,SEATTLE	0	0	0
PROGRAMMERS,ALWAYS_ENTER,A_SEASON	1	1	1
QUARTER,ALSO_LOOKS,GOOD	1	1	1
OUTPUT,WAS,REDUCED	1	0	0
DISORDER,STEMS,FROM_A_GENETIC_DYSFUNCTION	1	1	1
EPIDEMIOLOGISTS,SAY,DISORDER	0	0	0
DISORDER,STEMS,FROM_A_DYSFUNCTION	1	1	1
FIT,SAID,BOBBY_BROWN	0	0	0
CONGRESS,HOLDS,HEARINGS	1	1	1
HEARINGS,TO_CONSIDER,ANTI-ROAD-RAGE_LEGISLATION	0	1	0
INDIFFERENCE,IS,PROBABLY_CAUSED	1	1	1
LAWS,THAT_WERE,PLACE	0	0	0
EDWARDS,BELIEVES,THAT_DEFENDERS	1	0	0
SCANDAL,HAS,NOW_FORCED	1	0	0
GOVERNMENT,HAD,FAILED	1	0	0
CALCAVECCHIA,PLAYS,FRIDAY_MORNING	1	1	1
TUMAN,WHO_HAD,LINED	0	0	0
LEFT_SIDE,GLIDED,UNCHECKED	0	0	0
1-YARD_TOUCHDOWN,PUT,MICHIGAN	0	0	0
CHARLES_DARWIN,HAD,WRITTEN	1	0	0
1970S,BELIEVED,EXPRESSIONS	0	0	0
HEARST_NEWS_SERVICE,HAS,FILED	1	0	0
DEPUTIES,WHO_WERE,MEMBERS_OF_FATAH	1	1	1
ARAFAT,KNOW,IN_A_MEETING_TUESDAY_NIGHT	0	0	0
VISON_CONCEPT_SUV,SHOWN,AT_LAST_YEAR	1	1	1
VISON_CONCEPT_SUV,SHOWN,AT_YEAR	1	0	0
POWER_COMPANIES,SPURRED,MONDAY	1	1	1
ROY_OSWALT,HAVE,WON	1	0	0
NOVARTIS_PHARMA_AG,UNILATERALLY_TERMINATING,A_MARKETING_AGREEMENT	1	1	1
HOUSE_BUDGET_COMMITTEE,RELEASED,A_REPORT	1	1	1
MONDAY,PUTTING,LIKELY_PRICE_TAG	0	0	0
PRESIDENT,READS,BIOSCOPE	1	1	1
GEORGIA_COAST,CAUSING,SURF	0	0	0
DRILL,HAS,A_KEYLESS_CHUCK	1	1	1
DRILL,HAS,A_CHUCK	1	1	1
MISSING,WERE,DEAD	0	0	0
SECONDS,LEFT,ON_A_FROZEN_FIELD	0	0	0

SECONDS,LEFT,ON_A_FIELD	0	0	0
WEB,TO_CREATE,ART_SOUNDS	0	0	0
MIKE_TYSON,HAVING,DISAPPEARED	1	1	1
DELILLO,HAS,BRILLIANTLY_DESCRIBED	0	0	0
STABBING,WAS,UNRELATED	0	0	0
SALIM,SAID,STABBING	1	0	0
TAX_REVENUE,WILL_FALL,AS_ECONOMIC_GROWTH	0	0	0
GOVERNMENT,WILL_REDUCE,SPENDING	1	1	1
TAX_REVENUE,WILL,FALL_AS_ECONOMIC_GROWTH	1	0	0
TAX_REVENUE,WILL,FALL_AS_GROWTH	1	0	0
IRAQI_DICTATOR,HAS,NOT_BEEN	0	0	0
P53_PROTEIN,IS,KNOWN	0	1	0
PROCESS,CALLED,TRANSACTIVATION	1	1	1
ADULTS,SURVEYED,LATE_LAST_WEEK	1	0	0
COMPANIES,HAVE,BEEN	0	0	0
CALCAVECCHIA,HAS,LOOKED	0	0	0
STARTS,INCLUDING,A_SEVENTH-PLACE_FINISH	0	0	0
MEETING,SEEMED,UNLIKELY	1	1	1
COOPERATIVE_BANK_BUILDING,HAS,BEEN	0	0	0
EMBASSY,HAS,BEEN	0	0	0
MAYBE_SIKES,SHOULD_APPLY,FOR_WORKMAN	0	1	0
DEPARTMENT,HAS,RAPIDLY_INCREASED	0	0	0
FARRIS,WAS,REPLACED	1	0	0
FARRIS,WAS_REPLACED_BY,SOPHOMORE_DUSTIN_LONG	1	1	1
SOPHOMORE_JASON_CARTER,PLAYED,OPENER	0	1	0
FRESHMAN_REGGIE_MCNEAL,PLAYED,OPENER	0	1	0
JAPANESE_AUTOMAKERS,HAVE,TAKEN	0	0	0
ALABAMA_REPUBLICAN,WHO_IS,RANKING_MINORITY_MEMBER	0	1	0
MAYBE_GOD,JUST_HAD,A_PLAN	1	1	1
JOHNSON,WHO_HAS,A_WIFE	1	1	1
DISNEY,ANIMATED,FILMS	0	0	0
200-DEGREE_AIR,IS,PUMPED	1	0	0
PRESIDIO_MED,FILLS,TIME	1	1	1
BSA,SEIZED,ITEMS	1	0	0
LAW,SAID,MANY	0	0	0
FIRM,HAVE,CONTRIBUTED	0	0	0
ELEGANT_SOULS,WHO_CONSIDER,SUCH_JOURNALISM	1	1	1
ELEGANT_SOULS,WHO_CONSIDER,JOURNALISM	1	1	1
LEGISLATION,WOULD_ALLOW,TAX-FREE_SAVINGS	1	1	1
EXPENSES,INCLUDING,TUITION	0	1	0
LEGISLATION,WOULD,ALLOW_TAX-FREE_SAVINGS	0	0	0
LEGISLATION,WOULD,ALLOW_SAVINGS	0	0	0
INVESTORS,USING,OTHER_MAJOR_CURRENCIES	1	1	1
INVESTORS,USING,CURRENCIES	1	1	1
SOLUTIA,IS,SADDLED	1	0	0
SITUATIONS,OFFER,REASON	0	0	0
STRIKES,INVOLVE,KROGER_STORES	1	1	1
ROSTER,IS,OLD	1	1	1
CUPS_VEGETABLES,CHOPPED,MEDIUM_FINE	1	1	1
CUPS_VEGETABLES,CHOPPED,FINE	0	1	0
DIRECTOR_ANG_LEE,IS,SET	0	1	0
STOCKS,WERE,MIXED	0	0	0
DURABLE_GOODS,SHOWED,UNEXPECTED_STRENGTH	1	1	1
UNEXPECTED_STRENGTH,SQUELCHING,HOPES	1	1	1
DURABLE_GOODS,SHOWED,STRENGTH	1	1	1
EXPORT_GROWTH,HAS,ALSO_FORCED	0	0	0
EXECUTIVES,SPENT,SEVERAL_DAYS	1	1	1
WEEK,HUDDLED,IN_NEGOTIATIONS	0	1	0
ROBERT_TEITELMAN,MANAGING,EDITOR_OF_INSTITUTIONAL	0	1	0
EXECUTIVES,SPENT,DAYS	1	1	1
EDITOR,TO_REPLACE,CUDABACK	1	1	1
UNITED_AIRLINES,IS,LIKELY	0	0	0
LIKELY,TO_NAME,GLE	0	1	0
ORDER,TO_LOWER,NON-PRODUCTIVE_IMPORTS	0	1	0
JIM_SUYDAM,WRITES_FOR,AUSTIN_AMERICAN-STATESMAN	1	1	1

OBNOXIOUS,SAYS,STEERS	0	0	0
LIFE,HAS,BEEN	0	0	0
ORDERS,WILL_LIKELY_BE,STRONGER	1	1	1
SITE,SHOULD_BE,PRESERVED	1	1	1
GURNEY,BOOSTS,BACKERS_STARS	0	0	0
FOWLER,CLEARLY_RESENTED,ICKES	1	1	1
CLINTON_CAMPAIGN,INCLUDING,PRESIDENT_CLINTON	0	1	0
PARTNERS,INCLUDING,INTERNET_SERVICE_PROVIDERS	0	1	0
DISCUSSION,LIT,A_FLAME	1	1	1
INDIAN_OCEAN,ARE,USUALLY_CALLED	0	0	0
STOCK_EXCHANGE_FLOOR,WILL_BE,A_SEA	1	1	1
SEVEN-YEAR_SWAP_RATE,WAS_LITTLE_CHANGED_FROM,YESTERDAY	1	1	1
SEVEN-YEAR_SWAP_RATE,WAS,LITTLE_CHANGED	0	1	0
KORS,ALSO_USED,SILK	1	1	1
ADMINISTRATION,WISHED_TO_SUPPORT,SOMETHING	1	1	1
RUFFLES,IS-A,FRILLY_EDGING	1	1	1
RIBBONS,IS-A,FRILLY_EDGING	1	1	1
TERM,BANDIED,ABOUT_BY_DESIGNERS	1	1	1
EXCESS_OF_CLOTHES,RENDERED,IN_GUIPURE_LACE	1	1	1
EXCESS_OF_CLOTHES,RENDERED,IN_LACE	1	1	1
HAYDEN,SAID,SUNDAY	0	0	0
EXISTING_LAWS,DEALING,WITH_STALKING	1	1	1
SENATOR,WAS_LOOKING_AT,SEVERAL_AREAS	1	1	1
POSSIBLE_LEGISLATION,INCLUDING,CLARIFICATION	0	1	0
MANY_PEOPLE,STAY,IN_BAD_MARRIAGES	1	1	1
MANY_PEOPLE,STAY,IN_MARRIAGES	1	1	1
SMILE,HAD,RECEDED	0	0	0
TONE,HAD,AGAIN_TURNED	0	0	0
PEOPLE,TO_COME,TALK	1	1	1
POWS,WOULD_LIKE,MORE	0	1	0
MIAMI,WHO_HEARD,FORBES	0	1	0
INDONESIA,WILL_LOWER,TARIFFS	1	0	0
USED,TO_MAKE,EXPORTS	0	1	0
ADD,IS,NOT_NEW	0	1	0
SM_SUMMIT,COMMITTED,SOFTWARE_PIRACY	1	1	1
GOVERNMENT,HAD,DONE	0	0	0
ROOKIE_ANTONIO_BRYANT,IS,FIERY	1	1	1
RAMS,SORELY_MISS,DEPARTED	0	1	0
TAYLOR,MISSED,ONLY_ONE_DAY_OF_SCHOOL	1	1	1
FORCE,IS,NECESSARY	1	1	1
GRANTS,ANNOUNCED,TODAY	0	1	0
ENFORCEMENT,IS-A,ACTIVITIES	1	1	1
HOUSING_COUNSELING,IS-A,ACTIVITIES	1	1	1
CHILDREN,WILL_DEVELOP,CANCER	1	1	1
CANCER,HAS,VERY_DIFFERENT_IMPLICATIONS	1	1	1
TOWERS_FINANCIAL,WAS,FORMED	0	0	0
TOWERS_FINANCIAL,WAS_FORMED_BY,ONE-TIME_NEW_YORK	1	1	1
MANY_PEOPLE,HAD,THOUGHT	0	0	0
THOUGHT,POSSIBLY_GIVING,MORE	0	0	0
AFTONBLADET,SAID,CHATTY	0	1	0
EUPHORIA,RANG,A_BELL_OF_MEMORY	1	1	1
MOVES,HAVE,RAISED	0	0	0
POLITICAL_EMOTIONS,HAVE,BEEN	0	0	0
DROUGHT,REPRESENTS,SECOND_SETBACK	1	1	1
PEOPLE,LIVING,WITH_AIDS	1	1	1
MACKOVIC,IS,PRESENTED	1	0	0
POLITICS-AND-CALORIES_CALENDAR,IS,A_BUELL_DINNER_MONDAY	1	0	0
BIONDI,SAID,THAT_KAY_KOPLOVITZ	0	0	0
RUBIN,TOURS,CHINA	1	1	1
LIFE-SIZE_FIGURES,THAT_PROTECT,THE_GRAVES	1	1	1
HUMAN_RIGHTS_ABUSES,THAT_DETER,BOSNIA	0	1	0
QUALITY,TRANSCENDED,FASHION	1	1	1
POLICE_OFFICERS,WHO_HAD,APPARENTLY_BEEN	0	0	0
NECESSARY_REFORMS,COULD_BE,ENACTED	1	1	1
PUBLIC,WAS,CLEARLY_FED	0	0	0

LAST_MONTH,WAS,VIEWED	0	0	0
TURMOIL,SURROUNDING,PRESIDENT_RON_CAREY	1	1	1
SUBJECT,WAS,A_LAKERS	0	0	0
TRADING_PERFORMANCE,WAS,DUE	0	0	0
VOLUMES,LED,BY_CANNED_DRAUGHT_GUINNESS	0	1	0
BREWER,SAID,IMPROVEMENT	1	0	0
VOLUMES,LED,BY_DRAUGHT_GUINNESS	0	1	0
DUE,TO_INCREASED,VOLUMES	0	0	0
SCENE,WAS,ODDLY_SERENE	1	1	1
SUPPLIERS_YESTERDAY,LOOKING_FOR,SPROUTS	0	0	0
DOCTOR,HAS,A_FOOL	0	1	0
CAMPAIGN_AIDES,OFFERED,A_QUICK_RETORT	1	1	1
CAMPAIGN_AIDES,OFFERED,A_RETORT	1	1	1
PROPOSED_ACCORD,WAS,REACHED	1	0	0
OTHER_COMPANIES,THAT_GOT,A_BOOST	1	1	1
SIMILAR_NEGOTIATIONS,PURSUED,WITH_NORTH_KOREA	1	1	1
JUNICHIRO_KOIZUMI,MARKED,A_SIGNIFICANT_CHANGE	0	0	0
MARTIN_GIBSON,IS,COMPANY	1	0	0
COMPUTERS,THAT_IMPROVES,EFFICIENCY	1	0	0
NEW_PRODUCT,TO_LINK,COMPUTERS	0	1	0
MEETING_CLINTON_AIDES,HAD,BEEN	0	0	0
VIOLENCE,WILL_PRESSURE,ISRAEL	1	1	1
PRESIDENT_HAFEZ_ASSAD,HOPES,VIOLENCE	0	0	0
BOARDS_OF_EDUCATIONS,ARE,MODELED	1	0	0
CIVILIAN_PRISONERS,DIED,AT_MAJDANEK	1	1	1
WOODSON,KEPT,CHIAVERINI	1	1	1
BENSONHURST,IS,A_VINTAGE_ITALIAN_NEIGHBORHOOD	1	1	1
TWO-FAMILY_BRICK_HOMES,ADORNED,WITH_MADONNAS	1	1	1
BENSONHURST,IS,A_NEIGHBORHOOD	0	1	0
MONEY,LOSING,AIRLINE	0	1	0
RUIZ,HOPES,LEWIS	0	0	0
DECISION,WILL_GIVE,LIGHT_HEAVYWEIGHT_CHAMPION	0	1	0
GRBAC,WORE,A_QUIZZICAL_LOOK	1	1	1
GUY,WHO_WAS,GIVEN	0	0	0
GAC,WORE,A_QUIZZICAL_LOOK	1	1	1
GAC,WORE,A_LOOK	1	1	1
TURNOUT,WAS,LIGHT	1	1	1
STAFFS,HAVE,A_TRADITIONAL	0	0	0
STAFFS,HAVE,A	0	0	0
STARS,HAVE,A_TEAM_INCENTIVE	1	1	1
MOTORBIKES,CHASED,PRINCESS_DIANA	1	1	1
NATIONAL_ELECTIONS,COULD_NOT_HAVE,BEEN	0	0	0
PALE_STRAWBERRIES,SOAKED,IN_A_WATER-BASED_LIQUID	1	1	1
BERRIES,SOAKED,IN_A_BALSAMIC_VINEGAR-BROWN_SUGAR_SAUCE	1	1	1
PALE_STRAWBERRIES,SOAKED,IN_A_LIQUID	1	1	1
BERRIES,SOAKED,IN_A_SUGAR_SAUCE	1	1	1
EXPORT_RESTRICTIONS,ARE,NEEDED	1	1	1
DIRECTOR_LOUIS_FREEH,TOLD,SENATE_JUDICIARY_SUBCOMMITTEE	1	0	0
LAW_ENFORCEMENT,TO_COMBAT,CRIMINALS	1	1	1
CAREER,IS,IN_SIGHT	1	1	1
CONFIDENT_DIPLOMATS,HAD,IMAGINED	1	0	0
KIM_JONG_IL,PROMPTLY_SATISFIED,JAPAN	1	1	1
DOZEN_WOMEN,EMERGED,IN_WHITE_CHADORS	1	1	1
DOZEN_WOMEN,EMERGED,IN_CHADORS	1	1	1
LIKELY,TO_BE,LESS	0	0	0
IMF,ESTIMATED,IN_MAY	1	1	1
LEGISLATION,ACHIEVED,A_NUMBER	0	1	0
COUNTRY,CAN_CUT,BENEFITS	1	1	1
OTHER_DRIVER,IS,AMENABLE	1	1	1
DAMAGES,WILL_COST,LESS	1	1	1
HATLEY,CREATED,A_WILD_GARDEN	1	1	1
MYRIAD_COLLABORATORS,MAY_LEAVE,A_BRILLIANT_MARK	1	1	1
MYRIAD_COLLABORATORS,MAY,LEAVE_A_BRILLIANT_MARK	0	1	0
HATLEY,CREATED,A_GARDEN	1	1	1
MYRIAD_COLLABORATORS,MAY,LEAVE_A_MARK	1	1	1

PART,IS,PROBABLY_CONTAINED	0	1	0
FEDERAL_OVERSEER,WAS,ENTANGLED	0	0	0
BUSH,INSTRUCTED,SECRETARY_OF_STATE	1	1	1
STATE_COLIN_POWELL,TO_BEGIN,INTENSIVE_DIPLOMACY	1	1	1
SCIENTIFIC_EXPERIMENT,GOES,WRONG	1	1	1
GOVERNMENT,WILL_LIQUIDATE,BANKS	1	1	1
BANKS,THAT_ARE,INSOLVENT		1	0
EL_PUEBLO_GALLERY,IS,LOCATED	0	0	0
SAN_DIEGO,ACQUIRED,MICHAEL_BARRETT	1	0	0
PLAYER,TO_BE,NAMED	1	1	1
HOFFENBERG,WAS,SENTENCED	1	0	0
HOFFENBERG,WAS_SENTENCED,MARCH	0	0	0
ADECCO,WAS,FORMED	1	0	0
TEMPORARY_EMPLOYMENT_MARKET,INCLUDING,FRANCE_--EUROPE	0	1	0
ROYAL_INDY,HAD,BEEN	0	0	0
NEW_NETWORKING_PRODUCTS,WILL_BOOST,3COM	0	1	0
PROFIT_MARGINS,SAID,PAUL_MEEKS	0	0	0
STOCK,REPURCHASE,PROGRAM	0	0	0
LAST_PRISONER,WAS,RELEASED	1	0	0
SAME_THINGS,COULD_HAVE,BEEN	0	0	0
ZEALOTS,WHO_HAVE,BEEN	0	0	0
CIGARETTES,HAVE,TROUBLE	0	0	0
WEEK,IS,DANGEROUS	0	0	0
CHILDREN,SUFFERING,FROM_PSYCHOLOGICAL_DISORDERS	1	1	1
CITY_OFFICIALS,SCRAMBLED_TO_RECRUIT,NEW	0	0	0
CHILDREN,SUFFERING,FROM_DISORDERS	1	1	1
RANGE,SAID,MICHAEL_RIZZUTO	0	0	0
FIGURES,RELEASED,WEDNESDAY	1	1	1
MCLEMORE,HAVE,HAD	0	0	0
FACIAL_EXPRESSIONS,ARE,INNATE	1	1	1
HATRED,THAT_HAS,BEEN	0	0	0
COMPANY,IS,AWARE	1	1	1
NONPROFIT_STATUS,IS,A_SOURCE_OF_CONCERN	1	1	1
UNIT,HAS,COMPLETED	0	0	0
GUY_HANDS,MANAGING,DIRECTOR	0	0	0
GOVERNMENT,SOLD,AS_PART	0	0	0
PUB_CHAIN_NOMURA,ALSO_BOUGHT,FROM_GRANDMET	1	1	1
BALLOT,WAS,PART	0	0	0
LATINA_ACTRESS,WILL_PROMOTE,LATINA_ACTRESSES	0	1	0
GENERAL,SAYS,BEL_HERNANDEZ	0	0	0
PAIN_OF_SOMEONE,WHO_HAS,BEEN	0	0	0
HOSE,CONTRACTED,INHALATION_ANTHRAX	0	0	0
MASSIVE_ENFORCEMENT_PLANS,TO_COMBAT,ROAD_RAGE	1	1	1
PRESIDENT_JERRY_JORDAN,SPEAKS,ON_MONEY	1	1	1
BOMBING,THAT_ROCKED,THE_GAMES	1	1	1
RADIANT_HOPE,ACCOMPANY,TRANSITION	1	1	1
MEMORY,WAS,A_GOOD_DEAL	0	1	0
MEMORY,WAS,A_DEAL	0	1	0
FINDING,REVEALED,BAY_TREES	1	1	1
EXECUTIVES,MISLED,INVESTORS	1	1	1
FUTURE_PROSPECTS,SAID,JACOB_FRANKEL	0	0	0
GROUPS,PUBLISH,STUDIES	1	1	1
NEWS_RELEASES,USING,ROAD_RAGE	1	1	1
CUP_GAMES,IS-A,11-GAME_LOSING_STREAK	1	1	1
REVOLUTION,BEEN,INVOLVED	0	0	0
11-GAME_LOSING_STREAK,INCLUDING,CUP_GAMES	0	1	0
IRAQ,COULD_BE,A_LABORATORY	1	1	1
PRODUCTS,FLOPS,AS_PECORIELLO	0	0	0
SUCCESS_OF_BRANDS,THAT_WERE,LAUNCHED	0	0	0
JEFF_DAVIS,WHO_SUPERVISED,A_WATER-PIPE_REPLACEMENT	1	1	1
WATER,HAVE,INDEED_FOUND	0	0	0
MANAGER_GRADY_LITTLE,KEPT,RAMIREZ	1	1	1
FOWLER,ACKNOWLEDGED,THAT_HAROLD_ICKES	1	0	0
HAROLD_ICKES,WHO_WAS,DEPUTY_CHIEF	1	1	1
GEORGIA_INVENTOR,HAS,WON	0	0	0

CLIENTS,WHO_ARE,AT_FAULT	1	1	1
PRIVATE_RESOLUTION,IS,POSSIBLE	1	1	1
PRICE_RISE,WAS,SECOND	0	0	0
SILENCE,TURNED,VOLCANIC	1	1	1
CREATURE,WAS,IN_TURN	0	0	0
TURN,NAMED_FOR,MYTHICAL	0	0	0
WEINBERGS,ARE,BUSY_PLANNING	0	1	0
WEINBERGS,ARE,PLANNING	0	1	0
MARKETS,AFFECTS,LEVEL_OF_RETURN	0	1	0
ITEMS,RANGING,FROM_JEANS	0	0	0
RESULTS,ARE,COMPILED	1	1	1
CENSUS,IS,EXPECTED	0	0	0
DEMOGRAPHERS,HAVE,ALREADY_BEEN	0	0	0
ARTERY,HAD,BEEN	0	0	0
MAJOR_AIRLINES,INCLUDING,FORT	0	0	0
SHOW,IS,SCHEDULED	0	1	0
SCHEDULED,TO_BE,FILMED	0	0	0
SKUNK,SEEMED_TO_PERMEATE,THE_BUS	0	0	0
STATEMENT,RELEASED,BY_MAR	0	0	0
COMPANY,SAY,TIGRETT	0	0	0
COMPANY,TOOK,A_BIG_HIT	1	1	1
COMPANY,TOOK,A_HIT	1	1	1
RATNER,HAS,BEEN	0	0	0
STEVE_FOES,WAS_RUNNING_FOR,PRESIDENT	1	1	1
UNDERWORLD,IS,CERTAIN	0	1	0
AMHERST_COLLEGE_STUDENTS,HELD,A_PATRIOTISM_RALLY	1	1	1
FOREIGN_MINISTRY,HAVE,COME	0	0	0
CUBAN_TOWN,CALLED,GUANTANAMERA	1	1	1
CONTRABAND,BROKEN,MARRIAGES	0	0	0
CONFIDENCE,WAS,MIRRORED	0	0	0
CONFIDENCE,WAS_MIRRORED,FOLLOW-UP_INTERVIEWS	0	1	0
DOW,HAD,PERFORMED	0	0	0
LUCAS,PLAYS,BANNER	1	0	0
PEOPLE,STOOD,IN_TWO-HOUR_LINES	1	1	1
PEOPLE,STOOD,IN_LINES	1	1	1
DAY,TO_GET,CANCER	0	0	0
PRACTICE,TO_MAKE,SURE	0	0	0
RULES,WERE,WRITTEN	1	0	0
RULES,WERE_WRITTEN_TO_ENCOURAGE,DIVERSITY_OF_VOICES	1	1	1
WRITTEN,TO_ENCOURAGE,DIVERSITY_OF_VOICES	0	0	0
NEW_CADILLAC,IS,SCHEDULED	0	1	0
OFFICIALS,SAY,JAPAN	1	0	0
APRIL,TO_CHANGE,UNFAIR_PORT_PRACTICES	0	0	0
REPORT,WAS,PREPARED	0	0	0
ENERGY_MARKET,HAS,DECLINED	0	0	0
POSSIBLE_BUYERS,HAS,DWINDLED	0	0	0
AMERICAN_INTELLIGENCE_OFFICIALS,HAVE,SAID	0	0	0
IRAQI_FIGHTERS,WHO_OPPOSED,UNITED_STATES	1	1	1
AFGHANISTAN,HAVE,NOW_DRIFTED	0	0	0
END-OF-THE-MONTH_DEADLINES,ARE,A_RESULT	1	1	1
IMMIGRATION_REFORM_ACT,PASSED,BY_CONGRESS	1	1	1
GAMES,MATCHING,A_SEASON	0	0	0
WAVES,WERE,SO_SMALL	1	1	1
WORLD,IS,FILLED	0	0	0
PEOPLE,WHO_TALK,ABOUT_VIRTUE	1	1	1
LATE_20S,WERE,ARRESTED	0	0	0
TURKISH_GOVERNMENT,HAVE,DISPUTED	0	0	0
BARMY,ARE,NOW_SEEN	0	0	0
FACIAL_HAIR,ARE,NOW_OK	1	1	1
HEAVY_RAIN,WILL_REMAIN,OFFSHORE_TUESDAY	1	1	1
HEAVY_RAIN,WILL,REMAIN_OFFSHORE_TUESDAY	0	1	0
HEAVY_RAIN,WILL,REMAIN_TUESDAY	0	1	0
COMPILED,SAID,MILLS	0	0	0
TEST_RESULTS,HAVE,JUST_BEEN	0	0	0
SHOEBOX,STUFFED,WITH_EMERGENCY_CHOCOLATE_CUPCAKES	1	1	1

LAWYERS,DISMISSED,BY_A_JUDGE	1	1	1
WHITE_HOUSE_AIDES,SAY,DEMOCRATIC_PRESIDENT	0	0	0
PHONE,WAS,ACTIVATED	1	1	1
NEEDED,TO_BE,CHARGED	0	0	0
COVERAGE,ARISING,FROM_DIANA	0	1	0
IMAGE,HAD,BEEN	0	0	0
PRESENT,COULD_BECOME,A_VIRTUAL_GIFT	1	1	1
PRESENT,COULD,BECOME_A_VIRTUAL_GIFT	1	1	1
PRESENT,COULD,BECOME_A_GIFT	1	1	1
FLETCHER,IS-A,OTHER_TRUSTEES	0	1	0
OTHER_TRUSTEES,INCLUDING,FLETCHER	0	1	0
MONEY,IS,EARMARKED	1	1	1
PASSENGERS,REALIZED,THAT_OTHER_COMMERCIAL_JETS	1	1	1
PASSENGERS,REALIZED,THAT_JETS	1	1	1
APPARENT_RAPTURE,EXCHANGING,SIX-FIGURE_PRIMES	0	1	0
APPARENT_RAPTURE,EXCHANGING,PRIMES	0	1	0
MARY_MCCARTY,WRITES_FOR,DAYTON_DAILY_NEWS	1	1	1
TIPPING_POINT,IS,A_LONG_WAY	0	1	0
TIPPING_POINT,IS,A_WAY	0	1	0
ECONOMY,IS,EXPECTED	0	0	0
COMPANY,FOLLOWED,SUIT	1	1	1
MAJOR_AIRPORTS,POSED,NEW_OBSTACLES	1	1	1
MAJOR_AIRPORTS,POSED,OBSTACLES	1	1	1
CARPET_CLEANING_COMPANY,WAS,STARTED	0	0	0
COMPANY,WENT,PUBLIC	1	1	1
OFFSHORE_OIL_WORKERS,FORCED,STATE-OWNED_OIL_COMPANY_STATOIL	1	1	1
OFFSHORE_OIL_WORKERS,FORCED,OIL_COMPANY_STATOIL	1	1	1
ALLOWED,TO_RETURN,HOME	0	0	0
LUCAS,STOPPED,IN_ATLANTA	1	1	1
OTHER_TOBACCO_COMPANIES,WOULD_OBTAIN,PROTECTION	1	1	1
CLASS-ACTION_LAWSUITS,THAT_HAVE,THREATENED	1	0	0
TABIO,USE,POLITICAL_STRIFE	1	1	1
TABIO,USE,STRIFE	0	1	0
TREASURY_OFFICIALS,EXPRESS,CONCERN	1	1	1
JOHNSON,WERE,UNSUCCESSFUL	0	0	0
EFFORTS,TO_REACH,JOHNSON	1	1	1
AIR,TO_COOL,SOMETHING	1	1	1
BART_SIMPSON_DREAM,COME,TRUE	1	1	1
BARBECUE_SAUCES,DEVELOPED,WITH_TEXAS_TASTE_PANELS	1	1	1
PUBLIC,REMAINS,SKEPTICAL	1	1	1
TREASURY_DEPARTMENT,IS,RESPONSIBLE	1	1	1
TELEVISION_PICTURES,SHOWED,POLICE_OFFICERS	1	1	1
PCS,TRACKING,STOCK	1	0	0
SIDE_AIR_BAGS,TO_PROVIDE,MORE	0	1	0
CITY_HALL,SAID,BECKY_FENGER	0	0	0
EXPORTS,SURPASSED,JUNE	1	1	1
18TH_AVENUE,IS,CHOCK	1	1	1
DECISION,TO_BAN,BHUTTO	0	1	0
STARTER,HAD,NOT_PITCHED	0	0	0
CASE,HAS,RECEIVED	0	0	0
DIFFERENCE,TO_ENTICE,PENSION_FUNDS	1	1	1
TELEVISION_ADVERTISING,IS,SO_POWERFUL	1	1	1
AGENCY,SUSPENDED,IMPOSITION	1	1	1

APPENDIX C

Relations extracted by LSOE and not extracted by ClausIE from ReVerb test set [ETZ11]

(Health maintenance organizations; were; required)
(Next year; raise; premiums)
(Health maintenance organizations; were required to tell; the federal government)
(Yield; was; unchanged)
(Ballot; was; a little-known challenger)
(Principal opposition parties; boycotted; polls)
(Ballot; was; a challenger)
(Series of phenomena; that affect; weather)
(Box; sits; high)
(Announcement; was; a first step)
(Aouncement; was; a first step)
(Aouncement; was; a step)
(Stable bond yields; provided; support)
(Teammates; indeed loved; show)
(Consumers; have; just decided)
(Scoreless iings; enabling; seattle)
(Programmers; always enter; a season)
(Quarter; also looks; good)
(Output; was; reduced)
(Disorder; stems; from a genetic dysfunction)
(Epidemiologists; say; disorder)
(Disorder; stems; from a dysfunction)
(Fit; said; bobby brown)
(Congress; holds; hearings)
(Indifference; is; probably caused)
(Laws; that were; place)
(Edwards; believes; that defenders)
(Scandal; has; now forced)
(Government; had; failed)
(Tuman; who had; lined)
(Left side; glided; unchecked)
(1-yard touchdown; put; michigan)
(Charles darwin; had; written)
(1970s; believed; expressions)
(Hearst news service; has; filed)
(Deputies; who were; members of fatah)
(Arafat; know; in a meeting tuesday night)
(Vison concept suv; shown; at last year)
(Vison concept suv; shown; at year)
(Power companies; spurred; monday)

(Roy oswalt; have; won)
(Novartis pharma ag; unilaterally terminating; a marketing agreement)
(House budget committee; released; a report)
(Monday; putting; likely price tag)
(President; reads; bioscope)
(Georgia coast; causing; surf)
(Drill; has; a keyless chuck)
(Drill; has; a chuck)
(Missing; were; dead)
(Seconds; left; on a frozen field)
(Seconds; left; on a field)
(Web; to create; art sounds)
(Mike tyson; having; disappeared)
(Delillo; has; brilliantly described)
(Stabbing; was; unrelated)
(Salim; said; stabbing)
(Tax revenue; will fall; as economic growth)
(Government; will reduce; spending)
(Tax revenue; will; fall as economic growth)
(Tax revenue; will; fall as growth)
(Iraqi dictator; has; not been)
(P53 protein; is; known)
(Process; called; transactivation)
(Adults; surveyed; late last week)
(Companies; have; been)
(Calcavecchia; has; looked)
(Starts; including; a seventh-place finish)
(Meeting; seemed; unlikely)
(Cooperative bank building; has; been)
(Embassy; has; been)
(Maybe sikes; should apply; for workman)
(Department; has; rapidly increased)
(Farris; was; replaced)
(Farris; was replaced by; sophomore dustin long)
(Sophomore jason carter; played; opener)
(Freshman reggie mcneal; played; opener)
(Japanese automakers; have; taken)
(Alabama republican; who is; ranking minority member)
(Maybe god; just had; a plan)
(Johnson; who has; a wife)
(Disney; animated; films)
(200-degree air; is; pumped)
(Presidio med; fills; time)
(Law; said; many)
(Firm; have; contributed)
(Elegant souls; who consider; such journalism)
(Elegant souls; who consider; journalism)

(Legislation; would allow; tax-free savings)
(Expenses; including; tuition)
(Legislation; would; allow tax-free savings)
(Legislation; would; allow savings)
(Investors; using; other major currencies)
(Investors; using; currencies)
(Solutia; is; saddled)
(Situations; offer; reason)
(Strikes; involve; kroger stores)
(Roster; is; old)
(Cups vegetables; chopped; medium fine)
(Cups vegetables; chopped; fine)
(Director ang lee; is; set)
(Stocks; were; mixed)
(Durable goods; showed; unexpected strength)
(Unexpected strength; squelching; hopes)
(Durable goods; showed; strength)
(Export growth; has; also forced)
(Executives; spent; several days)
(Week; huddled; in negotiations)
(Robert teitelman; managing; editor of institutional)
(Executives; spent; days)
(Editor; to replace; cudaback)
(United airlines; is; likely)
(Likely; to name; gle)
(Order; to lower; non-productive imports)
(Jim suydam; writes for; austin american-statesman)
(Obnoxious; says; steers)
(Life; has; been)
(Orders; will likely be; stronger)
(Site; should be; preserved)
(Gurney; boosts; backers stars)
(Fowler; clearly resented; ickes)
(Clinton campaign; including; president clinton)
(Partners; including; internet service providers)
(Discussion; lit; a flame)
(Indian ocean; are; usually called)
(Stock exchange floor; will be; a sea)
(Seven-year swap rate; was little changed from; yesterday)
(Seven-year swap rate; was; little changed)
(Kors; also used; silk)
(Administration; wished to support; something)
(Ruffles; is-a; frilly edging)
(Ribbons; is-a; frilly edging)
(Term; bandied; about by designers)
(Excess of clothes; rendered; in guipure lace)
(Excess of clothes; rendered; in lace)

(Hayden; said; sunday)
(Existing laws; dealing; with stalking)
(Senator; was looking at; several areas)
(Possible legislation; including; clarification)
(Many people; stay; in bad marriages)
(Many people; stay; in marriages)
(Smile; had; receded)
(Tone; had; again turned)
(People; to come; talk)
(Pows; would like; more)
(Miami; who heard; forbes)
(Used; to make; exports)
(Add; is; not new)
(Government; had; done)
(Rams; sorely miss; departed)
(Grants; announced; today)
(Enforcement; is-a; activities)
(Housing counseling; is-a; activities)
(Children; will develop; cancer)
(Cancer; has; very different implications)
(Towers financial; was; formed)
(Towers financial; was formed by; one-time new york)
(Many people; had; thought)
(Thought; possibly giving; more)
(Aftonbladet; said; chatty)
(Euphoria; rang; a bell of memory)
(Moves; have; raised)
(Political emotions; have; been)
(Drought; represents; second setback)
(People; living; with aids)
(Mackovic; is; presented)
(Politics-and-calories calendar; is; a buell dinner monday)
(Biondi; said; that kay koplovitz)
(Rubin; tours; china)
(Life-size figures; that protect; the graves)
(Human rights abuses; that deter; bosnia)
(Quality; transcended; fashion)
(Police officers; who had; apparently been)
(Necessary reforms; could be; enacted)
(Public; was; clearly fed)
(Last month; was; viewed)
(Turmoil; surrounding; president ron carey)
(Subject; was; a lakers)
(Trading performance; was; due)
(Volumes; led; by canned draught guinness)
(Brewer; said; improvement)
(Volumes; led; by draught guinness)

(Due; to increased; volumes)
(Scene; was; oddly serene)
(Suppliers yesterday; looking for; sprouts)
(Doctor; has; a fool)
(Campaign aides; offered; a quick retort)
(Campaign aides; offered; a retort)
(Proposed accord; was; reached)
(Other companies; that got; a boost)
(Similar negotiations; pursued; with north korea)
(Junichiro koizumi; marked; a significant change)
(Martin gibson; is; company)
(Computers; that improves; efficiency)
(New product; to link; computers)
(Meeting clinton aides; had; been)
(Violence; will pressure; israel)
(President hafez assad; hopes; violence)
(Boards of educations; are; modeled)
(Civilian prisoners; died; at majdanek)
(Woodson; kept; chiaverini)
(Two-family brick homes; adorned; with madonnas)
(Bensonhurst; is; a neighborhood)
(Money; losing; airline)
(Ruiz; hopes; lewis)
(Decision; will give; light heavyweight champion)
(Guy; who was; given)
(Gac; wore; a quizzical look)
(Gac; wore; a look)
(Staffs; have; a traditional)
(Staffs; have; a)
(Stars; have; a team incentive)
(Motorbikes; chased; princess diana)
(National elections; could not have; been)
(Pale strawberries; soaked; in a water-based liquid)
(Berries; soaked; in a balsamic vinegar-brown sugar sauce)
(Pale strawberries; soaked; in a liquid)
(Berries; soaked; in a sugar sauce)
(Export restrictions; are; needed)
(Director louis freeh; told; senate judiciary subcommittee)
(Law enforcement; to combat; criminals)
(Career; is; in sight)
(Confident diplomats; had; imagined)
(Kim jong il; promptly satisfied; japan)
(Dozen women; emerged; in white chadors)
(Dozen women; emerged; in chadors)
(Likely; to be; less)
(Imf; estimated; in may)
(Legislation; achieved; a number)

