Abstract Meaning Representation (AMR) 1.0 Specification

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Part I. Introduction

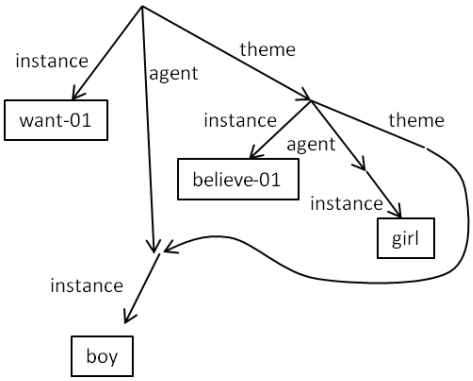
AMR captures "who is doing what to who" in a sentence. Each sentence is represented as a **rooted, directed, acyclic graph** with labels on edges (relations) and leaves (concepts).

Like a parse tree, AMR provides a **single, traversable structure** that takes all words into account. It is not a disconnected set of annotation layers. Unlike a parse tree, the AMR is abstract. It may represent any number of natural language sentences. AMR does not annotate the individual words in a sentence, like a dependency parse does.

AMR implements a simplified, standard neo-Davidsonian semantics [Davidson 1967, Higginbotham 1985], using standard feature structures [Shieber 1986, Carpenter 1992]. AMR's formal origins are in unification systems [Kay 1979, Knight 1989, Moore 1989] and natural language generation [Mann 1982, Elhadad 1988, Knight & Hatzivassiloglou 1995]. Predicates senses and core semantic roles in AMR are drawn from the amazing Ontonotes project.

AMR does not say anything about how it wants to be processed. It is closer to English than to other languages. It is not an interlingua.

Example



This AMR means (roughly): There is a wanting event, whose agent is a boy, and whose theme (i.e., wanted thing) is a believing event. This believing event has an agent, which is a girl, and it has a theme (i.e., believed thing), which is the *same boy* just mentioned. Here, "boy" plays two roles: (1) it is the agent of "want-01", and (2) it is the "theme" of "believe-01". The AMR captures this with two directed edges pointing to the same node.

Suffixes like "-01" and "-02" indicate conceptual frames, distinguishing between different senses of English predicates like "want".

Here is a text-friendly way to write the same AMR:

```
(w / want-01
  :agent (b / boy)
  :theme (b2 / believe-01
             :agent (g / girl)
             :theme b))
```

The variables w, b, b2, and g correspond to internal nodes in the graph above. Note that b appears twice in this format, the first time as "(b / boy)" and the second time simply as "b".

This AMR can also be viewed as conjunction of logical triples, omitting root information:

```
instance(w, want-01) ^          /* w is an instance of wanting */
instance(b, boy) ^              /* b is an instance of boy */
instance(b2, believe-01) ^      /* b2 is an instance of believing */
instance(g, girl) ^             /* g is an instance of girl */
agent(w, b) ^                   /* b is the wanter in w */
theme(w, b2) ^                  /* b2 is the wantee in w */
agent(b2, g) ^                  /* g is the believer in b2 */
theme(b2, b)                    /* b is the believee in b2 */
```

Abstraction away from English

The AMR above can be expressed variously in English:

The boy wants the girl to believe him.
The boy wants to be believed by the girl.
The boy has a desire to be believed by the girl.
The boy's desire is for the girl to believe him.
The boy is desirous of the girl believing him.
etc.

The concept "want-01" might be realized as a verb ("wants"), a noun ("desire"), or an adjective ("desirous").

We think of AMR leaf-labels as concepts rather than words. We do not point to an element in an AMR and say "that is a noun" or "that is a verb". Rather, we say "that is an object" or "that is an event".

A single entity ("boy") can play multiple roles simultaneously (e.g., "agent" of "want-01", and "theme" of "believe-01"). The AMR does not talk about pronouns or zero-pronouns, though these are natural mechanisms for expressing multiple roles in English.

In many cases, English function words do not show up at all in AMR:

```
(a / adjust-01
  :agent (b / girl)
  :theme (m / machine))
```

The girl made adjustments to the machine.
The girl adjusted the machine.
The machine was adjusted by the girl.

```
(k / kill-01
  :time (y / yesterday))
```

The killing happened yesterday.

The killing took place yesterday.

More Logical than Syntax

AMR strives for a more logical, less syntactic representation. For example, "the boy must not go" and "the boy cannot go" are syntactically similar, but they have very different AMRs:

```
(o / obligatory
  :domain (g / go-01
              :agent (b / boy)
              :polarity -))
```

The boy must not go.
It is obligatory that the boy not go.

```
(p / possible
  :domain (g / go-01
              :agent (b / boy))
  :polarity -)
```

The boy cannot go.
It is not possible for the boy to go.
There is no possibility that the boy will go.
There is no possibility of the boy going.

The AMR transparently represents what is being negated, using the **:polarity** relation. Note that the concept "possible" can be realized as a modal, or an adjective, or a noun.

Labeled Roles

In predicate logic, we might write fixed-arity predicates like:

```
want(boy, girl)

sad(girl)
```

In AMR, we assign role names like:

```
(w / want
  :agent (b / boy)
  :theme (g / girl))

(s / sad
  :domain (g / girl))
```

Focus

The root of an AMR binds its contents into a single, traversable directed acyclic graph. It also serves as a rudimentary representation of focus. So we have:

```
(s / sad
   :domain (g / girl))
```

The girl is sad.
the sadness of the girl

```
(g / girl
   :domain-of (s / sad))
```

the sad girl
the girl who is sad
It is the girl who is sad.

```
 (s / see-01
  :agent (b / boy)
  :theme (s / sad
              :domain (g / girl)))
```

The boy sees that the girl is sad.
The boy sees the sadness of the girl.

```
(s / see-01
  :agent (b / boy)
  :theme (g / girl
             :domain-of (s / sad))
```

The boy sees the sad girl.
The boy sees the girl who is sad.

Here, **:domain** and **:domain-of** are inverses of each other, carrying the same meaning, differing only in direction. (Aside: we write **:mod** as shorthand for **:domain-of**, e.g., "(g / girl :mod (s / sad))")

Inverse roles are useful for maintaining a single rooted structure, e.g.:

```
(s / see-01
  :agent (b / boy)
  :theme (g / girl
             :agent-of (w / want-01
                          :theme b)))
```

The boy saw the girl who wanted him.
The boy saw the girl who he was wanted by.
The girl who wanted the boy was seen by him.

In this AMR, the role **:agent-of** connects "girl" with "want-01" in a natural way.

To re-focus an AMR, we can "lift up" any node and imagine all other nodes falling down. For example, if we lift up the "w" node, we get very similar content, but re-arranged:

```
(w / want-01
  :agent (g / girl
            :theme-of (s / see-01
                         :agent (b / boy)))
  :theme b)
```

The girl who was seen by the boy wants him.
The boy is wanted by the girl he saw.

This is a matter of focusing: the first AMR (rooted by see-01) is about the seeing, while the second AMR (rooted by want-01) is about the wanting.

Another example:

```
(c / change
  :patient (d / document
              :instrument-of (r / regulate)))
```

The regulatory documents were changed.

AMR slogans

Here are some slogans that make it easier to work with AMR:

- AMR captures the rough meaning of a sentence in a single, traversable directed acyclic graph.
- AMR does not say anything about how it wants to be processed.
- AMR is not an interlingua.
- There are no nouns and verbs in AMR.
- We cannot read off a unique English sentence from an AMR.

An AMR is like a foreign-language translation. Of course, it is reasonable to align the elements of an AMR with the words of a sentence, just as it is reasonable to word-align an original sentence with its translation.

Limitations of AMR 1.0

AMR 1.0 is over-simple in many ways:

- It is geared toward English and the vocabulary of English.
- It does not represent quantifier scope, or even universal quantification at all.
- It does not represent co-references that cross sentence boundaries.
- It drops grammatical number, tense, aspect, quotation marks, etc.
- It does not deeply capture many noun-noun or noun-adjective relations.
- It does not include deep frames such as Earthquake (with roles for magnitude, epicenter, casualties, etc) or Pregnancy (with roles for mother, father, baby gender, time since inception, etc). AMR 1.0 looks forward to AMR 2.0!

Part II. Concepts and relations

Concepts are tokens that appear at the leaves of AMR graphs. AMR does not formally carve the world up into events, objects, features, etc., though we may refer to a certain concept instance as an event. The following AMR has three concepts (boy, want, believe):

```
(w / want
  :agent (b / boy)
  :theme (b2 / believe
             :agent b))
```

The boy wants to believe.

The slash ("/") is shorthand for the **:instance** relation. This relation shows up more clearly in AMR graph format (see Introduction).

Concepts in AMR 1.0 are usually written with English words or phrases. Concepts with core semantic relations may have sense tags, to identify the semantic frame:

```
(b / believe-01
   :agent (b / boy))
```

The boy believes.

AMR semantic relations are best described through examples; see the next section ("Phenomena"). Here, we only provide a brief summary listing.

Core **:ARGx** roles:

:ARG0, :ARG1, :ARG2, :ARG3, :ARG4, :ARG5

In this document, we frequently use :agent, :patient, :experiencer, etc., for ease of readability. However, AMR 1.0 actually uses numbered :ARGx from Ontonotes whenever possible.

Non-core roles:

:accompanier, :age
:beneficiary
:cause, :compared-to
:degree, :destination, :direction, :domain, :duration
:effect
:instrument
:location
:manner, :mod, :mode
:name
:polarity, :poss, :purpose
:quant
:reason, :recipient
:scale, :source, :subset

:time, :topic, :unit
:value

Used in date-entity:

:calendar, :day, :era, :month, :quarter, :season, :timezone, :weekday, :year, :year2

Roles of the form **:opx** are used in conjoined phrases:

:op1, :op2, :op3, :op4, …

Roles of the form **:prep-X** are used in cases where there is no good relation from the list above. AMR likes to avoid these. Here is a partial list:

:prep-against, :prep-along-with, :prep-amid, :prep-among, :prep-as, :prep-at
:prep-by
:prep-concerning, :prep-considering
:prep-despite
:prep-except, :prep-excluding
:prep-following, :prep-for, :prep-from
:prep-in, :prep-in-addition-to, :prep-in-spite-of, :prep-into
:prep-like
:prep-on, :prep-on-behalf-of, :prep-opposite
:prep-per
:prep-regarding
:prep-save, :prep-such-as
:prep-through, :prep-to, :prep-toward
:prep-under, :prep-unlike
:prep-versus
:prep-with, :prep-within, :prep-without

All relations above have inverses of the form **:X-of**.

