Guide to Event Mention

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Version 1.3

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Contents

[1 Introduction 2](#_Toc380417828)

[2 Domain Event Annotations 2](#_Toc380417829)

[2.1 Which Events are Markable? 2](#_Toc380417830)

[2.1.1 Some Simple Tests for Events 3](#_Toc380417831)

[2.1.2 Domain Restrictions 3](#_Toc380417832)

[2.1.3 Object for Event 4](#_Toc380417833)

[2.1.4 Pronouns 4](#_Toc380417834)

[2.2 Which States are Events? 4](#_Toc380417835)

[2.3 Multiple or Single Event? 4](#_Toc380417836)

[2.3.1 Modifiers in Noun Phrases 5](#_Toc380417837)

[2.3.2 Lexicalized vs Productive Noun Phrases 5](#_Toc380417838)

[2.3.3 Phrasal Verbs 6](#_Toc380417839)

[2.3.4 Light Verbs 7](#_Toc380417840)

[2.3.5 Idioms, Metaphors, and Metonyms 7](#_Toc380417841)

[2.3.6 Aspectual Words 9](#_Toc380417842)

[2.4 Epistemic Status 9](#_Toc380417843)

[2.4.1 Perspective of Agent 10](#_Toc380417844)

[2.4.2 Conditional Occurrence 11](#_Toc380417845)

[2.4.3 Uncertain Occurrence 12](#_Toc380417846)

[2.4.4 Negation in Epistemic Status 13](#_Toc380417847)

[2.5 Elliptical: Missing Markable 14](#_Toc380417848)

[3 Reporting Events 15](#_Toc380417849)

[3.1 What is a Reporting Event? 15](#_Toc380417850)

[3.2 How to Mark Reporting Events 16](#_Toc380417851)

[3.3 Psychological States are Not Reporting Events 16](#_Toc380417852)

[3.4 Examples of Markable Reporting Events 17](#_Toc380417853)

[3.5 Examples of Unmarked Reporting Events 18](#_Toc380417854)

# Introduction

This Guide concentrates on issues surrounding the decision of what is a Markable Event (Event Mention). This document is based on CMU’s annotation work and the texts used were in the IC Domain provided by the DARPA Machine Reading Program.

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# Domain Event Annotations

In texts, authors refer to events or states. These might be actual occurrences in the world, hypothesized or desired or uncertain events, ongoing or habitual events, etc. However, they exist in the text as Markable Events, and this is what is considered when the text is annotated.

Each Markable Event is referred to (explicitly or implicitly) in the text, for example “the attack” or “exploded”. The goal is to mark each of the events and states that are important in a specific domain.

Example sentences in this document use **bold** for the Markable Events (Event Mention) followed by some of their annotations in parentheses. **E** indicates Event and **R** indicates Reporting Events, followed by Epistemic Status, such as AO, CO, etc. (See Section 2.4).

In this example sentence, reference to a **bombing**(E1,AO) last weekend is marked in bold.

Multiword phrases are in **bold** followed by their annotations in parentheses. If the phrase is non-contiguous, the first part contains the annotations and subsequent parts contain (=EventID).

An example of a contiguous phrase is **house arrest**(E2,AO) and a non-contiguous phrase occurs when they **set**(E3,AO) someone **free**(=E3).

Additionally annotated words of interest in the sentences are also underlined and unmarked words of interest are *italicized and underlined*.

A *treaty* is not marked in the IC Domain but a **battle**(E4,AO) is marked.

## Which Events are Markable?

In general, Markable Events can be thought of as anything that occurs at a location and a time[[1]](#footnote-1). The easiest Markable Events to identify are words which are heads of phrases. Events can refer to something that happened, is happening now, happens habitually, is hypothesized could happen, has an uncertain status as to its actually having happened, or is desired or predicted to happen in the future. In addition, Markable Events must also follow specific domain requirements. Some examples of single word Markable Events in the IC Domain are the nouns “attack”, “shooting”, and “massacre” and the verbs “kill”, “stab” and “exploded”.

### Some Simple Tests for Events

A simple test to determine if a noun is a Markable Event or not is to ask if the noun easily admits arguments, such as a time, location, agent, patient, etc. While the agent or patient of “vehicle” is hard to imagine, the agent and patient of “battle” is not. Thus “battle” is a Markable Event and “vehicle” is not***.***

Another simple test to determine if a noun is a Markable Event is to consider its relationship to the verbal form. If a noun can be changed into a verb, it is likely to be a Markable Event (e.g., “the strike > “to strike”, “the demonstration” > “to demonstrate”). Many gerunds are also Markable Events (e.g., “killing” in “They condemned the killing.”).