(Country; can cut; benefits)
(Other driver; is; amenable)
(Damages; will cost; less)
(Hatley; created; a wild garden)
(Myriad collaborators; may leave; a brilliant mark)
(Myriad collaborators; may; leave a brilliant mark)
(Hatley; created; a garden)
(Myriad collaborators; may; leave a mark)
(Part; is; probably contained)
(Federal overseer; was; entangled)
(Bush; instructed; secretary of state)
(State colin powell; to begin; intensive diplomacy)
(Scientific experiment; goes; wrong)
(Government; will liquidate; banks)
(Banks; that are; insolvent)
(El pueblo gallery; is; located)
(San diego; acquired; michael barrett)
(Player; to be; named)
(Hoffenberg; was; sentenced)
(Hoffenberg; was sentenced; march)
(Adecco; was; formed)
(Temporary employment market; including; france --europe)
(Royal indy; had; been)
(New networking products; will boost; 3com)
(Profit margins; said; paul meeks)
(Stock; repurchase; program)
(Last prisoner; was; released)
(Same things; could have; been)
(Zealots; who have; been)
(Cigarettes; have; trouble)
(Week; is; dangerous)
(Children; suffering; from psychological disorders)
(City officials; scrambled to recruit; new)
(Children; suffering; from disorders)
(Range; said; michael rizzuto)
(Figures; released; wednesday)
(Mclemore; have; had)
(Hatred; that has; been)
(Company; is; aware)
(Nonprofit status; is; a source of concern)
(Unit; has; completed)
(Guy hands; managing; director)
(Government; sold; as part)
(Pub chain nomura; also bought; from grandmet)
(Ballot; was; part)
(Latina actress; will promote; latina actresses)
(General; says; bel hernandez)

(Pain of someone; who has; been)
(President jerry jordan; speaks; on money)
(Bombing; that rocked; the games)
(Radiant hope; accompany; transition)
(Memory; was; a good deal)
(Memory; was; a deal)
(Finding; revealed; bay trees)
(Future prospects; said; jacob frankel)
(Groups; publish; studies)
(News releases; using; road rage)
(Cup games; is-a; 11-game losing streak)
(Revolution; been; involved)
(11-game losing streak; including; cup games)
(Products; flops; as pecoriello)
(Success of brands; that were; launched)
(Jeff davis; who supervised; a water-pipe replacement)
(Water; have; indeed found)
(Manager grady little; kept; ramirez)
(Fowler; acknowledged; that harold ickes)
(Harold ickes; who was; deputy chief)
(Georgia inventor; has; won)
(Clients; who are; at fault)
(Private resolution; is; possible)
(Price rise; was; second)
(Silence; turned; volcanic)
(Creature; was; in turn)
(Turn; named for; mythical)
(Weinbergs; are; busy planning)
(Weinbergs; are; planning)
(Markets; affects; level of return)
(Items; ranging; from jeans)
(Results; are; compiled)
(Census; is; expected)
(Demographers; have; already been)
(Artery; had; been)
(Major airlines; including; fort)
(Show; is; scheduled)
(Scheduled; to be; filmed)
(Skunk; seemed to permeate; the bus)
(Statement; released; by mar)
(Company; say; tigrett)
(Company; took; a big hit)
(Company; took; a hit)
(Ratner; has; been)
(Steve foes; was running for; president)
(Underworld; is; certain)
(Amherst college students; held; a patriotism rally)

(Foreign ministry; have; come)
(Cuban town; called; guantanamera)
(Contraband; broken; marriages)
(Confidence; was; mirrored)
(Confidence; was mirrored; follow-up interviews)
(Dow; had; performed)
(Lucas; plays; banner)
(People; stood; in two-hour lines)
(People; stood; in lines)
(Day; to get; cancer)
(Practice; to make; sure)
(Rules; were; written)
(Rules; were written to encourage; diversity of voices)
(Written; to encourage; diversity of voices)
(New cadillac; is; scheduled)
(Officials; say; japan)
(April; to change; unfair port practices)
(Report; was; prepared)
(Energy market; has; declined)
(Possible buyers; has; dwindled)
(American intelligence officials; have; said)
(Iraqi fighters; who opposed; united states)
(Afghanistan; have; now drifted)
(End-of-the-month deadlines; are; a result)
(Immigration reform act; passed; by congress)
(Games; matching; a season)
(Waves; were; so small)
(World; is; filled)
(People; who talk; about virtue)
(Late 20s; were; arrested)
(Turkish government; have; disputed)
(Barmy; are; now seen)
(Facial hair; are; now ok)
(Heavy rain; will remain; offshore tuesday)
(Heavy rain; will; remain offshore tuesday)
(Heavy rain; will; remain tuesday)
(Compiled; said; mills)
(Test results; have; just been)
(Shoebox; stuffed; with emergency chocolate cupcakes)
(Lawyers; dismissed; by a judge)
(White house aides; say; democratic president)
(Phone; was; activated)
(Needed; to be; charged)
(Coverage; arising; from diana)
(Image; had; been)
(Present; could become; a virtual gift)
(Present; could; become a virtual gift)

(Present; could; become a gift)
(Fletcher; is-a; other trustees)
(Other trustees; including; fletcher)
(Money; is; earmarked)
(Passengers; realized; that other commercial jets)
(Passengers; realized; that jets)
(Apparent rapture; exchanging; six-figure primes)
(Apparent rapture; exchanging; primes)
(Mary mccarty; writes for; dayton daily news)
(Tipping point; is; a long way)
(Tipping point; is; a way)
(Economy; is; expected)
(Company; followed; suit)
(Major airports; posed; new obstacles)
(Major airports; posed; obstacles)
(Carpet cleaning company; was; started)
(Company; went; public)
(Offshore oil workers; forced; state-owned oil company statoil)
(Offshore oil workers; forced; oil company statoil)
(Allowed; to return; home)
(Lucas; stopped; in atlanta)
(Class-action lawsuits; that have; threatened)
(Tabio; use; strife)
(Treasury officials; express; concern)
(Johnson; were; unsuccessful)
(Efforts; to reach; johnson)
(Air; to cool; something)
(Bart simpson dream; come; true)
(Public; remains; skeptical)
(Treasury department; is; responsible)
(Television pictures; showed; police officers)
(Pcs; tracking; stock)
(Side air bags; to provide; more)
(City hall; said; becky fenger)
(Exports; surpassed; june)
(18th avenue; is; chock)
(Decision; to ban; bhutto)
(Starter; had; not pitched)
(Case; has; received)
(Difference; to entice; pension funds)
(Television advertising; is; so powerful)
(Agency; suspended; imposition)

APPENDIX D

Relations extracted by LSOE and not extracted by OLLIE from ReVerb test set [ETZ11]

(Health maintenance organizations; were; required)
(Next year; raise; premiums)
(Health maintenance organizations; were required to tell; the federal government)
(Yield; was; unchanged)
(Ballot; was; a little-known challenger)
(Principal opposition parties; boycotted; polls)
(Ballot; was; a challenger)
(Series of phenomena; that affect; weather)
(Box; sits; high)
(Announcement; was; a first step)
(Aouncement; was; a first step)
(Aouncement; was; a step)
(Stable bond yields; provided; support)
(Teammates; indeed loved; show)
(Consumers; have; just decided)
(Scoreless iings; enabling; seattle)
(Programmers; always enter; a season)
(Quarter; also looks; good)
(Output; was; reduced)
(Disorder; stems; from a genetic dysfunction)
(Epidemiologists; say; disorder)
(Disorder; stems; from a dysfunction)
(Fit; said; bobby brown)
(Congress; holds; hearings)
(Indifference; is; probably caused)
(Laws; that were; place)
(Edwards; believes; that defenders)
(Scandal; has; now forced)
(Government; had; failed)
(Calcavecchia; plays; friday morning)
(Tuman; who had; lined)
(Left side; glided; unchecked)
(1-yard touchdown; put; michigan)
(Charles darwin; had; written)
(1970s; believed; expressions)
(Hearst news service; has; filed)
(Deputies; who were; members of fatah)
(Arafat; know; in a meeting tuesday night)
(Vison concept suv; shown; at last year)

(Vison concept suv; shown; at year)
(Power companies; spurred; monday)
(Roy oswalt; have; won)
(Novartis pharma ag; unilaterally terminating; a marketing agreement)
(House budget committee; released; a report)
(Monday; putting; likely price tag)
(President; reads; bioscope)
(Georgia coast; causing; surf)
(Drill; has; a keyless chuck)
(Drill; has; a chuck)
(Missing; were; dead)
(Seconds; left; on a frozen field)
(Seconds; left; on a field)
(Web; to create; art sounds)
(Mike tyson; having; disappeared)
(Delillo; has; brilliantly described)
(Stabbing; was; unrelated)
(Salim; said; stabbing)
(Tax revenue; will fall; as economic growth)
(Government; will reduce; spending)
(Tax revenue; will; fall as economic growth)
(Tax revenue; will; fall as growth)
(Iraqi dictator; has; not been)
(P53 protein; is; known)
(Process; called; transactivation)
(Adults; surveyed; late last week)
(Companies; have; been)
(Calcavecchia; has; looked)
(Starts; including; a seventh-place finish)
(Meeting; seemed; unlikely)
(Cooperative bank building; has; been)
(Embassy; has; been)
(Maybe sikes; should apply; for workman)
(Department; has; rapidly increased)
(Farris; was; replaced)
(Sophomore jason carter; played; opener)
(Freshman reggie mcneal; played; opener)
(Japanese automakers; have; taken)
(Alabama republican; who is; ranking minority member)
(Maybe god; just had; a plan)
(Johnson; who has; a wife)
(Disney; animated; films)
(200-degree air; is; pumped)
(Presidio med; fills; time)
(Law; said; many)
(Firm; have; contributed)
(Elegant souls; who consider; such journalism)

(Elegant souls; who consider; journalism)
(Legislation; would allow; tax-free savings)
(Expenses; including; tuition)
(Legislation; would; allow tax-free savings)
(Legislation; would; allow savings)
(Investors; using; other major currencies)
(Investors; using; currencies)
(Solutia; is; saddled)
(Situations; offer; reason)
(Strikes; involve; kroger stores)
(Roster; is; old)
(Cups vegetables; chopped; medium fine)
(Cups vegetables; chopped; fine)
(Director ang lee; is; set)
(Stocks; were; mixed)
(Durable goods; showed; unexpected strength)
(Unexpected strength; squelching; hopes)
(Durable goods; showed; strength)
(Export growth; has; also forced)
(Executives; spent; several days)
(Week; huddled; in negotiations)
(Robert teitelman; managing; editor of institutional)
(Executives; spent; days)
(Editor; to replace; cudaback)
(United airlines; is; likely)
(Likely; to name; gle)
(Order; to lower; non-productive imports)
(Jim suydam; writes for; austin american-statesman)
(Obnoxious; says; steers)
(Life; has; been)
(Orders; will likely be; stronger)
(Site; should be; preserved)
(Gurney; boosts; backers stars)
(Fowler; clearly resented; ickes)
(Clinton campaign; including; president clinton)
(Partners; including; internet service providers)
(Discussion; lit; a flame)
(Indian ocean; are; usually called)
(Stock exchange floor; will be; a sea)
(Seven-year swap rate; was little changed from; yesterday)
(Seven-year swap rate; was; little changed)
(Administration; wished to support; something)
(Ruffles; is-a; frilly edging)
(Ribbons; is-a; frilly edging)
(Term; bandied; about by designers)
(Excess of clothes; rendered; in guipure lace)
(Excess of clothes; rendered; in lace)

(Hayden; said; sunday)
(Existing laws; dealing; with stalking)
(Senator; was looking at; several areas)
(Possible legislation; including; clarification)
(Many people; stay; in bad marriages)
(Many people; stay; in marriages)
(Smile; had; receded)
(Tone; had; again turned)
(People; to come; talk)
(Pows; would like; more)
(Miami; who heard; forbes)
(Used; to make; exports)
(Add; is; not new)
(Government; had; done)
(Rams; sorely miss; departed)
(Taylor; missed; only one day of school)
(Grants; announced; today)
(Enforcement; is-a; activities)
(Housing counseling; is-a; activities)
(Children; will develop; cancer)
(Cancer; has; very different implications)
(Towers financial; was; formed)
(Towers financial; was formed by; one-time new york)
(Many people; had; thought)
(Thought; possibly giving; more)
(Aftonbladet; said; chatty)
(Euphoria; rang; a bell of memory)
(Moves; have; raised)
(Political emotions; have; been)
(Drought; represents; second setback)
(People; living; with aids)
(Mackovic; is; presented)
(Politics-and-calories calendar; is; a buell dinner monday)
(Biondi; said; that kay koplovitz)
(Rubin; tours; china)
(Life-size figures; that protect; the graves)
(Human rights abuses; that deter; bosnia)
(Quality; transcended; fashion)
(Police officers; who had; apparently been)
(Necessary reforms; could be; enacted)
(Public; was; clearly fed)
(Last month; was; viewed)
(Turmoil; surrounding; president ron carey)
(Subject; was; a lakers)
(Trading performance; was; due)
(Volumes; led; by canned draught guinness)
(Brewer; said; improvement)

(Volumes; led; by draught guinness)
(Due; to increased; volumes)
(Scene; was; oddly serene)
(Suppliers yesterday; looking for; sprouts)
(Doctor; has; a fool)
(Campaign aides; offered; a quick retort)
(Campaign aides; offered; a retort)
(Proposed accord; was; reached)
(Other companies; that got; a boost)
(Similar negotiations; pursued; with north korea)
(Junichiro koizumi; marked; a significant change)
(Martin gibson; is; company)
(Computers; that improves; efficiency)
(New product; to link; computers)
(Meeting clinton aides; had; been)
(Violence; will pressure; israel)
(President hafez assad; hopes; violence)
(Boards of educations; are; modeled)
(Civilian prisoners; died; at majdanek)
(Two-family brick homes; adorned; with madonnas)
(Bensonhurst; is; a neighborhood)
(Money; losing; airline)
(Ruiz; hopes; lewis)
(Decision; will give; light heavyweight champion)
(Guy; who was; given)
(Gac; wore; a quizzical look)
(Gac; wore; a look)
(Staffs; have; a traditional)
(Staffs; have; a)
(Stars; have; a team incentive)
(Motorbikes; chased; princess diana)
(National elections; could not have; been)
(Pale strawberries; soaked; in a water-based liquid)
(Berries; soaked; in a balsamic vinegar-brown sugar sauce)
(Pale strawberries; soaked; in a liquid)
(Berries; soaked; in a sugar sauce)
(Export restrictions; are; needed)
(Director louis freeh; told; senate judiciary subcommittee)
(Law enforcement; to combat; criminals)
(Career; is; in sight)
(Confident diplomats; had; imagined)
(Kim jong il; promptly satisfied; japan)
(Dozen women; emerged; in white chadors)
(Dozen women; emerged; in chadors)
(Likely; to be; less)
(Imf; estimated; in may)
(Legislation; achieved; a number)

(Country; can cut; benefits)
(Other driver; is; amenable)
(Damages; will cost; less)
(Hatley; created; a wild garden)
(Myriad collaborators; may leave; a brilliant mark)
(Myriad collaborators; may; leave a brilliant mark)
(Hatley; created; a garden)
(Myriad collaborators; may; leave a mark)
(Part; is; probably contained)
(Federal overseer; was; entangled)
(Bush; instructed; secretary of state)
(State colin powell; to begin; intensive diplomacy)
(Scientific experiment; goes; wrong)
(Government; will liquidate; banks)
(Banks; that are; insolvent)
(El pueblo gallery; is; located)
(San diego; acquired; michael barrett)
(Player; to be; named)
(Hoffenberg; was; sentenced)
(Hoffenberg; was sentenced; march)
(Adecco; was; formed)
(Temporary employment market; including; france --europe)
(Royal indy; had; been)
(New networking products; will boost; 3com)
(Profit margins; said; paul meeks)
(Stock; repurchase; program)
(Last prisoner; was; released)
(Same things; could have; been)
(Zealots; who have; been)
(Cigarettes; have; trouble)
(Week; is; dangerous)
(Children; suffering; from psychological disorders)
(City officials; scrambled to recruit; new)
(Children; suffering; from disorders)
(Range; said; michael rizzuto)
(Figures; released; wednesday)
(Mclemore; have; had)
(Facial expressions; are; innate)
(Hatred; that has; been)
(Company; is; aware)
(Nonprofit status; is; a source of concern)
(Unit; has; completed)
(Guy hands; managing; director)
(Government; sold; as part)
(Pub chain nomura; also bought; from grandmet)
(Ballot; was; part)
(Latina actress; will promote; latina actresses)

(General; says; bel hernandez)
(Pain of someone; who has; been)
(Hose; contracted; inhalation anthrax)
(Massive enforcement plans; to combat; road rage)
(President jerry jordan; speaks; on money)
(Bombing; that rocked; the games)
(Radiant hope; accompany; transition)
(Memory; was; a good deal)
(Memory; was; a deal)
(Finding; revealed; bay trees)
(Future prospects; said; jacob frankel)
(News releases; using; road rage)
(Cup games; is-a; 11-game losing streak)
(Revolution; been; involved)
(11-game losing streak; including; cup games)
(Iraq; could be; a laboratory)
(Products; flops; as pecoriello)
(Success of brands; that were; launched)
(Jeff davis; who supervised; a water-pipe replacement)
(Water; have; indeed found)
(Manager grady little; kept; ramirez)
(Fowler; acknowledged; that harold ickes)
(Harold ickes; who was; deputy chief)
(Georgia inventor; has; won)
(Clients; who are; at fault)
(Private resolution; is; possible)
(Price rise; was; second)
(Silence; turned; volcanic)
(Creature; was; in turn)
(Turn; named for; mythical)
(Weinbergs; are; busy planning)
(Weinbergs; are; planning)
(Markets; affects; level of return)
(Items; ranging; from jeans)
(Results; are; compiled)
(Census; is; expected)
(Demographers; have; already been)
(Artery; had; been)
(Major airlines; including; fort)
(Show; is; scheduled)
(Scheduled; to be; filmed)
(Skunk; seemed to permeate; the bus)
(Statement; released; by mar)
(Company; say; tigrett)
(Company; took; a big hit)
(Company; took; a hit)
(Ratner; has; been)

(Steve foes; was running for; president)
(Amherst college students; held; a patriotism rally)
(Foreign ministry; have; come)
(Cuban town; called; guantanamera)
(Contraband; broken; marriages)
(Confidence; was; mirrored)
(Confidence; was mirrored; follow-up interviews)
(Dow; had; performed)
(Lucas; plays; banner)
(People; stood; in two-hour lines)
(People; stood; in lines)
(Day; to get; cancer)
(Practice; to make; sure)
(Rules; were; written)
(Rules; were written to encourage; diversity of voices)
(Written; to encourage; diversity of voices)
(New cadillac; is; scheduled)
(Officials; say; japan)
(April; to change; unfair port practices)
(Report; was; prepared)
(Energy market; has; declined)
(Possible buyers; has; dwindled)
(American intelligence officials; have; said)
(Iraqi fighters; who opposed; united states)
(Afghanistan; have; now drifted)
(End-of-the-month deadlines; are; a result)
(Immigration reform act; passed; by congress)
(Games; matching; a season)
(Waves; were; so small)
(World; is; filled)
(People; who talk; about virtue)
(Late 20s; were; arrested)
(Turkish government; have; disputed)
(Barmy; are; now seen)
(Facial hair; are; now ok)
(Heavy rain; will remain; offshore tuesday)
(Heavy rain; will; remain offshore tuesday)
(Heavy rain; will; remain tuesday)
(Compiled; said; mills)
(Test results; have; just been)
(Shoebox; stuffed; with emergency chocolate cupcakes)
(Lawyers; dismissed; by a judge)
(White house aides; say; democratic president)
(Phone; was; activated)
(Needed; to be; charged)
(Coverage; arising; from diana)
(Image; had; been)

(Present; could become; a virtual gift)
(Present; could; become a virtual gift)
(Present; could; become a gift)
(Fletcher; is-a; other trustees)
(Other trustees; including; fletcher)
(Money; is; earmarked)
(Passengers; realized; that other commercial jets)
(Passengers; realized; that jets)
(Apparent rapture; exchanging; six-figure primes)
(Apparent rapture; exchanging; primes)
(Mary mccarty; writes for; dayton daily news)
(Tipping point; is; a long way)
(Tipping point; is; a way)
(Economy; is; expected)
(Major airports; posed; new obstacles)
(Major airports; posed; obstacles)
(Carpet cleaning company; was; started)
(Company; went; public)
(Offshore oil workers; forced; state-owned oil company statoil)
(Offshore oil workers; forced; oil company statoil)
(Allowed; to return; home)
(Lucas; stopped; in atlanta)
(Other tobacco companies; would obtain; protection)
(Class-action lawsuits; that have; threatened)
(Tabio; use; political strife)
(Tabio; use; strife)
(Treasury officials; express; concern)
(Johnson; were; unsuccessful)
(Efforts; to reach; johnson)
(Air; to cool; something)
(Bart simpson dream; come; true)
(Barbecue sauces; developed; with texas taste panels)
(Public; remains; skeptical)
(Treasury department; is; responsible)
(Television pictures; showed; police officers)
(Pcs; tracking; stock)
(Side air bags; to provide; more)
(City hall; said; becky fenger)
(Exports; surpassed; june)
(18th avenue; is; chock)
(Decision; to ban; bhutto)
(Starter; had; not pitched)
(Case; has; received)
(Difference; to entice; pension funds)
(Television advertising; is; so powerful)
(Agency; suspended; imposition)

ANNEX A

Relations extracted by OLLIE from ReVerb test set [ETZ11]

(The nation 's health maintenance organizations;were required;to tell the federal government Monday whether they plan to continue providing health insurance to Medicare recipients next year)
(The nation 's health maintenance organizations;were required;to tell the federal government Monday whether they plan to raise premiums)
(The nation 's health maintenance organizations;were required;to tell the federal government Monday whether they plan to reduce benefits)
(The nation 's health maintenance organizations;were required;to tell the federal government by midnight whether they plan to continue providing health insurance to Medicare recipients next year)
(The nation 's health maintenance organizations;were required;to tell the federal government by midnight whether they plan to raise premiums)
(The nation 's health maintenance organizations;were required;to tell the federal government by midnight whether they plan to reduce benefits)
(The nation 's health maintenance organizations;were required;to tell the federal government whether they plan to continue providing health insurance to Medicare recipients next year)
(The nation 's health maintenance organizations;were required;to tell the federal government whether they plan to raise premiums)
(The nation 's health maintenance organizations;were required;to tell the federal government whether they plan to reduce benefits)
(The nation;has;health maintenance organizations)
(they;plan;to continue providing health insurance next year)
(they;plan;to continue providing health insurance to Medicare recipients next year)
(they;plan;to continue providing health insurance to Medicare recipients)
(they;plan;to continue providing health insurance)
(they;plan;to raise premiums)
(they;plan;to reduce benefits)
(The two-year note 's yield;was;unchanged at 5.95 percent)
(The two-year note 's yield;was;unchanged)
(The two-year note;has;yield)
(The 12 to 18-month target price;is;$ 70.00 per share)
(The 12 to 18-month target price;is;$ 70.00)
(The principal opposition parties;boycotted;the polls after accusations of vote-rigging)
(The principal opposition parties;boycotted;the polls)
(the only other name on the ballot;was;a little-known challenger from a marginal political party)
(the only other name on the ballot;was;a little-known challenger)
(Gallery hours;are;11 a.m. daily)
(Gallery hours;are;11 a.m. to 6 p.m.)
(Gallery hours;are;11 a.m.)
(A Spanish official;had finished;a siesta just)
(A Spanish official;had finished;a siesta)
(A Spanish official;offered;what he believed to be a perfectly reasonable explanation for why the portable facilities were n't in service)
(A Spanish official;seemed not;the least bit tense)
(he;believed;to be a perfectly reasonable explanation for why the portable facilities were n't in service)
(he;believed;to be a perfectly reasonable explanation)
(the portable facilities;were n't;in service)
(The current El Nino;is;a complicated understood series of phenomena)

(The current El Nino;is;a vaguely understood series of phenomena)

(The current El Nino;is;the weather event whose bluster ca n't come close to living up to the super-hype preceding it either)

(The current El Nino;is;the weather event whose bluster ca n't come close to living up to the super-hype preceding it of an event)

(The current El Nino;is;the weather event whose bluster ca n't come close to living up to the super-hype preceding it of the century)

(The current El Nino;is;the weather event whose bluster ca n't come close to living up to the super-hype preceding it)

(bluster;ca n't come;close to living up to the super-hype preceding it)

(phenomena;affect;weather around the globe)

(phenomena;affect;weather)

(the super-hype;be preceding;it)

(he;has eased up;on team rules)

(Jake;decides;to give Melanie a bit of a hard time because she 's giving him)

(Jake;decides;to give Melanie a bit of everyone else)

(a megadose of New York attitude;is;exaggerated almost as)

(a megadose of New York attitude;is;exaggerated as the Southern stuff)

(a megadose of New York attitude;is;exaggerated grossly)

(a megadose of New York attitude;is;exaggerated in this film)

(a megadose of New York attitude;is;exaggerated)

(she;'s giving;him)

(she;grew up;everyone else)

(she;grew up;with a megadose of New York attitude everyone else)

(Sather box;sits;high above the Garden ice behind one of the nets)

(Sather box;sits;high above the Garden ice)

(Sather;has;box)

(Sather;said;that he could hardly notice the netting)

(he;could notice;the netting hardly)

(1 percent;went;to other regions in the world)

(1 percent;went;to other regions)

(Eight percent;went;to Europe while 1 percent went to other regions in the world)

(Eight percent;went;to Europe)

(Iraq 's announcement;was;a first step against his country)

(Iraq 's announcement;was;a first step toward the lifting of this brutal regime of sanctions)

(Iraq 's announcement;was;a first step)

(Iraq;has;announcement)

(Sabri;said;he hoped Iraq 's announcement was a first step toward the lifting of this brutal regime of sanctions against his country As he left the UN building)

(Sabri;said;he hoped Iraq 's announcement was a first step toward the lifting of this brutal regime of sanctions against his country)

(he;hoped;Iraq 's announcement was a first step toward the lifting of this brutal regime of sanctions against his country)

(he;left;the UN building)

(his;has;country)

(A backdrop of scant inflation;provided;support for stocks)

(A backdrop of scant inflation;provided;support)

(A backdrop of stable bond yields;provided;support for stocks)

(A backdrop of stable bond yields;provided;support)

(A backdrop of steady economic growth;provided;support for stocks)

(A backdrop of steady economic growth;provided;support)

(His teammates;loved;the show indeed)

(His teammates;loved;the show)
(His;has;teammates)
(The Revolution;gave up;a 90th-minute goal in a 2-2 regulation draw Sept. 16)
(The Revolution;gave up;a 90th-minute goal in a 2-2 regulation draw also)
(The Revolution;gave up;a 90th-minute goal in a 2-2 regulation draw at D.C. United)
(The Revolution;gave up;a 90th-minute goal in a 2-2 regulation draw)
(their;has;final two matches)
(they;recovered;to win their final two matches)
(One factor;might be;that consumers have just decided they are salting money away for retirement)
(One factor;might be;that consumers have just decided they are spending it on entertainment)
(One factor;might be;that consumers have just decided they are spending it on vacations)
(One factor;might be;that consumers have just decided they have enough stuff)
(consumers;have decided;they are salting money away for retirement just)
(consumers;have decided;they are salting money away for retirement spending it on entertainment just)
(consumers;have decided;they are salting money away for retirement spending it on entertainment)
(consumers;have decided;they are salting money away for retirement spending it on vacations just)
(consumers;have decided;they are salting money away for retirement spending it on vacations)
(consumers;have decided;they are salting money away for retirement)
(consumers;have decided;they have enough stuff just)
(consumers;have decided;they have enough stuff)
(he;said;One factor might be that consumers have just decided they are salting money away for retirement)
(he;said;One factor might be that consumers have just decided they are spending it on entertainment)
(he;said;One factor might be that consumers have just decided they are spending it on vacations)
(he;said;One factor might be that consumers have just decided they have enough stuff)
(they;are salting;money away)
(they;are salting;money for retirement)
(they;are salting;money)
(they;are spending it on entertainment;money away)
(they;are spending it on entertainment;money for retirement)
(they;are spending it on entertainment;money)
(they;are spending it on vacations;money away)
(they;are spending it on vacations;money for retirement)
(they;are spending it on vacations;money)
(they;have;enough stuff)
(He;be enabling;Seattle to climb back into the game)
(He;threw;three scoreless innings enabling Seattle to climb back into the game)
(He;threw;three scoreless innings)
(Seattle;to climb back;into the game)
(Programmers;enter;a season worried about the future of specific programs but never before have so many of them entered a season so worried about the future of the entire business always)
(Programmers;enter;a season worried about the future of specific programs but never before have so many of them entered a season so worried about the future of the entire business)
(a season worried about the future of specific programs but never before have so many of them;entered;a season so worried about the future of the entire business)
(a season worried about the future of specific programs but never before have so many of them;entered;a season so worried)
(a season;be worried;about the future of specific programs)
(A spokesperson for Omega in Rio de Janeiro;was not;available for comment)
(A spokesperson for Omega in Rio de Janeiro;was not;available immediately)
(A spokesperson for Omega in Rio de Janeiro;was not;available)
(Dell Computer Corp. 's quarter;looks;good also)
(Dell Computer Corp. 's quarter;looks;good)

(Dell Computer Corp.;has;quarter)
(Output;was reduced;in 1996 after one of its three furnaces exploded killing one worker)
(Output;was reduced;in 1996)
(its;has;three furnaces)
(one of its three furnaces;exploded;killing one worker)
(Quiriconi;said;The Residential Internship Program should meet the district 's needs too)
(The Residential Internship Program;should meet;the district 's needs too)
(The Residential Internship Program;should meet;the district 's needs)
(the district;has;needs)
(Esaka;will quit;to take responsibility for 67.28 million yen in payoffs to corporate racketeer Ryuichi Koike)
(Esaka;will quit;to take responsibility for 67.28 million yen in payoffs)
(corporate racketeer Ryuichi Koike;is;54)
(six other top executives;will quit;to take responsibility for 67.28 million yen in payoffs to corporate racketeer Ryuichi Koike)
(six other top executives;will quit;to take responsibility for 67.28 million yen in payoffs)
(Ruth Brown of London;said;She 's a hard act to follow)
(Ruth Brown of London;was;Wednesday among the crowds)
(Ruth Brown of London;was;Wednesday)
(She;'s;a hard act to follow)
(Most epidemiologists;say;the disorder stems from a genetic dysfunction probably a short circuit in the brain)
(the disorder;stems;from a genetic dysfunction probably a short circuit in the brain)
(she;settled in;-44.464.447.021.484.300)
(she;settled in;on the turn)
(It;took;an interception of a Warren Moon pass by Chiefs free safety Jerome Woods in overtime to set up Stoyanovich 's game-winner)
(It;took;an interception of a Warren Moon pass to set up Stoyanovich 's game-winner also)
(It;took;an interception of a Warren Moon pass to set up Stoyanovich 's game-winner)
(Stoyanovich;has;game-winner)
(herself;less;with the motives of those willing to help than with their pitching in)
(she;would concern;herself less with the motives of those willing to help than with their pitching in)
(their;has;pitching)
(Bobby Brown;is;Netanyahu 's adviser on world Jewish affairs)
(Bobby Brown;said;We are going to have to do it when we see fit)
(Netanyahu;has;adviser on world Jewish affairs)
(We;are going;to have to do it when we see fit)
(We;are going;to have to do it)
(we;see;fit when)
(we;see;fit)
(Congress;holds;hearings to consider anti-road-rage legislation)
(hearings;to consider;anti-road-rage legislation)
(I;smoke;one only)
(I;smoke;one)
(I;'ve been;19 years here)
(I;'ve been;19 years)
(it;'s never been;a good time)
(some conglomerates;have bumped up;against the limits of the rules already)
(some conglomerates;have bumped up;against the limits of the rules like Viacom)
(some conglomerates;have bumped up;against the limits of the rules like the News Corp.)
(some conglomerates;have bumped up;against the limits of the rules)
(Ms. Holloman;looks;less like a tomboy jsuydamstatesman.com In person)
(Ms. Holloman;looks;less like a tomboy jsuydamstatesman.com)

(Ms. Holloman;looks;less like a tomboy than her film roles suggest jsuydamstatesman.com)
(her film roles;suggest;-2.751.910.095.214.840)
(her most beguiling;features;E-mail jsuydamstatesman.com with faint drawl)
(her most beguiling;features;E-mail jsuydamstatesman.com with her hazel eyes)
(her;has;film roles)
(her;has;hazel eyes)
(her;has;most beguiling)
(He;died;-4.894.479.751.586.910)
(He;died;en route)
(He;died;to hospital)
(The benchmark 30-year bond;be pushing;its yield down 3 basis points to 6.61 percent)
(The benchmark 30-year bond;rose;$ 3.75 per $ 1,000 bond pushing its yield down 3 basis points to 6.61 percent)
(The benchmark 30-year bond;rose;$ 3.75 per $ 1,000 bond to 96 30\/32)
(The benchmark 30-year bond;rose;$ 3.75 per $ 1,000 bond)
(The benchmark 30-year bond;rose;3\/8 pushing its yield down 3 basis points to 6.61 percent)
(The benchmark 30-year bond;rose;3\/8 to 96 30\/32)
(The benchmark 30-year bond;rose;3\/8)
(its;has;yield)
(It;begins;life with a $ 75 million annual debt service burden)
(It;begins;life with a negative book value of nearly $ 300 million)
(It;begins;life)
(Part of this indifference;is caused;by the unearned cynicism of the age probably)
(Part of this indifference;is caused;by the unearned cynicism of the age)
(R-Fla;is;the lead sponsor of House legislation)
(R-Fla;is;the lead sponsor)
(Rep. Lincoln Diaz-Balart;is;R-Fla)
(Rep. Lincoln Diaz-Balart;said;These immigrants deserve consideration under the laws)
(These immigrants;deserve;consideration under the laws)
(These immigrants;deserve;consideration)
(the laws;were;in place when they applied for asylum)
(the laws;were;in place)
(the lead sponsor of House legislation;would change;the current law)
(they;applied;for asylum when)
(they;applied;for asylum)
(Edwards;believes;that defenders were pressing trying to overcompensate for the lack of certainty about the system by leaving their assignments to attempt a big play In previous games)
(Edwards;believes;that defenders were pressing trying to overcompensate for the lack of certainty about the system by leaving their assignments to attempt a big play)
(defenders;were;pressing trying to overcompensate for the lack of certainty about the system by leaving their assignments to attempt a big play)
(defenders;were;pressing trying to overcompensate for the lack of certainty about the system)
(their;has;assignments)
(girly fantasy;make;this Reese Witherspoon vehicle for starry-eyed romantics In a nutshell Weird mix of redneck humor)
(girly fantasy;make;this Reese Witherspoon vehicle for starry-eyed romantics only)
(girly fantasy;make;this Reese Witherspoon vehicle for starry-eyed romantics)
(the occasional moment of reality;make;this Reese Witherspoon vehicle for starry-eyed romantics In a nutshell Weird mix of redneck humor)
(the occasional moment of reality;make;this Reese Witherspoon vehicle for starry-eyed romantics only)
(the occasional moment of reality;make;this Reese Witherspoon vehicle for starry-eyed romantics)
(He;stepped out;of his Mercedes)

(He;stood;among dozens of other stupefied commuters all staring helplessly at the flames in the distance)
(He;stood;among dozens of other stupefied commuters all staring helplessly at the smoke in the distance)
(He;stood;among dozens of other stupefied commuters all)
(his;has;Mercedes)
(Giorgio;began;getting headaches in late September)
(Giorgio;began;getting headaches)
(Koplowitz 's next concert;presented;indoors at Dance Theater Workshop in May)
(Koplowitz 's next concert;presented;indoors)
(Koplowitz 's next concert;will be;a more modest affair)
(Koplowitz;has;next concert)
(Only about one in five private-sector employees;receives;that kind of deal still)
(Only about one in five private-sector employees;receives;that kind of deal)
(experts;say;Only about one in five private-sector employees still receives that kind of deal)
(It;did n't specify;which goods in either case)
(which;goods;in either case)
(The committee;is planning;to hear from him this month)
(The committee;is planning;to hear from him)
(Japan;has;Big Four brokerages)
(Japan;has;fourth-largest bank)
(The scandal;has forced;resignations at Japan 's fourth-largest bank)
(The scandal;has forced;resignations at three of Japan 's Big Four brokerages)
(The scandal;has forced;resignations now)
(The scandal;has forced;resignations)
(It;said;it wanted the court to establish whether the government had failed to apply the same rules to all the bidders)
(it;wanted;the court to establish whether the government had failed to apply the same rules to all the bidders)
(the government;had failed;to apply the same rules to all the bidders)
(the government;had failed;to apply the same rules)
(Calcavecchia;plays;Friday morning)
(Calcavecchia;plays;Friday)
(he;knows;the importance of starting well If Calcavecchia plays Friday morning)
(he;knows;the importance of starting well because the Americans have a recent history of falling behind early)
(he;knows;the importance of starting well)
(the Americans;have;a recent history of falling behind early)
(Chris Floyd 's dive for a 1-yard touchdown;put;Michigan ahead On the next play Two plays later)
(Chris Floyd 's dive for a 1-yard touchdown;put;Michigan ahead)
(Chris Floyd;has;dive for a 1-yard touchdown)
(Griese 's;pass;for a 53-yard play to the Colorado 2)
(the next play Two plays later;had caught;Griese 's pass for a 53-yard play to the Colorado 2)
(the next play Two plays later;had glided;unchecked to the right)
(the next play Two plays later;had lined up;on the left side)
(the next play Two plays later;is;Tuman)
(Charles Darwin;had written;in 1872 about the consistency of expressions in mammals)
(Charles Darwin;had written;in 1872)
(expressions;are learned;through culture)
(social scientists of the 1960s;believed;expressions are learned through culture Although Charles Darwin had written in 1872 about the consistency of expressions in mammals)
(social scientists of the 1960s;believed;expressions are learned through culture)
(social scientists of the 1970s;believed;expressions are learned through culture Although Charles Darwin had written in 1872 about the consistency of expressions in mammals)