:ARG0-of, :ARG1-of
:cause-of
etc.

Part III. Phenomena

Modality.

AMR represents modals with concepts like **possible**, **obligatory**, **permitted**, and **likely**:

```
(p / possible
  :domain (g / go
              :agent (b / boy)))
```

The boy can go.
It is possible that the boy goes.

```
(o / obligatory
  :domain (g / go
              :agent (b / boy)))
```

The boy must go.
It is obligatory that the boy go.

```
(l / likely
  :domain (g / go
              :agent (b / boy)))
```

The boy is likely to go.
It is likely that the boy will go.

AMR currently ignores the modals “would” and “should”.

Negation

AMR represents negation logically, using **:polarity**.

```
(g / go
  :agent (b / boy)
  :polarity -)
```

The boy doesn’t go.

```
(p / possible
  :domain (g / go
              :agent (b / boy))
  :polarity -)
```

The boy can’t go.
It’s not possible for the boy to go.

```
 (p / possible
```

```
  :domain (g / go
              :agent (b / boy)
              :polarity -))
```

It is possible for the boy not to go.
It is possible for the boy to not go.

```
(p / obligatory
  :domain (g / go
              :agent (b / boy))
  :polarity -)
```

The boy doesn't have to go.
It's not necessary for the boy to go.

```
(p / obligatory
  :domain (g / go
              :agent (b / boy)
              :polarity -))
```

The boy must not go.
It's obligatory that the boy not go.

```
(t / think
  :agent (b / boy)
  :theme (w / win
            :agent (y / yankee)
            :polarity -)
```

The boy thinks the Yankees won't win.
The boy doesn't think the Yankees will win. (more ambiguously)

```
(t / think
  :agent (b / boy)
  :theme (w / win
            :agent (y / yankee))
  :polarity -)
```

It's not true that the boy thinks the Yankees will win.
The boy doesn't think the Yankees will win. (more ambiguously)

Negative English affixes are also represented with the **:polarity** role:

```
(a / appropriate
  :domain (c / comment)
  :polarity -)
```

the comment is inappropriate
the comment is not appropriate

```
(c / comment
```

```
  :mod (a / appropriate
          :polarity -))
```

the inappropriate comment
the comment that is appropriate
the comment that is not appropriate

```
(c / comment
  :mod (g / good
          :polarity -))
```

the bad comment
the comment that is not good

Note that **:mod** and **:domain-of** mean the same thing in AMR; either can be used.

Interrogatives & imperatives

AMR uses **:mode** to indicate yes-no questions and imperatives:

```
(f / find
  :agent (g / girl)
  :patient (b / boy)
  :mode interrogative)
```

Did the girl find the boy?

```
(f / find
  :patient (b / boy)
  :mode interrogative)
```

Was the boy found?

```
(f / find
  :patient (b / boy)
  :mode imperative)
```

Find the boy.

AMR also uses **:mode** for yes-no embedded clauses:

```
(k / know
  :polarity -
  :agent (b / boy)
  :theme (c / come
            :agent (g / girl)
            :mode interrogative)))
```

The boy doesn't know whether the girl came.
The boy doesn't know if the girl came.

We contrast this with:

```
(k / know
  :polarity -
  :agent (b / boy)
  :theme (c / come
            :agent (g / girl)))
```

The boy doesn't know that the girl came.
The boy doesn't know the girl came.

To capture wh-questions, AMR uses the concept **amr-unknown** (in-place!) to indicate wh-questions:

```
(f / find
  :agent (g / girl)
  :patient amr-unknown)
```

What did the girl find?

```
(f / find
  :agent (g / girl)
  :patient (b / boy)
  :location amr-unknown)
```

Where did the girl find the boy?

```
(f / find
  :agent (g / girl)
  :patient (b / boy)
  :manner amr-unknown)
```

How did the girl find the boy?

```
(f / find
  :agent (g / girl)
  :patient (t / toy
            :poss amr-unknown))
```

Whose toy did the girl find?

```
(r / run
  :agent (g / girl)
  :mod (f / fast
          :degree amr-unknown))
```

How fast did the girl run?

wh- words in relative clauses are treated differently, using inverse roles instead of **amr-unknown**:

```
(k / know
```

```
:agent (i / i)
:theme (p / person
            :patient-of (s / see
                        :agent (y / you))))
```

I know who you saw.
I know the person you saw.

Articles, plurals, tense, aspect, quotes

AMR 1.0 does not represent event times (outside of the explicit **:time** relation), articles, plurals, or quotation marks:

```
(g / go
  :agent (b / boy))
```

The boy went.
The boys went.
A boy went.
Some boys went.
The boy goes.
The boy will go.

Demonstratives are included:

```
 (b / boy
   :mod (t / that))
```

that boy

Hyphenated words are joined in AMR:

```
(v / vice-president)
```

the vice-president

Predicates and core roles

Core predicates and roles are taken from the Ontonotes semantic role layer. Ontonotes predicates are sense-labeled words (e.g., "sentence-01"). They are predicate-specific and numbered. For example:

:ARG0 of charge-01 is the person doing the charging.
:ARG1 of charge-01 is the person being charged.
:ARG2 of charge-01 is the role or crime (for which ARG0 is charging ARG1).

:ARG0 of sentence-01 is the person doing the sentencing.
:ARG1 of sentence-01 is the person being sentenced.
:ARG2 of sentence-01 is the role or crime.

:ARG0 of fine-01 is the person doing the fining.
:ARG1 of fine-01 is the amount of the fine (e.g., $1000).
:ARG2 of fine-01 is the person being fined.
:ARG3 of fine-01 is the role or crime.

Not the predicate-sensitivity: a person might naturally be the ARG1 of sentence-01, but simultaneously the ARG2 of fine-01.

One semantic frame may be realized in vastly different ways in English:

```
(d / describe-01
  :ARG0 (h / he)
  :ARG1 (m / mission)
  :ARG2 (f / failure))
```

He described the mission as a failure.
As he described it, the mission was a failure.

Here, the AMR does not worry about representing the words "as", "it", or "was".

In this document, we frequently use **:agent**, **:patient**, **:theme**, etc., to make AMRs easier to read. Likewise, we often omit sense tags. In reality, we use Ontonotes numbered arguments and sense-tags in AMR 1.0.

Implicit roles

AMR roles may be implicit when rendered in English. AMR includes such roles when there is no real debate about what is happening in the world. Consider:

```
(c / charge-05
   :ARG1 (h / he)
   :ARG2 (a / and
              :op1 (i / intoxicate-01
                        :ARG1 h
                        :location (p / public))
              :op2 (r / resist-01
                        :ARG0 h
                        :ARG1 (a2 / arrest-01
                                  :ARG1 h))))
```

He was charged with public intoxication and resisting arrest.

Here, the variable h appears four times, including as the ARG1 of arrest-01, because it is clear that h is resisting his own arrest (not someone else's). However, we do not include anything to the effect of "the charging agent and the arresting agent are the same entity", as that is debatable.

Derivational morphology

AMR's principle is to maximize the use of Ontonotes predicates, regardless of English parts of speech. This section gives examples of this principle.

AMR represents events, not verbs. So, "destroy" and "destruction" have the same AMR representation. For consistency, AMR uses sense-tagged English verbs from Ontonotes:

```
(d / destroy-01
  :ARG0 (b / boy)
  :ARG1 (r / room))
```

The boy destroyed the room.
The boy's destruction of the room
The destruction of the room by the boy

By using destroy-01, we can exploit the semantic frames in Ontonotes, which are most developed for English verbs.

We never say:

```
(d / destruction
   …)
```

```
(d / destruction-01
   …)
```

An adjective may also get stemmed to noun form, and then on to verb form:

```
(p / problem
  :mod (b / behave-01))
```

Behavioral problems.
Behavior problems.
Problems with behavior.
Problems behaving.

When building AMR from English, the rule is to continue stemming toward verb form unless meaning is significantly altered.

Adverbs get stemmed to adjective form:

```
(o / observe-01
  :ARG0 (i / i)
  :ARG1  (m / move-01
              :ARG0 (a / army)
              :mod (q / quick)))
```

I observed that the army moved quickly.
I observed the quick movement of the army

Inverse roles are commonly used to represent "-er" nouns:

```
(p / person
  :ARG0-of (i / invest-01))
```

investor

```
(p / person
  :ARG0-of (i / invest-01
              :ARG2 (b / bond)))
```

bond investor

```
(p / person
  :ARG0-of (i / invest-01
               :mod (s / small)))
```

small investor

```
(p / person
  :ARG0-of (i / invest-01)
  :mod (b / britain))
```

British investor

```
 (o / organization
  :ARG0-of (m / make-01
              :ARG1 (c / chip)))
```

chip maker
maker of chips

When a noun's meaning is significantly different from the verbal form, then AMR does not break down its meaning. For example, a "treasurer" is not essentially someone who treasures:

```
(t / treasure)          NOT:  (p / person
                                 :ARG0-of (t / treasure-01))
```

treasurer

```
(p / president)         NOT:  (p / person
                                 :ARG0-of (p2 / preside-01))
```

president

Adjectives also invoke predicates:

```
(m / man
  :ARG0-of (a / attract-01))
```

the attractive man

```
(a / attract-01
```

:ARG0 (m / man))

the man is attractive
the man attracts

(a / attract-01
:ARG0 (m / man)
:ARG1 (w / woman))

the man is attractive to women
the man attracts women

Adjectives following "be" are also represented with Ontonotes verbal predicates whenever possible:

(a / realize-01
:ARG0 (s / soldier)
:ARG1 (b / battle)

NOT: (a / aware
:domain (s / soldier)
:prep-of (b / battle))

The soldier was aware of the battle.
The soldier realized there was a battle.