(social scientists of the 1970s;believed;expressions are learned through culture)
(The Hearst News Service;has filed;-8.867.042.541.503.900)
(The Hearst News Service;will file;the following for Wednesday)
(Arafat;know;in a meeting)
(Deputies;said;that as many as 57 deputies let Arafat know in a meeting Tuesday night that they intended to vote against him)
(as many as 57 deputies;let;Arafat know in a meeting Tuesday night that they intended to vote against him)
(as many as 57 deputies;let;Arafat know in a meeting that they intended to vote against him)
(as many as 57 deputies;were;members of Fatah)
(as many as 57 deputies;were;members)
(they;intended;to vote against him)
(its;has;own Aviator)
(last year;has;auto shows)
(rival Lincoln;is about;to add its own Aviator in the fast-growing medium luxury utility segment)
(rival Lincoln;is about;to add its own Aviator)
(the Cadillac Vison concept SUV;be shown;at last year 's auto shows)
(the new Cadillac SRX;will become;one Inspired by the Cadillac Vison concept SUV shown at last year 's auto shows)
(the new Cadillac SRX;will become;one based on the Ford Explorer\/Mercury Mountaineer platform)
(the new Cadillac SRX;will become;one into the fast-growing medium luxury utility segment)
(the new Cadillac SRX;will become;one of the newest entrants)
(the new Cadillac SRX;will become;one)
(will one of the newest entrants into the fast-growing medium luxury utility segment based on the Ford Explorer\/Mercury Mountaineer platform;be Inspired;by the Cadillac Vison concept SUV shown at last year 's auto shows)
(It;'s;an effective maybe even subversive way to get the message across)
(Miller Oswalt;be spurred;Monday by negative news for El Paso Corp. Better)
(Miller Oswalt;be spurred;Monday yet)
(Miller Oswalt;be spurred;Monday)
(Miller Oswalt;have won and;19 straight decisions For their part)
(Miller Oswalt;have won and;19 straight decisions spurred Monday by negative news for El Paso Corp. Better yet)
(Miller Oswalt;have won and;19 straight decisions)
(Miller Oswalt;have won;19 straight decisions For their part)
(Miller Oswalt;have won;19 straight decisions spurred Monday by negative news for El Paso Corp. Better yet)
(Miller Oswalt;have won;19 straight decisions)
(Roy Oswalt;be spurred;Monday by negative news for El Paso Corp. Better)
(Roy Oswalt;be spurred;Monday yet)
(Roy Oswalt;be spurred;Monday)
(Roy Oswalt;have won and;19 straight decisions For their part)
(Roy Oswalt;have won and;19 straight decisions spurred Monday by negative news for El Paso Corp. Better yet)
(Roy Oswalt;have won and;19 straight decisions)
(Roy Oswalt;have won;19 straight decisions For their part)
(Roy Oswalt;have won;19 straight decisions spurred Monday by negative news for El Paso Corp. Better yet)
(Roy Oswalt;have won;19 straight decisions)
(investors;kept;selling off stocks in deregulated power companies)
(investors;kept;selling off stocks in trading power companies)
(their;has;part)
(they;'re;a combined 21-1 since July 1)
(they;'re;a combined 21-1 with a 2.41 ERA)

(they;'re;a combined 21-1)

(Organogenesis Inc. of Canton Monday;be terminating;unilaterally a marketing agreement in a move)

(Organogenesis Inc. of Canton Monday;be terminating;unilaterally a marketing agreement)

(Organogenesis Inc. of Canton Monday;ended;its troubled six-year relationship unilaterally terminating a marketing agreement in a move)

(Organogenesis Inc. of Canton Monday;ended;its troubled six-year relationship with giant Novartis Pharma AG)

(Organogenesis Inc. of Canton Monday;ended;its troubled six-year relationship)

(Organogenesis;to file;for bankruptcy protection from creditors)

(Organogenesis;to file;for bankruptcy protection this week)

(Organogenesis;to file;for bankruptcy protection)

(a move;will lead;Organogenesis to file for bankruptcy protection from creditors likely)

(a move;will lead;Organogenesis to file for bankruptcy protection from creditors)

(a move;will lead;Organogenesis to file for bankruptcy protection likely)

(a move;will lead;Organogenesis to file for bankruptcy protection this week likely)

(a move;will lead;Organogenesis to file for bankruptcy protection this week)

(a move;will lead;Organogenesis to file for bankruptcy protection)

(its;has;troubled six-year relationship)

(Democrats on the House Budget Committee;released;a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion In the first effort in Congress to estimate the fiscal cost of an Iraqi war)

(Democrats on the House Budget Committee;released;a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion)

(Democrats on the House Budget Committee;released;a report than that of the Gulf War in 1991 In the first effort in Congress to estimate the fiscal cost of an Iraqi war)

(Democrats on the House Budget Committee;released;a report than that of the Gulf War in 1991)

(Monday;be putting;the likely price tag at between $ 30 billion and $ 60 billion)

(ONE OF THOSE;DAYS out;FOR JARRETT Worn by the travel)

(ONE OF THOSE;DAYS out;FOR JARRETT Worn)

(ONE OF THOSE;discouraged;by agency 's perpetual financial difficulties)

(ONE OF THOSE;discouraged;by the intractable nature of the Palestinian problem)

(Rennie;retired;ONE OF THOSE DAYS FOR JARRETT Worn out by the travel at 60)

(Rennie;retired;ONE OF THOSE DAYS FOR JARRETT Worn out by the travel in 1977)

(Rennie;retired;ONE OF THOSE DAYS FOR JARRETT Worn out by the travel)

(Rennie;retired;ONE OF THOSE discouraged by agency 's perpetual financial difficulties at 60)

(Rennie;retired;ONE OF THOSE discouraged by agency 's perpetual financial difficulties in 1977)

(Rennie;retired;ONE OF THOSE discouraged by agency 's perpetual financial difficulties)

(Rennie;retired;ONE OF THOSE discouraged by the intractable nature of the Palestinian problem at 60)

(Rennie;retired;ONE OF THOSE discouraged by the intractable nature of the Palestinian problem in 1977)

(Rennie;retired;ONE OF THOSE discouraged by the intractable nature of the Palestinian problem)

(agency;has;perpetual financial difficulties)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in assumed debt nearly doubling Ohio businesses and making it one of North America 's largest long-term health care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in assumed debt nearly doubling its Florida care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in assumed debt nearly making it one of North America 's largest long-term health care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in cash nearly doubling Ohio businesses and making it one of North America 's largest long-term health care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in cash nearly doubling its Florida care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million in cash nearly making it one of North America 's largest long-term health care providers)

(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million nearly doubling Ohio businesses and making it one of North America 's largest long-term health care providers)
(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million nearly doubling its Florida care providers)
(Extendicare Inc.;agreed;to buy Arbor Health Care Co. for about US$ 432 million nearly making it one of North America 's largest long-term health care providers)
(North America;has;largest long-term health)
(it;one;of North America 's largest long-term health)
(its;has;Florida)
(She;began;her career as a chunky woman)
(She;began;her career on stage of her musical direction)
(She;began;her career on unsure of her musical direction)
(She;began;her career)
(a chunky woman;is;awkward)
(her;has;career)
(her;has;musical direction)
(BioScope;lucky;-14.459.642.028.808.500)
(I;lucky;-14.459.642.028.808.500)
(This;leads;to one of two inescapable conclusions)
(the president;reads;BioScope got lucky)
(the president;reads;I got lucky)
(nobody;was watching;-5.666.534.423.828.120)
(nobody;was watching;Luckily for them)
(Diana;died;-181.466.064.453.125)
(Diana;died;in the fatal crash)
(Diana;is;Princess of Wales)
(The first photograph of the fatal crash;appeared;Monday on the front page of Bild Zeitung)
(The first photograph of the fatal crash;appeared;Monday)
(Hooters of America;franchises;a total of 192 of the hot wing restaurants vs. the 12 run by Hooters Inc.)
(Hooters of America;operates;-18.979.615.783.691.400)
(Hooters of America;owns;-18.979.615.783.691.400)
(the 12;be run;by Hooters Inc.)
(Tropical Storm Edouard;will meander;about 125 miles off the Georgia coast causing surf to build along parts of the Southeast Coast)
(Tropical Storm Edouard;will meander;to build along parts of the Southeast Coast)
(The drill;has;a keyless chuck)
(a keyless chuck;is;a built-in level for drilling straight holes texturing over the whole drill body to provide a firm grip)
(a keyless chuck;is;a built-in level for drilling straight nonslip texturing over the whole drill body to provide a firm grip)
(Six of the 11 missing;were;dead)
(the whereabouts of another;is;unknown)
(The first batter;is;Carl Everett)
(The first batter;singled;-8.216.559.600.830.070)
(he;faced;The first batter)
(Rhodes;discovered;he had cancer last October after he felt a sharp pain in his right leg)
(he;felt;a sharp pain in his right leg)
(he;felt;a sharp pain)
(he;had;cancer after he felt a sharp pain in his right leg)
(he;had;cancer last October)
(he;had;cancer)
(his;has;right leg)

(28 seconds;be left;on a frozen field at Cleveland 's Municipal Stadium)
(Cleveland;has;Municipal Stadium)
(Graham;set up;Groza 's 16-yard winning field goal with 28 seconds left on a frozen field at Cleveland 's Municipal Stadium)
(Graham;threw;four touchdown passes in the title game)
(Graham;threw;four touchdown passes)
(Groza;has;16-yard winning field goal)
(Koplowitz;begs;to differ If his use of the Web to create art sounds highfalutin)
(Koplowitz;begs;to differ)
(his use of the Web to create art;sounds;highfalutin)
(his;has;use of the Web to create art)
(Mike Tyson;having disappeared;because of the sleight of hand of promoter Don King)
(Ruiz;knows;That 's a lot of maybes in a sport he must turn in another direction if he wants the multimillion-dollar payday now)
(Ruiz;knows;That 's a lot of maybes in a sport he must turn in another direction if he wants the multimillion-dollar payday)
(That;'s;a lot of maybes in a sport)
(That;'s;a lot)
(he;'s been seeking;for two years the multimillion-dollar payday)
(he;'s been seeking;the multimillion-dollar payday)
(he;must turn;in another direction if he wants the multimillion-dollar payday)
(he;must turn;in another direction)
(he;wants;the multimillion-dollar payday)
(the right thing;happens;a sport seldom)
(the right thing;happens;a sport where seldom)
(the right thing;happens;at Mike Tyson having disappeared because of the sleight of hand of promoter Don King a sport seldom)
(the right thing;with;a shot a sport seldom)
(the right thing;with;a sport seldom)
(the right thing;with;a sport where seldom)
(the right thing;with;at Mike Tyson having disappeared because of the sleight of hand of promoter Don King a sport seldom)
(DeLillo;has described;the simultaneous explosion of knowledge brilliantly)
(DeLillo;has described;the simultaneous explosion of knowledge in our times)
(DeLillo;has described;the simultaneous explosion of knowledge)
(invasive connections;be spawned;by the World Wide Web)
(our;has;times)
(the bloodless;is;invasive connections spawned by the World Wide Web)
(the spread of Dark Age superstitions;is;the loss of community ties)
(the spread of Dark Age superstitions;is;the loss of family ties)
(the spread of Dark Age superstitions;replaced;by the bloodless)
(Salim;be Continuing;to maintain his innocence of terrorism charges)
(Salim;said;the stabbing stemmed instead from his dissatisfaction with his lawyers Continuing to maintain his innocence of terrorism charges)
(Salim;said;the stabbing stemmed instead from his dissatisfaction with his lawyers)
(Salim;said;the stabbing was unrelated to the escape plan Continuing to maintain his innocence of terrorism charges)
(Salim;said;the stabbing was unrelated to the escape plan)
(his;has;dissatisfaction with his lawyers)
(his;has;innocence of terrorism charges)
(his;has;lawyers)
(the stabbing;stemmed;instead from his dissatisfaction with his lawyers)

(the stabbing;stemmed;instead)
(the stabbing;was;unrelated to the escape plan)
(the stabbing;was;unrelated)
(Mar ie;said;-24.589.410.400.390.600)
(Tax revenue;will fall;Mar ie said)
(Tax revenue;will fall;as economic growth slows Mar ie said)
(Tax revenue;without specifying;Mar ie said again)
(Tax revenue;without specifying;Mar ie said)
(economic growth;slows;-24.589.410.400.390.600)
(the cuts;will be;-24.589.410.400.390.600)
(the government;will reduce;spending)
(they;will be made;-24.589.410.400.390.600)
(they;will be made;where)
(The group 's attacks on the Kurdish leadership;give;it common cause with Saddam Hussein though a firm link with the Iraqi dictator has not been established)
(The group;has;attacks on the Kurdish leadership)
(a firm link with the Iraqi dictator;has not been established;-1.964.330.596.923.820)
(15 photographs;represented;what I felt the movie should feel like)
(15 photographs;represented;what I felt the movie should look like)
(I;felt;the movie should feel like)
(I;felt;the movie should look like)
(I;showed;him 15 photographs)
(the movie;should feel;like)
(the movie;should look;like)
(The p53 protein;is known;to work as a genetic switch binding to various sites along the DNA of cells)
(The p53 protein;is known;to work as a genetic switch switching on nearby genes)
(a process;called;The p53 protein is known to work as a genetic switch binding to various sites along the DNA of cells transactivation)
(a process;called;The p53 protein is known to work as a genetic switch switching on nearby genes transactivation)
(1,051 adults;be surveyed;late last week)
(Only 19 percent of a national sample of 1,051 adults surveyed late last week;said;they believed the accord would reduce the number of teen-agers)
(teen-agers;begin;smoking)
(the accord;would reduce;the number of teen-agers)
(they;believed;the accord would reduce the number of teen-agers)
(it;be Complete;with 363 rooms in a variety of traditional furnishings)
(it;be Complete;with 363 rooms)
(it;be Complete;with health spa in a variety of traditional furnishings)
(it;be Complete;with health spa)
(it;be Complete;with three restaurants in a variety of traditional furnishings)
(it;be Complete;with three restaurants)
(it;is dominated;by a six-story rotunda Complete with 363 rooms in a variety of traditional furnishings)
(it;is dominated;by a six-story rotunda Complete with health spa in a variety of traditional furnishings)
(it;is dominated;by a six-story rotunda Complete with three restaurants in a variety of traditional furnishings)
(it;is dominated;by a six-story rotunda)
(The companies;have been;in business for more than 20 years)
(The companies;have been;in business)
(Calcavecchia;has looked;finishing in the top 35 in three of his last four starts including a seventh-place finish at last month 's PGA Championship)
(Calcavecchia;has looked;finishing in the top 35)

(Calcavecchia;has looked;recently finishing in the top 35 in three of his last four starts including a seventh-place finish at last month 's PGA Championship)
(Calcavecchia;has looked;recently finishing in the top 35)
(his;has;last four starts)
(last month;has;PGA Championship)
(prices;rose;$ 2.50 per 1,000 cigarettes In March)
(prices;rose;$ 2.50 per 1,000 cigarettes at wholesale)
(prices;rose;$ 2.50 per 1,000 cigarettes)
(wholesale;equaled;about 5 cents a pack for premium cigarettes at retail)
(wholesale;equaled;about 5 cents a pack for premium cigarettes)
(a meeting;seemed;unlikely)
(a park;is;a memorial)
(the Cooperative Bank Building;has been;renovated completely)
(the Cooperative Bank Building;has been;renovated)
(the site of the embassy;has been turned;into a park to the victims of that day)
(the site of the embassy;has been turned;into a park)
(workers;clear;rubble Four years later)
(workers;clear;rubble although the Cooperative Bank Building has been completely renovated)
(workers;clear;rubble from the site of Ufundi House)
(workers;clear;rubble still)
(workers;clear;rubble)
(1.476 million new starts;be recorded;in 1996)
(the average rate of new starts for the first eight months of the year 1.449 million;remains;close Even so)
(the average rate of new starts for the first eight months of the year 1.449 million;remains;close according to government statistics)
(the average rate of new starts for the first eight months of the year 1.449 million;remains;close to the eight-year high of 1.476 million new starts recorded in 1996)
(the average rate of new starts for the first eight months of the year 1.449 million;remains;close)
(Sikes;should apply;for workman 's compensation Maybe)
(Sikes;should apply;for workman 's compensation)
(workman;has;compensation)
(John Abraham;lined up;in one)
(John Abraham;lined up;on one side in one)
(Mo Lewis;rushed;from the other)
(Shaun Ellis;lined up;in one)
(Shaun Ellis;lined up;on one side in one)
(the Jets;used;some new alignments Last week)
(the Jets;used;some new alignments including one)
(the Jets;used;some new alignments)
(it;tests;annually cattle)
(it;tests;cattle)
(the department;has increased;the number of cattle Without admitting any error)
(the department;has increased;the number of cattle rapidly)
(the department;has increased;the number of cattle)
(It;did not take;long)
(She;sought out;the untouchables of our society)
(our;has;society)
(she;touched;them)
(You;can find;the water no deeper)
(You;can find;the water still)
(You;can find;the water than 4 feet)
(You;can find;the water)

(You;can venture out;100 yards still)
(You;can venture out;100 yards)
(Three Forks;is;Miss)
(Farris;was replaced;by sophomore Dustin Long in the second quarter against Pitt)
(freshman Reggie McNeal;played;in the opener)
(sophomore Jason Carter;played;in the opener)
(BIGGEST CONCERNS Express pilots;have;no pension currently)
(BIGGEST CONCERNS Express pilots;have;no pension)
(Honda Motor Co. 's new Accord likely to be a best-seller;is;better)
(Honda Motor Co. 's new Accord likely to be a best-seller;is;bigger)
(Honda Motor Co. 's new Accord likely to be a best-seller;is;cheaper)
(Honda Motor Co.;has;new Accord likely to be a best-seller)
(Japanese automakers;have taken;some of the biggest strides with their new car models)
(their;has;new car models)
(C. Shelby;Following are excerpts from an interview with Sen. Richard;-39.385.064.697.265.600)
(C. Shelby;is;the Alabama Republican)
(God;had;a plan for me Maybe)
(God;had;a plan for me just)
(God;had;a plan for me)
(God;wanted;me to be around Maybe)
(God;wanted;me to be around for a little while Maybe)
(God;wanted;me to be around for a little while just)
(God;wanted;me to be around for a little while)
(God;wanted;me to be around just)
(God;wanted;me to be around longer Maybe)
(God;wanted;me to be around longer just)
(God;wanted;me to be around longer)
(God;wanted;me to be around)
(Johnson;has;Cookie)
(Johnson;has;a wife)
(Johnson;has;three children)
(Johnson;said;Maybe God just had a plan for me)
(Johnson;said;Maybe God just wanted me to be around for a little while longer)
(me;to be;around for a little while)
(me;to be;around longer)
(me;to be;around)
(the Alabama Republican;is;the ranking minority member of the Intelligence Committee)
(the Alabama Republican;is;the ranking minority member)
(you;'ll get;side-by-side comparisons for plans in your area)
(your;has;ZIP code)
(your;has;area)
(Disney;Katzenberg is feuding with former employer;for example)
(he;helped;the Disney animated films)
(he;sued;Disney claiming he was denied his cut of the Disney animated films)
(he;sued;Disney for $ 250 million claiming he was denied his cut of the Disney animated films)
(he;was denied;his cut of the Disney animated films)
(his;has;cut of the Disney animated films)
(1,200-degree air;is pumped back;from the compressor in order to cool the blades)
(1,200-degree air;is pumped back;to cool the blades)
(1,200-degree air;is pumped back;to the turbine blades to cool the blades)
(NYT;News;Service)
(Presidio Med;fills;the time between those scenes with even more stock situations when)

(Presidio Med;fills;the time between those scenes with even more stock situations)
(it;'s;time for a moratorium on medical dramas)
(it;'s;time for complete euthanasia)
(it;'s;time)
(it;may be;a sign that it 's time for a moratorium on medical dramas when Presidio Med fills the time between those scenes with even more stock situations)
(it;may be;a sign that it 's time for a moratorium on medical dramas)
(it;may be;a sign that it 's time for complete euthanasia when Presidio Med fills the time between those scenes with even more stock situations)
(it;may be;a sign that it 's time for complete euthanasia)
(M2 + CDs;rose;3.0 percent in the April-June period)
(the poverty rate for people 18 to 64;rose;a half percentage point to 10.1 percent)
(the poverty rate for people 18 to 64;rose;a half percentage point)
(13;c.;2002 SAN FRANCISCO CHRONICLE City Supervisor Tom Ammiano said many of the problems were simply a matter of getting the new system up)
(13;c.;2002 SAN FRANCISCO CHRONICLE City Supervisor Tom Ammiano said many of the problems were simply a matter of running)
(2002 SAN FRANCISCO CHRONICLE City Supervisor Tom Ammiano;said;many of the problems were simply a matter of getting the new system up)
(2002 SAN FRANCISCO CHRONICLE City Supervisor Tom Ammiano;said;many of the problems were simply a matter of running)
(2002 SAN FRANCISCO CHRONICLE City Supervisor Tom Ammiano;sponsored;the law)
(BSA;seized;items from SM Summit in a raid)
(BSA;seized;items on Aug. 12)
(BSA;seized;items)
(many of the problems;were;a matter of getting the new system up)
(many of the problems;were;a matter of running)
(many of the problems;were;a matter simply)
(many of the problems;were;a matter)
(everyone;reverted;to their traditional duties)
(normalcy;prevailed;-14.794.851.684.570.300)
(normalcy;prevailed;After a few minutes)
(normalcy;prevailed;After some lighthearted chuckles)
(their;has;traditional duties)
(the Alden Trust;have contributed;$ 1.7 million Together)
(the Alden Trust;have contributed;$ 1.7 million in the last five years)
(the Alden Trust;have contributed;$ 1.7 million to Clark)
(the Alden Trust;have contributed;$ 1.7 million)
(the other foundations controlled by the firm;have contributed;$ 1.7 million Together)
(the other foundations controlled by the firm;have contributed;$ 1.7 million in the last five years)
(the other foundations controlled by the firm;have contributed;$ 1.7 million to Clark)
(the other foundations controlled by the firm;have contributed;$ 1.7 million)
(the other foundations;be controlled;by the firm)
(elegant souls;consider;such journalism beneath their attention)
(elegant souls;consider;such journalism)
(elegant souls;there are;-11.070.665.740.966.700)
(elegant souls;there are;Of course)
(their;has;attention)
(Some;think;the blend is more weighted toward expedience)
(the blend;is weighted;toward expedience more)
(the blend;is weighted;toward expedience)
(Trucking companies;have rebounded;after years of laggard performance relative to the rest of the U.S.

stock market finally)

(Trucking companies;have rebounded;after years of laggard performance relative to the rest of the U.S. stock market meanwhile)

(Trucking companies;have rebounded;after years of laggard performance relative to the rest of the U.S. stock market)

(you;have;questions)

(We;must continue;to lead by example)

(West Roxbury;ENDIT;We must continue to lead by example)

(caulking;Should be done;after at a cost of $ 70 JUDY FRIEDMAN)

(caulking;Should be done;at the time of the reglazing)

(His legislation;would allow;tax-free savings for expenses including tuition for any school private)

(His legislation;would allow;tax-free savings for expenses including tuition for any school public)

(His legislation;would allow;tax-free savings for expenses including tuition for any school religious)

(His;has;legislation)

(Bullion;rose;as the U.S. dollar fell against the German mark making it cheaper for investors using other major currencies to buy the precious metal)

(Bullion;rose;as the U.S. dollar fell against the yen making it cheaper for investors using other major currencies to buy the precious metal)

(analysts;said;Bullion rose as the U.S. dollar fell against the German mark making it cheaper for investors using other major currencies to buy the precious metal)

(analysts;said;Bullion rose as the U.S. dollar fell against the yen making it cheaper for investors using other major currencies to buy the precious metal)

(investors;be using;other major currencies to buy the precious metal)

(it;cheaper;for investors using other major currencies to buy the precious metal)

(the U.S. dollar;fell;against the German mark making it cheaper for investors using other major currencies to buy the precious metal)

(the U.S. dollar;fell;against the yen making it cheaper for investors using other major currencies to buy the precious metal)

(the U.S. dollar;fell;making it cheaper for investors using other major currencies to buy the precious metal)

(Solutia;is saddled;with $ 1 billion in debt)

(Solutia;is saddled;with even more than that in retiree environmental liabilities)

(Solutia;is saddled;with even more than that in retiree medical costs)

(3,300 union employees in Wms T$ Kentucky ities between the two situations;offer;reason to hope both disputes center on health care both began in early October)

(3,300 union employees in Wms T$ Kentucky ities between the two situations;offer;reason to hope both disputes center on health care plans both)

(3,300 union employees in Wms T$ Ohio ities between the two situations;offer;reason to hope both disputes center on health care both began in early October)

(3,300 union employees in Wms T$ Ohio ities between the two situations;offer;reason to hope both disputes center on health care plans both)

(3,300 union employees in Wms T$ Virginia ities between the two situations;offer;reason to hope both disputes center on health care both began in early October)

(3,300 union employees in Wms T$ Virginia ities between the two situations;offer;reason to hope both disputes center on health care plans both)

(A grocery store strike between Ralphs parent company;offer;reason to hope both disputes center on health care both began in early October)

(A grocery store strike between Ralphs parent company;offer;reason to hope both disputes center on health care plans both)

(Both strikes;involve;Commercial Workers employees)

(Both strikes;involve;Kroger stores)

(Both strikes;involve;United Food)

(Kroger Co.;offer;reason to hope both disputes center on health care both began in early October)

(Kroger Co.;offer;reason to hope both disputes center on health care plans both)
(Ralphs;has;parent company)
(both disputes center on health care;began;in early October)
(both disputes center on health care;plans;-537.702.880.859.375)
(both;have been mediated;by federal officials)
(Seattle 's roster;is;old)
(Seattle;has;roster)
(Those three;were apprehended;Sunday)
(The most unpopular agencies;are;those charged with solving the most unsolvable problems)
(The most unpopular agencies;are;those usually)
(The most unpopular agencies;are;those)
(he;noted;The most unpopular agencies are usually those charged with solving the most unsolvable problems)
(usually those;be charged;with solving the most unsolvable problems)
(The movie;is set;to debut in June)
(The movie;is;a $ 120 million change of pace for arty Crouching Tiger)
(arty Crouching Tiger;is;Hidden Dragon director Ang Lee)
(29;be Kidd;-23322451782226500   )
(29;extended;his current contract years Kidd)
(29;extended;his current contract years ago)
(29;extended;his current contract years)
(29;is;the team 's star point guard)
(29;may not sign;another extension with the Nets Kidd)
(29;may not sign;another extension with the Nets before becoming a free agent on July 1)
(29;may not sign;another extension with the Nets)
(his;has;current contract years)
(the team;has;star point guard)
(U.S. stocks;were;mixed after a report on durable goods showed unexpected strength squelching hopes for a bond market rally)
(U.S. stocks;were;mixed)
(a report on durable goods;be squelching;hopes for a bond market rally)
(a report on durable goods;showed;unexpected strength squelching hopes for a bond market rally)
(hopes for a bond market rally;could boost;shares)
(Slowing corporate profits;has forced;economic growth expectations also)
(Slowing corporate profits;has forced;economic growth expectations lower)
(Slowing corporate profits;has forced;economic growth expectations)
(weakening export growth;has forced;economic growth expectations also)
(weakening export growth;has forced;economic growth expectations lower)
(weakening export growth;has forced;economic growth expectations)
(Euromoney 's executives;spent;several days this week huddled in negotiations with Robert Teitelman)
(Euromoney;has;executives)
(Institutional Investor;has;Americas edition)
(Robert Teitelman;is;managing editor of Institutional Investor 's Americas edition)
(they;whom named;editor to replace Cudaback Robert Teitelman)
(this week;huddled;in negotiations several days)
(this week;huddled;in negotiations with Robert Teitelman)
(this week;huddled;in negotiations)
(Ms. Denis 's gift;is;to integrate the characters so fully in their milieu that they emerge from it almost insensibly)
(Ms. Denis 's gift;is;to integrate the characters that they emerge from it almost insensibly)
(Ms. Denis;has;gift)
(their;has;milieu)

(they;emerge;from it almost)
(they;emerge;from it insensibly)
(they;emerge;from it)
(and;keep;the cats away)
(Glenn F. Tilton as the airline 's new chief executive in a meeting Monday;is;an oil industry executive)
(Glenn F. Tilton as the airline 's new president Monday;is;an oil industry executive)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new chief executive in a meeting Monday according to people with knowledge of the situation)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new chief executive in a meeting Monday morning)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new chief executive in a meeting Monday)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new president Monday according to people with knowledge of the situation)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new president Monday morning)
(The board of directors of UAL;is;likely to name Glenn F. Tilton as the airline 's new president Monday)
(The board of directors of UAL;is;the parent company of United Airlines)
(the airline;has;new chief executive in a meeting Monday)
(the airline;has;new president Monday)
(Dell stock;fell;2 1\/16 to 87 1\/8 Friday)
(Dell stock;fell;2 1\/16 to 87 1\/8)
(It;will increase;luxury taxes also)
(It;will increase;luxury taxes on other goods)
(It;will increase;luxury taxes)
(other goods;are not;essential for development)
(other goods;are not;essential in order to lower non-productive imports)
(other goods;are not;essential)
(Jim Suydam;writes;for the Austin American-Statesman)
(they;accept;the responsibility As for Miller)
(they;accept;the responsibility As for Oswalt)
(they;accept;the responsibility without blinking)
(they;accept;the responsibility)
(I;was;obnoxious For Use By Clients of the New York Times News Service)
(I;was;obnoxious pretty)
(I;was;obnoxious)
(Martha;has;Vineyard)
(Steers;did;a year at Hotchkiss)
(Steers;did;a year at an Indiana military school)
(Steers;did;a year at another)
(Steers;did;a year before running away to New York)
(Steers;did;a year)
(Steers;says;-43.542.559.814.453.100)
(he;bunked;he had worked for as a stagehand the previous summer on Martha 's Vineyard New York where)
(he;bunked;he had worked for as a stagehand the previous summer on Martha 's Vineyard New York)
(he;bunked;with members of a dance company he had worked for as a stagehand the previous summer on Martha 's Vineyard New York)
(he;had worked;for as a stagehand the previous summer on Martha 's Vineyard)
(he;had worked;for as a stagehand the previous summer)
(Callas;has;life)
(The glamour of Callas life;has been;exaggerated much)

(The glamour of Callas life;has been;exaggerated)
(Service Manufacturers orders;will be;stronger For clients of the New York Times News)
(Service Manufacturers orders;will be;stronger likely)
(Service Manufacturers orders;will be;stronger than the 9.1 percent growth for the July-September quarter)
(Service Manufacturers orders;will be;stronger)
(Service Manufacturers;has;orders)
(the EPA;forecast;the July-September quarter originally)
(the EPA;forecast;the July-September quarter)
(the government;said;For clients of the New York Times News Service Manufacturers orders will likely be stronger than the 9.1 percent growth for the July-September quarter)
(Politicians;are grappling;with how the site should be preserved)
(historians;are grappling;with how the site should be preserved)
(locals;are grappling;with how the site should be preserved)
(the site;should be preserved;-13.495.278.930.664.000)
(the site;should be preserved;how)
(the victims families;are grappling;with how the site should be preserved)
(the victims;has;families)
(she;became;the sleekly beautiful musical actress of legend)
(she;became;the sleekly beautiful musical actress with sheer determination)
(she;became;the sleekly beautiful musical actress)
(she;became;the sleekly charismatic musical actress of legend)
(she;became;the sleekly charismatic musical actress with sheer determination)
(she;became;the sleekly charismatic musical actress)
(she;shed;70 pounds with sheer determination)
(she;shed;70 pounds)
(her;has;mother)
(she;be Born;in New York City to Greek parents)
(she;entered;the conservatory Born in New York City to Greek parents)
(she;entered;the conservatory in Athens)
(she;entered;the conservatory)
(she;returned;with her mother Born in New York City to Greek parents)
(she;returned;with her mother at 14)
(she;returned;with her mother to Greece)
(she;returned;with her mother)
(Gurney;boosts;backers Stars general manager Bob Gainey said he was uncomfortable with increased team incentives for one player)
(backers Stars general manager Bob Gainey;said;he was uncomfortable with increased team incentives for one player)
(he;was;uncomfortable with increased team incentives for one player)
(he;was;uncomfortable)
(I;am having;my bathtubs reglazed)
(my;has;bathtubs reglazed)
(BLUE RIBBON COOK BOOK 1907;DEVILED;EGGS Cut in two)
(crosswise;is;one dozen hard-boiled eggs)
(two;is;crosswise)
(Fowler;resented;Ickes authority clearly)
(Fowler;resented;Ickes authority)
(Ickes;has;authority)
(Ickes;is;probably more than any other person)
(Ickes;knows;the full story of the 1996 Clinton campaign including President Clinton 's role in the fund-raising excesses)
(President Clinton;has;role in the fund-raising excesses)

(his testimony;affirms;once again that Ickes knows the full story of the 1996 Clinton campaign including President Clinton 's role in the fund-raising excesses)

(his;has;testimony)

(Netscape;is aiming;to distribute 100 million copies of Navigator including Internet service providers)

(Netscape;is aiming;to distribute 100 million copies of Navigator including U.S. Robotics)

(Netscape;is aiming;to distribute 100 million copies of Navigator over the next year)

(Netscape;is aiming;to distribute 100 million copies of Navigator through partners)

(Netscape;is aiming;to distribute 100 million copies of Navigator)

(Netscape;sell;its higher-end Internet software packages especially)

(Netscape;sell;its higher-end Internet software packages to large companies)

(Netscape;sell;its higher-end Internet software packages)

(a division of 3Com Corp. Wide familiarity with Navigator;helps;Netscape is aiming to distribute 100 million copies of Navigator over the next year through partners including Internet service providers Netscape sell its higher-end Internet software packages especially to large companies)

(a division of 3Com Corp. Wide familiarity with Navigator;helps;Netscape is aiming to distribute 100 million copies of Navigator over the next year through partners including U.S. Robotics Netscape sell its higher-end Internet software packages especially to large companies)

(its;has;higher-end Internet software packages)

(Childhood cancers;make up;2 percent of all cancer cases in the United States)

(Childhood cancers;make up;2 percent of all cancer cases only)

(Childhood cancers;make up;2 percent of all cancer cases)

(He;did;-934.667.739.868.164)

(a flame;had burned out;-934.667.739.868.164)

(a flame;had burned out;temporarily)

(their discussion;lit;a flame)

(their;has;discussion)

(he;did n't fool;me)

(hurricanelike tropical cyclones born over the southwestern Pacific;are called;cyclones Confusingly)

(hurricanelike tropical cyclones born over the southwestern Pacific;are called;cyclones in the media)

(hurricanelike tropical cyclones born over the southwestern Pacific;are called;cyclones usually)

(hurricanelike tropical cyclones born over the southwestern Pacific;are called;cyclones)

(hurricanelike tropical cyclones born over the southwestern Pacific;are called;just cyclones)

(hurricanelike tropical cyclones born over the the Indian Ocean;are called;cyclones Confusingly)

(hurricanelike tropical cyclones born over the the Indian Ocean;are called;cyclones in the media)

(hurricanelike tropical cyclones born over the the Indian Ocean;are called;cyclones usually)

(hurricanelike tropical cyclones born over the the Indian Ocean;are called;cyclones)

(hurricanelike tropical cyclones born over the the Indian Ocean;are called;just cyclones)

(hurricanelike tropical cyclones;be born;over the southwestern Pacific)

(hurricanelike tropical cyclones;be born;over the the Indian Ocean)

(Gap Inc.;promotes;casual Fridays with free pants for about 3,500 traders)

(Gap Inc.;promotes;casual Fridays with free shirts for about 3,500 traders)

(Gap Inc.;promotes;casual Fridays)

(The New York Stock Exchange floor;will be;a sea tomorrow as Gap Inc. promotes casual Fridays with free pants for about 3,500 traders)

(The New York Stock Exchange floor;will be;a sea tomorrow as Gap Inc. promotes casual Fridays with free shirts for about 3,500 traders)

(The New York Stock Exchange floor;will be;a sea tomorrow of khaki-clad legs)

(The New York Stock Exchange floor;will be;a sea tomorrow)

(The spread between the notional yield on the most active 10-year Japanese government bond futures contract and the seven-year swap rate;was;changed at 42 basis points)

(The spread between the notional yield on the most active 10-year Japanese government bond futures contract and the seven-year swap rate;was;changed from yesterday)

(The spread between the notional yield on the most active 10-year Japanese government bond futures contract and the seven-year swap rate;was;changed little)

(The spread between the notional yield on the most active 10-year Japanese government bond futures contract and the seven-year swap rate;was;changed)

(I;Had known;what I know now)

(I;know;what now)

(I;know;what)

(I;might have argued;for a different arrangement)

(Kors;used;silk also)

(Kors;used;silk on belted polo dresses)

(Kors;used;silk on belted polo trousers)

(Kors;used;silk)

(President Clinton;would embrace;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts If the administration wished to support something appropriate)

(President Clinton;would embrace;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts If the administration wished to support something useful)

(President Clinton;would embrace;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts)

(President Clinton;would resist;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts If the administration wished to support something appropriate)

(President Clinton;would resist;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts If the administration wished to support something useful)

(President Clinton;would resist;U.S. Sen. Paul Coverdell 's K-12 education savings A + Accounts)

(U.S. Sen. Paul Coverdell;has;K-12 education savings)

(the administration;wished;to support something appropriate)

(the administration;wished;to support something useful)

(He;did n't understand;-9.369.116.973.876.950)

(He;did n't understand;quite)

(I;was getting;at)

(he;claimed;-9.369.116.973.876.950)

(We;get;long digressions about a second nuclear weapons lab set up at Calif. about technical problems at both labs)

(We;get;long digressions about a second nuclear weapons lab set up at Livermore about technical problems at both labs)

(We;get;long digressions about a second nuclear weapons lab set up at eye-glazing asides about technical problems at both labs)

(We;get;long digressions about the rivalry between Los Alamos)

(a second nuclear weapons lab;be set;at Calif. about technical problems at both labs)

(a second nuclear weapons lab;be set;at Calif.)

(a second nuclear weapons lab;be set;at Livermore about technical problems at both labs)

(a second nuclear weapons lab;be set;at Livermore)

(a second nuclear weapons lab;be set;at eye-glazing asides about technical problems at both labs)

(a second nuclear weapons lab;be set;at eye-glazing asides)

(He;was;back in Atlanta last October on a non-guaranteed training camp contract)

(He;was;back in Atlanta last October)

(Panathinaikos;is;a Greek team)

(he;could sign;a guaranteed deal that he led to the Euroleague championship)

(he;could sign;a guaranteed deal with Panathinaikos that he led to the Euroleague championship)

(he;led;to the Euroleague championship)

(the Hawks;released;him so he could sign a guaranteed deal with Panathinaikos that he led to the Euroleague championship)

(the Hawks;released;him)

(a term;be bandied;by designers)

(clothes;be rendered;in guipure lace)
(depressed big-company shares;$;$ $ to buy temporarily)
(depressed big-company shares;have outperformed;those of smaller companies for the past 2 1\/2 years)
(investors;to look;for opportunities)
(they;expect;investors to look for opportunities)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with other frilly;does edging;in liquid silks or with lingerie-style details)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with other frilly;does edging;in polka-dotted silks)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with other frilly;does edging;with lingerie-style details)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ribbons;does edging;in liquid silks or with lingerie-style details)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ribbons;does edging;in polka-dotted silks)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ribbons;does edging;with lingerie-style details)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ruffles;does edging;in liquid silks or with lingerie-style details)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ruffles;does edging;in polka-dotted silks)
(this moment to use a term bandied about by designers call for an excess of clothes rendered in guipure lace with ruffles;does edging;with lingerie-style details)
(traders;said;they expect investors to look for opportunities $ $ Still)
(traders;said;they expect investors to look for opportunities $ $)
(A spokesman for Hayden;said;Sunday that the senator was looking at several areas for possible legislation including clarification of existing laws dealing with stalking)
(A spokesman for Hayden;said;Sunday that the senator was looking at several areas for possible legislation including clarification of existing laws dealing with trespassing)
(A spokesman for Hayden;said;that the senator was looking at several areas for possible legislation including clarification of existing laws dealing with stalking)
(A spokesman for Hayden;said;that the senator was looking at several areas for possible legislation including clarification of existing laws dealing with trespassing)
(existing laws;be dealing;with stalking)
(existing laws;be dealing;with trespassing)
(the senator;was looking;at several areas for possible legislation including clarification of existing laws dealing with stalking)
(the senator;was looking;at several areas for possible legislation including clarification of existing laws dealing with trespassing)
(the senator;was looking;at several areas for possible legislation)
(Boselli;would have;two more surgical procedures on his shoulder after he became a Texan)
(Boselli;would have;two more surgical procedures on his shoulder)
(What the team did n't count on;was;that Boselli would have two more surgical procedures on his shoulder after he became a Texan)
(he;became;a Texan)
(his;has;shoulder)
(the team;did n't count on;What)
(they;are;dependent financially)
(they;are;dependent of the unknown)
(they;are;dependent)
(they;are;simply afraid financially)
(they;are;simply afraid of the unknown)

(they;are;simply afraid)
(his smile;had receded;-1.108.718.490.600.580)
(his smile;had receded;within seconds)
(his tone;had turned;serious again)
(his tone;had turned;serious)
(his;has;smile)
(his;has;tone)
(Story Filed;was rated;buy in new coverage By Cox Newspapers Dao Heng Bank Group Ltd.)
(Story Filed;was rated;buy in new coverage at J.P. Morgan Securities)
(Story Filed;was rated;buy in new coverage by analyst Elan Cohen)
(Story Filed;was rated;buy in new coverage)
(They;begged;people to come talk)
(They;sweet-talked;-9.148.726.654.052.730)
(That;is;what many of the POWs would like more than anything)
(he;said;That is what many of the POWs would like more than anything)
(many of the POWs;would like;what more than anything)
(many of the POWs;would like;what more)
(Forbes;speak;at the Christian Coalition convention)
(He;said;exactly what the people wanted to hear)
(Jane Boynton;is;a nurse from Miami)
(Jane Boynton;said;He said exactly what the people wanted to hear)
(a nurse from Miami;heard;Forbes speak at the Christian Coalition convention)
(the people;wanted;to hear)
(That;'s;more about 2 percentage points)
(That;'s;more in contrast)
(That;'s;more on benchmark 30-year Treasuries this year)
(That;'s;more than investment grade bonds)
(That;'s;more to the 6.7 percent average yield)
(That;'s;more)
(The couple;was riding;in a rented Mercedes-Benz)
(the driver trying to avoid the photographers harassment;crashed;the car against a concrete pillar)
(the driver trying to avoid the photographers harassment;crashed;the car at high speed)
(the driver trying to avoid the photographers harassment;crashed;the car)
(the driver;be trying;to avoid the photographers harassment)
(the photographers;has;harassment)
(They;want;news of the latest United Nations debate inside dope on the recent political coup in Cambodia)
(They;want;news of the latest United Nations debate inside dope)
(the latest United Nations debate inside dope;is;bulletins on the Sudanese economy)
(Salomon;has;stock)
(Spokesmen for the SEC;declined;to say whether they are investigating trading in Salomon 's stock)
(the New Philadelphia exchanges;declined;to say whether they are investigating trading in Salomon 's stock)
(the New York exchanges;declined;to say whether they are investigating trading in Salomon 's stock)
(they;are investigating;trading in Salomon 's stock)
(Indonesia;will lower;tariffs on some goods used to make exports)
(Indonesia;will lower;tariffs)
(It;says;that Indonesia will lower tariffs on some goods used to make exports)
(some goods;be used;to make exports)
(The confusion over ADD;is not;new)
(SM Summit;committed;software piracy)
(The BSA suit filed on behalf of Adobe Systems Inc.;alleged;SM Summit committed software piracy)
(The BSA suit filed on behalf of Autodesk Inc.;alleged;SM Summit committed software piracy)

(The BSA suit filed on behalf of Microsoft Corp.;alleged;SM Summit committed software piracy)
(The BSA suit;be filed;on behalf of Adobe Systems Inc.)
(The BSA suit;be filed;on behalf of Autodesk Inc.)
(The BSA suit;be filed;on behalf of Microsoft Corp.)
(the government;had done;enough to protect them against another terrorist attack)
(three-fifths of Americans;said;the government had done enough to protect them against another terrorist attack A year ago)
(three-fifths of Americans;said;the government had done enough to protect them against another terrorist attack)
(two-fifths;do;-17.533.712.768.554.600)
(two-fifths;do;just)
(two-fifths;do;now)
(Gidley;notes;there are also a number of push providers such as PointCast Inc.)
(PointCast Inc.;provides;information directly)
(PointCast Inc.;provides;information to computer users)
(PointCast Inc.;provides;information)
(PointCast Inc.;provides;news directly)
(PointCast Inc.;provides;news to computer users)
(PointCast Inc.;provides;news)
(PointCast Inc.;requiring;users to surf the Net to find it)
(a number of push providers such as PointCast Inc.;there are;-2.724.226.989.746.090)
(a number of push providers such as PointCast Inc.;there are;also)
(Rookie Antonio Bryant;is;fiery)
(he;must find;some consistency in his route running)
(his;has;route running)
(Airports;act;as heat islands so temperatures can vary Fahrenheit from far away vegetable fields citrus groves)
(Airports;act;as heat islands so temperatures can vary as much as 10 degrees Fahrenheit from far away vegetable fields)
(temperatures;can vary;Fahrenheit from far away vegetable fields citrus groves)
(temperatures;can vary;as much as 10 degrees Fahrenheit from far away vegetable fields)
(The Rams;miss;departed third receiver Az Hakim sorely)
(The Rams;miss;departed third receiver Az Hakim)
(they;surrendered;deciding goals In the last four games of the losing streak)
(they;surrendered;deciding goals in the last minutes of the game three times In the last four games of the losing streak)
(they;surrendered;deciding goals in the last minutes of the game three times)
(they;surrendered;deciding goals in the last minutes of the half three times In the last four games of the losing streak)
(they;surrendered;deciding goals in the last minutes of the half three times)
(they;surrendered;deciding goals)
(they;were blanked;4-0 In the last four games of the losing streak)
(they;were blanked;4-0 by Tampa Bay)
(they;were blanked;4-0)
(Eating disorders;affect;5 million to 10 million American adolescent girls)
(Eating disorders;affect;5 million to 10 million American adolescent women and about 1 million American boys and men)
(Eating disorders;affect;about 1 million American boys men)
(Eating disorders;affect;about 1 million American boys)
(A similar bill;is pending;in the Senate)
(Bob Graham;is;a Democrat)
(Connie Mack;is;Bob Graham)

(Connie Mack;is;a Republican)
(Connie Mack;sponsored;A similar bill is pending in the Senate by Florida Sens.)
(Connie Mack;sponsored;A similar bill is pending in the Senate)
(a Republican;is;a Democrat)
(Taylor;missed;only one day of school)
(Taylor;went;by before she could lift her writing arm up to desk level another week)
(Taylor;went;by before she could lift her writing arm up to desk level without pain)
(Taylor;went;by before she could lift her writing arm up to desk level)
(Taylor;went;by before she could move her head smoothly to the right another week)
(Taylor;went;by before she could move her head smoothly to the right without pain)
(Taylor;went;by before she could move her head smoothly to the right)
(her;has;head)
(her;has;writing arm)
(she;could lift up;her writing arm to desk level)
(she;could lift up;her writing arm)
(she;could move;her head smoothly)
(she;could move;her head to the right)
(she;could move;her head)
(it;'ll cost;you a few dollars extra)
(you;can buy;a single quart at the corner store)
(you;can buy;a single quart still)
(you;can buy;a single quart)
(all;want;a peaceful world truly)
(all;want;a peaceful world)
(force;is;necessary)
(it;be;force in the best interest of all)
(it;be;force)
(Clinton;said;Organizations in the 33 states can use the grants announced today for education efforts including funding for enforcement housing counseling)
(Clinton;said;Organizations in the 33 states can use the grants announced today for education efforts including funding for other activities)
(Clinton;said;Organizations in the 33 states can use the grants announced today for enforcement efforts including funding for enforcement housing counseling and other activities)
(Organizations in the 33 states;can use;the grants announced today for education efforts including funding for enforcement housing counseling)
(Organizations in the 33 states;can use;the grants announced today for education efforts including funding for other activities)
(Organizations in the 33 states;can use;the grants announced today for enforcement efforts including funding for enforcement housing counseling and other activities)
(enforcement housing counseling;will promote;fair housing)
(other activities;will promote;fair housing)
(the grants including funding for enforcement housing counseling;be announced;today for education efforts)
(the grants including funding for enforcement housing counseling;be announced;today for enforcement efforts)
(the grants including funding for enforcement housing counseling;be announced;today)
(the grants including funding for other activities;be announced;today for education efforts)
(the grants including funding for other activities;be announced;today for enforcement efforts)
(the grants including funding for other activities;be announced;today)
(that;would be;revolutionary Come to think of it)
(that;would be;revolutionary)
(1 out 630 children;will develop;cancer before the age of 15)

(1 out 630 children;will develop;cancer)
(Leslie Robison;is;an epidemiologist from the University of Minnesota)
(Leslie Robison;said;that cancer has very different implications for a child compared to adults even for those)
(cancer;has;very different implications for a child compared to adults even for those)
(cancer;has;very different implications for a child compared to adults)
(the University of Minnesota;estimates;that 1 out 630 children will develop cancer before the age of 15)
(those;survive;-3.107.746.276.855.460)
(He;calculates;his annual maintenance costs at $ 25,000)
(He;calculates;his annual maintenance costs)
(his;has;annual maintenance costs)
(Towers Financial;was formed;by one-time New York Post bidder Steven Hoffenberg)
(a safety net;is;larger already than many people had thought giving more discouraged workers reason to depend on a government check possibly)
(a safety net;is;larger already than many people had thought giving more discouraged workers reason to depend on a government check)
(a safety net;is;larger than many people had thought giving more discouraged workers reason to depend on a government check possibly)
(a safety net;is;larger than many people had thought giving more discouraged workers reason to depend on a government check)
(it;can expand;a safety net)
(it;can maintain;a safety net)
(many people;had thought;-20.485.183.715.820.300)
(Aftonbladet;made;a pilgrimage subsequently)
(Aftonbladet;made;a pilgrimage to Mecca)
(Aftonbladet;made;a pilgrimage)
(Aftonbladet;said;Chatty was interviewed by the police after Sept. 11)
(Chatty;was interviewed;by the police after Sept. 11)
(Chatty;was interviewed;by the police)
(She;said;she was looking forward to returning to Texas with her family)
(her;has;family)
(she;was looking;forward to returning to Texas with her family)
(she;was looking;forward)
(the Chiefs;had;to overcome a 10-0 first-half deficit in the third quarter)
(the Chiefs;had;to overcome a 10-0 first-half deficit)
(the Chiefs;had;to overcome a 17-14 Seahawks advantage in the third quarter)
(the Chiefs;had;to overcome a 17-14 Seahawks advantage)
(this euphoria;rang;a bell of memory For historians)
(this euphoria;rang;a bell of memory)
(you;'ll find;the ocean conditions generally inviting)
(you;'ll find;the ocean conditions inviting Even if you just want to take a dip)
(you;'ll find;the ocean conditions inviting)
(you;want;to take a dip just)
(you;want;to take a dip)
(the year 's two moves;have raised;7 percent at retail Together)
(the year 's two moves;have raised;7 percent at retail according to Black)
(the year 's two moves;have raised;7 percent at retail)
(the year 's two moves;have raised;prices 14 percent at the wholesale level Together)
(the year 's two moves;have raised;prices 14 percent at the wholesale level according to Black)
(the year 's two moves;have raised;prices 14 percent at the wholesale level)
(the year;has;two moves)
(It;was;Tuesday)

(he;explained;It was Tuesday)

(Arab political emotions;have been by the direct injection of American power;into the region its treatment of the Palestinians)

(Arab political emotions;have been by the direct injection of American power;into the region the subsequent American support for Israel)

(Arab political emotions;have been by the direct injection of American power;its treatment of the Palestinians)

(Arab political emotions;have been by the direct injection of American power;the subsequent American support for Israel)

(Arab political emotions;have been by;its treatment of the Palestinians into the region)

(Arab political emotions;have been by;its treatment of the Palestinians)

(Arab political emotions;have been by;the subsequent American support for Israel into the region)

(Arab political emotions;have been by;the subsequent American support for Israel)

(Arab political emotions;have been shaped;by the region 's encounter by the defeat of the Arab effort to prevent the existence of Israel)

(Arab political emotions;have been shaped;by the region 's encounter with British colonialism)

(Arab political emotions;have been shaped;by the region 's encounter with French colonialism)

(Arab political emotions;have been shaped;by the region 's encounter)

(its;has;treatment of the Palestinians)

(the region;has;encounter)

(the drought;represents;the second setback in as many years For P.T. International)

(the drought;represents;the second setback in as many years)

(Diana;raised;our consciousness about diseased children in Third World countries)

(Diana;raised;our consciousness about people living with AIDS)

(Diana;raised;our consciousness about the ravages of land mines)

(Diana;raised;our consciousness)

(our;has;consciousness)

(Hooters Inc.;founded;the chain 14 years ago)

(Hooters Inc.;founded;the chain)

(Hooters Inc.;owns;related rights)

(Hooters Inc.;owns;the company trademark)

(Story Filed;have joined;Bravo in producing public service announcements about the importance of the arts)

(Story Filed;have joined;Bravo)

(Story Filed;have joined;CBS in producing public service announcements about the importance of the arts)

(Story Filed;have joined;CBS)

(Story Filed;have joined;others in producing public service announcements about the importance of the arts)

(Story Filed;have joined;others)

(congressional conservatives;are trying;Story Filed to shut down)

(Charlene;be Waiting;in Guyana for their turn)

(Charlene;looked;after each other Waiting in Guyana for their turn)

(Charlene;looked;after each other)

(Charles;be Waiting;in Guyana for their turn)

(Charles;looked;after each other Waiting in Guyana for their turn)

(Charles;looked;after each other)

(their;has;turn)

(Mackovic;Today is presented;with a real-life role reversal)

(Today;Mackovic is presented;with a real-life role reversal)

(a real-life role reversal;could prove;painful for his football team if played out to the hilt at Rice Stadium)

(a real-life role reversal;could prove;painful for his football team)

(his;has;football team)

(Chellie Pingree;is;the Dems Maine senatorial candidate)
(Next;is;a Buell dinner Monday for Chellie Pingree)
(Next;is;a Buell dinner Monday up on the politics-and-calories calendar)
(Next;is;a Buell dinner Monday)
(the Dems;has;Maine senatorial candidate)
(Federal Express;said;it has kept about 15 percent of the extra deliveries Meanwhile)
(Federal Express;said;it has kept about 15 percent of the extra deliveries)
(it;gained;during the UPS strike the extra deliveries)
(it;gained;the extra deliveries)
(it;has kept;about 15 percent of the extra deliveries)
(Biondi;said;that Kay Koplovitz would remain as chairwoman of the company)
(Kay Koplovitz;would remain;as chairwoman of the company)
(China;has;most astounding archeological treasure the army of thousands of life-size figures)
(Rubin;tours;China 's most astounding archeological treasure the army of thousands of life-size figures Like most visitors to Xi'an)
(Rubin;tours;China 's most astounding archeological treasure the army of thousands of life-size figures)
(the army of thousands of life-size figures;protect;the graves of the Chinese emperors)
(The yield spread between an index of option-free 10-year A2 bank bonds;was;70 basis points yesterday wider 2 basis points)
(The yield spread between an index of option-free 10-year A2 bank bonds;was;70 basis points yesterday wider from a week earlier)
(The yield spread between an index of option-free 10-year A2 bank bonds;was;70 basis points yesterday wider)
(The yield spread between an index of the 10-year Treasury note;was;70 basis points yesterday wider 2 basis points)
(The yield spread between an index of the 10-year Treasury note;was;70 basis points yesterday wider from a week earlier)
(The yield spread between an index of the 10-year Treasury note;was;70 basis points yesterday wider)
(Bosnia;has;refugees)
(human rights abuses;deter;Bosnia 's refugees from returning home)
(human rights abuses;deter;Bosnia 's refugees)
(she;traveled;around the country returning to brief officials about ethnic clashes)
(she;traveled;around the country returning to human rights abuses)
(she;traveled;returning to brief officials about ethnic clashes As a human rights officer)
(she;traveled;returning to brief officials about ethnic clashes regularly)
(she;traveled;returning to brief officials about ethnic clashes)
(she;traveled;returning to human rights abuses As a human rights officer)
(she;traveled;returning to human rights abuses regularly)
(she;traveled;returning to human rights abuses)
(This quality;transcended;fashion)
(Most;were dragged off;instantly by police officers)
(Most;were dragged off;instantly)
(police officers;had been warned;-9.886.198.425.292.960)
(police officers;had been warned;apparently)
(Congress;took up;the issue in early 2001)
(The public;was fed up;-24788955688476500   )
(The public;was fed up;clearly)
(the necessary reforms;could be enacted;before the 2002 midterm elections)
(the only question;seemed;to be one of timing whether the necessary reforms could be enacted before the 2002 midterm elections as Congress took up the issue in early 2001)
(the only question;seemed;to be one of timing whether the necessary reforms could be enacted before the 2002 midterm elections)

(the only question;seemed;to be one whether the necessary reforms could be enacted before the 2002 midterm elections as Congress took up the issue in early 2001)

(the only question;seemed;to be one whether the necessary reforms could be enacted before the 2002 midterm elections)

(Region;prospers;While a successful Teamsters union strike last month was viewed as a comeback for U.S. labor the turmoil surrounding President Ron Carey casts doubt on its future)

(a successful Teamsters union strike last month;was viewed;as a comeback for U.S. labor)

(its;has;future)

(the turmoil surrounding President Ron Carey;casts;doubt on its future While a successful Teamsters union strike last month was viewed as a comeback for U.S. labor)

(the turmoil surrounding President Ron Carey;casts;doubt on its future)

(the turmoil;be surrounding;President Ron Carey)

(The subject;was;a Lakers four-peat a campaign)

(a campaign;begins;one week from today when the Lakers open training camp in El Segundo)

(a campaign;begins;one week from today)

(the Lakers;open;training camp in El Segundo when)

(the Lakers;open;training camp in El Segundo)

(Best;showed;how easy fraud could be)

(easy fraud;could be;-1.144.489.974.975.580)

(easy fraud;could be;how)

(it;was ZZZZ;Best By the early 1980s)

(it;was ZZZZ;Best)

(A physician 's diet;The brewer said;exercise the improvement in trading performance was due to increased volumes led by canned Draught Guinness on a 10 percent increase in marketing investment to 107 million pounds)

(A physician;has;diet)

(The brewer;A physician 's diet said;exercise the improvement in trading performance was due to increased volumes led by canned Draught Guinness on a 10 percent increase in marketing investment to 107 million pounds)

(canned Draught Guinness;is;an 11 percent increase in productivity per employee)

(canned Draught Guinness;is;an 11 percent increase in productivity per returns)

(increased volumes;be led;by canned Draught Guinness on a 10 percent increase in marketing investment)

(increased volumes;be led;by canned Draught Guinness to 107 million pounds)

(increased volumes;be led;by canned Draught Guinness)

(the improvement in trading performance;was;due to increased volumes led by canned Draught Guinness on a 10 percent increase in marketing investment to 107 million pounds)

(the improvement in trading performance;was;due)

(Lufthansa;has;domestic routes)

(The number of passengers on Lufthansa 's domestic routes;declined;5.5 percent in the first half)

(The number of passengers on Lufthansa 's domestic routes;declined;5.5 percent)

(overall passenger numbers;rose;3 percent)

(it;was diagnosed;by a British pediatrician in 1902 first)

(it;was diagnosed;by a British pediatrician in 1902)

(no one;knows;what causes it Even though it was first diagnosed by a British pediatrician in 1902)

(no one;knows;what causes it)

(what;causes;it)

(It;was;an area in central Bosnia that Melnick knew well)

(It;was;an area that Melnick knew well)

(Melnick;knew;well)

(12 North Koreans;tried;to enter a compound housing the Ecuadorian Embassy)

(The scene;was;serene after 12 North Koreans tried to enter a compound housing the Ecuadorian Embassy)

(The scene;was;serene compared with the mayhem on Monday)

(The scene;was;serene oddly)
(The scene;was;serene)
(the Ecuadorian Embassy;is guarded;-2.268.147.735.595.700)
(the Ecuadorian Embassy;is guarded;lightly)
(the Ecuadorian Embassy;is guarded;usually)
(health food stores;be Spurred;by requests from customers)
(health food stores;started;looking for the sprouts Spurred by requests from customers)
(health food stores;started;looking for the sprouts)
(the sprouts;are n't;available commercially)
(the sprouts;are n't;available)
(their;has;suppliers)
(Anyone;has;himself for a doctor)
(Anyone;has;himself)
(do n't let a Web site substitute for a physician either Anyone;has;a fool for a patient)
(His mother;said;he was in Saudi Arabia on Sept. 11)
(His;has;mother)
(he;was;in Saudi Arabia on Sept. 11)
(The governor 's campaign aides;offered;a quick retort)
(The governor;has;campaign aides)
(The proposed accord;was reached;June 20 by 39 states)
(The proposed accord;was reached;June 20 by the tobacco industry)
(The proposed accord;was reached;June 20)
(Sara Lee Corp.;gained;17 percent for the week Among the other companies)
(Sara Lee Corp.;gained;17 percent for the week after announcing it will cut costs to raise $ 3 billion for a stock buyback)
(Sara Lee Corp.;gained;17 percent for the week after announcing it will sell some business)
(Sara Lee Corp.;gained;17 percent for the week)
(costs;to raise;$ 3 billion for a stock buyback)
(it;will cut;costs to raise $ 3 billion for a stock buyback)
(it;will sell;some business)
(the other companies;got;a boost from restructurings)
(Japan 's prime minister;is;Junichiro Koizumi)
(Japan;has;prime minister)
(The announcement;came;only days after a visit to Pyongyang)
(The announcement;came;only days by Japan 's prime minister)
(The announcement;came;only days)
(The announcement;marked;a significant change of strategy for the administration)
(The announcement;marked;a significant change of strategy)
(he;left;office shortly)
(he;left;office)
(similar negotiations;be pursued;with North Korea by President Bill Clinton shortly before he left office)
(similar negotiations;be pursued;with North Korea shortly before he left office)
(the administration;had terminated;similar negotiations pursued with North Korea by President Bill Clinton shortly before he left office)
(E. Martin Gibson;has served;as a director of the parent company since 1992)
(E. Martin Gibson;has served;as a director of the parent company)
(E. Martin Gibson;is;the company 's chairman)
(the company;has;chairman)
(Her friend;was waiting;for her at a bar)
(Her friend;was waiting;for her)
(Her;has;friend)
(European countries;tested;10 million animals By contrast)

(European countries;tested;10 million animals last year)
(European countries;tested;10 million animals)
(blood pressure;start;jumping around)
(he;is improving;-24.335.958.862.304.600)
(he;never was;before)
(he;runs out;of breath)
(he;thinks;he is improving then he runs out of breath Sometimes)
(he;thinks;he is improving then he runs out of breath)
(he;turns;forgetful in a way that he never was before)
(his pulse;start;jumping around)
(his;has;pulse)
(Intel Corp.;rose;1 13\/16 to 97 3\/4 after it introduced a new product to link computers)
(Intel Corp.;rose;1 13\/16 to 97 3\/4)
(Intel Corp.;was;among the leaders after it introduced a new product to link computers)
(Intel Corp.;was;among the leaders)
(computers;improves;efficiency 30 percent)
(it;introduced;a new product to link computers)
(Deutsche BA;saw;passenger numbers almost double)
(Deutsche BA;saw;passenger numbers in the first six months of 1997 helped by a new marketing campaign)
(Deutsche BA;saw;passenger numbers in the first six months of 1997 helped by the introduction of two new routes)
(Deutsche BA;saw;passenger numbers meanwhile)
(Deutsche BA;saw;passenger numbers)
(the first six months of 1997;be helped;by a new marketing campaign)
(the first six months of 1997;be helped;by the introduction of two new routes)
(Clinton aides;had been talking;to industry officials Before tonight 's meeting)
(Clinton aides;had been talking;to industry officials)
(Clinton aides;had with;little progress Before tonight 's meeting)
(Clinton aides;had with;little progress)
(tonight;has;meeting)
(Syrian President Hafez Assad;hopes;the violence will pressure Israel into relinquishing the Golan Heights land it captured in the 1967 war)
(it;captured;in the 1967 war)
(the violence;will pressure;Israel into relinquishing the Golan Heights)
(the violence;will pressure;Israel)
(He;needs;inhaled asthma medicine to help him breathe even though he never had asthma before now)
(He;needs;inhaled asthma medicine to help him breathe even though he never had asthma before)
(he;never had;asthma before)
(he;never had;asthma)
(him;breathe;even though he never had asthma before)
(The foundations separate from the boards of educations;are modeled;on those)
(the passage of Proposition 13;limited;property taxes)
(those;began;appearing in California after the passage of Proposition 13)
(those;began;appearing in California in the 1970s)
(those;began;appearing in California)
(he;is;a finalist For example)
(he;is;a finalist in the competition to choose a developer for the site of the New York Coliseum in Manhattan)
(he;is;a finalist)
(he;wants;to erect a multiplex theater For example)
(he;wants;to erect a multiplex theater in Coney Island For example)
(he;wants;to erect a multiplex theater in Coney Island)

(he;wants;to erect a multiplex theater)
(he;wants;to erect virtual-reality amusement park For example)
(he;wants;to erect virtual-reality amusement park in Coney Island For example)
(he;wants;to erect virtual-reality amusement park in Coney Island)
(he;wants;to erect virtual-reality amusement park)
(Alabama a relatively painless experience;be provided;again)
(Jewel;starts;singing)
(They;make;Alabama a relatively painless experience provided again)
(you;leave;They make Alabama a relatively painless experience provided again before Jewel starts singing)
(you;leave;They make Alabama a relatively painless experience provided again)
(13,000 Jews;were murdered;within a month of Bucmys 's arrival)
(At least 170,000 civilian prisoners;died;-19.971.694.946.289.000)
(At least 170,000 civilian prisoners;died;at Majdanek)
(At least 170,000 civilian prisoners;died;including 13,000 Jews)
(Bucmys;has;arrival)
(Majdanek;is;the suit claims)
(It;was;her sheer life force)
(her sheer life force;was;blinding blinding almost it is hard to believe it was not permanent such a shock to discover that it could be destroyed away)
(her sheer life force;was;blinding blinding almost it is hard to believe it was not permanent such a shock to discover that it could be taken away)
(her sheer life force;was;blinding blinding it is hard to believe it was not permanent such a shock to discover that it could be destroyed away)
(her sheer life force;was;blinding blinding it is hard to believe it was not permanent such a shock to discover that it could be taken away)
(her;has;sheer life force)
(it;could be destroyed;away)
(it;could be taken;away)
(it;is;hard to believe it was not permanent such a shock to discover that it could be destroyed away)
(it;is;hard to believe it was not permanent such a shock to discover that it could be taken away)
(it;was not;permanent such a shock to discover that it could be destroyed away)
(it;was not;permanent such a shock to discover that it could be taken away)
(it;was not;permanent)
(Selig;will have;to overcome strong feelings To do so)
(Selig;will have;to overcome strong feelings on both sides To do so)
(Selig;will have;to overcome strong feelings on both sides)
(Selig;will have;to overcome strong feelings)
(another tropical disturbance in the western Gulf of Mexico;will promote;locally heavy showers Meanwhile)
(another tropical disturbance in the western Gulf of Mexico;will promote;locally heavy showers along the coast from Texas)
(another tropical disturbance in the western Gulf of Mexico;will promote;locally heavy showers to the central Gulf States)
(another tropical disturbance in the western Gulf of Mexico;will promote;locally heavy showers)
(Woodson;kept;Chiaverini behind him)
(Woodson;made;the leaping interception at the Michigan 45)
(Woodson;made;the leaping interception)
(you;Have looked;closely at a Cheez Doodle)
(you;Have looked;closely ever)
(you;Have looked;closely)
(American flags;be snapping;over the front doors)
(Bensonhurst is a vintage Italian neighborhood;is;a place of tidy two-family brick homes adorned with Madonnas in American flags snapping over the front doors)

(Bensonhurst is a vintage Italian neighborhood;is;a place of tidy two-family brick homes adorned with Madonnas in the front yard)
(Bensonhurst;is;a vintage Italian neighborhood)
(tidy two-family brick homes;be adorned;with Madonnas in American flags snapping over the front doors)
(tidy two-family brick homes;be adorned;with Madonnas in the front yard)
(tidy two-family brick homes;be adorned;with Madonnas)
(He;remembers;when Weinberg came to him with his wife 's sculpture portfolio still)
(He;remembers;when Weinberg came to him with his wife 's sculpture portfolio)
(He;remembers;when Weinberg proposed making similarly styled hardware still)
(He;remembers;when Weinberg proposed making similarly styled hardware)
(He;remembers;when Weinberg proposed making similarly styled knobs still)
(He;remembers;when Weinberg proposed making similarly styled knobs)
(Weinberg;came;to him when)
(Weinberg;came;to him with his wife 's sculpture portfolio)
(Weinberg;came;to him)
(Weinberg;proposed;making similarly styled hardware when)
(Weinberg;proposed;making similarly styled hardware)
(Weinberg;proposed;making similarly styled knobs when)
(Weinberg;proposed;making similarly styled knobs)
(his wife;has;sculpture portfolio)
(his;has;wife 's)
(The money losing airline;offered;discount prices between western Canadian destinations)
(The ailing incumbent Lansana Conte in office since seizing power in a coup in 1984;was expected;to win widely)
(The ailing incumbent Lansana Conte in office since seizing power in a coup in 1984;was expected;to win)
(You;can look up;individual carriers for more detailed info on special offers also)
(You;can look up;individual carriers for more detailed info on special offers)
(You;can look up;individual carriers for more detailed info on their respective products also)
(You;can look up;individual carriers for more detailed info on their respective products)
(their;has;respective products)
(beautiful moments;there were;-508.831.672.668.457)
(beautiful moments;there were;At times)
(A Ply Gem Industries Inc. shareholder;be claiming;it was negligent in recommending Nortek Inc. 's takeover offer as fair to shareholders)
(A Ply Gem Industries Inc. shareholder;is suing;Furman Selz Inc. for $ 100 million claiming it was negligent in recommending Nortek Inc. 's takeover offer as fair to shareholders)
(A Ply Gem Industries Inc. shareholder;is suing;Furman Selz Inc. for $ 100 million)
(Nortek Inc.;has;takeover offer as fair)
(it;was;negligent in recommending Nortek Inc. 's takeover offer as fair to shareholders)
(it;was;negligent)
(they;fire up;the pits)
(they;smoke;the briskets for 18 hours over hickory)
(they;smoke;the briskets for 18 hours over mesquite)
(they;smoke;the briskets)
(HBO;is;the idea being that the winner would fight the winner of the WBA title next spring)
(Lewis 's decision;will give;light heavyweight champion Roy Jones Jr. the impetus to take on Ruiz Dec. 7 on HBO)
(Lewis;has;decision)
(Ruiz;hopes;Lewis 's decision will give light heavyweight champion Roy Jones Jr. the impetus to take on Ruiz Dec. 7 on HBO)
(the winner;would fight;the winner of the WBA title next spring)
(the winner;would fight;the winner of the WBA title)

(Grbac;wore;a quizzical look like a guy)
(Grbac;wore;a quizzical look)
(a guy;was given;a wonderful gift by his worst enemy)
(a guy;was given;a wonderful gift)
(his;has;worst enemy)
(Turnout;was;light according to news agency reports from the capital)
(Turnout;was;light)
(the capital;is;Conakry)
(A Swiss Bank spokesman in Basel;declined;to comment on the talks as did a spokesman in London)
(A Swiss Bank spokesman in Basel;declined;to comment on the talks)
(A Swiss Bank spokesman in Basel;is;Michel Willi)
(members of Congress;be meaning;that they know exactly what they 'll get upon retirement)
(members of Congress;have;a traditional defined benefit program For one thing)
(members of Congress;have;a traditional defined benefit program meaning that they know exactly what they 'll get upon retirement)
(members of Congress;have;a traditional defined benefit program)
(members of their staffs;be meaning;that they know exactly what they 'll get upon retirement)
(members of their staffs;have;a traditional defined benefit program For one thing)
(members of their staffs;have;a traditional defined benefit program meaning that they know exactly what they 'll get upon retirement)
(members of their staffs;have;a traditional defined benefit program)
(their;has;staffs)
(they;'ll get;upon retirement)
(they;know;exactly what they 'll get upon retirement)
(He;moved;Jerry Pettibone 's 6 a.m.)
(Jerry Pettibone;has;6 a.m.)
(The Stars;have;a team incentive plan in place)
(a team incentive plan in place;awards;bonuses on a years-played basis)
(a team incentive plan in place;awards;bonuses)
(her companion;is;Dodi al-Fayed)
(her;has;companion)
(seven frantic photographers on motorbikes;chased;Princess Diana In the most world-renowned episode)
(seven frantic photographers on motorbikes;chased;Princess Diana after leaving the Ritz hotel in Paris)
(seven frantic photographers on motorbikes;chased;Princess Diana)
(seven frantic photographers on motorbikes;chased;her companion In the most world-renowned episode)
(seven frantic photographers on motorbikes;chased;her companion after leaving the Ritz hotel in Paris)
(seven frantic photographers on motorbikes;chased;her companion)
(The need for strong federal action to protect the right to vote;could not have been;clearer)
(The need for the integrity of future national elections;could not have been;clearer)
(Pale strawberries soaked in a water-based liquid;are lined up;beside richly colored berries soaked in a balsamic vinegar-brown sugar sauce)
(Pale strawberries;be soaked;in a water-based liquid)
(a balsamic vinegar-brown sugar sauce;stained;them vivid red)
(richly colored berries;be soaked;in a balsamic vinegar-brown sugar sauce)
(them;vivid red;-2.672.694.091.796.870)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Government Information that export restrictions are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Government Information that export restrictions are needed by law enforcement to combat criminals in the information age)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Government Information that the keys are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Government Information that the keys

are needed by law enforcement to combat criminals in the information age)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Technology Information that export restrictions are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Technology Information that export restrictions are needed by law enforcement to combat criminals in the information age)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Technology Information that the keys are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Technology Information that the keys are needed by law enforcement to combat criminals in the information age)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Terrorism Information that export restrictions are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Terrorism Information that export restrictions are needed by law enforcement to combat criminals in the information age)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Terrorism Information that the keys are needed by law enforcement to combat criminals in the information age On Wednesday)
(FBI Director Louis Freeh;told;the Senate Judiciary Subcommittee on Terrorism Information that the keys are needed by law enforcement to combat criminals in the information age)
(export restrictions;are needed;by law enforcement to combat criminals in the information age)
(export restrictions;are needed;by law enforcement to combat criminals)
(export restrictions;are needed;to combat criminals in the information age)
(export restrictions;are needed;to combat criminals)
(the keys;are needed;by law enforcement to combat criminals in the information age)
(the keys;are needed;by law enforcement to combat criminals)
(the keys;are needed;to combat criminals in the information age)
(the keys;are needed;to combat criminals)
(he;understands;the end of his career is in sight Clearly)
(he;understands;the end of his career is in sight)
(he;wants;to make the most of the time remaining Clearly)
(he;wants;to make the most of the time remaining)
(his;has;career)
(the end of his career;is;in sight)
(the time;be remaining;-12.727.922.821.044.900)
(He;has encouraged;the couple ever since)
(He;has encouraged;the couple)
(He;took;to the idea)
(Japan 's overly confident diplomats;had imagined;-21.060.951.232.910.100)
(Japan 's overly confident diplomats;had imagined;not in the way)
(Japan;has;demands)
(Japan;has;overly confident diplomats)
(The North Korean leader;is;Kim Jong Il)
(The North Korean leader;satisfied;Japan 's demands although not in the way Japan 's overly confident diplomats had imagined)
(The North Korean leader;satisfied;Japan 's demands promptly)
(The North Korean leader;satisfied;Japan 's demands)
(a dozen women;emerged;in white chadors gazing mutely at the audience In silence)
(a dozen women;emerged;in white chadors gazing mutely at the audience)
(a dozen women;emerged;in white chadors standing silently In silence)
(a dozen women;emerged;in white chadors standing silently)
(white chadors;gazing;mutely at the audience)
(white chadors;gazing;mutely)
(white chadors;is;the final one in black)
(white chadors;standing;silently)

(Silver inventories in Comex warehouses;rose;454,000 ounces to 141.118 million ounces)
(Silver inventories in Comex warehouses;rose;454,000 ounces)
(its;has;daily stockpile report)
(the exchanges;said;Silver inventories in Comex warehouses rose 454,000 ounces to 141.118 million ounces after trading)
(the exchanges;said;Silver inventories in Comex warehouses rose 454,000 ounces to 141.118 million ounces in its daily stockpile report)
(the exchanges;said;Silver inventories in Comex warehouses rose 454,000 ounces to 141.118 million ounces up from a 10-month low of 140.664 million ounces)
(the exchanges;said;Silver inventories in Comex warehouses rose 454,000 ounces to 141.118 million ounces yesterday)
(the exchanges;said;Silver inventories in Comex warehouses rose 454,000 ounces to 141.118 million ounces)
(2.1 percent;estimated;in May)
(2.1 percent;is;not 3.0 percent as the IMF)
(Growth in 1998;is;likely also to be forecast less than earlier)
(Growth in 1998;is;likely also to be forecast)
(Growth in 1998;is;likely to be forecast less than earlier)
(Growth in 1998;is;likely to be forecast)
(Lois Epstein;is;an engineer with a longtime pipeline safety activist)
(Lois Epstein;is;an engineer with the Alaska environmental organization Cook Inlet Keeper)
(Lois Epstein;said;the legislation achieved a number of needed reforms)
(Lois Epstein;said;the legislation did not go far enough)
(the legislation;achieved;a number of needed reforms)
(the legislation;did not go;far enough)
(The country;can cut;benefits at a time)
(The country;can cut;benefits when joblessness is rising)
(The country;can cut;benefits)
(The country;can leave;relatively unskilled workers to fend for themselves)
(joblessness;is rising;-14.795.323.181.152.300)
(joblessness;is rising;when)
(he;analyzes;the client 's policy to determine whether paying for all the damages will cost less money than paying a premium increase over six years)
(paying for all the damages;will cost;less money than paying a premium increase over six years)
(paying for all the damages;will cost;less money)
(the agent;said;he analyzes the client 's policy to determine whether paying for all the damages will cost less money than paying a premium increase over six years If the other driver is amenable)
(the agent;said;he analyzes the client 's policy to determine whether paying for all the damages will cost less money than paying a premium increase over six years)
(the client;has;policy to determine whether paying for all the damages will cost less money than paying a premium increase over six years)
(the other driver;is;amenable)
(The original basis for some of them;grew out;of fears of the experience before World War II)
(The original basis for some of them;grew out;of fears of the experience when totalitarian governments in Asia controlled all media outlets)
(The original basis for some of them;grew out;of fears of the experience when totalitarian governments in Europe controlled all media outlets)
(The original basis for some of them;grew out;of fears of the experience)
(totalitarian governments in Asia;controlled;all media outlets when)
(totalitarian governments in Asia;controlled;all media outlets)
(totalitarian governments in Europe;controlled;all media outlets when)
(totalitarian governments in Europe;controlled;all media outlets)