Many such adjectives have natural English verbal predicates:

be aware (of X) – realize-01
be worth (X) – value-01
be like (X) – resemble-01
be afraid (of X) – fear-01

Other adjectives do not, in which case we use the adjective as the predicate name. ARG0 refers to the thing being described by the adjective, while ARG1 names the next most natural argument:

be responsible (for X) – responsible-01
be nervous (about X) – nervous-01
be serious (about X) – serious-01
be efficient (at X) – efficient-01

(r / responsible-01
:ARG0 (b / boy)
:ARG1 (w / work))

The boy is responsible for the work.
The boy is responsible for doing the work.
The boy has the responsibility for the work.

In this way, we avoid awkward syntactic representations for English function words (like "for" and "has"). "The boy responsibles the work" isn't good English, but it is good Chinese.

More nominalizations

Some nominalizations (like "explosion") refer to a whole event, while others (like "proposal") refer to role player in the event. For example:

(e / explode)

the explosion

(t / thing
  :ARG1-of (p / propose-01))

the proposal
the thing proposed

The next example reminds us to always search for an Ontonotes predicate, even for common words like "opinion":

(t / thing
  :ARG1-of (o / opine-01
                :ARG0 (b / boy)))

the boy's opinion
that which is opined by the boy

Non-core roles

We have seen roles like **:time** and **:location**. AMR includes these other non-core roles:

:source
:destination
:beneficiary
:recipient
:accompanier
:topic
:duration

(s / sing
  :agent (s2 / soldier)
  :beneficiary (g / girl)
  :time (w / walk
          :agent g
          :accompanier s2
          :destination (t / town))

The soldier sang to the girl as he walked with her to town.

:manner
:purpose
:cause

(m / murmur

```
:agent (b / boy)
:manner (s / soft)
:purpose (s2 / soothe
              :patient (g / girl))
:cause (w / worry
          :agent b
          :topic g))
```

The boy murmured softly to soothe the girl, because he worried about her.

If you ever feel like using ":reason" as a relation, use **:cause** instead. If you feel like using ":effect", use **:cause-of** instead.

```
(s / strike
  :agent (t / torpedo)
  :cause-of (d / damage
                :theme (s2 / ship)))
```

The torpedo struck, causing the ship to be damaged.
The torpedo struck, causing damage to the ship.
The torpedo struck, damaging the ship.

Occasionally, a numbered **:ARGx** role will refer exactly to **:location**, **:recipient**, or some other named non-core role. In this case, we use the **:ARGx** role, e.g.:

```
(p / provide-01                NOT:   (p / provide-01
  :ARG0 (b / boy)                       :ARG0 (b / boy)
  :ARG1 (c / chocolate)                 :ARG1 (c / chocolate)
  :ARG2 (g / girl))                     :recipient (g / girl))
```

The boy provided chocolate to the girl.
The boy provided the girl with chocolate.

Focus

Inverse relations are often used for focusing (see Introduction section of this document):

```
(s / sing
  :agent (b / boy
            :source (c / college)))
```

The boy from the college sang.

```
 (b / boy
  :agent-of (s / sing)
  :source (c / college))
```

The singing boy from the college

```
(c / college
```

```
:source-of (b / boy
                :agent-of (s / sing)))
```

The college that the singing boy came from

Reification

Very occasionally, we may want to focus an AMR on a relation instead of an event or object. For example, suppose there is a knife in a drawer. We can focus on the knife:

```
(k / knife
  :location (d / drawer))
```

The knife in the drawer.

Or we can focus on the drawer:

```
(d / drawer
  :location-of (k / knife))
```

The drawer where the knife is.

But it is harder to focus on the location role. In such cases, we re-ify ("make into a thing") the role:

```
(l / :location
  :domain (k / knife)
  :range (d / drawer))
```

The knife is in the drawer.
The knife is located in the drawer.

AMR 1.0 isn't especially fond of reification, though, as things get awkward. So, "(k / knife :location (d / drawer))" is an okay way to express "The knife is in the drawer".

Phrasal verbs

AMR strips away light-verb constructions:

```
(a / adjust
  :agent (g / girl)
  :patient (m / machine))
```

The girl adjusted the machine.
The girl made an adjustment to the machine.

```
(t / bathe
  :agent (b / boy))
```

The boy bathed.

The boy took a bath.

It also combines verb-particle constructions:

```
(l / look-up
  :agent (b / boy)
  :theme (a / answer))
```

The boy looked up the answer.
The boy looked the answer up.

```
(b / be-in-step-with
  :agent (g / girl)
  :theme (t / time))
```

The girl is in step with the times.

Prepositions

Most prepositions that signal semantic frame elements are dropped in AMR:

```
(s / default
  :agent (n / nation)
  :time (j / june))
```

The nation defaulted in June.

```
(d / die
  :experiencer (m / man)
  :location (h / house
                :poss m)))
```

The man died in his house.

But time and location prepositions are kept if they carry additional information, using AMR's **:opN** representation:

```
(s / default
  :agent (n / nation)
  :time (b / after
          :op1 (w / war)))
```

The nation defaulted after the war.

```
(d / die
  :experiencer (m / man)
  :location (n / near
                :op1 (h / house
                        :poss m)))
```

The man died near his house.

```
(d / die
  :experiencer (m / man)
  :location (b / between
                :op1 (h / house)
                :op2 (r / river)))
```

The man died between the house and the river.

Sometimes, the content of a prepositional phrase cannot be easily slotted into a predicate-argument structure, or into a generic role like **:time** or **:location**. AMR cringes while employing a default **:prep-x** representation:

```
(s / participant
  :domain (h / he)
  :prep-in (s / scheme))
```

He was a participant in the scheme.

AMR combines phrasal prepositions:

```
(f / file
  :patient (b / brief)
  :prep-on-behalf-of (g / government))
```

The brief was filed on behalf of the government.

```
(a / animal
  :prep-such-as (g / giraffe))
```

animals such as giraffes

The frequent phrase "according to" gets special handling:

```
(s / say
  :agent (s2 / source
             :mod (g / government))
  :theme (k / kill
             :time (y / yesterday)))
```

According to government sources, the killing happened yesterday.
Government sources said that the killing happened yesterday.

Relative clauses

AMR frequently represents relative clauses with inverse roles, as described in the introduction section:

```
(b / believe
  :agent (b2 / boy))
```

The boy believes.

```
(b / boy
  :agent-of (b2 / believe))
```

the boy who believes

English also uses relative clauses when negating a pre-nominal adjective is difficult ("the not-black car"):

```
(c / car
  :mod (b / black))
```

the black car

```
(c / car
  :mod (b / black
           :polarity -))
```

the car that is not black

Japanese simply marks adjectives with a negative suffix.

Multiple relations with the same name

An entity may have several relations with the same name:

```
(s / system
  :mod (l / law)
  :mod (s2 / city
           :name (n / name :op1 "Shanghai")))
```

the Shanghai legal system

```
(b / boy
  :agent-of (w / want
                :patient (b / believe
                             :patient (g / girl)))
  :agent-of b)
```

the boy who wants to believe the girl

Conjunctions

To represent conjunction, AMR uses concepts **and**, **or**, **but**, **either**, and **neither,** along with **:opx** relations:

```
(a / and
  :op1 (b / boy)
```

```
  :op2 (g / girl))
```

the boy and the girl

```
(a / either
  :op1 (b / boy)
  :op2 (g / girl)
  :op3 (d / dog))
```

either the boy, the girl, or the dog

Conjoined adjectives are done without **and**:

```
(b / ball
  :mod (b2 / big)
  :mod (h / heavy)
```

the big heavy ball
the big and heavy ball

:opx is also used for clauses:

```
(a / and
  :op1 (c / come
          :agent (g2 / girl))
  :op2 (l / leave
          :patient (b / boy))
```

The girl came, and the boy left.

```
(i / if
  :op1 (r / rain)
  :op2 (m / melt
          :experiencer (b / boy)))
```

If there is rain, the boy will melt.
If there is rain, then the boy will melt.

Sometimes, an **:op1** may be missing:

```
(b / but
  :op2 (l / leave
          :patient (b / boy)))
```

But the boy left.

AMR aims for a logical representation even when English elides core actors:

```
(a / and
  :op1 (c / come
         :agent (b / boy))
```

```
  :op2 (l / leave
          :agent b))
```

The boy came and left.

The need for this is evident when an entity plays different roles in different predicates:

```
(a / and
  :op1 (a2 / arrive
          :agent (b / boy))
  :op2 (l / kill
          :patient b
          :manner (p / prompt)))
```

The boy arrived and was promptly killed.

However, AMR "pulls out" non-core roles like **:time** and **:location**. Here, **:time** modifies the entire conjunction rooted by **and**:

```
(a / and
  :time (t / tuesday)
  :op1 (a2 / arrive
          :agent (b / boy))
  :op2 (l / leave
          :agent b))
```

The boy arrived and left on Tuesday.
On Tuesday, the boy arrived and left.

Quantifiers and scope

AMR does not have a deep representation for quantifiers. It only canonicalizes their position:

```
(l / leave
   :agent (b / boy
             :mod (a / all)))
```

The boys all left.
All the boys left.
Each of the boys left.

```
(l / leave
  :agent (b / boy
            :mod (n / no)))
```

No boy left.
None of the boys left.

```
(l / leave
  :agent (b / boy
```

```
        :mod (a / all
                :polarity -)))
```

Not all of the boys left.

```
(l / leave
  :agent (p / person
        :mod (a / all
                :polarity -)))
```

Not everyone left.

The placement of **:polarity** can be troublesome. Consider:

```
(p / person
   :domain (b / boy)
   :ARG0-of (w / work
                :manner (h / hard)))
```

The boy is a hard worker.

If we want to represent "the boy is not a hard worker", we have to decide whether to place the negative polarity under "hard" or "work" or "person". Here it should go under "hard":

```
(p / person
   :domain (b / boy)
   :ARG0-of (w / work
                :manner (h / hard
                        :polarity -)))
```

The boy works in a not-hard manner.
The boy is not a hard worker. (colloquially)
The boy does not work hard. (colloquially)

```
(p / person
   :domain (b / boy)
   :ARG0-of (w / work
                :polarity -
                :manner (h / hard)))
```

The boy does something other than work, but in a hard manner.

```
(p / person
   :polarity -
   :domain (b / boy)
   :ARG0-of (w / work
                :manner (h / hard)))
```

The boy is an un-person who works hard.

AMR apologizes for not advising on the placement of negation with respect to quantifiers.