(He;was;inspired by Snyder 's speech)
(He;was;inspired on how he made the program a success that when he learned Snyder had to hurry to the airport Riley begged to go along for the ride)
(He;was;inspired)
(Riley;begged;to go along for the ride when he learned Snyder had to hurry to the airport)
(Riley;begged;to go along for the ride)
(Snyder;had;to hurry to the airport)
(Snyder;has;speech)
(he;learned;Snyder had to hurry to the airport when)
(he;learned;Snyder had to hurry to the airport)
(he;made;the program a success that when he learned Snyder had to hurry to the airport Riley begged to go along for the ride how)
(he;made;the program a success that when he learned Snyder had to hurry to the airport Riley begged to go along for the ride)
(We;are looking;for a middle ground)
(Chicken minced very finely;may be added;if desired)
(Chicken;be minced;-9.129.800.415.039.060)
(a wild garden complete with long grasses;created;-3.517.706.298.828.120)
(a wild garden complete with long grasses;created;Hatley)
(a wild garden complete with long grasses;turned;the underground stage at the Manhattan Theater Club)
(a wild garden complete with long grasses;turned;the underground stage into a thrilling terrarium)
(a wild garden complete with long grasses;turned;the underground stage)
(a wild garden complete with long hillocks;created;-3.517.706.298.828.120)
(a wild garden complete with long hillocks;created;Hatley)
(a wild garden complete with long hillocks;turned;the underground stage at the Manhattan Theater Club)
(a wild garden complete with long hillocks;turned;the underground stage into a thrilling terrarium)
(a wild garden complete with long hillocks;turned;the underground stage)
(a wild garden complete with long pathways;created;-3.517.706.298.828.120)
(a wild garden complete with long pathways;created;Hatley)
(a wild garden complete with long pathways;turned;the underground stage at the Manhattan Theater Club)
(a wild garden complete with long pathways;turned;the underground stage into a thrilling terrarium)
(a wild garden complete with long pathways;turned;the underground stage)
(a wild garden complete with long wildflowers;created;-3.517.706.298.828.120)
(a wild garden complete with long wildflowers;created;Hatley)
(a wild garden complete with long wildflowers;turned;the underground stage at the Manhattan Theater Club)
(a wild garden complete with long wildflowers;turned;the underground stage into a thrilling terrarium)
(a wild garden complete with long wildflowers;turned;the underground stage)
(any of the myriad collaborators;may leave;a brilliant mark in any production)
(any of the myriad collaborators;may leave;a brilliant mark)
(government;can can not do;what)
(many;have;about what government can can not do)
(many;have;about what politicians can and can not do)
(part;is contained;in the lowered expectations probably)
(part;is contained;in the lowered expectations so many have about what government can can not do)
(part;is contained;in the lowered expectations so many have about what politicians can and can not do)
(part;is contained;in the lowered expectations)
(politicians;can can not do;what)
(America Inc.;is;a federal overseer)
(Carey;has;eligibility to run in a new election)
(Just weeks after the victory over United Parcel Service of America Inc.;leaving;Carey 's eligibility to run in a new election)

(Just weeks after the victory over United Parcel Service of America Inc.;leaving;in doubt Carey 's eligibility to run in a new election)

(Just weeks after the victory over United Parcel Service of America Inc.;leaving;in doubt its timetable)

(Just weeks after the victory over United Parcel Service of America Inc.;leaving;its timetable)

(Just weeks after the victory over United Parcel Service of America Inc.;resigned;-3.193.419.494.628.900)

(Just weeks after the victory over United Parcel Service of America Inc.;was;entangled in a fund-raising scandal among Carey aides)

(Just weeks after the victory over United Parcel Service of America Inc.;was;entangled)

(its;has;timetable)

(THE TEENAGE SOUL;be compiled;by nn If the owner ca n't read the riot act after a game)

(THE TEENAGE SOUL;be compiled;by nn)

(the owner;ca n't read;the riot act after a game)

(the owner;ca n't read;the riot act)

(They;'re;in the title credits of the film)

(he;says;They 're in the title credits of the film)

(Bush;instructed;Secretary of State Colin Powell to begin intensive diplomacy aimed at crafting a U.N. Security Council resolution)

(a U.N. Security Council resolution;would amount;to an ultimatum for Iraq)

(intensive diplomacy;be aimed;at crafting a U.N. Security Council resolution)

(Lucas next big film;is;The Hulk based on the comic book about Bruce Banner)

(Lucas next big film;is;The Hulk)

(Lucas;has;next big film)

(a scientific experiment;goes;wrong when)

(a scientific experiment;goes;wrong)

(banks;are;insolvent)

(that;fails;-7.165.996.551.513.670)

(the government;will liquidate;banks If that fails)

(the government;will liquidate;banks)

(El Pueblo Gallery;is located;in space E-13 on Olvera Street)

(El Pueblo Gallery;is located;in space E-13)

(Olvera Street;is;downtown Los Angeles)

(Oakland in need of a catcher after trading Ramon Hernandez to San Diego;acquired;Michael Barrett from Montreal for a player to be named later)

(Oakland in need of a catcher after trading Ramon Hernandez to San Diego;acquired;Michael Barrett from Montreal)

(Edge Rams Offensive linemen;McAdams adds;Texans are passionate about cooking briskets)

(McAdams;Edge Rams Offensive linemen adds;Texans are passionate about cooking briskets)

(Texans;are;passionate about cooking briskets)

(Texans;are;passionate)

(Hoffenberg;was ordered;to pay $ 462.6 million for defrauding Tower Financial debt holders of $ 460 million)

(Hoffenberg;was ordered;to pay $ 462.6 million in a $ 1 million fine)

(Hoffenberg;was ordered;to pay $ 462.6 million in restitution)

(Hoffenberg;was ordered;to pay $ 462.6 million)

(Hoffenberg;was sentenced;in March to 20 years in jail)

(Hoffenberg;was sentenced;in March)

(11 countries Australia;make up;90 percent of the temporary employment market including France Europe 's biggest temporary employment market)

(11 countries Australia;make up;90 percent of the temporary employment market)

(11 countries Britain;make up;90 percent of the temporary employment market including France Europe 's biggest temporary employment market)

(11 countries Britain;make up;90 percent of the temporary employment market)

(11 countries Germany;make up;90 percent of the temporary employment market including France Europe 's biggest temporary employment market)
(11 countries Germany;make up;90 percent of the temporary employment market)
(11 countries Spain;make up;90 percent of the temporary employment market including France Europe 's biggest temporary employment market)
(11 countries Spain;make up;90 percent of the temporary employment market)
(11 countries Switzerland;make up;90 percent of the temporary employment market including France Europe 's biggest temporary employment market)
(11 countries Switzerland;make up;90 percent of the temporary employment market)
(Adecco;was formed;-29.454.339.599.609.300)
(Adecco;was formed;When)
(Europe;has;biggest temporary employment market)
(it;was;the market leader in six)
(it;was;the market leader of 11 countries Australia)
(it;was;the market leader of 11 countries Britain)
(it;was;the market leader of 11 countries Germany)
(it;was;the market leader of 11 countries Spain)
(it;was;the market leader of 11 countries Switzerland)
(it;was;the market leader)
(the company;said;it was the market leader in six of 11 countries Australia When Adecco was formed)
(the company;said;it was the market leader in six of 11 countries Australia)
(the company;said;it was the market leader in six of 11 countries Britain When Adecco was formed)
(the company;said;it was the market leader in six of 11 countries Britain)
(the company;said;it was the market leader in six of 11 countries Germany When Adecco was formed)
(the company;said;it was the market leader in six of 11 countries Germany)
(the company;said;it was the market leader in six of 11 countries Spain When Adecco was formed)
(the company;said;it was the market leader in six of 11 countries Spain)
(the company;said;it was the market leader in six of 11 countries Switzerland When Adecco was formed)
(the company;said;it was the market leader in six of 11 countries Switzerland)
(I;was n't concerned;-24.852.395.629.882.800)
(I;was n't concerned;that)
(Pat Day;added;She always seems to be like that I was n't that concerned)
(Pat Day;agreed;that Royal Indy had been a little hot before the race She always seems to be like that I was n't that concerned)
(Pat Day;agreed;that Royal Indy had been nervous before the race She always seems to be like that I was n't that concerned)
(Pat Day;is;the winning jockey)
(Royal Indy;had been;hot a little)
(Royal Indy;had been;hot before the race)
(Royal Indy;had been;hot)
(Royal Indy;had been;nervous a little)
(Royal Indy;had been;nervous before the race)
(Royal Indy;had been;nervous)
(She;seems;to be like that always)
(She;seems;to be like that)
(3Com 's success at integrating U.S. Robotics;will boost;3Com 's sales)
(3Com 's success at integrating U.S. Robotics;will boost;profit margins)
(3Com 's success at integrating the introduction of a large number of new networking products;will boost;3Com 's sales)
(3Com 's success at integrating the introduction of a large number of new networking products;will boost;profit margins)
(3Com;has;sales)

(3Com;has;success at integrating U.S. Robotics)

(3Com;has;success at integrating the introduction of a large number of new networking products)

(Paul Meeks;is;director of research at Jurika & AMP Voyles LP)

(Paul Meeks;said;3Com 's success at integrating U.S. Robotics will boost 3Com 's sales)

(Paul Meeks;said;3Com 's success at integrating U.S. Robotics will boost profit margins)

(Paul Meeks;said;3Com 's success at integrating the introduction of a large number of new networking products will boost 3Com 's sales and profit margins)

(Voyles LP;owned;3.7 million 3Com shares at the end of June)

(Voyles LP;owned;3.7 million 3Com shares)

(The Giants;represent;opposite viewpoints)

(The Rangers;represent;opposite viewpoints)

(Dell Computer;said;it 's adding 25 million shares to its stock repurchase program for a total of 125 million shares almost a third of its 383 million outstanding as of last quarter)

(it;'s adding;25 million shares to its stock repurchase program almost a third of its 383 million outstanding as of last quarter)

(it;'s adding;25 million shares to its stock repurchase program for a total of 125 million shares almost a third of its 383 million outstanding as of last quarter)

(its;has;383 million outstanding as of last quarter)

(its;has;stock repurchase program)

(The last prisoner;was released;in 1988)

(look at me with just a little;Do lust;-8.131.922.149.658.200)

(Pageant officials;do not release;the winner 's name of the preliminary interview contest until within hours of Saturday night 's final competition)

(Pageant officials;do not release;the winner 's name of the preliminary interview contest)

(Saturday night;has;final competition)

(the winner;has;name of the preliminary interview contest)

(the same things;could have been said;in Pittsburgh)

(the same things;could have been said;in Tennessee)

(Boruchin;adds;The zealots have trouble telling people that three cigars a week is dangerous to their health)

(The zealots;have been campaigning;against cigarettes)

(The zealots;have;trouble telling people that three cigars a week is dangerous to their health)

(their;has;health)

(three cigars a week;is;dangerous to their health)

(three cigars a week;is;dangerous)

(trouble;be telling;people)

(children;be suffering;from large groups of siblings)

(children;be suffering;from psychological disorders)

(children;be suffering;from young mothers with babies)

(city officials;scrambled;to recruit new foster parents)

(teen-agers;is;children suffering from large groups of siblings)

(teen-agers;is;children suffering from psychological disorders)

(teen-agers;is;children suffering from young mothers with babies)

(themselves;struggling;to find homes for teen-agers)

(themselves;struggling;to find homes)

(they;found;-27.652.734.375)

(they;found;as city officials scrambled to recruit new foster parents)

(His;has;Wife)

(Oliver Sacks;has;The Man)

(the autistic twins in Oliver Sacks The Man;Mistook;His Wife for a Hat)

(the autistic twins in Oliver Sacks The Man;Mistook;His Wife)

(the autistic twins in Oliver Sacks The Man;saw;what with their inner eyes)

(the autistic twins in Oliver Sacks The Man;saw;what)
(their;has;inner eyes)
(this;is;what the autistic twins in Oliver Sacks The Man saw with their inner eyes Maybe)
(this;is;what the autistic twins in Oliver Sacks The Man saw with their inner eyes)
(Gracious Home;was;the first store to feature the North River Mint)
(Michael Rizzuto;is;a senior buyer at Gracious Home)
(Michael Rizzuto;said;Their pieces sell well in the $ 20 range)
(Their pieces;sell;well in the $ 20 range)
(Their pieces;sell;well)
(Their;has;pieces)
(a group of protesters;burned;two American flags)
(a group of protesters;showed up;-8.137.081.146.240.230)
(Open positions of short sales on the Nasdaq stock market;rose;1 percent in the most recent month according to figures released Wednesday)
(Open positions of short sales on the Nasdaq stock market;rose;1 percent in the most recent month)
(figures;be released;Wednesday)
(Martinez;have had;injury problems)
(McLemore;have had;injury problems)
(The Mariners oldest players Edgar Martinez;have been;among the most productive though Martinez have had injury problems)
(The Mariners oldest players Edgar Martinez;have been;among the most productive though McLemore have had injury problems)
(The Mariners oldest players Jamie Moyer;have been;among the most productive though Martinez have had injury problems)
(The Mariners oldest players Jamie Moyer;have been;among the most productive though McLemore have had injury problems)
(The Mariners oldest players John Olerud;have been;among the most productive though Martinez have had injury problems)
(The Mariners oldest players John Olerud;have been;among the most productive though McLemore have had injury problems)
(The Mariners oldest players Mark McLemore;have been;among the most productive though Martinez have had injury problems)
(The Mariners oldest players Mark McLemore;have been;among the most productive though McLemore have had injury problems)
(The Mariners;has;oldest players Edgar Martinez)
(The Mariners;has;oldest players Jamie Moyer)
(The Mariners;has;oldest players John Olerud)
(The Mariners;has;oldest players Mark McLemore)
(The average yield on junk bonds;is;this year a little more than 9 percent so far)
(The average yield on junk bonds;is;this year according to Merrill Lynch & AMP Co.)
(The average yield on junk bonds;is;this year)
(Ekman;learned;-2.608.830.261.230.460)
(Ekman;learned;first)
(Ekman;learned;when)
(Ekman;set out;to determine whether facial expressions are innate first)
(Ekman;set out;to determine whether facial expressions are innate when)
(Ekman;set out;to determine whether facial expressions are innate)
(facial expressions;are;innate)
(he;was derided;by esteemed social scientists including the famous anthropologist Margaret Mead More than 30 years ago)
(he;was derided;by esteemed social scientists including the famous anthropologist Margaret Mead when Ekman first learned)

(he;was derided;by esteemed social scientists including the famous anthropologist Margaret Mead when Ekman first set out to determine whether facial expressions are innate)
(he;was derided;by esteemed social scientists including the famous anthropologist Margaret Mead)
(American involvement in the Middle East;is;the main impulse clearly)
(American involvement in the Middle East;is;the main impulse of the hatred)
(American involvement in the Middle East;is;the main impulse)
(the hatred;has been directed;at America)
(The troubled answers about the campaign against terrorism abroad;conveyed;a similar fatalistic slightly cranky mood)
(The troubled answers about the campaign against terrorism at home;conveyed;a similar fatalistic slightly cranky mood)
(The findings;appear;in the current issue of The Journal of the National Cancer Institute)
(the researchers;say;The findings probably)
(the researchers;say;The findings)
(That;is n't;awful in itself)
(That;is n't;awful)
(Nancy Cole;is;the president of ETS)
(Nancy Cole;says;that the company is aware that its nonprofit status is a source of concern particularly to outsiders as the testing service increases its competition with for-profit businesses)
(its nonprofit status;is;a source of concern to outsiders particularly)
(its nonprofit status;is;a source of concern to outsiders)
(its nonprofit status;is;a source to outsiders as the testing service increases its competition with for-profit businesses)
(its nonprofit status;is;a source to outsiders particularly as the testing service increases its competition with for-profit businesses)
(its nonprofit status;is;a source to outsiders particularly)
(its nonprofit status;is;a source to outsiders)
(its;has;competition)
(its;has;nonprofit status)
(the company;is;aware that its nonprofit status is a source of concern particularly to outsiders as the testing service increases its competition with for-profit businesses)
(the testing service;increases;its competition with for-profit businesses)
(the testing service;increases;its competition)
(Guy Hands;is;managing director for Nomura International 's Principal Finance Group)
(Nomura International;has;Principal Finance Group)
(Nomura;bought;from Fosters also)
(Nomura;bought;from Fosters)
(Nomura;bought;from GrandMet also)
(Nomura;bought;from GrandMet)
(a group of 57,000 British military houses;chain;Nomura also bought from Fosters)
(a group of 57,000 British military houses;chain;Nomura also bought from GrandMet)
(its;has;rail privatization program)
(part of its rail privatization program;chain;Nomura also bought from Fosters)
(part of its rail privatization program;chain;Nomura also bought from GrandMet)
(the 249 million pound securitization of the Phoenix Inns pub;chain;Nomura also bought from Fosters)
(the 249 million pound securitization of the Phoenix Inns pub;chain;Nomura also bought from GrandMet)
(the 904 million pound securitization of Annington Homes;chain;Nomura also bought from Fosters)
(the 904 million pound securitization of Annington Homes;chain;Nomura also bought from GrandMet)
(the U.K. government;which sold;Angel Trains)
(the U.K. government;which sold;as a group of 57,000 British military houses chain Nomura also bought from GrandMet and Fosters Angel Trains)
(the U.K. government;which sold;as part of its rail privatization program chain Nomura also bought from

Fosters Angel Trains)
(the U.K. government;which sold;as part of its rail privatization program chain Nomura also bought from GrandMet Angel Trains)
(the U.K. government;which sold;as the 249 million pound securitization of the Phoenix Inns pub chain Nomura also bought from GrandMet and Fosters Angel Trains)
(the U.K. government;which sold;as the 904 million pound securitization of Annington Homes chain Nomura also bought from GrandMet and Fosters Angel Trains)
(the unit;be Led;by Guy Hands)
(the unit;has completed;more than $ 11 billion Led by Guy Hands)
(the unit;has completed;more than $ 11 billion in securitizations since 1995)
(the unit;has completed;more than $ 11 billion including the 944 million pound securitization of Angel Trains)
(the unit;has completed;more than $ 11 billion)
(He;said;keeping her off the ballot was part of his effort to promote the emergence of new political leaders though opposition leaders accuse him of manipulation to protect his hold on power)
(his;has;effort to promote the emergence of new political leaders though opposition leaders accuse him of manipulation to protect his hold on power)
(his;has;hold)
(keeping her off the ballot;was;part of his effort to promote the emergence of new political leaders though opposition leaders accuse him of manipulation to protect his hold on power)
(keeping her off the ballot;was;part)
(opposition leaders;accuse;him of manipulation to protect his hold on power)
(opposition leaders;accuse;him of manipulation to protect his hold)
(opposition leaders;accuse;him to protect his hold on power)
(opposition leaders;accuse;him to protect his hold)
(the Browns;be Joining;the NFL in 1950)
(the Browns;proved;themselves more Joining the NFL in 1950)
(the Browns;proved;themselves more once Joining the NFL in 1950)
(the Browns;proved;themselves more once)
(the Browns;proved;themselves more)
(themselves;more;-9.373.497.772.216.790)
(themselves;more;once)
(One of the most disturbing factors for Rohrabacher;is;that there has never been any formal apology from any of the Japanese companies)
(By Cox Newspapers the cultural issues;pose;the biggest challenges probably)
(By Cox Newspapers the cultural issues;pose;the biggest challenges)
(It;is;the cultural issues By Cox Newspapers)
(It;is;the cultural issues though)
(It;is;the cultural issues)
(Story Filed;is;the cultural issues By Cox Newspapers)
(Story Filed;is;the cultural issues though)
(Story Filed;is;the cultural issues)
(Poverty rates for 16.3 percent;were;unchanged from 2000)
(Poverty rates for 16.3 percent;were;unchanged virtually)
(Poverty rates for 16.3 percent;were;unchanged)
(Poverty rates for children;were;unchanged from 2000)
(Poverty rates for children;were;unchanged virtually)
(Poverty rates for children;were;unchanged)
(Poverty rates for the elderly 10.1 percent;were;unchanged from 2000)
(Poverty rates for the elderly 10.1 percent;were;unchanged virtually)
(Poverty rates for the elderly 10.1 percent;were;unchanged)
(Any notoriety for a Latina actress;will promote;Latina actresses in general)

(Any notoriety for a Latina actress;will promote;Latina actresses)
(Bel Hernandez;is;former actress of a Hollywood trade publication for Latinos Heat)
(Bel Hernandez;is;former publisher of a Hollywood trade publication for Latinos Heat)
(Bel Hernandez;says;Any notoriety for a Latina actress will promote Latina actresses in general)
(Latinos Heat;is;Latin)
(the acute pain of someone;has been dumped;-97.655.029.296.875)
(they;do n't feel;the acute pain of someone After a while)
(they;do n't feel;the acute pain of someone)
(Such remarks;prompt;speculation)
(its;has;strong-dollar policy)
(the U.S.;may change;its strong-dollar policy)
(Hose;contracted;inhalation anthrax while handling mail for the State Department in Sterling Va)
(Hose;contracted;inhalation anthrax)
(Police departments;launch;massive enforcement plans to combat road rage)
(massive enforcement plans;to combat;road rage)
(The company;exported;2.13 million barrels a day of crude oil of refined products)
(The company;exported;2.13 million barrels a day of crude oil)
(The company;exported;966,000 barrels a day of refined products)
(The company;exported;966,000 barrels a day)
(Federal Reserve Bank of Cleveland President Jerry Jordan;speaks;on monetary policy to the Cleveland Business Economists Club)
(Federal Reserve Bank of Cleveland President Jerry Jordan;speaks;on monetary policy)
(Federal Reserve Bank of Cleveland President Jerry Jordan;speaks;on money to the Cleveland Business Economists Club)
(Federal Reserve Bank of Cleveland President Jerry Jordan;speaks;on money)
(the Cleveland Business Economists Club;is;noon)
(The event;fizzled;after the bombing)
(the bombing;rocked;the games)
(Tim Fallar;is;president of The Fallar Co. in West Harrison)
(West Harrison;is;New York)
(further earthquakes;could follow;-26.956.732.177.734.300)
(lingering concern that further earthquakes could follow leading to some mud-slides in Colombia according to Tim Fallar;there is;-26.956.732.177.734.300)
(lingering concern that further earthquakes could follow leading to some mud-slides in Colombia according to Tim Fallar;there is;Still)
(lingering concern that further earthquakes could follow leading to some problems in Colombia according to Tim Fallar;there is;-26.956.732.177.734.300)
(lingering concern that further earthquakes could follow leading to some problems in Colombia according to Tim Fallar;there is;Still)
(lingering concern that further earthquakes could follow leading to some transportation in Colombia according to Tim Fallar;there is;-26.956.732.177.734.300)
(lingering concern that further earthquakes could follow leading to some transportation in Colombia according to Tim Fallar;there is;Still)
(lingering concern that further earthquakes could follow;be leading;to some mud-slides according to Tim Fallar)
(lingering concern that further earthquakes could follow;be leading;to some mud-slides in Colombia)
(lingering concern that further earthquakes could follow;be leading;to some mud-slides)
(lingering concern that further earthquakes could follow;be leading;to some problems according to Tim Fallar)
(lingering concern that further earthquakes could follow;be leading;to some problems in Colombia)
(lingering concern that further earthquakes could follow;be leading;to some problems)
(lingering concern that further earthquakes could follow;be leading;to some transportation according to

Tim Fallar)
(lingering concern that further earthquakes could follow;be leading;to some transportation in Colombia)
(lingering concern that further earthquakes could follow;be leading;to some transportation)
(not the same radiant hope;Did accompany;the transition from the 19th)
(not the same radiant hope;Did accompany;the transition to the 20th century)
(not the same radiant hope;Did accompany;the transition)
($ 525 for a 20-inch Sony television set;retails;at less than $ 350 new)
(An online bidder in Boerne;paid;$ 525 for a 20-inch Sony television set)
(His memory;was;better a good deal)
(His memory;was;better about White House management of the DNC especially its fund-raising operations)
(His memory;was;better)
(His;has;memory)
(its;has;fund-raising operations)
(The company;is based;on the work of Dr. Mark T. Keating largely)
(The company;is based;on the work of Dr. Mark T. Keating)
(The company;is based;on the work of a biologist at Harvard largely)
(The company;is based;on the work of a biologist at Harvard)
(The company;is based;on the work of a founder of the company largely)
(The company;is based;on the work of a founder of the company)
(The company;is;Hydra Biosciences)
(the work of Dr. Mark T. Keating;studies;regeneration in zebrafish)
(the work of a biologist at Harvard;studies;regeneration in zebrafish)
(the work of a founder of the company;studies;regeneration in zebrafish)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Lebanon For its part)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Lebanon long)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Lebanon)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Syria For its part)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Syria long)
(Israel;has said;it will not pull out of southern Lebanon until it gains a peace treaty with Syria)
(it;gains;a peace treaty with Lebanon)
(it;gains;a peace treaty with Syria)
(it;gains;a peace treaty)
(it;will not pull out;of southern Lebanon until it gains a peace treaty with Lebanon)
(it;will not pull out;of southern Lebanon until it gains a peace treaty with Syria)
(it;will not pull out;of southern Lebanon)
(its;has;part)
(The finding;revealed;bay trees not oak trees to be the unexpected key disperser of the disease)
(The finding;revealed;bay trees not oak trees to be the unexpected key disperser)
(Little;said;he left Ramirez in the game because the slugger apologized to everybody in the dugout At the time)
(Little;said;he left Ramirez in the game because the slugger apologized to everybody in the dugout)
(he;left;Ramirez in the game because the slugger apologized to everybody in the dugout)
(he;left;Ramirez in the game)
(the slugger;apologized;to everybody in the dugout)
(the slugger;apologized;to everybody)
(The Cardinals;considered;drafting Purdue fullback Mike Alstott with their second-round pick a year ago)
(The Cardinals;considered;drafting Purdue fullback Mike Alstott)
(The Cardinals;considered;very seriously drafting Purdue fullback Mike Alstott with their second-round pick a year ago)
(The Cardinals;considered;very seriously drafting Purdue fullback Mike Alstott)
(their;has;second-round pick)

(He;paid;$ 350,000 for the car in 1990)
(He;paid;$ 350,000)
(He;appears;to be motivated also)
(He;appears;to be motivated as he 's been in some time also)
(He;appears;to be motivated as he 's been in some time)
(He;appears;to be motivated)
(he;'s been;in some time)
(The Chinese;are firing;eight million workers a year as part of their reforming of state-owned enterprises)
(The Chinese;are firing;eight million workers a year still)
(The Chinese;are firing;eight million workers a year)
(The Chinese;are firing;eight nine workers a year as part of their reforming of state-owned enterprises)
(The Chinese;are firing;eight nine workers a year still)
(The Chinese;are firing;eight nine workers a year)
(their;has;reforming of state-owned enterprises)
(those workers;do n't have;a safety net much less a wage)
(those workers;do n't have;a safety net)
(Investigators;are looking;into whether executives misled investors about the financial well-being of its future prospects clearly)
(Investigators;are looking;into whether executives misled investors about the financial well-being of its future prospects)
(Investigators;are looking;into whether executives misled investors about the financial well-being of the company clearly)
(Investigators;are looking;into whether executives misled investors about the financial well-being of the company)
(Jacob Frankel;is;Exchange Commission lawyer now in private practice)
(Jacob Frankel;is;a former Securities now in private practice)
(Jacob Frankel;said;Investigators are clearly looking into whether executives misled investors about the financial well-being of its future prospects)
(Jacob Frankel;said;Investigators are clearly looking into whether executives misled investors about the financial well-being of the company)
(executives;misled;investors about the financial well-being of its future prospects)
(executives;misled;investors about the financial well-being of the company)
(executives;misled;investors)
(its;has;future prospects)
(you;can gag;-3.548.039.627.075.190)
(you;can gag;Now)
(Special-interest groups;publish;-2.086.305.389.404.290)
(highway construction;is;road improvements)
(issue news releases;using;road rage to make the case for highway construction)
(issue news releases;using;road rage to make the case)
(road improvements;is;tougher traffic regulations)
(studies;using;road rage to make the case for highway construction)
(studies;using;road rage to make the case)
(the Revolution;be involved;in an 11-game losing streak)
(they;appeared;to lose faith By early September)
(they;appeared;to lose faith in themselves By early September)
(they;appeared;to lose faith in themselves)
(they;appeared;to lose faith)
(blacks;came;-18.197.882.080.078.100)
(blacks;came;In the end)
(blacks;to hear;many of them tell it In the end)
(blacks;to hear;many of them tell it)

(many of them;tell;it)
(there;climbed;In the end blacks came over a lot of harsh terrain to get)
(there;climbed;In the end blacks came to get)
(there;climbed;In the end blacks to hear many of them tell it over a lot of harsh terrain to get)
(there;climbed;In the end blacks to hear many of them tell it to get)
(there;climbed;In the end whites came and to hear many of them tell it over a lot of harsh terrain to get)
(there;climbed;In the end whites came and to hear many of them tell it to get)
(whites;came;-18.197.882.080.078.100)
(whites;came;In the end)
(whites;to hear;many of them tell it In the end)
(whites;to hear;many of them tell it)
(Army;be Playing;before a crowd of 39,294)
(Army;jumped;covering 66 yards in a 14-play drive Playing before a crowd of 39,294)
(Army;jumped;covering 66 yards in a 14-play drive)
(Army;jumped;on its second possession covering 66 yards in a 14-play drive)
(Army;jumped;to a 7-0 lead covering 66 yards in a 14-play drive)
(a 14-play drive;culminated;in a 1-yard leap by the junior fullback Joe Hewitt)
(a 14-play drive;culminated;in a 1-yard leap into the end zone)
(a 14-play drive;culminated;in a 1-yard leap)
(its;has;second possession)
(Baker Hughes Inc.;releases;its weekly survey of the number of active oil in the Canada)
(Baker Hughes Inc.;releases;its weekly survey of the number of active oil in the U.S.)
(Baker Hughes Inc.;releases;its weekly survey of the number of active oil)
(Baker Hughes Inc.;releases;its weekly survey of the number of gas drilling rigs in the Canada)
(Baker Hughes Inc.;releases;its weekly survey of the number of gas drilling rigs in the U.S.)
(Baker Hughes Inc.;releases;its weekly survey of the number of gas drilling rigs)
(its;has;weekly survey of the number of active oil)
(its;has;weekly survey of the number of gas drilling rigs)
(Nikko Securities Co.;has;the same top executives Only)
(Nikko Securities Co.;has;the same top executives)
(it;started;the year with the same top executives)
(it;started;the year)
(Iraq;could be;a laboratory easily furnishing them with biological weapons it had developed)
(Iraq;could be;a laboratory easily furnishing them with the chemical it had developed)
(Iraq;could be;a laboratory for terror groups)
(Iraq;could be;a laboratory)
(he;asserted;that Iraq could be a laboratory for terror groups easily furnishing them with biological weapons it had developed Illustrating that point)
(he;asserted;that Iraq could be a laboratory for terror groups easily furnishing them with biological weapons it had developed)
(he;asserted;that Iraq could be a laboratory for terror groups easily furnishing them with the chemical it had developed Illustrating that point)
(he;asserted;that Iraq could be a laboratory for terror groups easily furnishing them with the chemical it had developed)
(he;be Illustrating;that point)
(it;had developed;-1.957.687.225.341.790)
(that could a laboratory for terror groups;be furnishing;easily them with biological weapons)
(that could a laboratory for terror groups;be furnishing;easily them with the chemical)
(that could a laboratory for terror groups;be furnishing;easily them)
(It 's very early days;to count;on the success of brands)
(It;has;early days)
(Pecoriello;did;-2.139.496.612.548.820)

(Reilly;said;It 's very early days to count on the success of brands As for labeling the products flops as Pecoriello did)
(Reilly;said;It 's very early days to count on the success of brands)
(brands;were launched;just this summer)
(the products;flops;as Pecoriello did)
(Jeff Davis;supervised;a water-pipe replacement in the early 1990s)
(Jeff Davis;supervised;a water-pipe replacement)
(Jeff Davis;testified;-38.004.962.158.203.100)
(Jeff Davis;testified;during the trial this summer)
(Ooze;was coming out;of the side next to the water line)
(Ooze;was coming out;of the side)
(Some city tests of the water;have found;small traces of crude oil indeed)
(Some city tests of the water;have found;small traces of crude oil)
(pools of oil at the bottom;there were;-38.004.962.158.203.100)
(that;was;the case At least)
(that;was;the case for linebacker Brendon Ayanbadejo at the Rose Bowl on Saturday)
(that;was;the case)
(He;carved;the steak into slices)
(He;carved;the steak off the bone)
(He;carved;the steak once it was cooked al sangue deliciously rare though obviously you should cook the steak just how you like to eat it)
(He;carved;the steak)
(He;used;T-bone)
(it;was cooked;al sangue deliciously rare though obviously you should cook the steak just how you like to eat it)
(it;was cooked;al sangue deliciously rare)
(sangue;is;to say)
(you;like;to eat it how)
(you;like;to eat it)
(you;should cook;the steak just)
(you;should cook;the steak obviously)
(you;should cook;the steak)
(matters;worse;-15.034.536.743.164.000)
(their;has;meeting spot)
(they;bumped;in the street some distance from their meeting spot)
(they;bumped;into each other some distance from their meeting spot)
(they;bumped;some distance from their meeting spot To make matters worse)
(they;bumped;some distance from their meeting spot accidentally)
(they;bumped;some distance from their meeting spot)
(Red Sox manager Grady Little;admitted;he should have benched him later)
(Red Sox manager Grady Little;admitted;he should have benched him)
(Red Sox manager Grady Little;kept;Ramirez in the game later)
(he;should have benched;him)
(Fowler;acknowledged;that Harold Ickes had the strongest voice in directing the DNC finance division from the White House With some prompting from his own earlier deposition on this issue)
(Fowler;acknowledged;that Harold Ickes had the strongest voice in directing the DNC finance division from the White House)
(Harold Ickes;had;the strongest voice in directing the DNC finance division from the White House)
(Harold Ickes;was;deputy chief of staff)
(Harold Ickes;was;deputy chief)
(his;has;own earlier deposition)
(some;prompting;from his own earlier deposition on this issue)

(some;prompting;from his own earlier deposition)
(A Georgia inventor;has won;a patent for a method of regiving items ordered online when they turn out to be white elephants)
(A Georgia inventor;has won;a patent)
(regiving items;be ordered;online when they turn out to be white elephants)
(regiving items;be ordered;online)
(they;turn out;to be white elephants when)
(they;turn out;to be white elephants)
(Michigan Stadium;is;So the largest in the nation in seating capacity)
(Michigan Stadium;is;So the largest indeed)
(Michigan Stadium;is;So the largest)
(a private resolution;is;possible)
(clients;are;at fault in minor fender benders where there are no personal injuries to inquire whether a private resolution is possible)
(clients;are;at fault in minor fender benders)
(he;advises;clients)
(no personal injuries to inquire whether a private resolution is possible;there are;-21.011.962.890.625)
(no personal injuries to inquire whether a private resolution is possible;there are;where)
(the agent;said;he advises clients Still)
(the agent;said;he advises clients)
(The latest price rise;was;the second by the cigarette makers this year)
(It;went;from testing 219 in 1997 to 20,526 last year)
(Mills;stressed;that his plans for a review panel were not a reaction to criticism)
(Mills;stressed;that the release of test results were not a reaction to criticism)
(his plans for a review panel;were not;a reaction to criticism)
(his plans for a review panel;were not;a reaction)
(his;has;plans for a review panel)
(the release of test results;were not;a reaction to criticism)
(the release of test results;were not;a reaction)
(silence;there was;-9.526.940.155.029.290)
(silence;there was;At times)
(the silence;turned;volcanic sometimes)
(the silence;turned;volcanic)
(She;was;anxious a little)
(She;was;anxious early on)
(She;was;anxious)
(That creature;was;in turn named for the mythical multiheaded serpent)
(one;was cut off;-16.647.303.771.972.600)
(one;was cut off;when)
(the mythical multiheaded serpent;regrew;new heads when one was cut off)
(the mythical multiheaded serpent;regrew;new heads)
(turn;be named;for the mythical multiheaded serpent)
(Hydra of Cambridge Mass.;is named;after a pond-dwelling creature)
(a pond-dwelling creature;can grow;two wholes after being sliced in half)
(a pond-dwelling creature;can grow;two wholes)
(other studies;point;to fetal exposure to environmental toxins like alcohol)
(other studies;point;to fetal exposure to environmental toxins like cigarettes)
(other studies;point;to fetal exposure to environmental toxins like lead)
(other studies;point;to fetal exposure)
(one;signing;on every week)
(the Weinbergs;are;busy planning to expand into clothing hooks With one signing on every week)
(the Weinbergs;are;busy planning to expand into clothing hooks With two new distributors signing on every

week)
(the Weinbergs;are;busy planning to expand into clothing hooks)
(the Weinbergs;are;busy planning to expand into towel racks With one signing on every week)
(the Weinbergs;are;busy planning to expand into towel racks With two new distributors signing on every week)
(the Weinbergs;are;busy planning to expand into towel racks)
(two new distributors;signing;on every week)
(Hevesi;said;that in managing an investment portfolio there are a wide array of stocks)
(Hevesi;said;that the performance of the broader markets affects the level of return)
(a wide array of stocks;there are;-1.697.128.448.486.320)
(a wide array of stocks;there are;in managing an investment portfolio)
(the performance of the broader markets;affects;the level of return)
(May;has;estimate of 2.2 percent)
(it;cut;in half its growth estimate for Japan from May 's estimate of 2.2 percent)
(it;cut;in half its growth estimate for Japan this year)
(it;cut;in half its growth estimate for Japan to 1.1 percent)
(it;cut;in half its growth estimate for Japan)
(its;has;half growth estimate for Japan)
(its;has;report)
(the IMF;said;it cut in half its growth estimate for Japan this year to 1.1 percent from May 's estimate of 2.2 percent In its report)
(the IMF;said;it cut in half its growth estimate for Japan this year to 1.1 percent from May 's estimate of 2.2 percent also)
(the IMF;said;it cut in half its growth estimate for Japan this year to 1.1 percent from May 's estimate of 2.2 percent)
(foreign students;spend;an estimated $ 11 billion a year for rent not to mention items ranging from jeans to pizzas)
(foreign students;spend;an estimated $ 11 billion a year for tuition not to mention items ranging from jeans to pizzas)
(he;said;that foreign students spend an estimated $ 11 billion a year for rent not to mention items ranging from jeans to pizzas Moreover)
(he;said;that foreign students spend an estimated $ 11 billion a year for rent not to mention items ranging from jeans to pizzas)
(he;said;that foreign students spend an estimated $ 11 billion a year for tuition not to mention items ranging from jeans to pizzas Moreover)
(he;said;that foreign students spend an estimated $ 11 billion a year for tuition not to mention items ranging from jeans to pizzas)
(items;be ranging;from jeans to pizzas)
(items;be ranging;from jeans)
(Isaac Bruce;might be;the best explosive tandem in the league)
(Isaac Bruce;might be;the best explosive tandem)
(Isaac Bruce;might be;the most explosive tandem in the league)
(Isaac Bruce;might be;the most explosive tandem)
(starters Torry Holt;might be;the best explosive tandem in the league)
(starters Torry Holt;might be;the best explosive tandem)
(starters Torry Holt;might be;the most explosive tandem in the league)
(starters Torry Holt;might be;the most explosive tandem)
(M2 + CDs;to grow;by about 3.0 percent in the July-September quarter)
(The Bank of Japan;said;in its quarterly report the josei handan that it expects M2 + CDs to grow by about 3.0 percent in the July-September quarter)
(The Bank of Japan;said;the josei handan that it expects M2 + CDs to grow by about 3.0 percent in the July-September quarter)

(it;expects;M2 + CDs to grow by about 3.0 percent in the July-September quarter)
(its;has;quarterly report)
(Another survivor;expressed;frustration also)
(Another survivor;expressed;frustration over his slow recovery)
(Another survivor;expressed;frustration)
(Another survivor;is;David Hose)
(David Hose;is;60)
(his;has;slow recovery)
(Stalin;has;forced relocations)
(demographers;have been predicting;what the steady decline in migration already)
(demographers;have been predicting;what the steady decline in migration)
(demographers;have been predicting;what the steady decline in the Russian population due to ill health already)
(demographers;have been predicting;what the steady decline in the Russian population due to ill health)
(demographers;have been predicting;what the steady decline in what demographers call the echo of war from World War II the increasing concentration of jobs in the biggest cities already)
(demographers;have been predicting;what the steady decline in what demographers call the echo of war from World War II the increasing concentration of jobs in the biggest cities)
(demographers;have been predicting;what the steady decline in what demographers call the echo of war from World War II the increasing concentration of wealth in the biggest cities already)
(demographers;have been predicting;what the steady decline in what demographers call the echo of war from World War II the increasing concentration of wealth in the biggest cities)
(next year;the census is expected;to confirm after World War II)
(next year;the census is expected;to confirm here)
(next year;the census is expected;to confirm since Stalin 's forced relocations)
(next year;the census is expected;to confirm)
(the census;next year is expected;to confirm after World War II)
(the census;next year is expected;to confirm here)
(the census;next year is expected;to confirm since Stalin 's forced relocations)
(the census;next year is expected;to confirm)
(the results;are compiled;sometime When)
(the results;are compiled;sometime)
(what;demographers;call the echo of war from World War II the increasing concentration of jobs in the biggest cities)
(what;demographers;call the echo of war from World War II the increasing concentration of wealth in the biggest cities)
(what;may be;the largest mass movement of people)
(what;may be;the largest mass movement)
(an artery;had been cut;-1.179.251.480.102.530)
(it;was;as if an artery had been cut For the major airlines)
(it;was;as if an artery had been cut including Fort Worth-based American)
(it;was;as if an artery had been cut)
(Some 75 percent;said;it would not)
(it;would not;-4.958.283.996.582.030)
(Ford;plans;to announce a similar move soon)
(Ford;plans;to announce a similar move)
(MTV;will decide;whether to continue Austin Stories for a full season when)
(MTV;will decide;whether to continue Austin Stories for a full season)
(The show;is scheduled;to be filmed in Austin till November when MTV will decide whether to continue Austin Stories for a full season)
(the smell of a skunk;seemed;to permeate the bus Sometime later)
(the smell of a skunk;seemed;to permeate the bus)

(the statement released by Mar ie;addressed;these concerns In broad terms)
(the statement released by Mar ie;addressed;these concerns)
(the statement;be released;by Mar ie)
(The 12-month target price;is;HK$ 51.00 per share)
(The 12-month target price;is;HK$ 51.00)
(The exchange next year;may permit;growers to trade directly in the market instead of being forced to deal with the 12 market makers authorized by the exchange)
(The exchange next year;may permit;growers to trade directly)
(growers;to trade;directly in the market instead of being forced to deal with the 12 market makers authorized by the exchange)
(growers;to trade;directly)
(the 12 market makers;be authorized;by the exchange)
(Those close to the company;say;Tigrett lost support on the board last year when the company took a big hit in the wake of a $ 15 million extravaganza at last year 's Summer Olympics)
(Tigrett;lost;support last year)
(Tigrett;lost;support on the board)
(Tigrett;lost;support when the company took a big hit in the wake of a $ 15 million extravaganza at last year 's Summer Olympics)
(Tigrett;lost;support)
(last year;has;Summer Olympics)
(the company;took;a big hit in the wake of a $ 15 million extravaganza at last year 's Summer Olympics)
(the company;took;a big hit in the wake of a $ 15 million extravaganza when)
(the company;took;a big hit in the wake of a $ 15 million extravaganza)
(Ratner;has been;one in the city in recent years)
(Ratner;has been;one of the most aggressive builders)
(Ratner;has been;one)
(he;needs;government approval for many of his projects)
(his;has;projects)
(They;feel;nothing simply)
(They;feel;nothing)
(Steve Forbes;was running;for president When)
(Steve Forbes;was running;for president)
(he;did n't talk;very much When Steve Forbes was running for president)
(he;did n't talk;very much about the rights of the unborn)
(he;did n't talk;very much)
(You;do n't have;a computer)
(A fitting book for the millennium Underworld;is;certain to become a key text for the interpretation of American culture)
(A fitting book for the millennium Underworld;is;certain to become a key text in the second half of the 20th century)
(A fitting book for the millennium Underworld;is;certain to become a key text)
(smaller stocks;rallied;pushing the Nasdaq Even as those stocks slumped)
(smaller stocks;rallied;pushing the Nasdaq to records Even as those stocks slumped)
(smaller stocks;rallied;pushing the Nasdaq to records)
(smaller stocks;rallied;pushing the Nasdaq)
(smaller stocks;rallied;pushing the Russell Even as those stocks slumped)
(smaller stocks;rallied;pushing the Russell to records Even as those stocks slumped)
(smaller stocks;rallied;pushing the Russell to records)
(smaller stocks;rallied;pushing the Russell)
(those stocks;slumped;-11.725.473.022.460.900)
(a group of Amherst College students;be reciting;the Pledge of Allegiance)
(a group of Amherst College students;held;a patriotism rally In response)

(a group of Amherst College students;held;a patriotism rally in October)
(a group of Amherst College students;held;a patriotism rally reciting the Pledge of Allegiance)
(a group of Amherst College students;held;a patriotism rally)
(Koizumi;have come;under harsh criticism for promising North Korea large amounts of aid in exchange for clear information about the abductees)
(Koizumi;have come;under harsh criticism for promising North Korea normalization talks in exchange for clear information about the abductees)
(Koizumi;have come;under harsh criticism)
(North Korea;large amounts;of aid)
(North Korea;normalization talks;of aid)
(his foreign ministry;have come;under harsh criticism for promising North Korea large amounts of aid in exchange for clear information about the abductees)
(his foreign ministry;have come;under harsh criticism for promising North Korea normalization talks in exchange for clear information about the abductees)
(his foreign ministry;have come;under harsh criticism)
(his;has;foreign ministry)
(They;litter;the road to redemption)
(They;litter;the road with broken marriages)
(They;litter;the road with chaos)
(They;litter;the road with contraband)
(They;litter;the road with jilted women)
(They;litter;the road with political aspirations)
(They;litter;the road)
(a ray of happiness for the residents of a small Cuban town called Guantanamera;there is;-29.467.877.197.265.600)
(a ray of happiness for the residents of a small Cuban town called Guantanamera;there is;still)
(a ray of hope for the residents of a small Cuban town called Guantanamera;there is;-29.467.877.197.265.600)
(a ray of hope for the residents of a small Cuban town called Guantanamera;there is;still)
(a small Cuban town;be called;Guantanamera)
(That sharp drop in confidence;was mirrored;in follow-up interviews)
(The large multinational companies in the Dow;had performed best;this year until those averages peaked on Aug. 6)
(The large multinational companies in the Dow;had performed best;this year)
(The large multinational companies in the S&P 500;had performed best;this year until those averages peaked on Aug. 6)
(The large multinational companies in the S&P 500;had performed best;this year)
(those averages;peaked on;Aug. 6)
(a visionary;struck down;in a battle to drag all of Britain into the 21st century)
(a visionary;struck down;in a battle to drag all of Britain)
(a visionary;struck down;in a battle to drag the stuffy monarchy into the 21st century)
(a visionary;struck down;in a battle to drag the stuffy monarchy)
(a visionary;struck down;to drag all of Britain into the 21st century)
(a visionary;struck down;to drag all of Britain)
(a visionary;struck down;to drag the stuffy monarchy into the 21st century)
(a visionary;struck down;to drag the stuffy monarchy)
(the dead princess;is being hailed;as a visionary struck down in a battle to drag all of Britain into the 21st century In many quarters)
(the dead princess;is being hailed;as a visionary struck down in a battle to drag all of Britain into the 21st century)
(the dead princess;is being hailed;as a visionary struck down in a battle to drag the stuffy monarchy into the 21st century In many quarters)

(the dead princess;is being hailed;as a visionary struck down in a battle to drag the stuffy monarchy into the 21st century)

(You;have;all of the ingredients in 72847:929434:77)

(You;have;all of the ingredients likely)

(You;have;all of the ingredients)

(You;have;one of the ingredients in 72847:929434:77)

(You;have;one of the ingredients likely)

(You;have;one of the ingredients)

(Volkswagen sales;peaked;at 293,000 In the U.S.)

(Volkswagen sales;peaked;at 293,000 in 1980)

(Volkswagen sales;peaked;at 293,000)

(Banner 's nemesis;is;Maj)

(Banner;has;nemesis)

(Lucas;plays;Banner 's nemesis)

(it;seemed;that the Enron connection was propping up some dubious prices In the auction 's early hours)

(it;seemed;that the Enron connection was propping up some dubious prices as people stood in two-hour lines just to get into the bidding room)

(it;seemed;that the Enron connection was propping up some dubious prices)

(people;stood;in two-hour lines just to get into the bidding room)

(people;stood;in two-hour lines to get into the bidding room)

(the Enron connection;was propping up;some dubious prices)

(the auction;has;early hours)

(I;do need;to smoke a day to get cancer)

(Shares of the New York-based company;rose;5 1\/4 in midday trading of 2.1 million triple the three-month daily average)

(Shares of the New York-based company;rose;5 1\/4 to 67 3\/4)

(Shares of the New York-based company;rose;5 1\/4)

(Shares of the New York-based company;rose;8.4 percent in midday trading of 2.1 million triple the three-month daily average)

(Shares of the New York-based company;rose;8.4 percent to 67 3\/4)

(Shares of the New York-based company;rose;8.4 percent)

($ season sparely with mustard a tablespoonful of melted butter;mash;Remove the yolks carefully them fanE very)

($ season sparely with mustard a tablespoonful of melted butter;mash;Remove the yolks carefully them fanE)

($ season sparely with mustard pepper tablespoonful of melted butter;mash;Remove the yolks carefully them fanE very)

($ season sparely with mustard pepper tablespoonful of melted butter;mash;Remove the yolks carefully them fanE)

($ season sparely with mustard salt tablespoonful of melted butter;mash;Remove the yolks carefully them fanE very)

($ season sparely with mustard salt tablespoonful of melted butter;mash;Remove the yolks carefully them fanE)

($ season sparely with mustard vinegar tablespoonful of melted butter;mash;Remove the yolks carefully them fanE very)

($ season sparely with mustard vinegar tablespoonful of melted butter;mash;Remove the yolks carefully them fanE)

(them;fanE;-2.585.293.273.925.780)

(them;fanE;very)

(Carroll;said;he would hold tailback Justin Fargas out of practice to make sure they are available for next week 's game with Colorado)

(he;would hold;tailback Justin Fargas out of practice to make sure they are available for next week 's game

with Colorado)
(next week;has;game)
(they;are;available for next week 's game)
(they;are;available with Colorado)
(they;are;available)
(I;did;-18.127.259.826.660.100)
(I;do n't know;why I said it)
(I;said;it)
(You;know;-18.127.259.826.660.100)
(the secretary;says;You know)
(the secretary;turns;to me)
(you;'ve got;I did a point there)
(you;'ve got;I did a point)
(you;'ve got;I did the secretary says You know a point there)
(you;'ve got;I did the secretary says You know a point)
(you;'ve got;I did the secretary turns to me a point there)
(you;'ve got;I did the secretary turns to me a point)
(you;'ve got;I do n't know why I said it a point there)
(you;'ve got;I do n't know why I said it a point)
(it;has;few photos in its 500 + pages In contrast to the two technique books)
(it;has;few photos in its 500 + pages)
(its;has;500 + pages)
(those;illustrate;concepts such as the water solubility of anthyocyanins)
(The rules;were written;to encourage diversity of voices on the airwaves among media outlets)
(The rules;were written;to encourage diversity of voices on the competition among media outlets and to prevent the biggest companies from becoming too powerful in controlling news and entertainment)
(The rules;were written;to prevent the biggest companies from becoming too powerful in controlling entertainment)
(The rules;were written;to prevent the biggest companies from becoming too powerful in controlling news)
(The new Cadillac;is scheduled;to go on sale for model year 2004)
(The new Cadillac;is scheduled;to go on sale next summer)
(The new Cadillac;is scheduled;to go on sale)
(Japan;has done;little to change unfair port practices)
(Japan;has done;since April to change unfair port practices)
(Japan;has done;to change unfair port practices)
(U.S. officials;say;Japan has done little since April to change unfair port practices)
(analysts;be diminishing;the value of those assets)
(analysts;say;-1.824.685.516.357.420)
(analysts;say;Since however the energy market has declined)
(analysts;say;Since the number of possible buyers has dwindled)
(analysts;say;Since the report was prepared)
(analysts;say;diminishing the value of those assets)
(the energy market;has declined;-1.824.685.516.357.420)
(the energy market;has declined;however)
(the number of possible buyers;has dwindled;-1.824.685.516.357.420)
(the report;was prepared;-1.824.685.516.357.420)
(senior American intelligence officials;have said;that some Iraqi fighters have now drifted back to Iraq In the past)
(senior American intelligence officials;have said;that some Iraqi fighters have now drifted back to Iraq)
(senior American intelligence officials;joined;ranks In the past)
(senior American intelligence officials;joined;ranks with Ansar al-Islam)
(senior American intelligence officials;joined;ranks)

(some Iraqi fighters;have drifted back;to Iraq now)
(some Iraqi fighters;have drifted back;to Iraq)
(some Iraqi fighters;opposed;the United States in Afghanistan)
(some Iraqi fighters;opposed;the United States)
(Hilton 's shares;rose;1 1\/16 to 33 3\/16)
(Hilton;has;shares)
(Mar ie;said;the government will also encourage the merger of insolvent banks with solvent ones)
(the government;will encourage;the merger of insolvent banks also)
(the government;will encourage;the merger of insolvent banks with solvent ones)
(the government;will encourage;the merger of insolvent banks)
(Immigration Reform Act;passed;by Congress to turn back the tide of illegal immigrants the landmark)
(Immigration Reform Act;passed;last year to turn back the tide of illegal immigrants the landmark)
(Immigration Reform Act;passed;to turn back the tide of illegal immigrants the landmark)
(The end-of-the-month deadlines;are;a result By GREG LUCAS)
(The end-of-the-month deadlines;are;a result of the landmark)
(The end-of-the-month deadlines;are;a result)
(He;has n't had;a save opportunity in nine games matching a season high)
(a save opportunity in nine games;be matching;a season high)
(a season;high;-10.151.636.505.126.900)
(She;has done;-5.377.410.888.671.870)
(She;has done;with confidence)
(She;has done;with depth)
(the waves;were;punchless that they could n't even provide sufficient lift for a 165-pound bodysurfer Also)
(the waves;were;punchless that they could n't even provide sufficient lift for a 165-pound bodysurfer on a recent afternoon)
(the waves;were;punchless that they could n't even provide sufficient lift for a 165-pound bodysurfer)
(the waves;were;small that they could n't even provide sufficient lift for a 165-pound bodysurfer Also)
(the waves;were;small that they could n't even provide sufficient lift for a 165-pound bodysurfer on a recent afternoon)
(the waves;were;small that they could n't even provide sufficient lift for a 165-pound bodysurfer)
(they;could n't provide;sufficient lift for a 165-pound bodysurfer)
(they;could n't provide;sufficient lift)
(She;knew;that the world is filled with people)
(She;knew;too well that the world is filled with people)
(people;has;a much shorter supply of those)
(people;talk;about virtue)
(the world;is filled;with people)
(those;act;on it)
(her;has;work for people with AIDS)
(she;broke through;-816.055.908.203.125)
(she;broke through;Yet)
(she;broke through;in her work for people with AIDS)
(Clark;appears;to have a reserved seat In fact)
(Clark;appears;to have a reserved seat)
(Seagram shares;rose;3\/16 to 36 3\/16 in New York)
(Seagram shares;rose;3\/16 to 36 3\/16)
(Seagram shares;rose;C$ 0.25 to C$ 50.30 in midmorning Toronto trading)
(Seagram shares;rose;C$ 0.25)
(it;Does matter;who wins still)
(it;Does matter;who wins)
(who;wins;-48.374.088.287.353.500)
(Helou;joins;a number of top writers like Claudia Roden in making the Mediterranean the focus of their

studies)

(Helou;joins;a number of top writers like Claudia Roden)

(Helou;joins;a number of top writers like Nancy Harmon Jenkins in making the Mediterranean the focus of their studies)

(Helou;joins;a number of top writers like Nancy Harmon Jenkins)

(Helou;joins;a number of top writers like Paula Wolfert in making the Mediterranean the focus of their studies)

(Helou;joins;a number of top writers like Paula Wolfert)

(the Mediterranean;the focus;of their studies)

(their;has;studies)

(Oppenheimer;had;with his colleagues of differences)

(Oppenheimer;had;with his colleagues)

(encounters Oppenheimer of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power;be had;in the 1930s with Communist sympathizers of FBI efforts to bug his homes)

(encounters Oppenheimer of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power;be had;in the 1930s with Communist sympathizers of FBI efforts to bug his offices)

(encounters Oppenheimer of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power;be had;in the 1930s with Communist sympathizers)

(he;gives;blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of FBI efforts to bug his homes of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power Instead)

(he;gives;blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of FBI efforts to bug his homes of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power)

(he;gives;blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of FBI efforts to bug his offices of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power Instead)

(he;gives;blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of FBI efforts to bug his offices of the machinations of Lewis Strauss on the Atomic Energy Commission to have him removed from power)

(him;removed;from power)

(his;has;colleagues)

(his;has;homes)

(Dr. Norman J. Silver;was winding down;his orthopedic surgery practice in New Rochelle)

(Dr. Norman J. Silver;was winding down;his orthopedic surgery practice)

(New Rochelle;is;N.Y.)

(he;wanted;to make sure there were opportunities for continuing education in the place As Dr. Norman J. Silver was winding down his orthopedic surgery practice in New Rochelle)

(he;wanted;to make sure there were opportunities for continuing education in the place where he would ultimately retire As Dr. Norman J. Silver was winding down his orthopedic surgery practice in New Rochelle)

(he;wanted;to make sure there were opportunities for continuing education in the place where he would ultimately retire)

(he;wanted;to make sure there were opportunities for continuing education in the place)

(he;would retire;-2.635.205.993.652.340)

(he;would retire;ultimately)

(he;would retire;where)

(his;has;orthopedic surgery practice)

(opportunities for continuing education in the place;there were;-2.635.205.993.652.340)

(They;defeated;the defending champion Philadelphia Eagles handily in their first NFL game)

(They;went on;to win the league championship with a dramatic 30-28 victory over the Los Angeles Rams)

(They;went on;to win the league championship)
(their;has;first NFL game)
(Two other suspects;is;28)
(Two other suspects;is;Brian Jay Robbins)
(Two other suspects;is;Ronald Eugene Timms)
(Two other suspects;is;late 20s)
(Two other suspects;were arrested;Wednesday afternoon)
(an excuse;to haul out;the stars in finery given to them by designers)
(an excuse;to haul out;the stars)
(finery;be given;to them by designers)
(finery;be given;to them)
(the awards;Are;just an excuse to haul the stars out in finery given to them by designers)
(Some historians;have disputed;claims of an organized genocide)
(the Turkish government;have disputed;claims of an organized genocide)
(the numbers of Armenians;killed;-13.929.595.947.265.600)
(Those very same men;are seen;in TV studios down the land regaling us with tales of her specialness)
(Those very same men;are seen;in TV studios down the land regaling us)
(Those very same men;are seen;in TV studios up the land regaling us with tales of her specialness)
(Those very same men;are seen;in TV studios up the land regaling us)
(Those very same men;are seen;regaling us now)
(Those very same men;are seen;regaling us with tales of her specialness now)
(Those very same men;are seen;regaling us with tales of her specialness)
(Those very same men;are seen;regaling us)
(Those very same men;dismissed;her as barmy)
(Those very same men;dismissed;her)
(her;has;specialness)
(Earrings;are;OK now)
(Earrings;are;OK)
(facial hair;are;OK now)
(facial hair;are;OK)
(Strong wind gusts;will remain;offshore Tuesday although a few squalls will reach the immediate coast from South Carolina to northern Florida)
(Strong wind gusts;will remain;offshore Tuesday)
(a few squalls;will reach;the immediate coast from South Carolina to northern Florida)
(a few squalls;will reach;the immediate coast)
(most of the heavy rain;will remain;offshore Tuesday although a few squalls will reach the immediate coast from South Carolina to northern Florida)
(most of the heavy rain;will remain;offshore Tuesday)
(Mills;added;that he wants as much public discussion on the new tests as possible)
(Mills;added;that he wants as much public input on the new tests as possible)
(Mills;said;The test results have just been compiled)
(The test results;have been compiled;-17.750.906.372.070.300)
(The test results;have been compiled;just)
(he;wants;as much public discussion on the new tests as possible)
(he;wants;as much public discussion)
(he;wants;as much public input on the new tests as possible)
(he;wants;as much public input)
(I;ca n't remember;any time passing at all between his first tiny breath 18 years ago)
(I;ca n't remember;the one)
(We;moved;bags into a microscopically small dorm room)
(We;moved;bags with emergency chocolate cupcakes)
(We;moved;bags)

(We;moved;boxes into a microscopically small dorm room)
(We;moved;boxes with emergency chocolate cupcakes)
(We;moved;boxes)
(We;moved;computer into a microscopically small dorm room)
(We;moved;computer with emergency chocolate cupcakes)
(We;moved;computer)
(We;moved;favorite shirts CDs into a microscopically small dorm room)
(We;moved;favorite shirts CDs with emergency chocolate cupcakes)
(We;moved;favorite shirts CDs)
(We;moved;favorite shirts into a microscopically small dorm room)
(We;moved;favorite shirts with emergency chocolate cupcakes)
(We;moved;favorite shirts)
(We;moved;new socks into a microscopically small dorm room)
(We;moved;new socks with emergency chocolate cupcakes)
(We;moved;new socks)
(We;moved;notebooks into a microscopically small dorm room)
(We;moved;notebooks with emergency chocolate cupcakes)
(We;moved;notebooks)
(We;moved;shoebox stuffed into a microscopically small dorm room)
(We;moved;shoebox stuffed with emergency chocolate cupcakes)
(We;moved;shoebox stuffed)
(We;moved;tennis racket into a microscopically small dorm room)
(We;moved;tennis racket with emergency chocolate cupcakes)
(We;moved;tennis racket)
(any time;be passing;at all between his first tiny breath 18 years ago)
(any time;be passing;at all between his first tiny breath)
(half of which;would be inhabited;a microscopically small dorm room)
(half of which;would be inhabited;by a completely unknown quantity a microscopically small dorm room)
(half of which;would be inhabited;by the other half of which would be inhabited by a quantity so known Bye Mom a microscopically small dorm room)
(half of which;would be inhabited;by the other half of which would be so loved that I ca n't even remember any time passing at all between his first tiny breath 18 years ago Bye Mom a microscopically small dorm room)
(half of which;would be inhabited;by the other half of which would be so loved that I ca n't even remember the one Bye Mom a microscopically small dorm room)
(he;can say;-6.914.804.077.148.430)
(he;draws;in today the one)
(he;draws;so that he can say the one)
(he;draws;the one)
(his;has;first tiny breath)
(the one;be passing;at all between his first tiny breath 18 years ago)
(the one;be passing;at all between his first tiny breath)
(which;would be inhabited;by a quantity so known)
(which;would be loved;that I ca n't even remember any time passing at all between his first tiny breath 18 years ago)
(which;would be loved;that I ca n't even remember the one)
(he;decided;When he failed to have the lawyers dismissed by a judge he said to attack them)
(he;failed;to have the lawyers dismissed by a judge When)
(he;failed;to have the lawyers dismissed by a judge)
(he;said;-10.558.260.345.458.900)
(he;said;When he failed to have the lawyers dismissed by a judge)
(the lawyers;be dismissed;by a judge)

(White House aides;say;the Democratic president plans to offer his fast-track bill to the Republican Congress sometime during the second week of September)

(his;has;fast-track bill)

(the Democratic president;plans;to offer his fast-track bill sometime during the second week of September)

(the Democratic president;plans;to offer his fast-track bill to the Republican Congress)

(the Democratic president;plans;to offer his fast-track bill)

(the second week of September;promises;to be hectic already)

(the second week of September;promises;to be hectic)

(Today 's average yield on the sale of C$ 2.1 billion of six-month bills;was;3.615 percent up from 3.561 percent two weeks ago)

(Today 's average yield on the sale of C$ 2.1 billion of six-month bills;was;3.615 percent)

(Today;has;average yield on the sale of C$ 2.1 billion of six-month bills)

(Hot-rolled sheet;account;for about half of all U.S. steel shipments)

(Hot-rolled sheet;has;a smoother finish)

(Hot-rolled sheet;is used;on the outside of appliances)

(Hot-rolled sheet;is used;on the outside of autos)

(cold-rolled sheet;account;for about half of all U.S. steel shipments)

(cold-rolled sheet;has;a smoother finish)

(cold-rolled sheet;is used;on the outside of appliances)

(cold-rolled sheet;is used;on the outside of autos)

(I;got;the package the next day When)

(I;got;the package the next day finally)

(I;got;the package the next day)

(the battery;needed;to be charged for four hours)

(the phone;was activated;though the battery needed to be charged for four hours When I finally got the package the next day)

(the phone;was activated;though the battery needed to be charged for four hours)

(Diana;has;death)

(The clamor for coverage arising from Diana 's death;recalled;how profitable her image had been for some publications during her life)

(coverage;be arising;from Diana 's death)

(her image;had been;for some publications during her life)

(her image;had been;for some publications how profitable)

(her image;had been;for some publications)

(her;has;image)

(her;has;life)

(a present;could become;a virtual gift that only ligHtli touches down in the recipient 's e-mail box before being passed on to someone else with the click of a mouse With the patent issued to William Dodd from Marietta)

(a present;could become;a virtual gift that only ligHtli touches down in the recipient 's e-mail box before being passed on to someone else with the click of a mouse)

(a present;could become;a virtual gift that only ligHtli touches down in the recipient 's e-mail box before being rejected on to someone else with the click of a mouse With the patent issued to William Dodd from Marietta)

(a present;could become;a virtual gift that only ligHtli touches down in the recipient 's e-mail box before being rejected on to someone else with the click of a mouse)

(only ligHtli;touches;down in the recipient 's e-mail box before being passed on to someone else with the click of a mouse)

(only ligHtli;touches;down in the recipient 's e-mail box before being rejected on to someone else with the click of a mouse)

(only ligHtli;touches;down in the recipient 's e-mail box)

(the patent;issued;to William Dodd from Marietta)

(the patent;issued;to William Dodd)
(the recipient;has;e-mail box)
(I;said;It must be an Arab)
(I;said;right out loud It must be an Arab)
(It;must be;an Arab)
(a second one;be hit;the towers)
(the secretary;tells;me a second one hit the towers)
(Space business;will boom;if the federal government will leave it largely unregulated)
(he;said;Space business will boom if the federal government will leave it largely unregulated)
(it;unregulated;-1.047.125.015.258.780)
(it;unregulated;largely)
(the federal government;will leave;it unregulated largely)
(the federal government;will leave;it unregulated)
(Traina;each make;$ 123,000 a year)
(Traina;each make;$ 123,000 for part-time work)
(Traina;each make;$ 123,000 including Clark treasurer James E. Collins)
(Traina;each make;$ 123,000 including Fletcher)
(Traina;each make;$ 123,000)
(each;Traina make;$ 123,000 a year)
(each;Traina make;$ 123,000 for part-time work)
(each;Traina make;$ 123,000 including Clark treasurer James E. Collins)
(each;Traina make;$ 123,000 including Fletcher)
(each;Traina make;$ 123,000)
(each;three other trustees make;$ 123,000 a year)
(each;three other trustees make;$ 123,000 for part-time work)
(each;three other trustees make;$ 123,000 including Clark treasurer James E. Collins)
(each;three other trustees make;$ 123,000 including Fletcher)
(each;three other trustees make;$ 123,000)
(three other trustees;each make;$ 123,000 a year)
(three other trustees;each make;$ 123,000 for part-time work)
(three other trustees;each make;$ 123,000 including Clark treasurer James E. Collins)
(three other trustees;each make;$ 123,000 including Fletcher)
(three other trustees;each make;$ 123,000)
(ABC;are offering;the same shows in the time slot In fact)
(ABC;are offering;the same shows in the time slot)
(Fox;are offering;the same shows in the time slot In fact)
(Fox;are offering;the same shows in the time slot)
(UPN;are offering;the same shows in the time slot In fact)
(UPN;are offering;the same shows in the time slot)
(they;did;a year ago now)
(they;did;a year ago)
(Brown;persisted;-4.395.547.103.881.830)
(her staff;persisted;-4.395.547.103.881.830)
(her;has;staff)
(Some of that money;is earmarked;for the new Traina Center for the Arts)
(I;did n't stop;living because I was diagnosed with HIV)
(I;was diagnosed;with HIV)
(What he did n't understand;was;the true essence of the Raiders)
(What he did n't understand;was;the true essence)
(You;might not understand;it all)
(he;did n't understand;What)
(it;all;-17.555.592.346.191.400)

(you;'re never going;to cheated)

(he;said;When the passengers crashed they fulfilled the quintessential American desire to act and decided to take matters into their own hands to avert a catastrophe)

(he;said;When the passengers realized that other commercial jets had been hijacked they decided to take matters into their own hands to avert a catastrophe)

(he;said;When the passengers realized that other commercial jets had been hijacked they fulfilled the quintessential American desire to act)

(other commercial jets;had been hijacked;-26.563.482.666.015.600)

(the passengers;crashed;-26.563.482.666.015.600)

(the passengers;crashed;When)

(the passengers;realized;that other commercial jets had been hijacked When)

(the passengers;realized;that other commercial jets had been hijacked)

(the quintessential American desire;to act;-26.563.482.666.015.600)

(their;has;own hands)

(they;decided;to take matters into their own hands to avert a catastrophe When the passengers crashed)

(they;decided;to take matters into their own hands to avert a catastrophe When the passengers realized that other commercial jets had been hijacked)

(they;decided;to take matters into their own hands to avert a catastrophe)

(they;decided;to take matters to avert a catastrophe When the passengers crashed)

(they;decided;to take matters to avert a catastrophe When the passengers realized that other commercial jets had been hijacked)

(they;decided;to take matters to avert a catastrophe)

(they;fulfilled;the quintessential American desire to act When the passengers crashed)

(they;fulfilled;the quintessential American desire to act When the passengers realized that other commercial jets had been hijacked)

(they;fulfilled;the quintessential American desire to act)

(Officials at Volvo long known for safe design;acknowledge;that their cars are no match for a large sport utility vehicle)

(Officials at Volvo;be known;long for safe design)

(Officials at Volvo;be known;long)

(their cars;are;no match for a large sport utility vehicle)

(their cars;are;no match)

(their;has;cars)

(Sacks;wrote;of how he observed the brothers one day at a state mental hospital as they sat in apparent rapture exchanging six-figure primes that they seemed to pull from their heads)

(he;observed;the brothers as they sat in apparent rapture exchanging six-figure primes that they seemed to pull from their heads)

(he;observed;the brothers at a state mental hospital)

(he;observed;the brothers how)

(he;observed;the brothers one day)

(he;observed;the brothers)

(their;has;heads)

(they;sat;in apparent rapture exchanging six-figure primes that they seemed to pull from their heads)

(they;seemed;to pull from their heads)

(Mary McCarty;writes;for the Dayton Daily News)

(You;should go;online just)

(You;should go;online probably)

(You;should go;online)

(One of life 's simple pleasures;is guessing;who 'll walk away with the VeeHee)

(life;has;simple pleasures)

(who;'ll walk away;-1.144.048.843.383.780)

(who;'ll walk away;with the VeeHee)

(Stephen S. Roach;is;chief economist at Morgan Stanley)
(Stephen S. Roach;said;As dramatic as these developments are the tipping point is a long way off)
(dramatic as these developments;are;-1.861.793.975.830.070)
(the tipping point;is;a long way off As dramatic as these developments are)
(the tipping point;is;a long way off)
(Indonesia 's economy;is expected;to expand 7 percent)
(Indonesia 's economy;is expected;to expand Singapore 's between 6 percent)
(Indonesia;has;economy)
(Malaysia;to grow;7 percent)
(Poor 's;expects;Malaysia to grow 7 percent)
(Singapore;has;between 6 percent)
(Thailand;is bracing;for growth of even a recession For this year)
(Thailand;is bracing;for growth of even a recession)
(Thailand;is bracing;for growth of only 3 percent For this year)
(Thailand;is bracing;for growth of only 3 percent)
(the Philippines;expects;gross domestic product to grow 5.55 percent Standard & AMP)
(Company after company;followed;suit as heightened security at major airports posed new obstacles)
(Company after company;followed;suit)
(heightened security at major airports;posed;new obstacles)
(speed;is;your life When)
(speed;is;your life)
(the race;never ends;-688.031.005.859.375)
(the race;never ends;When speed is your life)
(your;has;life)
(That carpet cleaning company;was started;by a 16-year old)
(a 16-year old;wound up;with stock after his company went public)
(a 16-year old;wound up;with stock worth more than $ 100 million)
(a 16-year old;wound up;with stock)
(his company;went;public)
(his;has;company)
(its;has;40,000 barrel-a-day Yme oil field in the North Sea)
(state-owned oil company Statoil;to shut down;its 40,000 barrel-a-day Yme oil field in the North Sea)
(striking offshore oil workers;forced;state-owned oil company Statoil to shut down its 40,000 barrel-a-day Yme oil field in the North Sea In Norway)
(striking offshore oil workers;forced;state-owned oil company Statoil to shut down its 40,000 barrel-a-day Yme oil field in the North Sea)
(The other five;are;alive still)
(The other five;are;alive)
(The other five;will be allowed;to return home if they want)
(The other five;will be allowed;to return home)
(they;want;-9.609.302.520.751.950)
(Lucas;stopped;in Atlanta to talk about Sweet Home Alabama his new romantic comedy with Reese Witherspoon)
(Lucas;stopped;recently to talk about Sweet Home Alabama his new romantic comedy with Reese Witherspoon)
(Lucas;stopped;to talk about Sweet Home Alabama his new romantic comedy with Reese Witherspoon)
(his;has;new romantic comedy with Reese Witherspoon)
(Philip Morris;would obtain;protection In return for shelling out the $ 368.5 billion)
(Philip Morris;would obtain;protection from future class-action lawsuits)
(Philip Morris;would obtain;protection)
(RJR Nabisco Holdings Corp.;would obtain;protection In return for shelling out the $ 368.5 billion)
(RJR Nabisco Holdings Corp.;would obtain;protection from future class-action lawsuits)

(RJR Nabisco Holdings Corp.;would obtain;protection)
(future class-action lawsuits;have threatened;the industry 's well-being)
(other tobacco companies;would obtain;protection In return for shelling out the $ 368.5 billion)
(other tobacco companies;would obtain;protection from future class-action lawsuits)
(other tobacco companies;would obtain;protection)
(the industry;has;well-being)
(Alea;use;political strife as a broad backdrop on which to place the characters instead of making specific statements about revolution)
(Alea;use;political strife)
(Tabio;use;political strife as a broad backdrop on which to place the characters instead of making specific statements about revolution)
(Tabio;use;political strife)
(which;to place;the characters instead of making specific statements about revolution)
(Japan;may be trying;to boost its economy through exports)
(Japan;may be trying;to boost its economy)
(The dollar;declines;when U.S. Treasury officials express concern that Japan may be trying to boost its economy through exports often)
(The dollar;declines;when U.S. Treasury officials express concern that Japan may be trying to boost its economy through exports)
(U.S. Treasury officials;express;concern that Japan may be trying to boost its economy through exports when)
(U.S. Treasury officials;express;concern that Japan may be trying to boost its economy through exports)
(its;has;economy)
(Perhaps examining the food on the plate;is;something too closely)
(Perhaps examining the food on the plate;is;something)
(we;should avoid;something all)
(we;should avoid;something)
(Felix Trinidad;is;the only fighters)
(he;'s driven;by the prospect of Felix Trinidad to beat him Specifically)
(he;'s driven;by the prospect of Felix Trinidad to beat him)
(he;'s driven;by the prospect of rematches with Shane Mosley to beat him Specifically)
(he;'s driven;by the prospect of rematches with Shane Mosley to beat him)
(Efforts to reach Johnson;were;unsuccessful)
(you;'re running;a hot system When you have to resort to 1,200-degree air to cool something)
(you;'re running;a hot system)
(you;have;to cool something When)
(you;have;to cool something)
(I;asked;the Armenian native if anybody else ever poked fun at the sign)
(I;asked;the Armenian native if the neighborhood kids ever poked fun at the sign)
(I;asked;the Armenian native)
(anybody else;poked;fun at the sign)
(anybody else;poked;fun ever)
(anybody else;poked;fun)
(basically a Bart Simpson dream;be come;true)
(the neighborhood kids;poked;fun at the sign)
(the neighborhood kids;poked;fun ever)
(the neighborhood kids;poked;fun)
(the sign;is;a Bart Simpson dream basically)
(the sign;is;a Bart Simpson dream come true)
(the sign;is;a Bart Simpson dream)
(Ariel;bought;its shares in the mid-teens)
(Ariel;bought;its shares)