Degree

Comparatives and superlatives are represented by **:degree** and **:compared-to**, e.g.:

```
(b / bright
  :domain (b2 / boy
               :mod (t / that))
  :degree (m / more))
```

That boy is brighter.
That boy is more bright.

```
(b / bright
  :domain (b2 / boy
               :mod (t / that))
  :degree (m / most))
```

That boy is the brightest.
That boy is the most bright.

```
(p / plan
  :time (e / early
            :degree (m / more)))
```

the earlier plan

```
 (p / plan
  :mod (g / good
            :degree (m / more)))
```

a better plan

```
(p / plan
  :mod (g / good
            :polarity -
            :degree (m / more)))
```

a worse plan

```
(p / plan
  :mod (e / extreme
            :degree (t / too)))
```

a plan that is too extreme

```
(t / tall
  :degree (m / more)
  :domain (g / girl)
  :compared-to (b / boy))
```

the girl is taller than the boy

```
(g / girl
  :mod (t / tall
          :degree (m / most)
          :compared-to (t2 / team))
  :domain (s / she))
```

she is the tallest girl on the team

AMR apologizes, realizing that the girl is not taller than the whole team, but taller than each individual.

Variables

Any variable starting with a Roman letter is okay:

```
 (y17 / boy)
```

the boy

If two variables are the same, then they refer to the same entity:

```
(w / want
  :agent (y / boy)
  :theme (g / go
            :agent y))
```

The boy wants to go.

In English, pronouns are often used to realize co-reference, but AMR uses variables (e.g., "y" below):

```
(w / want
  :agent (y / boy)
  :theme (b / believe
            :agent (g / girl)
            :patient y))
```

The boy wants the girl to believe him.

Occasionally, a second reference in English will add information. In AMR, different instances of the same variable (e.g., "c" below) may both have relations attached:

```
(l / lick
  :agent (c / dog
            :mod (o / old))
  :patient (b / boy)
  :time (s / see
          :agent b
          :patient (c / dog
```

:name (n / name :op1 “Chester”))))

When the boy saw Chester, the old dog licked him.

(Some AMR editors or processors may disallow this, in which case all information must be put under one variable).

Possession

The relation **:poss** (“possessed by”) is a very general form of possession:

(h / handle
  :poss (d / door))

the handle of the door

(c / car
  :poss (h / he))

his car

Pertainyms

Pertainym adjectives (e.g., “naval, adj. = of, or pertaining to, the navy”) do not appear in AMR. Only the stemmed noun form is used, along with the **:mod** relation.

(o / officer
  :mod (n / navy))

naval officials
navy officials

(w / war
  :mod (a / atom))

atomic war

“Navy officer” and “naval officer” have the same AMR semantics.

[Note that previous versions of AMR used **:poss** instead of **:mod** for pertainym-derived concepts. No matter what, we still do not get the same AMR for all three expressions: “navy officer”, “naval officer”, and “officer of the navy”].

Pronouns

If a pronoun has no antecedent within the sentence, AMR uses the pronoun:

(l / leave
  :agent (h / he))

He left.

Named Entities

Any concept instance in AMR can have **:name** role. We are not restricted to a small set of fixed categories like countries and people -- for example, ships, pets, and computers can have **:name** roles. Of course, frequently named concepts include **person**, **organization**, **gpe** (geo-political entity), **location**, **facility**, **event**, **work-of-art**, **language**, **law**, and **norp** (nationality).

```
(p / person
  :name (n / name
            :op1 “Mollie”
            :op2 “Brown”))
```

Mollie Brown

```
 (p / person
  :name (n / name
            :op1 “Mollie”
            :op2 “Brown”)
  :ARG0-of (s / slay-01
                :ARG1 (o / orc)))
```

the orc-slaying Mollie Brown
Mollie Brown, who slays orcs, …

```
(s / ship
  :name (n / name
            :op1 “Titanic”))
```

Titanic
the Titanic
the ship named Titanic

```
(c / city
  :name (n / name
            :op1 “Marina”)
            :op2 “del”
            :op3 “Rey”))
```

Marina del Rey
the city of Marina del Rey

AMR does not analyze semantic relationships inside a named entity. For example, in the “Stop Malaria Foundation”, we do not represent “stop” as a predicate with “malaria” as its argument.

Future versions of AMR may:

- provide a list of preferred, disambiguated types (e.g., political-party)

- normalize variants (like U.S., US, USA, United States, etc.), by assigning unique identifiers to named entities (e.g., Wikipedia pages)
- assign types to part of names (e.g., family-name, title, etc) instead of **:opx**

Exact numbers

AMR normalizes numbers:

```
(b / boy
  :quant 40000)

forty thousand boys
40,000 boys

(a / atom
  :quant 1500000000)

one and half billion atoms
1.5 billion atoms
a billion and half atoms
1,500,000,000 atoms
```

Such normalization is often necessary when we translate between Asian-style 10,000-based numeration and Western-style 1,000-based numeration.

Approximate numbers

Approximate numbers are represented with this **:opN** notation:

```
(b / boy
  :quant (s / several
            :op1 100))

several hundred boys

(b / boy
  :quant (m / over
            :op1 4000))

over four thousand boys
over 4000 boys

(b / boy
  :quant (m / between
            :op1 4000
            :op2 5000))

between 4000 and 5000 boys
between four and five thousand boys
```

Quantities

Exact quantities are represented by their type and **:unit** and **:quant** arguments.

```
(q / distance-quantity
   :unit (m / mile)
   :quant 10)
```

ten miles
10 miles

Approximate quantities are represented using **:opN** notation, as for approximate numbers:

```
(a / about
   :op1 (q / distance-quantity
            :unit (m / mile)
            :quant 10))
```

about 10 miles

AMR views quantified expressions such “two gallons of milk” as “milk”:

```
(b / buy
    :agent (w / woman)
    :patient (m / milk
                :quant (q / volume-quantity
                          :unit (g / gallon)
                          :quant 2)))
```

The woman bought two gallons of milk.

Relative positions often include a quantity:

```
 (c / crash
    :theme (p / plane)
    :location (r / relative-position
                :op1 (g / city :name (n / name :op1 "Moscow"))
                :quant (d / distance-quantity
                          :unit (m / mile)
                          :num 50)
                :direction (e / east)))
```

The plane crashed 50 miles east of Moscow.
The plane crash occurred 50 miles east of Moscow.

The X-quantity notation is only used for precise quantities. Vague quantities still use the **:quant** role:

```
(g / gather
   :agent (p / person
```

```
        :quant (n / number
                :mod (l / large))))
```

A large number of people gathered.

Occasionally, the measurement itself is the primary concept:

```
(i / increase
  :theme (n / number
          :quant-of (p / person)))
```

The number of people increased.

The quantity types are: monetary-quantity, distance-quantity, area-quantity, volume-quantity, temporal-quantity, frequency-quantity, speed-quantity, acceleration-quantity, mass-quantity, force-quantity, pressure-quantity, energy-quantity, power-quantity, voltage-quantity, charge-quantity, potential-quantity, resistance-quantity, inductance-quantity, magnetic-field-quantity, magnetic-flux-quantity, radiation-quantity, concentration-quantity, temperature-quantity, score-quantity, fuel-consumption-quantity, seismic-quantity.

```
(q / monetary-quantity
    :quant 20
    :unit (d / dollar
            :mod (e / country
                    :name (n / name :op1 “Shanghai”))))
```

C$20
20 Canadian dollars

Quantities where a **:quant 0** value does not represent a 0-quantity use **:scale** rather than **:unit**:

```
(q / seismic-quantity
    :quant 7.9
    :scale (r / richter))
```

7.9 on the Richter scale

Other entities: dates, times, percentages, phone, email, URLs

These entities are described in standard, canonical forms:

```
 (d / date-entity
   :year 2012
   :month 2
   :day 29)
```

February 29, 2012
29 February 2012

```
(d / date-entity
```

:year 2012)

2012
the year 2012

(d / date-entity
:month 4)

April

(d / date-entity
:weekday (f / friday))

Friday

(d / date-entity
:year 2012
:month 2)

February, 2012

(d / date-entity
:month 2
:day 29
:weekday (w / Wednesday))

Wednesday, February 29

(d / date-entity
:day 29)

the 29th

(d / date-entity
:month 2
:day 29
:weekday (w / wednesday)
:time 16:30
:timezone (z / PST))

Wednesday, February 29, 16:30 PST

(d / date-entity
:time 16:30)

16:30
4:30pm
4:30

(d / date-entity
:era (h / heisei)

```
  :year 24
  :month 2
  :day 29
  :calendar (j / country :name (n / name :op1 “Japan”)))
```

February 29, 24th year of Heisei era

```
 (d / date-entity
   :year 2011
   :quarter 4)
```

4th quarter, 2011
2011Q4

```
(d / date-entity
   :year 2011
   :season (s / summer))
```

Summer 2011

```
(d / date-entity
   :year 2011
   :year2 2012
   :season (w / winter))
```

Winter 2011-2012

```
 (d / date-entity
   :year 2011
   :year2 2012
   :calendar (y / year
                 :poss (a / academia)))
```

academic year 2011-2012

```
 (d / date-entity
   :year 2012
   :calendar (y / year
                :poss (f / finance)
                :mod (g / government
                           :poss (u / country
                                      :name (n / name
                                                 :op1 "United"
                                                 :op2 "States")))))
```

United States government fiscal year 2012

```
 (d / date-interval
   :op1 (d2 / date-entity :year 2012 :month 3 :day 8)
   :op2 (d3 / date-entity :year 2012 :month 3 :day 9))
```

March 8-9, 2012

(d / date-interval
  :op1 (d2 / date-entity :year 1939 :month 9 :day 1)
  :op2 (d3 / date-entity :year 1945 :month 5 :day 8))

Sept. 1, 1939 - May 8, 1945

(p / percentage-entity :value 25)

25%
twenty-five percent
25 percent

(p / phone-number-entity :value “18005551212”)