(its;has;shares)
(They;add;barbecue sauces developed with Texas taste panels for the chopped versions)
(They;add;barbecue sauces developed with Texas taste panels for the sliced versions)
(barbecue sauces;developed;with Texas taste panels for the chopped versions)
(barbecue sauces;developed;with Texas taste panels for the sliced versions)
(barbecue sauces;developed;with Texas taste panels)
(ISRAEL MIGHT FIRE;NUKES;That earned him the respect of analysts though the public remains skeptical Lee Janzen IF PUSHED TO THE WALL)
(ISRAEL MIGHT FIRE;NUKES;That earned him the respect of analysts though the public remains skeptical)
(ISRAEL MIGHT FIRE;NUKES;That earned him the respect of investors though the public remains skeptical Lee Janzen IF PUSHED TO THE WALL)
(ISRAEL MIGHT FIRE;NUKES;That earned him the respect of investors though the public remains skeptical)
(PUSHED;TO;THE WALL)
(That;earned;him the respect of analysts though the public remains skeptical)
(That;earned;him the respect of analysts)
(That;earned;him the respect of investors though the public remains skeptical)
(That;earned;him the respect of investors)
(him;the respect;of analysts)
(him;the respect;of investors)
(the public;remains;skeptical)
(Arnoldy;logs;about 30,000 miles a year aboard Intrepid parking it on a private siding in Houston)
(Arnoldy;logs;about 30,000 miles a year aboard Intrepid parking it when he 's not riding the rails)
(Arnoldy;logs;about 30,000 miles a year aboard Intrepid parking it)
(Arnoldy;logs;parking it on a private siding in Houston)
(Arnoldy;logs;parking it when he 's not riding the rails)
(Arnoldy;logs;parking it)
(he;'s not riding;the rails when)
(he;'s not riding;the rails)
(searches of two warehouses owned by the firms in Schleswig-Holstein state in Hamburg;There were;-16.310.400.390.625)
(searches of two warehouses owned by the firms in Schleswig-Holstein state in Hamburg;There were;also)
(searches of two warehouses owned by the office of the firms tax adviser in Hamburg;There were;-16.310.400.390.625)
(searches of two warehouses owned by the office of the firms tax adviser in Hamburg;There were;also)
(the firms;has;tax adviser)
(two warehouses;be owned;by the firms in Schleswig-Holstein state in Hamburg)
(two warehouses;be owned;by the firms in Schleswig-Holstein state)
(two warehouses;be owned;by the office of the firms tax adviser in Hamburg)
(two warehouses;be owned;by the office of the firms tax adviser)
(The Treasury Department;is;responsible for U.S. foreign exchange policy)
(The Treasury Department;is;responsible)
(Nissan Motor Co.;has;Altima)
(Fitzbek;is;a village)
(Television pictures;showed;police officers 35 miles from Hamburg)
(Sprint Corp. 's recent disclosure that it expects a net loss in wireless customers this quarter;helped;send the company 's PCS tracking stock below $ 2 on Wednesday)
(Sprint Corp. 's recent disclosure that it expects a net loss in wireless customers this quarter;helped;send the company 's PCS tracking stock for the first time)
(Sprint Corp. 's recent disclosure that it expects a net loss in wireless customers this quarter;helped;send the company 's PCS tracking stock)
(Sprint Corp.;has;recent disclosure that it expects a net loss in wireless customers this quarter)
(it;expects;a net loss in wireless customers this quarter)

(the company;has;PCS tracking stock)
(They;are moving;to install side air bags to provide more protection to the chest)
(They;are moving;to install side air bags to provide more protection to the head)
(They;are moving;to install side air bags to provide more protection)
(side air bags;to provide;more protection to the chest)
(side air bags;to provide;more protection to the head)
(side air bags;to provide;more protection)
(The average yield on the sale of C$ 1.9 billion of one-year bills;was;4.167 percent up from 4.165 percent two weeks ago)
(The average yield on the sale of C$ 1.9 billion of one-year bills;was;4.167 percent)
(It;has;outstanding stock options)
(its;has;roster of shares)
(outstanding stock options;could reduce;earnings per share)
(outstanding stock options;could swell;its roster of shares by 15 percent)
(outstanding stock options;could swell;its roster of shares)
(Becky Fenger;is;a spokesperson for NO Transit Taxes)
(Becky Fenger;said;They say it can not be done)
(Becky Fenger;said;we beat City Hall)
(They;say;it can not be done)
(it;can not be done;-16.588.819.885.253.900)
(we;beat;City Hall)
(Tilton;has;offices)
(a $ 135 million foundation;'s run out;of Fletcher)
(he;moved;right into a spot When the university 's president retired in 2000)
(he;moved;right into a spot on Tilton 's offices)
(he;moved;right into a spot on a $ 135 million foundation)
(he;moved;right into a spot on the board of the George I. Alden Trust)
(he;moved;right into a spot on which has been a strong Clark supporter)
(he;moved;right into a spot)
(the university 's president;is;Richard P. Traina)
(the university 's president;retired;in 2000 When)
(the university 's president;retired;in 2000)
(the university;has;president)
(which;has been;a strong Clark supporter)
(July 's exports;surpassed;June 's total of $ 24.39 billion)
(July 's exports;were;well ahead of the previous January benchmark of C$ 24.88 billion)
(July 's exports;were;well ahead)
(July;has;exports)
(June;has;total of $ 24.39 billion)
(Its commercial spine;is;18th Avenue)
(Its commercial spine;is;chock everywhere)
(Its commercial spine;is;chock full of pasta stores)
(Its commercial spine;is;chock full of pork stores)
(Its commercial spine;is;chock)
(Its commercial spine;is;the Italian colors of green everywhere)
(Its commercial spine;is;the Italian colors of green full of pasta stores)
(Its commercial spine;is;the Italian colors of green full of pork stores)
(Its commercial spine;is;the Italian colors of green)
(Its commercial spine;is;the Italian colors of red everywhere)
(Its commercial spine;is;the Italian colors of red full of pasta stores)
(Its commercial spine;is;the Italian colors of red full of pork stores)
(Its commercial spine;is;the Italian colors of red)

(Its commercial spine;is;the Italian colors of white everywhere)
(Its commercial spine;is;the Italian colors of white full of pasta stores)
(Its commercial spine;is;the Italian colors of white full of pork stores)
(Its commercial spine;is;the Italian colors of white)
(Its;has;commercial spine)
(Hall;approached;from the same direction Instead of converging on the meeting place)
(Hall;approached;from the same direction)
(Sax;approached;from the same direction Instead of converging on the meeting place)
(Sax;approached;from the same direction)
(Musharraf;charged;with corruption)
(Musharraf;defended;his government 's decision to ban Bhutto now living in exile in London)
(Musharraf;from taking part in parliamentary elections;-19.844.308.471.679.600)
(his government;has;decision to ban Bhutto now living in exile in London)
(his;has;government 's)
(to ban Bhutto;be living;now in exile in London)
(to ban Bhutto;be living;now)
(The demoted starter;had not pitched;in a week)
(The demoted starter;showed;no signs of the long layoff)
(McDaniel;postponed;ruling also on a defense motion to move out the trial because of the publicity the case has received)
(McDaniel;postponed;ruling also on a defense motion to move out the trial of Middlesex County)
(McDaniel;postponed;ruling also on a defense motion to move out the trial)
(McDaniel;postponed;ruling on Reilly 's motion also to move out the trial because of the publicity the case has received)
(McDaniel;postponed;ruling on Reilly 's motion also to move out the trial of Middlesex County)
(McDaniel;postponed;ruling on Reilly 's motion also to move out the trial)
(McDaniel;postponed;ruling to move out the trial because of the publicity the case has received)
(McDaniel;postponed;ruling to move out the trial of Middlesex County)
(McDaniel;postponed;ruling to move out the trial)
(Reilly;has;motion)
(the case;has received;-2.073.548.126.220.700)
(the case;has received;of the publicity)
(other factors;can affect;quality of life)
(other factors;there are;-10.071.849.822.998.000)
(other factors;there are;Beyond these practical considerations)
(That;'s;enough of a difference to entice pension funds into junk)
(That;'s;enough of a difference to entice pension funds)
(That;'s;enough to entice pension funds into junk)
(That;'s;enough to entice pension funds)
(Dionne;said;he was skeptical about whether television advertising is so powerful)
(he;was;skeptical about whether television advertising is so powerful)
(television advertising;is;powerful)
(Japan;promised;to address U.S. concerns by today)
(Japan;promised;to address U.S. concerns)
(The agency;suspended;imposition of the $ 100,000-per-voyage fines in April after Japan promised to address U.S. concerns by today)
(The agency;suspended;imposition of the $ 100,000-per-voyage fines in April)

ANNEX B

Relations extracted by OLLIE from ReVerb test set [ETZ11]

(The nation 's health maintenance organizations; to tell the federal government by; midnight)
(The nation 's health maintenance organizations; to tell; the federal government)
(health insurance; be providing to; Medicare recipients)
(the federal government; to be tell by; midnight)
(The two-year note 's yield; was unchanged at; 5.95 percent)
(The two-year note 's yield; was; unchanged)
(The principal opposition parties; boycotted the polls after; accusations of vote-rigging)
(The principal opposition parties; boycotted; the polls)
(The principal opposition parties; was a little-known challenger from; a marginal political party)
(The principal opposition parties; was; a little-known challenger)
(a little-known challenger; be the only other name on; the ballot)
(only; be other name on; the ballot)
(other; be name on; the ballot)
(the only other name; boycotted the polls after; accusations of vote-rigging)
(the only other name; boycotted; the polls)
(the only other name; was a little-known challenger from; a marginal political party)
(the only other name; was; a little-known challenger)
(the polls; be boycotted after; accusations of vote-rigging)
(Gallery hours; are 11 a.m. to; 6)
(not the least bit tense; had just finished; a siesta)
(the portable facilities; were n't in; service)
(The current El Nino; is either the weather event of; the century)
(The current El Nino; is either; the weather event of the century or an event whose bluster ca n't come close to living up to the super-hype)
(a complicated and vaguely understood series of phenomena; affect weather around; the globe)
(he; has eased up on; team rules)
(Jake; decides to give Melanie; a bit of a hard time)
(New York attitude; is in; this film)
(she; grew up with; a megadose of New York attitude)
(he; could hardly notice; the netting)
(1 percent; went to; other regions)
(Eight percent; went to; Europe)
(other; be regions in; the world)
(Iraq 's announcement; was a first step toward; the `` lifting of this brutal regime of sanctions)
(Iraq 's announcement; was; a first step)
(he; left; the UN building)
(A backdrop of steady economic growth , scant inflation , and stable bond yields; provided; support)
(His teammates; indeed loved; the show)
(The Revolution; also gave up a 90th-minute goal in; a 2-2 regulation draw)
(The Revolution; also gave up; a 90th-minute goal)
(a 90th-minute goal; be also gave up in; a 2-2 regulation draw)
(they; recovered to win; their final two matches)
(they; are salting away; money)
(they; have; stuff)
(He; threw; three scoreless innings)
(Seattle; to climb back into; the game)

(Programmers; always enter; a season worried about the future of specific programs)
(a season; be worried about; the future of specific programs)
(A spokesperson; was immediately; not immediately available)
(A spokesperson; was not immediately available for; comment)
(not immediately available; be A spokesperson for; Omega)
(Output; was reduced in; 1996)
(Quiriconi; too said of; The Residential Internship Program)
(The Residential Internship Program; should meet; the district 's needs)
(Esaka and six other top executives; will quit to take responsibility for; 67.28 million yen)
(Esaka and six other top executives; will quit to take responsibility to; corporate racketeer Ryuichi Koike , 54)
(Esaka and six other top executives; will quit to take; responsibility)
(responsibility; to be take for; 67.28 million yen)
(responsibility; to take to be; corporate racketeer Ryuichi Koike , 54)
(Ruth Brown of London; was among; the crowds)
(She; 's; a hard act)
(a genetic dysfunction; be probably a short circuit in; the brain)
(the disorder; stems from; a genetic dysfunction)
(she; settled in on; the turn)
(It; also took an interception of a Warren Moon pass by; Chiefs free safety Jerome Woods)
(It; also took an interception of a Warren Moon pass in; overtime)
(It; also took an interception of a Warren Moon pass to set up; Stoyanovich 's game-winner)
(It; also took an interception of a Warren Moon pass; overtime)
(It; also took; an interception of a Warren Moon pass)
(It; to set up; Stoyanovich 's game-winner)
(an interception of a Warren Moon pass; be also took by; Chiefs free safety Jerome Woods)
(an interception of a Warren Moon pass; be also took in; overtime)
(she; would concern; herself)
(Bobby Brown; be Netanyahu 's adviser on; world Jewish affairs)
(Bobby Brown; be adviser of; Netanyahu)
(hearings; to consider; anti-road-rage legislation)
(I; only smoke; one)
(I; 's been; 19 years and it 's never been a good time)
(some conglomerates; have already bumped against; the limits of the rules)
(Ms. Holloman; looks in; person)
(Ms. Holloman; looks like; a tomboy)
(her film roles; suggest with; beguiling features)
(jsuydamstatesman.com; looks in; person)
(jsuydamstatesman.com; looks like; a tomboy)
(He; died en; route)
(3/8 , or $ 3.75; be rose per; $ 1,000 bond)
(3/8 , or $ 3.75; be rose to; 96 15/16)
(The benchmark 30-year bond; rose 3/8 , or $ 3.75 per; $ 1,000 bond)
(The benchmark 30-year bond; rose 3/8 , or $ 3.75 pushing; its yield)
(The benchmark 30-year bond; rose 3/8 , or $ 3.75 to; 96 15/16)
(The benchmark 30-year bond; rose; 3/8 , or $ 3.75)
(It; begins life with; a $ 75 million annual debt service burden)
(It; begins; life)
(Part of this indifference; is probably caused by; the unearned cynicism of the age)
(These immigrants; deserve consideration under; the laws that were in place when they applied '' for asylum)
(These immigrants; deserve; consideration)
(consideration; be deserve under; the laws that were in place when they applied '' for asylum)

(the laws; were in; place)
(they; applied for; asylum)
(Edwards; believes in; previous games)
(He; stood among; dozens of other stupefied commuters)
(Giorgio; began getting; headaches)
(Giorgio; began in; late September)
(Koplowitz 's next concert; be presented indoors at; Dance Theater Workshop)
(Koplowitz 's next concert; be presented indoors in; May)
(Koplowitz 's next concert; will be; a more modest affair and presented indoors)
(about one; still receives; that kind of deal)
(The committee; is planning to hear from; him)
(The scandal; has now forced resignations at; Japan 's fourth-largest bank and three of Japan 's Big Four brokerages)
(The scandal; has now forced; resignations)
(It; said; it)
(the government; had failed to apply the same rules '' to; all the bidders)
(the government; had failed to apply; the same rules)
(the same rules; to apply to be; all the bidders)
(Calcavecchia; plays in; Friday morning)
(he; knows; the importance starting well)
(the Americans; have; a recent history falling behind early)
(Chris Floyd 's dive; put ahead; Michigan)
(a 53-yard play; 2. later; Two plays)
(unchecked; be glided on; the next play who had lined up on the left side)
(Charles Darwin; had written about; the consistency of expressions)
(Charles Darwin; had written in; 1872)
(expressions; are learned through; culture)
(Arafat; know in; a meeting)
(as many as 57 deputies who were members of Fatah; let of; Arafat)
(as many as 57 deputies; were members of; Fatah)
(they; intended to vote against; him)
(they; to vote against; him)
(its own Aviator; be based on; the Ford Explorer/Mercury Mountaineer platform)
(the new Cadillac SRX; will become; one of the newest entrants)
(It; 's; an effective , maybe even subversive , way to get the message across)
(deregulated power companies spurred Monday by negative news for El Paso Corp. Better yet; have won; 19 straight decisions)
(deregulated power companies spurred Monday by negative news for El Paso Corp. Better yet; selling off stocks in; trading)
(deregulated power companies spurred Monday by negative news for El Paso Corp. Better yet; selling off; stocks)
(deregulated power companies; be spurred Better yet by; negative news)
(deregulated power companies; be spurred Better yet for; El Paso Corp.)
(deregulated power companies; be spurred Better yet in; Monday)
(investors; 're combined 21-1 since; July 1)
(investors; 're combined 21-1 with; 2.41)
(investors; kept for; their part)
(stocks; be selling off in; trading)
(they; 're combined 21-1 since; July 1)
(they; 're combined 21-1 with; 2.41)
(they; kept for; their part)

(Organogenesis Inc. of Canton Monday; ended its troubled six-year relationship with giant Novartis Pharma AG unilaterally terminating; a marketing agreement)

(Organogenesis Inc. of Canton Monday; ended; its troubled six-year relationship)

(Organogenesis; to file for; bankruptcy protection)

(Democrats; released a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion , less than that of the Gulf War in; the first effort to estimate the fiscal cost of an Iraqi war)

(Democrats; released a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion , less than that of the Gulf War; the first effort to estimate the fiscal cost of an Iraqi war)

(Democrats; released on; Monday)

(Democrats; released; a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion , less)

(a report on Monday putting the likely price tag at between $ 30 billion and $ 60 billion , less; be released in; the first effort to estimate the fiscal cost of an Iraqi war)

(the likely price tag; be putting at; between $ 30 billion and $ 60 billion)

(ONE OF THOSE DAYS; retired at; 60)

(ONE OF THOSE DAYS; retired in; 1977)

(Extendicare Inc.; agreed to buy; Arbor Health Care Co.)

(Extendicare Inc.; assumed debt nearly doubling; its Florida and Ohio businesses)

(Extendicare Inc.; assumed; debt)

(Extendicare Inc.; to buy; Arbor Health Care Co.)

(She; began her career as; a chunky woman , awkward)

(She; began; her career)

(her career; be began as; a chunky woman , awkward)

(the president; reads; BioScope)

(The first photograph of the fatal crash; appeared in; the front page of Bild Zeitung Monday)

(The first photograph of the fatal crash; appeared on; the front page of Bild Zeitung Monday)

(The drill; has; a keyless chuck)

(a keyless chuck; be a built-in level for; drilling straight holes and nonslip texturing)

(a keyless chuck; be a built-in level over; the whole drill body)

(Rhodes; discovered; he)

(a sharp pain; be felt in; his right leg)

(he; felt a sharp pain in; his right leg)

(he; felt; a sharp pain)

(he; had; cancer last October)

(Graham; set up Groza 's 16-yard winning field goal with; 28 seconds)

(Graham; set up; Groza 's 16-yard winning field goal)

(Graham; threw four touchdown passes in; the title game)

(Graham; threw; four touchdown passes)

(Groza 's 16-yard winning field goal; be set up with; 28 seconds)

(four touchdown passes; be threw in; the title game)

(he; 's been seeking for; two years)

(he; must turn in; another direction)

(he; wants; the multimillion-dollar payday he 's been seeking for two years)

(DeLillo; has brilliantly described the loss of family and community ties , replaced by the bloodless , invasive connections spawned by the World Wide Web.; the simultaneous explosion of knowledge in our times and the spread of Dark Age superstitions)

(DeLillo; has brilliantly described the simultaneous explosion of knowledge in our times; the loss of family and community ties replaced by the bloodless , invasive connections)

(DeLillo; has brilliantly described the spread of Dark Age superstitions; the loss of family and community ties replaced by the bloodless , invasive connections)

(the bloodless , invasive connections; be spawned by; the World Wide Web.)

(the loss of family and community ties; be replaced by; the bloodless , invasive connections spawned by the World Wide Web.)
(the stabbing; was unrelated to; the escape plan)
(the stabbing; was; unrelated)
(economic growth; will reduce; spending , Mar 'ie said)
(the government; will reduce; spending , Mar 'ie said)
(The group 's attacks; give; common cause)
(I; showed; him)
(The p53 protein; is known; a process called transactivation)
(1,051 adults; be surveyed in; last week)
(the accord; would reduce; the number of teen-agers)
(it; is dominated by; a six-story rotunda)
(three restaurants and 363 rooms; is dominated by; a six-story rotunda)
(The companies; have been for; than 20 years)
(The companies; have been in; business)
(Calcavecchia; has looked steady recently finishing in; the top 35)
(Calcavecchia; has looked steady recently finishing in; three of his last four starts)
(last; four starts including; a seventh-place finish)
(about 5 cents; be equaled at; retail)
(prices; rose $ 2.50 at; wholesale which equaled about 5 cents a pack for premium cigarettes at retail)
(prices; rose $ 2.50 in; March)
(prices; rose $ 2.50 per; 1,000 cigarettes)
(wholesale; equaled about 5 cents a pack for premium cigarettes at; retail)
(a meeting; seemed; unlikely)
(the Cooperative Bank Building; has been completely renovated; a memorial)
(the site of the embassy; has been turned into; a park)
(1.476 million new starts; be recorded in; 1996)
(Sikes; Maybe should apply for; workman 's compensation)
(John Abraham and Shaun Ellis; rushed from; the other)
(John Abraham and Shaun Ellis; which lined up on; one side)
(Mo Lewis; rushed from; the other)
(Mo Lewis; which lined up on; one side)
(the Jets; used some new alignments , including one in which John Abraham and Shaun Ellis lined up on one side and Mo Lewis rushed from the other in; Last week)
(the Jets; used; some new alignments)
(She; sought out; the untouchables of our society)
(She; touched; them)
(she; sought out; the untouchables of our society)
(she; touched; them)
(You; can venture out still find the water no deeper than 4 feet; 100 yards)
(Farris; was replaced by; sophomore Dustin Long)
(Farris; was replaced in; the second quarter)
(Jason Carter and freshman Reggie McNeal; sophomore played in; the opener)
(BIGGEST CONCERNS Express pilots; currently have; no pension)
(Japanese automakers; have taken some of the biggest strides with; their new car models)
(God; Maybe just had; a plan)
(Johnson; said; God)
(a wife , Cookie , and three children; be has by; Johnson)
(me; to be around longer for; a little while)
(ranking; is minority member of; the Intelligence Committee)
(the Alabama Republican; is the ranking minority member of; the Intelligence Committee)
(Type in your ZIP code and fill out the easy questionnaire , and you; 'll get; side-by-side comparisons)

(Katzenberg; is feuding for; example)
(Katzenberg; is feuding with; former employer)
(his cut of the Disney; animated; films he helped make)
(1,200-degree air; So is pumped back to the turbine blades from; the compressor)
(Presidio Med; fills the time between; those scenes)
(Presidio Med; fills the time with; more stock situations)
(Presidio Med; fills; the time)
(it; 's time for; a moratorium)
(it; 's; time)
(it; may be; a sign)
(3.0 percent; be rose in; the April-June period)
(M2+CDs; rose 3.0 percent in; the April-June period)
(M2+CDs; rose; 3.0 percent)
(a half percentage point; be rose to; 10.1 percent)
(the poverty rate; rose a half percentage point to; 10.1 percent)
(the poverty rate; rose; a half percentage point)
(BSA; seized items from SM Summit in; a raid)
(BSA; seized items from SM Summit on; Aug. 12 and 13)
(BSA; seized; items)
(items; be seized in; a raid)
(items; be seized on; Aug. 12 and 13)
(many of the problems; were simply; a matter getting the new system up and running)
(everyone; prevailed after; a few minutes and some lighthearted chuckles)
(everyone; reverted to; their traditional duties)
(normalcy; prevailed after; a few minutes and some lighthearted chuckles)
(normalcy; reverted to; their traditional duties)
(the Alden Trust and the other foundations controlled by the firm; Together have contributed $ 1.7 million in; the last five years)
(the Alden Trust and the other foundations controlled by the firm; Together have contributed $ 1.7 million to; Clark)
(the Alden Trust and the other foundations; be controlled by; the firm)
(elegant souls who consider such journalism beneath their attention; are of; course)
(elegant souls; consider such journalism beneath; their attention)
(the blend; is weighted toward; expedience)
(the blend; is; weighted)
(Trucking companies; meanwhile have finally rebounded after; years of laggard performance relative)
(Susie McBee or Tim Spence; be call at; 202-298-6920)
(you; have; questions)
(We; must continue to lead by; example)
(caulking; Should be done at; the time of the reglazing)
(His legislation; would allow tax-free savings for expenses , including tuition for; any school)
(His legislation; would allow; tax-free savings)
(tax-free savings; would be allow for; any school)
(Bullion; rose as; the U.S. dollar)
(analysts; said; Bullion)
(investors using other major currencies; to buy; the precious metal)
(it; to buy; the precious metal)
(A grocery store strike; offer; reason to hope)
(Both strikes; have been mediated by; federal officials)
(Both strikes; involve; Kroger stores and United Food and Commercial Workers employees)
(Kroger Co.; be parent company of; Ralphs)

(Kroger stores and United Food and Commercial Workers employees; be both disputes center on; health care plans)
(Kroger stores and United Food and Commercial Workers employees; began in; early October)
(Seattle 's roster; is; old)
(three; were apprehended in; Sunday)
(about 3 cups vegetables; chopped; medium fine)
(The movie; be a $ 120 million change of pace for; arty `` Crouching Tiger)
(The movie; be a $ 120 million change of; pace)
(The movie; to debut in; June)
(arty `` Crouching Tiger; be director of; Hidden Dragon)
(Kidd , 29; be star point guard of; the team)
(Kidd , 29; may not sign; another extension)
(a free agent; be becoming on; July 1)
(a report; showed unexpected strength squelching; hopes)
(a report; showed; unexpected strength)
(weakening export growth; Slowing; corporate profits)
(Euromoney 's executives; spent several days in; this week)
(Euromoney 's executives; spent; several days)
(managing editor of Institutional Investor 's Americas edition; be huddled in; negotiations)
(they; named; editor to replace Cudaback)
(Ms. Denis 's gift; is to integrate so fully; the characters)
(Ms. Denis 's gift; is to integrate the characters so fully in; their milieu)
(Ms. Denis 's gift; to integrate the characters so fully in; their milieu)
(the characters; to be integrate so fully in; their milieu)
(they; emerge almost insensibly from; it)
(Glenn F. Tilton; to be name as; the airline 's new president and chief executive)
(The board of directors of UAL; is; likely)
(The board of directors of UAL; to name; Glenn F. Tilton)
(UAL; be directors of; the parent company of United Airlines)
(UAL; be the parent company of; United Airlines)
(likely; be The board of; directors of UAL)
(2 1/16; be fell to; 87 1/8)
(Dell stock; fell 2 1/16 in; Friday)
(Dell stock; fell 2 1/16 to; 87 1/8)
(Dell stock; fell; 2 1/16)
(It; will also increase luxury taxes on; other goods)
(It; will also increase; luxury taxes)
(luxury taxes; will be also increase on; other goods)
(Jim Suydam; writes for; the Austin American-Statesman)
(they; accept the responsibility without; blinking)
(they; accept; the responsibility)
(I; was pretty obnoxious by; Clients of the New York Times News Service)
(I; was pretty obnoxious for; Use)
(I; was pretty; obnoxious)
(Steers; did at; Hotchkiss)
(he; bunked with; members of a dance company)
(he; had worked as; a stagehand)
(she; became the sleekly beautiful and charismatic musical actress of; legend)
(she; became; the sleekly beautiful and charismatic musical actress of legend)
(she; shed; 70 pounds)
(she; be Born in; New York City)
(she; be Born to; Greek parents)

(she; entered the conservatory in; Athens)
(she; entered the conservatory; Athens)
(she; entered; the conservatory)
(she; returned at; 14)
(she; returned to; Greece)
(she; returned with; her mother)
(the conservatory; be entered in; Athens)
(he; was uncomfortable with; increased team incentives)
(he; was; uncomfortable)
(EGGS Cut; be DEVILED crosswise one dozen hard-boiled eggs in; two)
(RIBBON COOK BOOK 1907; DEVILED EGGS Cut crosswise in; two)
(RIBBON COOK BOOK 1907; DEVILED EGGS Cut crosswise; one dozen hard-boiled eggs)
(RIBBON COOK BOOK 1907; DEVILED crosswise one dozen hard-boiled eggs in; two)
(RIBBON COOK BOOK 1907; DEVILED crosswise one dozen hard-boiled eggs; EGGS Cut)
(one dozen hard-boiled eggs; be DEVILED EGGS Cut crosswise in; two)
(Fowler; clearly resented; Ickes ' authority)
(Fowler; once again knows; the full story of the 1996 Clinton campaign)
(Ickes; clearly resented; Ickes ' authority)
(Ickes; once again knows; the full story of the 1996 Clinton campaign)
(full; be story of; the 1996 Clinton campaign)
(his testimony affirms; clearly resented; Ickes ' authority)
(his testimony affirms; once again knows; the full story of the 1996 Clinton campaign)
(100 million copies of Navigator; to be distribute over; the next year)
(100 million copies of Navigator; to be distribute through; partners)
(Netscape; is aiming to distribute 100 million copies of Navigator over; the next year)
(Netscape; is aiming to distribute 100 million copies of Navigator through; partners)
(Netscape; is aiming to distribute; 100 million copies of Navigator)
(Netscape; to distribute; 100 million copies of Navigator)
(U.S. Robotics; be Internet service providers to; large companies)
(U.S. Robotics; be a division of; 3Com Corp. Wide familiarity)
(Childhood cancers; only make up 2 percent of all cancer cases in; the United States)
(Childhood cancers; only make up; 2 percent of all cancer cases)
(He; lit; a flame that had temporarily burned out)
(their discussion; lit; a flame that had temporarily burned out)
(he; did n't fool; me)
(cyclones; are usually called in; the media)
(hurricanelike tropical cyclones born over the southwestern Pacific and the Indian Ocean; are usually called; cyclones)
(hurricanelike tropical cyclones born over the southwestern Pacific and the Indian Ocean; be just cyclones in; the media)
(hurricanelike tropical cyclones; be born over; the southwestern Pacific and the Indian Ocean)
(Gap Inc.; promotes casual Fridays with; free pants and shirts)
(Gap Inc.; promotes; casual Fridays)
(The New York Stock Exchange floor; will be a sea of; khaki-clad legs)
(The New York Stock Exchange floor; will be; a sea of khaki-clad legs)
(the seven-year swap rate; was little changed at; 42 basis points)
(the seven-year swap rate; was little changed from; yesterday)
(I; might have argued for; a different arrangement)
(Kors; also used silk on; belted polo dresses and trousers)
(Kors; also used; silk)
(silk; be also used on; belted polo dresses and trousers)
(the administration; to support; something appropriate and useful)

(the administration; wished to support; something appropriate and useful)
(We; get long; digressions)
(a guaranteed deal; could be sign with; Panathinaikos)
(he; could sign a guaranteed deal with; Panathinaikos)
(he; could sign; a guaranteed deal)
(he; that led to; the Euroleague championship)
(the Hawks; released; him)
(a term bandied about by designers , call for an excess of clothes; to be use $ $ $ Still in; polka-dotted or liquid silks or with)
(a term bandied about by designers , call for an excess of clothes; to be use $ $ $ Still with; ruffles , ribbons or other frilly edging)
(a term; be bandied by; designers)
(clothes; be rendered in; guipure lace)
(designers; be call for; an excess of clothes)
(investors; to look for; opportunities to buy temporarily depressed big-company shares ,)
(A spokesman; said in; Sunday)
(existing laws; dealing with; stalking and trespassing)
(the senator; was looking at; several areas)
(Boselli; be two more surgical procedures on; his shoulder)
(Boselli; would have; two more surgical procedures)
(he; became; a Texan)
(Think of how many people; stay in; bad marriages)
(his smile; had receded within; seconds)
(his tone; had receded within; seconds)
(Dao Heng Bank Group Ltd.; be buy in; new coverage)
(Dao Heng Bank Group Ltd.; was rated buy '' in new coverage at; J.P. Morgan Securities)
(Dao Heng Bank Group Ltd.; was rated buy '' in new coverage by; analyst Elan Cohen)
(Dao Heng Bank Group Ltd.; was rated buy '' in new coverage in; Story Filed)
(Dao Heng Bank Group Ltd.; was rated; buy)
(They; begged; people to come talk)
(Forbes; speak at; the Christian Coalition convention)
(He; said; the people)
(Jane Boynton; be a nurse from; Miami)
(Jane Boynton; said; He)
(The couple; crashed the car against; a concrete pillar)
(The couple; crashed the car at; high speed)
(The couple; crashed the car in; high speed)
(The couple; crashed; the car)
(The couple; was riding in; a rented Mercedes-Benz)
(the car; be crashed against; a concrete pillar)
(the car; be crashed at; high speed)
(the driver trying to avoid the photographers ' harassment; crashed the car against; a concrete pillar)
(the driver trying to avoid the photographers ' harassment; crashed the car at; high speed)
(the driver trying to avoid the photographers ' harassment; crashed the car in; high speed)
(the driver trying to avoid the photographers ' harassment; crashed; the car)
(the driver trying to avoid the photographers ' harassment; was riding in; a rented Mercedes-Benz)
(bulletins; be news of; the latest United Nations debate)
(news of the latest United Nations debate; be bulletins inside; dope)
(news of the latest United Nations debate; be bulletins on; the Sudanese economy)
(news of the latest United Nations debate; be bulletins on; the recent political coup)
(they; are investigating; trading)
(Indonesia; will lower; tariffs)

(The confusion; is; not new)
(not new; be The confusion over; ADD)
(SM Summit; committed; software piracy)
(The BSA suit; be filed on; behalf of Microsoft Corp.)
(the government; had done enough to protect them against; another terrorist attack)
(the government; had done enough to protect; them)
(the government; had done; enough)
(them; to be protect against; another terrorist attack)
(PointCast Inc.; provides information directly to; computer users)
(PointCast Inc.; provides news directly to; computer users)
(news and information; be provides directly by; PointCast Inc.)
(users; to surf the Net to find; it)
(users; to surf; the Net)
(Rookie Antonio Bryant; is; fiery)
(he; must find; some consistency)
(temperatures; can vary; as much as 10 degrees Fahrenheit)
(The Rams; sorely miss departed; third receiver Az Hakim)
(they; surrendered deciding; goals)
(they; surrendered in; the last four games of the losing streak)
(they; were blanked by; Tampa Bay)
(Eating disorders; affect 5 million to; 10 million American adolescent girls and women and about 1 million American boys and men)
(Eating disorders; affect; 5 million)
(A similar bill; is pending in; the Senate)
(a Democrat; be sponsored by; Florida Sens. Connie Mack , a Republican , and Bob Graham)
(Taylor; missed in; only one day of school)
(her head; went could move smoothly to; the right)
(her writing arm; be lift without; pain)
(she; went could move her head smoothly to; the right)
(she; went could move smoothly; her head)
(a single quart; can be still buy at; the corner store)
(it; 'll cost you; a few dollars extra)
(you; can still buy a single quart at; the corner store)
(you; can still buy; a single quart)
(force; is; necessary)
(it; be force in; the best interest of all)
(it; be; force)
(Organizations; can use; the grants)
(1 out 630 children; will develop cancer before; the age of 15)
(1 out 630 children; will develop; cancer)
(Leslie Robison; be an epidemiologist from; the University of Minnesota)
(cancer; has even; different implications)
(cancer; will be develop before; the age of 15)
(He; calculates; his annual maintenance costs)
(Steven Hoffenberg; be bidder for; New York Post)
(Steven Hoffenberg; be bidder of; New York Post)
(Towers Financial; was formed by; one-time New York Post bidder Steven Hoffenberg)
(it; expand; a safety net that is already larger than many people had thought , possibly giving more discouraged workers reason)
(Chatty; was interviewed after; Sept. 11)
(Chatty; was interviewed by; the police)
(the Chiefs; had to overcome; a 10-0 first-half deficit and a 17-14 Seahawks advantage)

(the Chiefs; to overcome; a 10-0 first-half deficit and a 17-14 Seahawks advantage)
(a bell of memory; be rang for; historians)
(this euphoria; rang a bell of memory for; historians)
(this euphoria; rang; a bell of memory)
(you; Even just want to take; a dip)
(the year 's two moves; Together have raised prices 14 percent at; the wholesale level)
(the year 's two moves; Together have raised; prices 14 percent)
(the year 's two moves; be 7 percent at; retail)
(It; was; Tuesday)
(he; explained in; Tuesday)
(Arab political emotions; have been shaped by; the region 's encounter)
(Diana; raised our consciousness about diseased children in Third World countries; people living with AIDS and the ravages of land mines)
(Diana; raised people living with AIDS; our consciousness)
(Diana; raised the ravages of land mines; our consciousness)
(diseased; be children in; Third World countries)
(Hooters Inc.; founded 14 years ago; the chain)
(Hooters Inc.; owns; the company trademark and related rights)
(Story Filed; have joined; CBS , Bravo and others)
(Mackovic; is presented with; a real-life role reversal that could prove painful for his football team if played out to the hilt at Rice Stadium)
(Today; is presented with; a real-life role reversal that could prove painful for his football team if played out to the hilt at Rice Stadium)
(a Buell dinner; be Maine senatorial candidate of; the Dems)
(it; gained during; the UPS strike)
(it; has kept; about 15 percent of the extra deliveries)
(Biondi; said of; Kay Koplovitz)
(Kay Koplovitz; be chairwoman of; the company)
(Kay Koplovitz; would remain as; chairwoman of the company)
(Rubin; tours China 's most astounding archeological treasure : the army of thousands of life-size figures that protect the graves of the Chinese emperors like; most visitors)
(Rubin; tours; China 's most astounding archeological treasure)
(The yield; spread between; an index of option-free 10-year `` A2 '' bank bonds)
(she; regularly traveled around; the country)
(she; regularly traveled returning to; brief officials)
(This quality; transcended; fashion)
(The public; took up the issue as; Congress)
(the issue; be took up as; Congress)
(the necessary reforms; could be enacted before; the 2002 midterm elections)
(the only question; seemed in; early 2001)
(a successful Teamsters union strike; was viewed as; a comeback)
(doubt; be casts by; Region prospers)
(the turmoil surrounding President Ron Carey; casts doubt on; its future)
(the turmoil surrounding President Ron Carey; casts; doubt)
(The subject; was; a Lakers four-peat)
(a campaign; begins from; today)
(it; was ZZZZ by; the early 1980s)
(it; was; ZZZZ)
(A physician 's diet; said the improvement in trading performance was due to; increased volumes led by canned Draught Guinness , an 11 percent increase in productivity per employee and returns on a 10 percent increase in marketing investment to 107 million pounds)
(The brewer; be diet of; A physician)