1-800-555-1212
1 (800) 555-1212

(e / email-address-entity :value "president@whitehouse.gov")

president@whitehouse.gov

(u / url-entity :value "www.whitehouse.gov")

www.whitehouse.gov

Part IV. Fifty Sentences Manually Translated to AMR

These sentences all appear in Ontonotes 4.0.

```
1. He was charged with public intoxication and resisting arrest.
  (msnbc_0001_1)

(c / charge-05
  :ARG1 (h / he)
  :ARG2 (a / and
          :op1 (i / intoxicate-01
                 :ARG1 h
                 :location (p / public))
          :op2 (r / resist-01
                 :ARG1 (a2 / arrest-01
                         :ARG1 h)
                 :ARG0 h)))

2. Police are facing more rowdy behavior as New Orleans ' nightlife makes a comeback .
  (msnbc_0001_2)

(f / face-01
  :ARG0 (p / police)
  :ARG1 (b / behave-01
          :manner (r / rowdy)
          :mod (m / more))
```

```
  :time (m2 / comeback
          :ARG0 (n / nightlife
                  :location (g / city
                              :name (n2 / name
                                      :op1 "New"
                                      :op2 "Orleans")))))
```

3. But officials said 0 the force used * in this arrest was not appropriate .
(msnbc_0001_3)

```
(b / but
  :op2 (s / say-01
         :ARG0 (o / official)
         :ARG1 (a / appropriate :polarity -
                 :domain (f / force
                           :ARG1-of (u / use-01
                                      :prep-in (a2 / arrest-01
                                                 :mod (t / this)))))))
```

4. As Mr. Whiting describes it , Nipponese baseball is a `` mirror of Japan 's fabled virtues of hard work and harmony . ''
(wsj_0037_20)

```
(d / describe-01
  :ARG0 (x / person
          :name (n / name
                  :op1 "Mr."
                  :op2 "Whiting"))
  :ARG1 (b / baseball
          :mod (g / country
                 :name (n3 / name
                         :op1 "Japan")))
  :ARG2 (m / mirror
          :mod (a / and
                 :domain-of (v / virtue
                              :mod (f / fabled)
                              :mod g)
                 :op1 (w / work-01
                        :manner (h / hard))
                 :op2 (h2 / harmony))))
```

5. In recent years Shanghai 's Pudong has promulgated and implemented 71 regulatory documents relating to areas such as economics , trade , construction , planning , science and technology , culture and education , etc. , *PRO* ensuring the orderly advancement of Pudong 's development .
(chtb_0001_3)

```
(a / and
  :ARG0-of (e / ensure-01
             :ARG1 (a6 / advance-01
                     :ARG1 (d / develop-02
                             :ARG1 p2)
                     :mod (o / order)))
  :op1 (p / promulgate-01
         :ARG0 (p2 / district
                 :name (n / name
                         :op1 "Pudong")
                 :poss (s / city
                         :name (n2 / name
                                 :op1 "Shanghai")))
         :ARG1 (a2 / document
                 :quant 71
                 :ARG0-of (r2 / regulate-01)
```

```
                :ARG1-of (r3 / relate-01
                           :ARG2 (a3 / area
                                   :prep-such-as (a4 / and
                                                   :op1 (e1 / economics)
                                                   :op2 (e2 / trade)
                                                   :op3 (e3 / construct)
                                                   :op4 (e4 / plan)
                                                   :op5 (e5 / science)
                                                   :op6 (e6 / technology)
                                                   :op7 (e7 / culture)
                                                   :op8 (e8 / educate)
                                                   :op9 (e9 / etc))))))
  :op2 (i / implement-01
         :ARG0 p2
         :ARG1 a2)
  :time (y / year
          :mod (r / recent)))
```

6. These years there have been several hundred construction companies and over four thousand construction sites that *T*-58 have spread out all over this stretch of hot turf .
  (chtb_0001_10)

```
(a / and
  :ARG1-of (s3 / spread-02
             :location (a2 / all-over
                         :op1 (t2 / turf
                                :mod (h2 / hot)
                                :unit (s4 / stretch
                                        :mod (t3 / this))))
             :time (y / year
                     :mod (t4 / these)))
  :op1 (c / company
         :ARG0-of (c2 / construct-01)
         :quant (s / several :op1 100))
  :op2 (s2 / site
         :location-of (c3 / construct-01)
         :quant (m / over :op1 4000)))
```

7. The development of Shanghai 's Pudong is in step with the establishment of its legal system
  (chtb_0001_1)

```
(i / in-step
  :domain (d / develop-02
             :ARG1 (g / district
                     :name (n / name
                             :op1 "Pudong")
                     :poss (g2 / city
                             :name (n2 / name
                                     :op1 "Shanghai"))))
  :prep-with (e / establish-01
               :ARG1 (s / system
                       :mod (l / law)
                       :poss g)))
```

8. The American Iron and Steel Institute reported : The capability utilization rate is a calculation designed to indicate at what percent of its production capability the industry is operating in a given week .
  (wsj_1240_4)

```
(r / report-01
  :ARG0 (o / organization
```

```
          :name (n3 / name
                  :op1 "American"
                  :op2 "Iron"
                  :op3 "and"
                  :op4 "Steel"
                  :op5 "Institute"))
  :ARG1 (c / calculate-01
          :ARG1-of (d / design-01
                      :ARG3 (i / indicate-01
                              :ARG1 (p / percent
                                      :manner-of (o2 / operate-01
                                                  :time (w / week
                                                          :mod (g / given))
                                                  :ARG1 i2)
                                      :quant-of (c3 / capability
                                                 :mod (p2 / produce-01)
                                                 :poss (i2 / industry)))))
          :domain (r2 / rate
                    :mod (u / utilize-01
                           :ARG1 (c2 / capability)))))
```

9. Like other zeros , they pay all their interest at maturity , meaning that buyers can time things so that their bonds pay off just when Junior graduates from high school .
  (wsj_1569_60)

```
(p / pay-01
  :ARG1 (i / interest
          :mod (a / all)
          :poss (t / they
                  :ARG0-of (r / resemble-01
                             :ARG2 (z / zero
                                     :mod (o / other)))))
  :cause-of (p2 / possible
              :domain (t2 / time-02
                        :ARG0 (b2 / buyer)
                        :ARG1 (p3 / pay-02
                                :ARG1 (b3 / bond
                                        :poss b2))
                        :ARG2 (g / graduate-01
                                :ARG0 (j / junior)
                                :ARG1 (s / school
                                        :mod (h / high)))))
  :time (m / maturity))
```

10. Recognition Equipment Inc. said it settled a civil action filed against it by the federal government on behalf of the U.S. Postal Service .
  (wsj_2452_1)

```
(s / say-01
  :ARG0 (o / company
          :name (n / name
                  :op1 "Recognition"
                  :op2 "Equipment"
                  :op3 "Inc."))
  :ARG1 (s2 / settle-02
          :ARG0 o
          :ARG1 (a / action
                  :ARG1-of (f / file-01
                             :ARG0 (g / government
                                     :mod (f2 / federal))
                             :ARG3 o)
                  :prep-on-behalf-of (o2 / organization
```

```
                                        :name (n4 / name
                                                :op1 "the"
                                                :op2 "U.S."
                                                :op3 "Postal"
                                                :op4 "Service")))
          :mod (c / civil)))
```

11. Mr. Voss was previously sentenced to four years in prison and fined $ 11,000 for his role in the scheme .
  (wsj_2452_5)

```
(a / and
  :op1 (s / sentence-01
         :ARG1 (p / person
                  :name (n / name
                           :op1 "Mr."
                           :op2 "Voss"))
         :ARG2 (t / temporal-quantity
                  :quant 4
                  :location (p2 / prison)
                  :unit (y / year))
         :ARG3 (r / role
                  :poss p
                  :prep-in (s2 / scheme)))
  :op2 (f / fine-01
         :ARG1 (m / monetary-quantity
                  :quant 11000
                  :unit (d / dollar))
         :ARG2 p
         :ARG3 r)
  :time (p3 / previously))
```

12. In the agreement , Recognition agreed to pay the government $ 20,000 in return for the release of all claims against the company , Mr. Moore and Mr. Reedy .
  (wsj_2452_6)

```
(a / agree-01
  :ARG0 (o / company
           :name (n / name
                    :op1 "Recognition"))
  :ARG1 (p / pay-01
           :ARG0 o
           :ARG1 (m / monetary-quantity
                    :quant 20000
                    :unit (d / dollar))
           :ARG2 (g / government)
           :ARG3 (r / release-01
                    :ARG1 (c / claim-02
                             :mod (a2 / all)
                             :prep-against (a3 / and
                                               :op1 o
                                               :op2 (p2 / person
                                                      :name (n2 / name
                                                               :op1 "Mr."
                                                               :op2 "Moore"))
                                               :op3 (p3 / person
                                                      :name (n4 / name
                                                               :op1 "Mr."
                                                               :op2 "Reedy")))))))
  :prep-in (a4 / agree-01))
```

13. In 1943 , he joined the student movement led by an underground party , then joined the Chinese Communist Party in April , 1946 , and graduated in 1947 from the department of Electric Engineering of Shanghai Jiaotong University .
  (chtb_0208_6)

```
(a / and
  :op1 (j / join-01
         :ARG0 (h / he)
         :ARG1 (m / movement
                 :ARG1-of (l / lead-02
                             :ARG0 (p / party
                                      :mod (u / underground)))
                 :mod (s / student))
         :time (t / date-entity
                 :year 1943))
  :op2 (j2 / join-01
         :ARG0 h
         :ARG1 (o / party
                 :name (n1 / name
                          :op1 "Chinese"
                          :op2 "Communist"
                          :op3 "Party"))
         :mod (t2 / then)
         :time (t3 / date-entity
                 :month 4
                 :year 1946))
  :op3 (g / graduate-01
         :ARG0 h
         :ARG1 (d / department
                 :mod (e / engineering
                        :mod (e2 / electricity))
                 :mod (o3 / university
                        :name (n6 / name
                                 :op1 "Shanghai"
                                 :op2 "Jiaotong"
                                 :op3 "University")))
         :time (t4 / date-entity
                 :year 1947)))
```

14. Signed here this morning were the two projects , knowledge information network communication technology and DNA bio-technology .
  (chtb_0271_3)

```
(s / sign-01
  :ARG1 (p / project :quant 2
          :mod (a / and
                 :op1 (t3 / technology
                        :instrument-of (c / communicate-01
                                          :mod (n / network
                                                 :mod (i / information)
                                                 :mod (k / knowledge))))
                 :op2 (b / bio-technology
                        :mod (d / dna))))
  :location (h / here)
  :time (m / morning
          :mod (t / this)))
```

15. The stock market 's woes spooked currency traders but prompted a quiet little party among bond investors .
  (wsj_1151_1)

```
(b / but
  :op1 (s / spook-01
```

```
        :ARG0 (w / woe
                :poss (m / market
                        :mod (s2 / stock)))
        :ARG1 (p / person
                :ARG0-of (t / trade-01
                        :ARG1 (c / currency))))
  :op2 (p2 / prompt-01
        :ARG0 w
        :ARG1 (p3 / party
                :mod (q / quiet)
                :mod (l / little)
                :prep-among (p4 / person
                             :ARG0-of (i / invest-01
                                       :ARG1 (b2 / bond))))))
```

16. Albert Fried Jr. , a 59 - year - old director and holder of a 9.5 % stake in the company , was named chairman of this maker of products for the construction equipment , material handling and railroad industries .
  (wsj_1224_1)

```
(n5 / name-01
  :ARG1 (p / person
          :ARG0-of (h / hold-01
                     :ARG1 (s / stake
                              :prep-in (c / company)
                              :quant (p2 / percentage-quantity
                                       :value 9.5)))
          :age (t / temporal-quantity
                 :quant 59
                 :unit (y / year))
          :domain-of (d / director)
          :name (n / name
                  :op1 "Albert"
                  :op2 "Fried"
                  :op3 "Jr."))
  :ARG2 (c2 / chairman
          :poss (o / company
                  :ARG0-of (m / make-01
                             :ARG1 (p3 / product)
                             :ARG3 (i / industry
                                     :mod (a / and
                                             :op1 (e / equipment
                                                     :instrument-of (c3 / construct-01))
                                             :op2 (h2 / handle-01
                                                     :ARG1 (m2 / material))
                                             :op3 (r / railroad))))
                  :mod (t2 / this))))
```

17. ATHLONE INDUSTRIES Inc. said that on Dec. 21 it will redeem $ 10 million face amount of its $ 59.3 million of 15.625 % subordinated notes outstanding , due June 1 , 1991 .
  (wsj_1437_1)

```
(s / say-01
  :ARG0 (a / organization
          :name (n / name
                  :op1 "Athlone"
                  :op2 "Industries"
                  :op3 "Inc."))
  :ARG1 (r / redeem-01
          :ARG0 a
          :ARG1 (n4 / note
                  :ARG1-of (s2 / subordinate-01)
```

```
                  :domain-of (d3 / due
                              :time (d4 / date-entity
                                      :day 1
                                      :month 6
                                      :year 1991))
                  :mod (m / monetary-quantity
                         :quant 10000000
                         :mod (a2 / amount
                                :mod (f / face))
                         :unit (d2 / dollar))
                  :mod (o / outstanding)
                  :subset-of (n5 / note
                              :mod (m2 / monetary-quantity
                                     :quant 59300000
                                     :poss a
                                     :unit d2)
                              :mod (m3 / percentage-entity
                                     :value 15.625)))
          :time (d / date-entity
                  :day 21
                  :month 12)))
```

18. Sotheby 's Inc. 's gamble in the art - dealing business appears to have paid off .
(wsj_1465_1)

```
(a / appear-02
  :ARG1 (p / pay-05
          :ARG1 (g / gamble-01
                  :ARG0 (s / company
                           :name (n / name
                                  :op1 "Sotheby"
                                  :op2 "'s"
                                  :op3 "Inc."))
                  :prep-in (b / business
                             :mod (d / deal-01
                                    :ARG1 (a2 / art))))))
```

19. Secretary of State Baker , in a foreign policy speech , called for the reunification of Germany , saying it was the `` legitimate right '' of the German people .
(wsj_2278_5)

```
(c / call-03
  :ARG0 (b / person
          :ARG0-of (s4 / say-01
                     :ARG1 (r2 / right
                             :domain (r / reunify
                                       :ARG1 (g / country
                                               :name (n2 / name
                                                       :op1 "Germany")))
                             :mod (l / legitimate)
                             :mod (p2 / people
                                    :poss g)))
          :mod (s / secretary
                 :mod (s2 / state))
          :name (n4 / name
                  :op1 "Baker"))
  :ARG1 r
  :prep-in (s3 / speech
             :mod (p / policy
                    :mod (f / foreign))))
```

20. It was the Libyan leader 's first trip to Egypt in 16 years .

(wsj_2278_20)

```
(t / travel-01
  :ARG0 (p / person
          :ARG0-of (l / lead-02
                     :ARG1 (l2 / country
                             :name (n2 / name
                                     :op1 "Libya"))))
  :ARG1 (e / country
          :name (n / name
                  :op1 "Egypt"))
  :mod (f / first
         :prep-in (t2 / temporal-quantity
                    :quant 16
                    :unit (y / year))))
```

21. Mortimer B. Zuckerman , chairman and editor in chief , said Mr. Rosenblatt would be succeeded starting today by Michael Ruby , the magazine 's executive editor , and Merrill McLoughlin , a senior writer .
(wsj_2436_6)

```
(s / say-01
  :ARG0 (z / person
          :mod (c / chairman)
          :mod (e / editor-in-chief)
          :name (n / name
                  :op1 "Mortimer"
                  :op2 "B."
                  :op3 "Zuckerman"))
  :ARG1 (s2 / succeed-02
          :ARG0 (a2 / and
                  :op1 (s3 / person
                         :mod (e3 / editor
                                :mod (e2 / executive)
                                :poss (m / magazine))
                         :name (n4 / name
                                 :op1 "Michael"
                                 :op2 "Ruby"))
                  :op2 (s4 / person
                         :mod (w / writer
                                :mod (s5 / senior))
                         :name (n6 / name
                                 :op1 "Merrill"
                                 :op2 "McLoughlin")))
          :ARG1 (s6 / person
                  :name (n8 / name
                          :op1 "Mr."
                          :op2 "Rosenblatt"))
          :time (t / today)))
```

22. By law , the council includes the president , vice president and secretaries of state and defense .
(wsj_1405_14)

```
(i / include-01
  :ARG1 (a / and
          :op1 (p / president)
          :op2 (p2 / president
                 :mod (v / vice))
          :op3 (s / secretary
                 :mod (s2 / state))
          :op4 (s3 / secretary
                 :mod (d / defense)))
```

```
  :ARG2 (c / council)
  :prep-by (l / law))
```

23. Despite the risks , the deals can be an attractive way for Japanese banks to increase their presence in the U.S. market , bank analysts say .
  (wsj_1421_30)

```
(s / say-01
  :ARG0 (a / analyst
          :mod (b / bank))
  :ARG1 (p / possible
          :domain (w / way
                    :ARG0-of (a2 / attract-01)
                    :domain (d / deal)
                    :mod (i / increase-01
                           :ARG0 (b2 / bank
                                   :mod (j / country
                                          :name (n1 / name
                                                  :op1 "Japan")))
                           :ARG1 (p2 / presence
                                   :prep-in (m / market
                                              :location (u / country
                                                          :name (n2 / name
                                                                  :op1 "U.S.")))
                                   :poss b2)))
          :prep-despite (r / risk)))
```

24. An omnibus bill assembled by Sen. Edward Kennedy -LRB- D. , Mass. -RRB- , and including some diluted Nunn - McCurdy provisions along with proposals by fellow Democratic Sens. Claiborne Pell , Barbara Mikulski and Christopher Dodd , has been reported out of the Senate Labor Committee .
  (wsj_2412_5)

```
(r / report-01
  :ARG0 (s / organization
          :name (n1 / name
                  :op1 "Senate"
                  :op2 "Labor"
                  :op3 "Committee"))
  :ARG1 (b / bill
          :ARG1-of (a / assemble-02
                     :ARG0 (k1 / senator
                             :location (m / state
                                         :name (n8 / name
                                                 :op1 "Mass."))
                             :mod (d / party
                                    :name (n7 / name
                                            :op1 "D."))
                             :name (n5 / name
                                     :op1 "Edward"
                                     :op2 "Kennedy")))
          :mod (o / omnibus)
          :ARG2-of (i / include-01
                     :ARG1 (a9 / and
                             :op1 (p / provision
                                    :ARG1-of (d2 / dilute-01)
                                    :mod (s2 / some)
                                    :mod (k2 / law
                                           :name (n9 / name
                                                   :op1 "Nunn-McCurdy")))
                             :op2 (t9 / thing
                                    :ARG1-of (p2 / propose-01
                                               :ARG0 (a10 / and
```

```
                                                        :op1 (k4 / person
                                                               :name (n11 / name
                                                                       :op1 "Claiborne"
                                                                       :op2 "Pell"))
                                                        :op2 (k5 / person
                                                               :name (n13 / name
                                                                       :op1 "Barbara"
                                                                       :op2  "Mikulski"))
                                                        :op3 (k6 / person
                                                               :name (n15 / name
                                                                       :op1
"Christopher"
                                                                       :op2  "Dodd"))))))
                      :mod d
                      :mod (f / fellow)
                      :mod (s3 / senator))))
```

25. After reopening for about 15 minutes , the S&P index tumbled to its 30 - point limit and the second freeze went into effect .
  (wsj_2417_21)

```
(a / and
  :op1 (t2 / tumble-01
         :ARG1 (i / index
                 :mod (s / organization
                         :name (n / name
                                  :op1 "S&P")))
         :ARG4 (l / limit
                 :quant (p / point
                           :quant 30)
                 :poss i))
  :op2 (g / go-08
         :ARG1 (f / freeze-02
                 :mod (s2 / second))
         :ARG2 (e / effect))
  :time (a2 / after
          :op1 (r / reopen-01
                 :ARG1 i
                 :duration (a3 / about
                             :op1 (t / temporal-quantity
                                    :quant 15
                                    :unit (m / minute))))))
```

26. And market expectations clearly have been raised by the capital gains victory in the House last month .
  (wsj_2429_7)

```
(a / and
  :op2 (r / raise-01
         :ARG0 (v / win-01
                 :ARG1 (g / gain
                         :mod (c2 / capital))
                 :location (s / organization
                             :name (n / name
                                      :op1 "House"))
                 :time (m / month
                         :mod (l / last)))
         :ARG1 (t9 / thing
                 :ARG1-of (e / expect-01
                            :ARG0 (m2 / market)))
         :mod (c / clear)))
```