(canned Draught Guinness; be an 11 percent increase in; productivity)
(exercise; be diet of; A physician)
(increased volumes; be led by; canned Draught Guinness)
(5.5 percent; be declined as; overall passenger numbers)
(5.5 percent; be declined in; the first half)
(The number of passengers; declined 5.5 percent as; overall passenger numbers)
(The number of passengers; declined 5.5 percent in; the first half)
(The number of passengers; declined; 5.5 percent)
(it; Even was first diagnosed by; a British pediatrician)
(It; was an area in; central Bosnia)
(It; was an area of; central Bosnia)
(It; was; an area)
(12 North Koreans; to enter; a compound housing)
(12 North Koreans; tried to enter; a compound housing)
(The scene; was oddly; serene)
(requests; started calling; their suppliers)
(Anyone who has himself for a doctor; has; a fool)
(Anyone; has himself for; a doctor)
(himself; be has by; Anyone)
(His mother; said; he)
(he; was in; Saudi Arabia)
(he; was on; Sept. 11)
(The governor 's campaign aides; offered; a quick retort)
(The proposed accord; was reached by; the tobacco industry and 39 states)
(The proposed accord; was reached in; June 20)
(17 percent; be gained among; the other companies that got a boost from restructurings)
(Sara Lee Corp.; gained 17 percent for the week among; the other companies that got a boost from restructurings)
(Sara Lee Corp.; gained; 17 percent)
(a boost; be got from; restructurings)
(it; cut costs to raise $ 3 billion for; a stock buyback)
(it; cut; costs)
(it; will sell; some business)
(the other companies; got a boost from; restructurings)
(The announcement which came only days after a visit to Pyongyang by Japan 's prime minister , Junichiro Koizumi; marked; a significant change of strategy)
(he; shortly left; office)
(similar negotiations; pursued by; President Bill Clinton)
(similar negotiations; pursued with; North Korea)
(similar negotiations; pursued; he)
(E. Martin Gibson; has served as; a director of the parent company)
(E. Martin Gibson; is chairman of; the company)
(E. Martin Gibson; is; the company 's chairman)
(Her friend; was waiting at; a bar shaken and alone)
(Her friend; was waiting for; her)
(10 million animals; be tested by; contrast)
(European countries; tested 10 million animals by; contrast)
(European countries; tested 10 million animals in; last year)
(European countries; tested; 10 million animals)
(he; turns forgetful in; a way)
(1 13/16; be rose to; 97 3/4)
(Intel Corp.; rose 1 13/16 to; 97 3/4)

(Intel Corp.; rose; 1 13/16)
(Intel Corp.; was among; the leaders)
(efficiency 30 percent; be improves by; computers)
(it; introduced; a new product to link computers)
(Deutsche BA; meanwhile saw almost double; passenger numbers)
(Deutsche BA; meanwhile saw passenger numbers almost double in; the first six months of 1997)
(passenger numbers; be meanwhile saw almost double in; the first six months of 1997)
(Clinton aides; had been talking to; industry officials)
(it; captured in; the 1967 war)
(the violence; will pressure; Israel)
(He; now needs inhaled; asthma medicine)
(he; even never had before; asthma)
(The foundations; separate from; the boards of educations)
(he; is a finalist in; the competition)
(he; is; a finalist to choose a developer for the site of the New York Coliseum in Manhattan)
(he; wants for; example)
(he; wants to erect; a multiplex theater and virtual-reality amusement park)
(At least 170,000 civilian prisoners; claims in; the suit)
(At least 170,000 civilian prisoners; died at; Majdanek)
(At least 170,000 civilian prisoners; died in; Majdanek)
(the suit; claims including; 13,000 Jews)
(It; was; her sheer life force that was almost blinding , so blinding it is hard to believe it was not permanent , such a shock)
(it; is; hard)
(it; was; not permanent)
(Selig; to overcome; strong feelings)
(Selig; will have to overcome; strong feelings)
(another tropical disturbance; Meanwhile will promote locally heavy showers along; the coast)
(another tropical disturbance; Meanwhile will promote locally heavy showers to; the central)
(another tropical disturbance; Meanwhile will promote; heavy showers)
(heavy showers; Meanwhile will be promote along; the coast)
(heavy showers; Meanwhile will be promote to; the central)
(Chiaverini; be kept behind; him)
(Woodson; kept Chiaverini behind; him)
(Woodson; kept; Chiaverini)
(Woodson; made the leaping interception at; the Michigan 45)
(Woodson; made; the leaping interception)
(the leaping interception; be made at; the Michigan 45)
(you; Have ever looked closely at; a Cheez Doodle)
(you; Have ever looked closely to; a Cheez Doodle)
(Bensonhurst; is; a vintage Italian neighborhood)
(a vintage Italian neighborhood; be a place of; tidy two-family brick homes adorned with Madonnas in the front yard and American flags)
(the front yard and American flags; snapping over; the front doors)
(tidy two-family brick homes; be adorned in; the front yard and American flags snapping over the front doors)
(tidy two-family brick homes; be adorned with; Madonnas)
(Weinberg; came to; him)
(Weinberg; came with; his wife 's sculpture portfolio)
(Weinberg; proposed making; styled knobs and hardware)
(The money losing airline; offered; discount prices)
(power; be seizing in; 1984)

(power; be seizing in; a coup)
(You; can also look up; individual carriers)
(beautiful moments; were at; times)
(E-mail; is suing; Furman Selz Inc.)
(it; was; negligent)
(they; So fire up; the pits and smoke)
(Lewis 's decision; will give heavyweight champion Roy Jones Jr.; the impetus to take on Ruiz Dec. 7 on HBO , the idea)
(Lewis 's decision; will give light; the impetus to take on Ruiz Dec. 7 on HBO , the idea)
(the winner; would fight; the winner of the WBA title)
(Grbac; wore like; a guy who was given a wonderful gift by his worst enemy)
(Grbac; wore; a quizzical look)
(quizzical; look like; a guy who was given a wonderful gift by his worst enemy)
(Turnout; was; light)
(A Swiss Bank spokesman; declined to comment on; the talks)
(A Swiss Bank spokesman; to comment on; the talks)
(Basel; be A Swiss Bank spokesman in; Michel Willi)
(members of Congress and their staffs; have a traditional `` defined benefit '' program for; one thing)
(members of Congress and their staffs; have; a traditional `` defined benefit '' program)
(they; exactly what 'll get upon; retirement)
(He; moved; Jerry Pettibone 's 6 a.m.)
(The Stars; have; a team incentive)
(the Ritz hotel; be leaving in; Paris)
(Pale strawberries; are lined up beside; colored berries soaked in a balsamic vinegar-brown sugar sauce)
(Pale strawberries; be soaked in; a water-based liquid)
(colored berries; be soaked in; a balsamic vinegar-brown sugar sauce that stained them vivid red)
(FBI Director Louis Freeh; told the Senate Judiciary Subcommittee on; Technology , Terrorism and Government Information)
(FBI Director Louis Freeh; told the Senate Judiciary Subcommittee on; Wednesday)
(FBI Director Louis Freeh; told; the Senate Judiciary Subcommittee)
(criminals; to be combat in; the information age)
(the Senate Judiciary Subcommittee; be told on; Technology , Terrorism and Government Information)
(the Senate Judiciary Subcommittee; be told on; Wednesday)
(the keys and export restrictions; are needed by; law enforcement to combat criminals in the information age)
(he; Clearly understands; the end of his career)
(He; has encouraged; the couple)
(He; took to; the idea)
(The North Korean leader; promptly satisfied; Japan 's demands)
(a dozen women; emerged the final one in black , standing silently and gazing mutely at the audience in; silence)
(a dozen women; emerged the final one in black , standing silently and gazing mutely at the audience in; white chadors)
(a dozen women; emerged; the final one)
(the final one; be emerged in; silence)
(the final one; be emerged in; white chadors)
(454,000 ounces; be rose to; 141.118 million ounces)
(Silver inventories; rose 454,000 ounces to; 141.118 million ounces)
(Silver inventories; rose; 454,000 ounces)
(its daily stockpile report; said up from a 10-month low 140.664 million ounces to; the exchanges)
(the exchanges; said up from a 10-month low 140.664 million ounces after; trading)
(the exchanges; said up from a 10-month low 140.664 million ounces in; its daily stockpile report)

(the exchanges; said up from a 10-month low 140.664 million ounces; Silver inventories)
(2.1 percent; estimated in; May)
(Growth; is also; likely)
(likely; be Growth in; 1998)
(Lois Epstein; be an engineer with; the Alaska environmental organization Cook Inlet Keeper and a longtime pipeline safety activist)
(the legislation; achieved; a number of needed reforms)
(The country; can cut benefits at; a time)
(The country; can cut; benefits)
(benefits; can be cut at; a time)
(joblessness; leave relatively unskilled workers to fend for; themselves)
(joblessness; leave; unskilled workers)
(a premium increase; be paying over; six years)
(he; analyzes; the client 's policy to determine whether paying for all the damages will cost less money than paying a premium increase over six years)
(the other driver; is; amenable)
(totalitarian governments; controlled; all media outlets)
(He; was so inspired by; Snyder 's speech)
(Riley; begged to go for; the ride)
(he; learned; Snyder)
(We; are looking for; a middle ground)
(Hatley; created a reminder that in any production , any of the myriad collaborators may leave a brilliant mark; a wild garden , complete)
(Hatley; created a wild garden , complete with long grasses , hillocks , wildflowers and pathways , that turned the underground stage at the Manhattan Theater Club into a thrilling terrarium; a reminder)
(a brilliant mark; may be leave in; any production)
(long grasses , hillocks , wildflowers and pathways; turned the underground stage at; the Manhattan Theater Club)
(long grasses , hillocks , wildflowers and pathways; turned the underground stage into; a thrilling terrarium)
(the underground stage; be turned at; the Manhattan Theater Club)
(the underground stage; be turned into; a thrilling terrarium)
(part; is probably contained in; the lowered expectations)
(a federal overseer; was entangled in; a fund-raising scandal)
(CHICKEN SOUP; be compiled by; nn)
(the owner; ca n't read the riot act after; a game)
(the owner; ca n't read; the riot act)
(the riot act; ca be n't read after; a game)
(They; 're in; the title credits of the film)
(Bush; instructed Secretary of State Colin Powell to begin; intensive diplomacy aimed at crafting a U.N. Security Council resolution)
(Bush; instructed; Colin Powell)
(Bush; to begin; intensive diplomacy aimed at crafting a U.N. Security Council resolution)
(Lucas ' next big film; is; The Hulk)
(The Hulk; be based on; the comic book)
(the government; will liquidate; banks that are insolvent)
(El Pueblo Gallery; is located at; space E-13)
(El Pueblo Gallery; is located in; space E-13)
(El Pueblo Gallery; is located on; space E-13)
(Michael Barrett; be acquired from; Montreal)
(Michael Barrett; be acquired in; need of a catcher)
(Oakland; acquired Michael Barrett from; Montreal)
(Oakland; acquired Michael Barrett in; need of a catcher)

(Oakland; acquired; Michael Barrett)
(Ramon Hernandez; be trading to; San Diego)
(Hoffenberg; was sentenced in; March)
(Hoffenberg; was sentenced to; 20 years)
(it; was the market leader in; six of 11 countries)
(it; was the market leader of; six of 11 countries)
(it; was; the market leader)
(I; always seems so in; She)
(Royal Indy; had been a little before; the race)
(3.7 million; be owned 3com; shares)
(3.7 million; be owned at; the end of June)
(3Com 's success; will boost; 3Com 's sales and profit margins)
(Paul Meeks; be director of research at; Jurika &AMP)
(Paul Meeks; be director of; research)
(Voyles LP; owned 3.7 million 3com; shares)
(Voyles LP; owned 3.7 million at; the end of June)
(The Rangers and Giants; represent; opposite viewpoints)
(25 million shares; 's adding for; a total of 125 million shares)
(25 million shares; 's adding to; its stock)
(it; 's adding 25 million shares for; a total of 125 million shares)
(it; 's adding 25 million shares to; its stock)
(it; 's adding; 25 million shares)
(The last prisoner; was released in; 1988)
(The last prisoner; was released on; 1988)
(Pageant officials; do not release; the winner 's name of the preliminary interview contest)
(the same things; could have been said in; Tennessee and Pittsburgh)
(The zealots who have been campaigning against cigarettes; have; trouble)
(three cigars; is dangerous to; their health)
(three cigars; is; dangerous)
(children; suffering from; psychological disorders)
(city officials; scrambled to recruit; new foster parents)
(large; be groups of; siblings)
(themselves; struggling young mothers with babies and large groups of siblings to find; homes)
(themselves; struggling; young mothers)
(themselves; to find; homes)
(young; be mothers with; babies and large groups of siblings)
(the autistic twins; saw with; their inner eyes)
(Michael Rizzuto; be a senior buyer at; Gracious Home)
(Their pieces; sell well in; the $ 20 range)
(a group of protesters; burned; two American flags)
(1 percent; be rose in; the most recent month)
(figures; be released in; Wednesday)
(Martinez and McLemore; have had; injury problems)
(The Mariners ' oldest players; have been among; productive)
(The average yield; is a little; than 9 percent)
(than 9 percent; be The average yield on; junk bonds)
(he; More than 30 years ago was derided by; esteemed social scientists)
(American involvement; is clearly the main impulse of; the hatred that has been directed at America)
(American involvement; is clearly; the main impulse of the hatred)
(the main impulse of the hatred; be American involvement in; the Middle East)
(The troubled answers about the campaign against terrorism at home and abroad; conveyed; a similar fatalistic , slightly cranky mood)

(Nancy Cole; be the president of; ETS)
(its nonprofit status; is a source of concern to; outsiders)
(its nonprofit status; is a source of; concern)
(its nonprofit status; is; a source of concern)
(the company; is; aware)
(the testing service; increases its competition with; for-profit businesses)
(the testing service; increases; its competition)
(Annington Homes; be a group of; 57,000 British military houses)
(Nomura International 's Principal Finance Group; has completed more than $ 11 billion in securitizations since; 1995)
(the 249 million pound securitization of the Phoenix Inns pub chain Nomura; Led by; Guy Hands)
(the 249 million pound securitization of the Phoenix Inns pub chain Nomura; also bought from; GrandMet and Fosters)
(the 249 million pound securitization of the Phoenix Inns pub chain Nomura; be the 904 million pound securitization of; Annington Homes)
(the 904 million pound securitization of Annington Homes; be the 249 million pound securitization of; the Phoenix Inns pub chain Nomura)
(the U.K. government; which sold as; part of its rail privatization program)
(the unit; be Principal Finance Group of; Nomura International)
(her; be keeping off; the ballot)
(his hold; to be protect on; power)
(opposition leaders; accuse him of; manipulation)
(opposition leaders; accuse him to protect his hold on; power)
(opposition leaders; accuse him to protect; his hold)
(opposition leaders; accuse; him)
(the Browns; proved once more; themselves)
(the NFL; be Joining in; 1950)
(It; is the cultural issues though by; Cox Newspapers)
(It; is though; the cultural issues that probably pose the biggest challenges)
(Story Filed; is the cultural issues though by; Cox Newspapers)
(Story Filed; is though; the cultural issues that probably pose the biggest challenges)
(Poverty rates for children , 16.3 percent , and the elderly , 10.1 percent; were virtually unchanged from; 2000)
(Poverty rates for children , 16.3 percent , and the elderly , 10.1 percent; were virtually; unchanged)
(unchanged; be Poverty rates for; children)
(Any notoriety; will promote Latina actresses in; general)
(Any notoriety; will promote; Latina actresses)
(Bel Hernandez; be former actress of; a Hollywood trade publication)
(Latina actresses; will be promote in; general)
(the acute pain of someone; do n't feel after; a while)
(they; do n't feel the acute pain of someone who has been dumped after; a while)
(they; do n't feel; the acute pain of someone)
(the U.S.; may change; its strong-dollar policy)
(Hose; contracted inhalation; anthrax)
(mail; be handling for; the State Department)
(The company; exported; 2.13 million barrels a day of crude oil , and 966,000 barrels a day of refined products)
(President Jerry Jordan; speaks on; money and monetary policy)
(President Jerry Jordan; speaks to; the Cleveland Business Economists Club)
(noon; be Federal Reserve Bank of; Cleveland)
(The event; fizzled after; the bombing that rocked the games)
(Tim Fallar; be president of; The Fallar Co.)

(the same radiant hope; Did not the same radiant hope accompany the transition from the 19th to; the 20th century)
(the same radiant hope; Did not the same radiant hope accompany; the transition)
(the transition; Did not the same radiant hope accompany to; the 20th century)
(20-inch; Sony television set that; retails)
(An online bidder; paid $ 525 for; a 20-inch Sony television set)
(Dr. Mark T. Keating; be a founder of the company at; Harvard)
(Dr. Mark T. Keating; be a founder of; the company)
(Dr. Mark T. Keating; be the work in; a founder of the company and a biologist)
(Dr. Mark T. Keating; be the work of; a founder of the company and a biologist)
(Harvard; be studies regeneration in; zebrafish)
(The company; is largely based on; the work of Dr. Mark T. Keating)
(Israel; has long said for; its part)
(it; gains; a peace treaty)
(The finding; revealed; bay trees , not)
(Little; said at; the time)
(Little; said in; the time)
(Little; said to; the time)
(Little; said; he)
(Ramirez; be left in; the game)
(he; left Ramirez in; the game)
(he; left Ramirez; the game)
(he; left; Ramirez)
(the slugger; apologized to; everybody)
(Purdue fullback Mike Alstott; be very seriously drafting a year ago with; their second-round pick)
(The Cardinals; considered very seriously drafting Purdue fullback Mike Alstott a year ago with; their second-round pick)
(The Cardinals; considered very seriously drafting a year ago; Purdue fullback Mike Alstott)
(He; paid $ 350,000 for; the car)
(He; paid $ 350,000 in; 1990)
(he; 's been in; some time)
(The Chinese; are still firing eight or nine million workers; a year)
(The Chinese; do n't have; a safety net)
(those workers; are still firing eight or nine million workers; a year)
(those workers; do n't have; a safety net)
(executives; misled; investors)
(groups; issue news releases using road rage to make; the case)
(groups; issue; news releases using road rage)
(groups; publish; studies)
(highway construction; be the case for; road improvements)
(faith; to be lose in; themselves)
(the Revolution; been involved in; an 11-game losing streak)
(they; appeared to lose faith in; themselves)
(they; appeared to lose; faith)
(blacks and whites; came in; the end)
(many of them; tell; it)
(the end; came to; blacks and whites)
(Army; jumped covering; 66 yards)
(Army; jumped to; a 7-0 lead)
(Baker Hughes Inc.; releases; its weekly survey of the number of active oil)
(it; started in; the same top executives)
(Iraq; could be a laboratory for; terror groups)

(Iraq; could be; a laboratory easily furnishing them with the chemical and biological weapons)
(a laboratory; easily furnishing them with; the chemical and biological weapons it had developed)
(them; be easily furnishing with; the chemical and biological weapons it had developed)
(It; 's; early days)
(Ooze; was coming next to; the water line)
(Some city tests of the water; have indeed found; small traces of crude oil)
(a water-pipe replacement; be supervised in; the early 1990s)
(pools of oil; were at; the bottom)
(this summer who supervised a water-pipe replacement in the early 1990s; be pools of; oil)
(this summer; supervised a water-pipe replacement in; the early 1990s)
(He; then carved the steak into; the bone and into slices)
(He; then carved the steak off; the bone and into slices)
(He; then carved; the steak)
(He; used; T-bone)
(it; was cooked; al sangue which is to say , deliciously rare , though obviously you should cook the steak just how you like to eat it)
(the steak; be then carved into; the bone and into slices)
(the steak; be then carved off; the bone and into slices)
(you; just like to eat; it)
(you; obviously should cook; the steak)
(some distance; be accidentally bumped from; their meeting spot)
(some distance; be accidentally bumped in; the street)
(some distance; be accidentally bumped into; each other)
(they; accidentally bumped some distance from; their meeting spot)
(they; accidentally bumped some distance in; the street)
(they; accidentally bumped some distance into; each other)
(they; accidentally bumped; some distance)
(Grady Little; be manager for; Red Sox)
(Grady Little; be manager of; Red Sox)
(Ramirez; be kept in; the game)
(Red Sox manager Grady Little; kept Ramirez in; the game)
(Red Sox manager Grady Little; kept; Ramirez)
(he; should have benched; him)
(Fowler; acknowledged; Harold Ickes)
(Harold Ickes; had; the strongest voice)
(Harold Ickes; was deputy chief of; staff)
(the DNC finance division; be directing from; the White House)
(A Georgia inventor; has won; a patent)
(Michigan Stadium; So is indeed the largest in; the nation)
(Michigan Stadium; So is indeed; the largest)
(a private resolution; is; possible)
(clients; are at; fault)
(clients; are in; minor fender benders where there are no personal injuries to inquire whether a private resolution is possible)
(he; advises; clients who are at fault in minor fender benders)
(The latest price rise; was the second by; the cigarette makers)
(The latest price rise; was; the second)
(It; went from; testing 219)
(It; went in; last year)
(It; went to; 20,526)
(not a reaction; be the release of; test results and his plans)
(the release of test results; were not a reaction to; criticism)

(the release of test results; were; not a reaction)
(silence; was at; times)
(the silence; was at; times)
(She; was early on; anxious)
(That creature; was in; turn named for the mythical multiheaded serpent)
(turn; be named for; the mythical multiheaded serpent that regrew new heads when one was cut off)
(Hydra , of Cambridge; is named after; a pond-dwelling creature that can grow two wholes after being sliced in half)
(other studies; Yet point to fetal; exposure)
(one or two new distributors; signing on; every week)
(a wide array of stocks; be the performance of; the broader markets)
(the performance of the broader markets; affects; the level of return)
(the performance of the broader markets; be a wide array of; stocks)
(it; cut for; Japan)
(it; cut in; half its growth estimate)
(its report; also said to; the IMF)
(the IMF; also said in; its report)
(the IMF; also said; its report)
(foreign students; spend an estimated $ 11 billion a year for tuition and rent , not an estimated $ 11 billion a year for tuition and rent to mention; items ranging from jeans to pizzas)
(items; ranging from; jeans)
(starters Torry Holt and Isaac Bruce; might be the best and most explosive tandem in; the league)
(starters Torry Holt and Isaac Bruce; might be; the best and most explosive tandem)
(The Bank of Japan; said in; its quarterly report)
(The Bank of Japan; said; its quarterly report)
(its quarterly report; said to; The Bank of Japan)
(Another survivor; also expressed; frustration)
(demographers; be the increasing concentration of jobs in; the biggest cities)
(demographers; be the increasing concentration of; jobs and wealth)
(demographers; be the steady decline due to; ill health)
(demographers; be the steady decline in; the Russian population)
(demographers; be the steady decline since; Stalin 's forced relocations)
(demographers; may be the largest mass movement of; people)
(the census; to confirm; the steady decline in the Russian population due to ill health , migration and what demographers call `` the echo of war '' from World War II)
(the results; are compiled in; next year)
(it; was for; the major airlines)
(Ford; plans to announce soon; a similar move)
(Austin Stories; to be continue for; a full season)
(the smell of a skunk; Sometime later seemed to permeate; the bus)
(the statement released by Mar; addressed these concerns in; broad terms)
(the statement released by Mar; addressed; these concerns)
(the statement; be released by; Mar)
(these concerns; be addressed in; broad terms)
(growers; to trade directly in; the market)
(the 12 market makers; be authorized by; the exchange)
(Tigrett; lost support in; last year)
(Tigrett; lost support on; the board)
(Tigrett; lost; support)
(a big hit; be took in; the wake of a $ 15 million extravaganza)
(support; be lost on; the board)
(the company; took a big hit in; the wake of a $ 15 million extravaganza)

(the company; took a big hit; the wake of a $ 15 million extravaganza)
(the company; took; a big hit)
(Ratner; be the most aggressive builders in; recent years)
(Ratner; be the most aggressive builders in; the city)
(Ratner; needs; government approval)
(he; be the most aggressive builders in; recent years)
(he; be the most aggressive builders in; the city)
(he; needs; government approval)
(They; simply feel; nothing)
(Steve Forbes; was running for; president)
(he; did n't talk very much about; the rights of the unborn)
(You; do n't have; a computer)
(Underworld; is; certain)
(smaller stocks; rallied pushing; the Russell and Nasdaq)
(Fill; be the spaces in; the whites of the eggs)
(Fill; be the spaces with; the spiced yolks)
(a group of Amherst College students; held a patriotism rally in; October)
(a group of Amherst College students; held a patriotism rally in; response)
(a group of Amherst College students; held a patriotism rally reciting; the Pledge of Allegiance)
(a group of Amherst College students; held a patriotism rally; October)
(a group of Amherst College students; held a patriotism rally; response)
(a group of Amherst College students; held; a patriotism rally)
(a patriotism rally; be held in; October)
(a patriotism rally; be held in; response)
(Koizumi and his foreign ministry; have come in; exchange)
(Koizumi and his foreign ministry; have come under; harsh criticism)
(They; litter; the road)
(That sharp drop; was mirrored in; follow-up interviews)
(those averages; peaked on; Aug. 6)
(a visionary; struck down in; a battle to drag the stuffy monarchy and all of Britain into the 21st century)
(a visionary; struck down; a battle to drag the stuffy monarchy and all of Britain into the 21st century)
(the dead princess; is being hailed in; many quarters)
(the stuffy monarchy and all of Britain; to be drag into; the 21st century)
(You; likely have in; }72847:929434:77)
(You; likely have; 0940:477973)
(Volkswagen sales; peaked then at; 293)
(Volkswagen sales; peaked then in; 1980)
(Volkswagen sales; peaked then in; the U.S.)
(Lucas; plays; Banner 's nemesis)
(Maj; be nemesis of; Banner)
(it; seemed in; the auction 's early hours)
(people; stood in; two-hour lines)
(people; stood just to get into; the bidding room)
(the Enron connection; was propping up; some dubious prices)
(5 1/4 , or 8.4 percent; be rose triple the three-month daily average in; midday trading of 2.1 million)
(5 1/4 , or 8.4 percent; be rose triple the three-month daily average to; 67 3/4)
(Shares of the New York-based company; rose 5 1/4 , or 8.4 percent , in; midday trading of 2.1 million)
(Shares of the New York-based company; rose 5 1/4 , or 8.4 percent , to; 67 3/4)
(Shares of the New York-based company; rose 5 1/4 , or 8.4 percent ,; triple the three-month daily average)
(Shares of the New York-based company; rose triple the three-month daily average in; midday trading of 2.1 million)
(Shares of the New York-based company; rose triple the three-month daily average to; 67 3/4)

(Shares of the New York-based company; rose triple the three-month daily average; 5 1/4 , or 8.4 percent)
(triple the three-month daily average; be rose 5 1/4 , or 8.4 percent , in; midday trading of 2.1 million)
(triple the three-month daily average; be rose 5 1/4 , or 8.4 percent , to; 67 3/4)
(Carroll; said of; he)
(he; would hold; tailback Justin Fargas)
(they; are available for; next week 's game)
(I; said; it)
(I; turns to; me)
(You; turns to; me)
(the secretary; turns to; me)
(you; 've got; a point)
(it; has few photos in its 500+ pages in; contrast)
(it; has; few photos)
(The new Cadillac; to go for; model year 2004)
(The new Cadillac; to go on; sale)
(Japan; has done little since; April)
(Japan; has done little to change; unfair port practices)
(the energy market; has dwindled diminishing; the value of those assets)
(the number of possible buyers; has dwindled diminishing; the value of those assets)
(ranks; be joined with; Ansar al-Islam)
(senior American intelligence officials; have said in; the past)
(some Iraqi fighters who opposed the United States in Afghanistan; joined ranks with; Ansar al-Islam)
(some Iraqi fighters who opposed the United States in Afghanistan; joined; ranks)
(some Iraqi fighters; opposed the United States in; Afghanistan)
(the United States; be opposed in; Afghanistan)
(1 1/16; be rose to; 33 3/16)
(Hilton 's shares; rose 1 1/16 to; 33 3/16)
(Hilton 's shares; rose; 1 1/16)
(the government; will also encourage; the merger of insolvent banks)
(The end-of-the-month deadlines; are a result of the landmark Immigration Reform Act by; GREG LUCAS)
(The end-of-the-month deadlines; are a result of; the landmark Immigration Reform Act)
(She; has done so with; depth and confidence)
(sufficient lift; could be n't even provide for; a 165-pound bodysurfer)
(the waves; Also were so small on; a recent afternoon)
(the waves; Also were so; small and punchless)
(they; could n't even provide sufficient lift for; a 165-pound bodysurfer)
(they; could n't even provide; sufficient lift)
(people; talk about; virtue)
(the world; is filled with; people who talk about virtue)
(Clark; appears in; fact)
(Clark; appears to have; a reserved seat)
(mar/16; be rose to; 36 3/16)
(Seagram shares; rose 3/16 to; 36 3/16)
(Seagram shares; rose; mar/16)
(Helou; joins of; top writers)
(Helou; joins; a number of top writers)
(Oppenheimer; had in; the 1930s)
(Oppenheimer; had with; his colleagues)
(Oppenheimer; had; the 1930s)
(he; Instead gives blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of; FBI efforts)

(he; Instead gives blow-by-blow accounts of encounters Oppenheimer had in the 1930s with Communist sympathizers of; the machinations of Lewis Strauss)

(he; Instead gives; blow-by-blow accounts of encounters)

(him; removed from; power and of differences Oppenheimer had with his colleagues)

(him; removed of; power and of differences Oppenheimer had with his colleagues)

(his orthopedic surgery practice; was winding down as; Dr. Norman J. Silver)

(opportunities; were in; the place where he would ultimately retire)

(They; defeated handily; the defending champion Philadelphia Eagles)

(They; defeated the defending champion Philadelphia Eagles handily in; their first NFL game)

(the defending champion Philadelphia Eagles; be defeated handily in; their first NFL game)

(the league championship; to be win with; a dramatic 30-28 victory)

(Ronald Eugene Timms; were arrested in; Wednesday afternoon)

(finery; be given by; designers)

(finery; be given to; them)

(Some historians and the Turkish government; have disputed; claims of an organized genocide)

(Those very same men who dismissed her as `` barmy ''; are now seen at; TV studios)

(Those very same men who dismissed her as `` barmy ''; are now seen in; TV studios)

(Those very same men; dismissed her as; barmy)

(her; be dismissed as; barmy)

(the land; regaling us with; tales of her specialness)

(us; be regaling with; tales of her specialness)

(a few squalls; will reach the immediate coast from; South Carolina)

(a few squalls; will reach the immediate coast to; northern Florida)

(a few squalls; will reach; the immediate coast)

(the immediate coast; will be reach from; South Carolina)

(the immediate coast; will be reach to; northern Florida)

(he; wants as; much public input and discussion)

(We; moved; boxes and bags)

(We; stuffed into; a microscopically small dorm room)

(We; stuffed with; emergency chocolate cupcakes)

(favorite shirts and CDs , computer , new socks , notebooks , tennis racket; would be inhabited by; a completely unknown quantity and the other half of which)

(he; draws so that he can say , `` Bye , Mom in; today)

(shoebox; moved; boxes and bags)

(shoebox; stuffed into; a microscopically small dorm room)

(shoebox; stuffed with; emergency chocolate cupcakes)

(he; decided to attack; them)

(he; failed to have; the lawyers dismissed by a judge)

(he; said; he)

(he; to attack; them)

(he; to have; the lawyers dismissed by a judge)

(the lawyers; be dismissed by; a judge)

(his fast-track bill; to be offer during; the second week of September)

(his fast-track bill; to offer to be; the Republican Congress)

(the Democratic president; plans to offer his fast-track bill during; the second week of September)

(the Democratic president; plans to offer his fast-track bill to; the Republican Congress)

(the Democratic president; plans to offer; his fast-track bill)

(the Democratic president; to offer his fast-track bill during; the second week of September)

(the Democratic president; to offer his fast-track bill to; the Republican Congress)

(3.615 percent; be Today 's average yield on; the sale of C$ 2.1 billion of six-month bills)

(Today 's average yield; was up from 3.561 percent two weeks ago; 3.615 percent)

(Hot-rolled and cold-rolled sheet which has a smoother finish and is used on the outside of autos and appliances; be account for; about half of all U.S. steel shipments)
(I; finally got; the package)
(the phone; was activated though; the battery needed to be charged for four hours)
(coverage; arising from; Diana 's death)
(her image; had been during; her life)
(her image; had been for; some publications)
(a present; could become a virtual gift that; ligHtli touches)
(a present; could become; a virtual gift)
(the patent; be issued to; William Dodd)
(I; hit; the towers)
(It; must be; an Arab)
(a second one; hit; the towers)
(Fletcher and Clark treasurer James E. Collins; make $ 123,000 a year for; part-time work)
(Fox , ABC and UPN; are offering now; the same shows)
(Fox , ABC and UPN; are offering the same shows in the time slot now in; fact)
(the same shows; are offering now in; fact)
(You; might not understand; it)
(matters; to be take into; their own hands)
(they; fulfilled; the quintessential American desire)
(Officials; be long known for; safe design)
(their cars; are no match for; a large sport utility vehicle)
(he; observed; the brothers)
(they; sat in; apparent rapture exchanging six-figure primes)
(they; seemed to pull from; their heads)
(they; to pull from; their heads)
(Mary McCarty; writes for; the Dayton Daily News)
(2.; Place jalapeno in; the bowl of a food processor)
(2.; Place the garlic in; the bowl of a food processor)
(2.; Place; the garlic and jalapeno)
(the garlic and jalapeno; be Place in; the bowl of a food processor)
(Stephen S. Roach; be chief economist at; Morgan Stanley)
(the tipping point; is off; a long way)
(Indonesia 's economy; to expand; 7 percent)
(Malaysia; to grow; 7 percent)
(Thailand; is bracing for; growth of only 3 percent)
(Thailand; is bracing for; this year)
(gross domestic product; to grow; 5.55 percent)
(Company; followed; suit)
(heightened security; posed; new obstacles)
(speed; is; your life)
(That carpet cleaning company; was started by; a 16-year old who wound up with stock worth more than $ 100 million after his company went public)
(a 16-year old; wound up with; stock worth)
(its 40,000 barrel-a-day Yme oil field; to be shut down in; the North Sea)
(state-owned oil company Statoil to shut down its 40,000 barrel-a-day Yme oil field in the North Sea; be forced in; Norway)
(striking offshore oil workers; forced state-owned oil company Statoil to shut down its 40,000 barrel-a-day Yme oil field in the North Sea in; Norway)
(striking offshore oil workers; forced; state-owned oil company Statoil to shut down its 40,000 barrel-a-day Yme oil field in the North Sea)
(Lucas; stopped recently in; Atlanta)

(Lucas; stopped recently to talk about; Sweet Home Alabama)
(Philip Morris , RJR Nabisco Holdings Corp. and other tobacco companies; would obtain protection from future class-action lawsuits that have threatened the industry 's well-being in; return)
(Philip Morris , RJR Nabisco Holdings Corp. and other tobacco companies; would obtain; protection)
(protection; would be obtain in; return)
(Alea and Tabio; use political strife as; a broad backdrop on which to place the characters instead of making specific statements about revolution)
(Alea and Tabio; use; political strife)
(Japan; may be trying to boost its economy through; exports)
(Japan; may be trying to boost; its economy)
(Japan; to boost; its economy)
(U.S. Treasury officials; express; concern)
(its economy; to be boost through; exports)
(the food; be Perhaps examining too closely on; the plate)
(he; Specifically 's driven by; the prospect of rematches to beat him)
(Efforts to reach Johnson; were; unsuccessful)
(you; 're running; a hot system)
(you; have to resort to; 1,200-degree air)
(I; asked; the Armenian native)
(fun; be ever poked at; the sign which is basically a Bart Simpson dream)
(the neighborhood kids or anybody; ever poked fun at; the sign which is basically a Bart Simpson dream)
(the neighborhood kids or anybody; ever poked; fun)
(Ariel; bought its shares in; the mid-teens)
(Ariel; bought; its shares)
(its shares; be bought in; the mid-teens)
(barbecue sauces; developed with; Texas taste panels)
(Lee Janzen; be PUSHED to; THE WALL)
(the public; remains; skeptical)
(Arnoldy; logs about 30,000 miles a year aboard Intrepid parking it on; a private siding)
(Arnoldy; logs about 30,000 miles a year aboard Intrepid parking; it)
(Arnoldy; logs; about 30,000 miles)
(he; 's not riding; the rails)
(it; be parking on; a private siding)
(The Treasury Department; is responsible for; U.S. foreign exchange policy)
(The Treasury Department; is; responsible)
(police officers; climbing over; the roof)
(police officers; entering; the offices of two related companies)
(it; expects a net loss in wireless customers in; this quarter)
(it; expects; a net loss)
(stock; be tracking for; the first time)
(stock; be tracking on; Wednesday)
(the company 's PCS; tracking stock below $ 2 for; the first time)
(the company 's PCS; tracking stock below $ 2 on; Wednesday)
(They; are moving to install; side air bags)
(more protection; to provide to be; the head and chest)
(4.167 percent; be The average yield on; the sale of C$ 1.9 billion of one-year bills)
(The average yield; was up from 4.165 percent two weeks ago; 4.167 percent)
(It; has; outstanding stock options that could swell its roster of shares by 15 percent , and thus reduce earnings per share)
(its roster of shares; could be swell by; 15 percent)
(Becky Fenger; be a spokesperson for; NO Transit Taxes)
(we; beat; City Hall)

(Richard P. Traina; be president of; the university)
(Tilton 's offices; be the board of; the George I. Alden Trust)
(he; moved into; a spot)
(he; moved to; a spot)
(the university 's president; retired in; 2000)
(July 's exports; surpassed; June 's total of $ 24.39 billion)
(Italian; be colors of; green , white and red)
(Its commercial spine; is; chock full of pork and pasta stores and the Italian colors of green)
(Hall and Sax; approached from; the same direction)
(Bhutto; now living in; exile)
(Musharraf; charged with; corruption)
(Musharraf; defended; his government 's decision to ban Bhutto ,)
(part; be taking in; parliamentary elections)
(The demoted starter; had not pitched in; a week)
(McDaniel; postponed because of; the publicity the case has received)
(McDaniel; postponed ruling also on; Reilly 's motion)
(McDaniel; postponed ruling also on; a defense motion to move the trial out of Middlesex County)
(other factors that can affect quality of life; are beyond; these practical considerations)
(pension funds; to be entice into; junk)
(he; was; skeptical)
(television advertising; is so; powerful)
(Japan; promised to address U.S. concerns by; today)
(Japan; promised to address; U.S. concerns)
(Japan; to address U.S. concerns by; today)
(Japan; to address; U.S. concerns)
(The agency; suspended; imposition of the $ 100,000-per-voyage fines)
(U.S. concerns; to be address by; today)

ANNEX C

Penn part-of-speech tags

Number	Tag	Description
1.	CC	Coordinating conjunction
2.	CD	Cardinal number
3.	DT	Determiner
4.	EX	Existential there
5.	FW	Foreign word
6.	IN	Preposition or subordinating conjunction
7.	JJ	Adjective
8.	JJR	Adjective, comparative
9.	JJS	Adjective, superlative
10.	LS	List item marker
11.	MD	Modal
12.	NN	Noun, singular or mass
13.	NNS	Noun, plural
14.	NNP	Proper noun, singular
15.	NNPS	Proper noun, plural
16.	PDT	Predeterminer
17.	POS	Possessive ending
18.	PRP	Personal pronoun
19.	PRP$	Possessive pronoun
20.	RB	Adverb
21.	RBR	Adverb, comparative
22.	RBS	Adverb, superlative
23.	RP	Particle
24.	SYM	Symbol
25.	TO	to
26.	UH	Interjection
27.	VB	Verb, base form
28.	VBD	Verb, past tense
29.	VBG	Verb, gerund or present participle
30.	VBN	Verb, past participle
31.	VBP	Verb, non-3rd person singular present
32.	VBZ	Verb, 3rd person singular present
33.	WDT	Wh-determiner
34.	WP	Wh-pronoun
35.	WP$	Possessive wh-pronoun
36.	WRB	Wh-adverb