27. Brush Wellman Inc. said 0 its board increased the number of shares of common stock 0 *T*-2 to be purchased *-1 under a previously authorized program to 3.9 million from 2.9 million .
  (wsj_1129_1)

```
(s / say-01
  :ARG0 (o2 / organization
          :name (n5 / name
                  :op1 "Brush"
                  :op2 "Wellman"
                  :op3 "Inc."))
  :ARG1 (i / increase-01
          :ARG1 (n / number
                  :quant-of (s2 / share
                              :poss (s3 / stock
                                      :ARG1 (p2 / purchase-01
                                              :prep-under (p3 / program
                                                            :ARG1 (a / authorize-01
                                                                    :time (p4 /
previous))))
                                      :mod (c / common))))
          :ARG3 (m / monetary-quantity
                  :quant 2900000
                  :unit (d / dollar))
          :ARG4 (m2 / monetary-quantity
                  :quant 3900000
                  :unit (d2 / dollar))
          :ARG0 (b / board
                  :poss o2)))
```

28. The maker of engineered materials has acquired more than 2.7 million shares under the program .
  (wsj_1129_2)

```
(a / acquire-01
  :ARG0 (t / company
          :ARG0-of (m / make-01
                     :ARG1 (m2 / material
                             :ARG1-of (e / engineer-01))))
  :ARG1 (s / share
          :quant (o / over
                   :op1 2700000))
  :prep-under (p / program))
```

29. The state attorney general 's office filed suit against five New York brokerage firms , *PRO*-1 charging them with responsibility for much of a $ 200 million *U* loss incurred * by the state treasurer 's office in 1987 .
  (wsj_1130_1)

```
(a2 / and
  :op1 (s / sue-01
         :ARG0 (o / office
                 :poss (a / attorney
                         :mod (g / general)
                         :mod (s2 / state)))
         :ARG1 (f / firm
                 :quant 5
                 :mod (b / brokerage)
                 :location (g3 / city
                             :name (n2 / name
                                     :op1 "New"
                                     :op2 "York"))))
  :op2 (c / charge-05
```

```
        :ARG0 o
        :ARG1 f
        :ARG2 (r / responsibility
                :ARG1 (l / loss
                        :ARG1-of (i / incur-01
                                  :ARG0 (o2 / office
                                          :poss (t / treasurer
                                                  :mod (s3 / state)))
                                  :time (n / date-entity
                                          :year 1987))
                        :degree (m2 / much)
                        :mod (m / monetary-quantity
                               :quant 200000000
                               :unit (d / dollar)))
                :ARG0 f)))
```

30. The suit sets the firms ' liability at more than $ 185 million *U* .
(wsj_1130_2)

```
(s / set-01
  :ARG0 (s2 / sue-01)
  :ARG1 (l / liability
          :poss (f / firm))
  :ARG2 (m / over
          :op1 (m2 / monetary-quantity :quant 185000000
                 :unit (d / dollar))))
```

31. The firms are Morgan Stanley & Co. , Salomon Brothers Inc. , County Natwest Government Securities Inc. , Greenwich Capital Markets Inc. and Goldman , Sachs & Co .
(wsj_1130_3)

```
(a / and
  :domain (f / firm)
  :op1 (o / company
         :name (n / name
                 :op1 "Morgan"
                 :op2 "Stanley"
                 :op3 "&"
                 :op4 "Co."))
  :op2 (o6 / company
         :name (n5 / name
                 :op1 "Salomon"
                 :op2 "Brothers"
                 :op3 ","
                 :op4 "Inc."))
  :op3 (o7 / company
         :name (n8 / name
                 :op1 "County"
                 :op2 "Natwest"
                 :op3 "Government"
                 :op4 "Securities"
                 :op5 "Inc."))
  :op4 (o8 / company
         :name (n13 / name
                 :op1 "Greenwich"
                 :op2 "Capital"
                 :op3 "Markets"
                 :op4 "Inc."))
  :op5 (o9 / company
         :name (n17 / name
                 :op1 "Goldman"
                 :op2 ","
                 :op3 "Sachs"
```

```
                :op4 "&"
                :op5 "Co.")))
```

32. The firms have all said that West Virginia 's suit is without merit .
(wsj_1130_4)

```
(s / say-01
  :ARG0 (f / firm
          :mod (a / all))
  :ARG1 (m / merit
          :polarity -
          :poss (s2 / sue-01
                  :ARG0 (g / state
                          :name (n / name
                                  :op1 "West"
                                  :op2 "Virginia")))))
```

33. On Friday , the firms filed a suit *ICH*-1 against West Virginia in New York state court asking for a declaratory judgment absolving them of liability .
(wsj_1130_5)

```
(a / and
  :op1 (s / sue-01
         :ARG0 (f / firm)
         :location (c / court
                     :mod (s2 / state)
                     :location (g2 / city
                                 :name (n3 / name
                                         :op1 "New"
                                         :op2 "York")))
         :ARG1 (g / state
                 :name (n / name
                         :op1 "West"
                         :op2 "Virginia")))
  :op2 (a2 / ask-02
         :ARG0 f
         :ARG1 (j / judge-01
                 :ARG0-of (a3 / absolve-01
                            :ARG1 f
                            :ARG2 (l / liability))
                 :ARG0-of (d / declare-02)))
  :time (f2 / date-entity
          :weekday (f3 / friday)))
```

34. That suit is pending .
(wsj_1130_6)

```
(p / pend-01
  :ARG0 (s / sue-01))
```

35. The suits relate to a $ 200 million *U* loss , disclosed * in December , that *T*-2 was suffered *-1 by West Virginia 's consolidated investment pool .
(wsj_1130_7)

```
(r / relate-01
  :ARG1 (s / sue-01)
  :ARG2 (l / loss
          :ARG1-of (d2 / disclose-01
                     :time (d3 / date-entity
                             :month 12))
          :ARG1-of (s2 / suffer-01
                     :ARG0 (p / pool
                             :ARG1-of (c / consolidate-01)
```

```
                              :mod (i / invest-01)
                              :poss (g / state
                                      :name (n / name
                                              :op1 "West"
                                              :op2 "Virginia"))))
          :quant (m / monetary-quantity
                    :quant 200000000
                    :unit (d / dollar))))
```

36. The pool invested idle cash for many state agencies and local governments .
(wsj_1130_8)

```
(i / invest-01
  :ARG0 (p / pool)
  :ARG1 (c / cash
          :mod (i2 / idle))
  :beneficiary (a / and
                 :op1 (a2 / agency
                        :mod (s / state)
                        :quant (m / many))
                 :op2 (g / government
                        :mod (l / local)
                        :quant (m2 / many))))
```

37. In its suit , the attorney general 's office alleges that brokers encouraged members of the treasurer 's office *PRO*-2 to engage in high - volume , high - risk transactions that *T*-1 benefited the brokers .
(wsj_1130_9)

```
(a / allege-01
  :ARG0 (o / office
          :poss (a2 / attorney
                  :mod (g / general)))
  :ARG1 (e / encourage-01
          :ARG0 (b / broker)
          :ARG1 (m / member
                  :poss (o2 / office
                          :poss (t / treasurer)))
          :ARG2 (e2 / engage-01
                  :ARG1 m
                  :ARG2 (t2 / transact-01
                          :ARG0-of (b2 / benefit-01
                                     :ARG1 b)
                          :mod (h / high-volume)
                          :mod (h2 / high-risk))))
  :prep-in (s / sue-01
             :poss o))
```

38. *PRO* Establishing these practices would permit earlier identification of emerging financial crises , provide better information for loan sales and budgeting decisions , and reduce fraud .
(wsj_1131_62)

```
(a / and
  :op1 (p2 / permit-01
         :ARG0 (e / establish-01
                 :ARG1 (p / practice-01
                         :mod (t / these)))
         :ARG1 (i / identify-01
                 :ARG1 (c / crisis
                         :mod (f / finance)
                         :ARG0-of (e2 / emerge-01))
                 :time (e3 / early
```

```
                        :degree (m / more))))
  :op2 (p3 / provide-01
         :ARG0 e
         :ARG1 (i2 / information
                 :mod (g / good
                        :degree (m2 / more))
                 :purpose (a2 / and
                           :op1 (s / sell-01
                                  :ARG1 (l / loan-01))
                           :op2 (d / decide-01
                                  :ARG1 (b / budget-01)))))
  :op3 (r / reduce-01
         :ARG0 e
         :ARG1 (f2 / fraud)))
```

39. The U.S. plan also would ease the transition to freer agriculture trade by *PRO*-2 allowing some countries to convert non-tariff barriers into tariffs that , *PRO*-3 together with existing tariffs , *T*-1 then would be phased *-3 out over 10 years .
  (wsj_1135_4)

```
(e / ease-02
  :ARG0 (p / thing
          :ARG1-of (p3 / plan-01
                     :ARG0 (g2 / country
                              :name (n / name
                                       :op1 "U.S."))))
  :ARG1 (t / transit-01
          :ARG2 (t2 / trade-01
                  :ARG1 (a / agriculture)
                  :mod (f / free
                         :degree (m / more))))
  :manner (a2 / allow-01
            :ARG1 (c / convert-01
                    :ARG0 (c2 / country
                            :quant (s / some))
                    :ARG1 (b / barrier
                            :mod (t3 / tariff
                                   :polarity -))
                    :ARG2 (a3 / and
                            :op1 (t4 / tariff
                                   :ARG1-of (p2 / phase-01
                                              :time (o / over
                                                      :op1 (y / year
                                                             :quant 10))))
                            :op2 (t5 / tariff
                                   :ARG1-of (e2 / exist-01))))))
```

40. Trade Representative Carla Hills , who along with Agriculture Secretary Clayton Yeutter *T*-1 unveiled the proposal , said 0 she is confident 0 it will gain considerable support from the U.S. 's trading partners .
  (wsj_1135_5)

```
(s / say-01
  :ARG1 (c / confidence
          :ARG1 (g1 / gain-02
                  :ARG1 (s2 / support-01
                          :mod (c2 / considerable))
                  :ARG2 (p2 / partner
                          :ARG2-of (t3 / trade-01
                                     :ARG0 (g2 / country
                                             :name (n5 / name
                                                     :op1 "U.S."))))
                  :ARG0 t2)
```

```
         :ARG0 p3)
  :ARG0 (p3 / person
         :name (n / name
                 :op1 "Carla"
                 :op2 "Hills")
         :mod (r / represent-01
                :mod (t / trade-01))
         :op1-of (a / and
                   :ARG0-of (u / unveil-01
                               :ARG1 (t2 / thing
                                        :ARG1-of (p / propose-01)))
                   :op2 (p4 / person
                          :name (n3 / name
                                  :op1 "Clayton"
                                  :op2 "Yuetter")
                          :mod (s3 / secretary
                                 :mod (a2 / agriculture))))))
```

41. Mr. Yeutter , *PRO*-4 seeking *PRO*-5 to allay European objections to an earlier U.S. plan that *T*-1 called for *PRO* eliminating all farm - trade barriers by the year 2000 , said 0 the new U.S. proposal would n't `` put farmers out of business '' but would only encourage them *PRO*-6 to `` grow what the markets desire *T*-2 instead of what the government wants *T*-3 . ''
  (wsj_1135_6)

```
(s / say-01
  :ARG0 (g / person
         :ARG0-of (s2 / seek-01
                   :ARG1 (a / allay-01
                          :ARG0 g
                          :ARG1 (o / object-01
                                  :ARG1 (p / plan-01
                                          :time (e2 / early
                                                  :degree (m / more))
                                          :ARG0-of (c / call-03
                                                     :ARG1 (e / eliminate-01
                                                             :ARG1 (b / barrier
                                                                     :quant (a2 / all)
                                                                     :mod (f / farm-trade))
                                                             :time (b2 / by
                                                                     :op1 (d / date-entity
                                                                             :year 2000))))
                                          :mod (g4 / country
                                                 :name (n5 / name
                                                         :op1 "U.S.")))
                                  :ARG0 (g2 / continent
                                          :name (n6 / name
                                                  :op1 "Europe")))))
         :name (n2 / name
                 :op1 "Mr."
                 :op2 "Yuetter"))
  :ARG1 (b3 / but
         :op1 (p2 / put-01
                :polarity -
                :ARG0 (t / thing
                         :ARG1-of (p3 / propose-01)
                                  :ARG0 g4)
                         :mod (n / new))
                :ARG1 (f2 / farmer)
                :prep-out-of (b4 / business))
         :op2 (e3 / encourage-01
                :mod (o4 / only)
                :ARG0 t
                :ARG2 (g5 / grow-03
                         :ARG1 (t2 / thing
                                 :ARG1-of (d2 / desire-01
                                          :ARG0 (m4 / market)))
                         :prep-instead-of (t3 / thing
```

```
                                          :ARG1-of (w / want-01
                                                    :ARG0 (g3 / government)))
                        :ARG0 f2)
                :ARG1 f2)))
```

42. The U.S. is submitting the proposal today in Geneva , *PRO*-1 hoping that the initiative will spur members of the General Agreement on Tariffs and Trade *PRO*-2 to reach agreement on new trade rules before their current negotiating round concludes in December 1990 .
  (wsj_1135_7)

```
(a / and
  :op1 (s / submit-01
         :ARG1 (t / thing
                  :ARG1-of (p / propose-01))
         :time (t2 / today)
         :ARG0 (g2 / country
                  :name (n3 / name
                           :op1 "U.S."))
         :location (g3 / city
                      :name (n4 / name
                               :op1 "Geneva")))
  :op2 (h / hope-01
         :ARG1 (s2 / spur-01
                  :ARG0 (i / initiate-01)
                  :ARG1 (r / agree-01
                           :ARG1 (r2 / rule
                                    :mod (n2 / new)
                                    :mod (t3 / trade-01))
                           :time (b / before
                                    :op1 (c / conclude-02
                                            :ARG1 (r3 / round
                                                     :mod (n / negotiate-01)
                                                     :mod (c2 / current)
                                                     :poss m)
                                            :time (d / date-entity
                                                     :month 12
                                                     :year 1990)))
                           :ARG0 (m / member
                                    :poss (o / organization
                                             :name (n11 / name
                                                      :op1 "General"
                                                      :op2 "Agreement"
                                                      :op3 "on"
                                                      :op4 "Tariffs"
                                                      :op5 "and"
                                                      :op6 "Trade")))))
         :ARG0 g2))
```

43. Another U.S. proposal filed * Monday urges more `` fair play '' in services trade , including predictable and clear rules and equality in the treatment of foreign and domestic service companies .
  (wsj_1135_8)

```
(u / urge-01
  :ARG0 (t / thing
           :ARG1 (p / propose-01
                    :ARG0 (o / country
                             :name (n / name
                                      :op1 "U.S.")))
           :mod (a / another)
           :ARG1-of (f / file-01
                       :time (m / date-entity
                                :weekday (m3 / monday))))
```

```
  :ARG1 (p4 / play-02
          :manner (f3 / fair
                    :degree (m2 / more))
          :prep-in (t3 / trade-01
                     :ARG1 (s2 / serve-01))
          :ARG2-of (i / include-01
                     :ARG1 (a2 / and
                             :op1 (r / rule
                                    :mod (c / clear)
                                    :ARG1-of (p3 / predict-01
                                               :domain-of (p2 / possible)))
                             :op2 (e / equal
                                    :prep-in (t2 / treat-01
                                               :ARG1 (c2 / company
                                                       :ARG0-of (s / serve-01)
                                                       :location (a3 / and
                                                                   :op1 (f2 / foreign)
                                                                   :op2 (d /
domestic)))))))))
```

44. Unlike the earlier U.S. farm - trade proposal which *T*-1 struck European countries as too extreme , the latest plan would provide some room for maneuver .
  (wsj_1135_9)

```
(p / provide-01
  :ARG1 (r / room
          :purpose (m2 / maneuver-01)
          :quant (s2 / some))
  :ARG0 (t3 / thing
          :ARG1-of (p2 / plan-01
                     :mod (l / late
                            :degree (m / most)))
          :ARG0-of (r2 / resemble-01
                     :polarity -
                     :ARG1 (t / thing
                             :ARG1-of (p3 / propose-01
                                        :topic (f / farm-trade)
                                        :ARG0 (g / country
                                                :name (n / name
                                                        :op1 "U.S."))
                                        :mod (e / early
                                               :degree (m3 / more)))
                             :ARG1-of (s / strike-04
                                        :ARG3 (c / country
                                                :location (g2 / continent
                                                            :name (n2 / name
                                                                    :op1 "Europe")))
                                        :ARG2 (e2 / extreme
                                                :degree (t2 / too)))))))
```

45. Loral Corp. said it received a $ 325 million order from Turkey 's Ministry of Defense , the largest contract the company ever has received .
  (wsj_1989_1)

```
(s / say-01
  :ARG0 (o / company
          :name (n / name
                  :op1 "Loral"
                  :op2 "Corp."))
  :ARG1 (r / receive-01
          :ARG0 o
          :ARG1 (o2 / order
                  :domain-of (c / contract
```

```
                                :mod (l / large
                                       :degree (m / most)
                                       :compared-to (t / thing
                                                     :ARG1-of (r2 / receive-01
                                                                :ARG0 o
                                                                :mod (e / ever))))))
          :ARG2 (o3 / organization
                  :name (n4 / name
                          :op1 "Ministry"
                          :op2 "of"
                          :op3 "Defense")
                  :poss (g / country
                          :name (n6 / name
                                  :op1 "Turkey")))
          :ARG3 (d / monetary-quantity
                  :quant 325000000
                  :unit (d2 / dollar))))
```

46. Loral will provide to Turkey an electronic countermeasures system for its fleet of F - 16 aircraft .
(wsj_1989_2)

```
(p / provide-01
  :ARG0 (o / company
          :name (n / name
                  :op1 "Loral"))
  :ARG1 (s / system
          :mod (c / countermeasure)
          :mod (e / electronic))
  :recipient (g / country
               :name (n2 / name
                       :op1 "Turkey"))
  :prep-for (a / aircraft
              :mod "F-16"
              :unit (f / fleet
                      :poss g)))
```

47. The system provides radar - threat warning and electronic jamming capabilities .
(wsj_1989_3)

```
(p / provide-01
  :ARG0 (s / system)
  :ARG1 (c / capability
          :mod (a / and
                 :op1 (w / warn-01
                        :ARG1 (t / threat)
                        :ARG0 (r / radar))
                 :op2 (j / jam-01
                        :manner (e / electronic)))))
```

48. The defense electronics maker said delivery will begin in October 1991 and run through mid-1995 .
(wsj_1989_4)

```
(s / say-01
  :ARG0 (o / company
          :ARG0-of (m / make-01
                     :ARG1 (e / electronics
                             :mod (d / defense))))
  :ARG1 (a / and
          :op1 (b / begin-01
                 :ARG1 (d2 / deliver-01)
                 :time (d3 / date-entity
```

```
                        :year 1991
                        :month 10))
          :op2 (r / run-04
                 :prep-through (d4 / date-entity
                                 :year (m2 / mid-1995)))))
```

49. Loral said the contract with Turkey will provide opportunities for Loral to supply that country with other defense systems .
  (wsj_1989_5)

```
(s / say-01
  :ARG0 (o / company
          :name (n / name
                  :op1 "Loral"))
  :ARG1 (p / provide-01
          :ARG0 (c / contract-02
                  :ARG2 (g / country
                           :name (n2 / name
                                   :op1 "Turkey"))
                  :ARG0 o)
          :ARG1 (o2 / opportunity
                  :mod (s2 / supply-01
                         :ARG0 o
                         :ARG1 (s3 / system
                                 :mod (d / defense)
                                 :mod (o3 / other))
                         :ARG2 g))
          :ARG2 o))
```

50. In addition to $ 33 million compensatory damages , the suit seeks $ 100 million in punitive damages .
  (wsj_2328_6)

```
(s / sue-01
  :ARG3 (a / and
          :op1 (m / monetary-quantity :quant 100000000
                 :prop-in (d2 / damage
                            :mod (p / punish-01))
                 :unit (d / dollar))
          :op2 (m2 / monetary-quantity :quant 33000000
                 :ARG3-of (c / compensate-01
                            :ARG1 (d3 / damage))
                 :unit (d4 / dollar))))
```