Paraphrasing with another known Markable Event can help determine if an event is markable. For example, the term “bloodletting” in the example below could be paraphrased by “killing” which is a Markable Event, and thus “bloodletting” is also a Markable Event.

The latest round of **bloodletting**(E50,AO) comes ahead of talks aimed at bringing lasting peace to Somalia, scheduled to take place in neighbouring Kenya in September, under the auspices of the seven-nation Inter-Governmental Authority on Development (IGAD). AFP\_ENG\_20020724.0397

### Domain Restrictions

Not all events are considered markable in all domains. The purpose of annotation for a particular domain determines which specific events are considered markable for that domain. In the IC Domain in the DARPA Machine Reading Program, only violent events, legal events related to violence, and Reporting Events related to violence are annotated. In the example below, only the bombing event is marked and other events such as “rattled” or “sent” are unmarked.

The **bombing**(E49,AO) on Monday morning near the headquarters of Allawi's party, the Iraqi National Accord, *rattled* windows miles away and *sent* a plume of smoke above the Baghdad skyline. NYT\_ENG\_20050125.0022

It is important to note that not all instances of the domain terms should be considered Markable Events. When a violent term is used to describe a non-violent event in the IC Domain, it should not be marked. In the example below, “siege” is used to describe “political and economic” actions, thus it is not considered a Markable Event.

The **bombardment**s(E20,OO) in the north of the Gaza Strip and in (southern) Khan Yunis … are part of a political and economic *siege* of the Palestinian people." **said**(R22,AO) Haniya, whose Hamas movement came to power two weeks ago. AFP\_ENG\_20060411.0317

### Object for Event

Occasionally a term which usually refers to an object is used to refer to an event. For example, the word “bomb” will sometimes be used to refer to the actual event of “bombing” rather than the object that is the “bomb”. In such cases “bomb” is considered a Markable Event. In the example below, “suicide bomb” is used to refer the event of “suicide bombing,” since it was the explosion of the suicide bomb that killed and wounded people. It passes the test for time and location and paraphrase (for example, into “a suicide-caused explosion”).

The Al-Aqsa Brigades **claimed responsibility for**(R28,AO) a **suicide bomb(**E29,AO) in Jerusalem Saturday which **killed**(E30,AO) nine Israelis and **wounded**(E31,AO) more than 50. AFP\_ENG\_20020303.0113

In this next example, “bomb” refers to the object which was detonated, and thus is not marked.

Khaled al-Batsh, another Islamic Jihad leader, **said**(R13,AO) the **blast**(E14,AO) had been caused by an Israeli **airstrike**(E14,CO), or by a *bomb* **detonated**(E15,CO) by remote control, Agence France-Presse **reported**(R16,AO). NYT\_ENG\_20060301.0184

### Pronouns

Pronouns are not annotated as Markable Events in the IC Domain.

## Which States are Events?

The term Markable Event can refer to both events and changes of state. In general, a state refers to either a fixed or regularly changing configuration of entities in the world. Fixed states are not marked, such as “he was *in pain*”. An event occurs when there is a change of state in the world, as with resultative-like events including “he was **dead**(E1,AO)”.

In the IC Domain, psychological states are not considered Markable Events. For example, “surprise”, “think”, and “belief” are not Markable Events. Sometimes these words can be confused with reporting events such as “suggest” and “accuse”, which are marked in the IC Domain. See ***Section 3.3 Psychological and Cognitive States*** for more details. Although unmarked, these psychological state words can influence the Epistemic Status of other Markable Events within their scope. See ***Section 2.4.3 Uncertain Occurrence***for more details on the influence of unmarked psychological states on the Epistemic Status of other Markable Events.

## Multiple or Single Event?

Whether to mark events separately or combine them into one multi-word event can be difficult to determine. These decisions can involve noun and verb phrases, idiomatic expressions, and aspectual terms. In most cases, only the head of the phrase is marked.

### Modifiers in Noun Phrases

In most noun phrases, only the head noun in the phrase is marked. Adjectives and adjectival nouns and other modifiers used in noun phrases are not normally marked. Thus “bombing” in phrase “a new urban bombing campaign” is not marked in the example below, only “campaign”.

As the 20th anniversary on Sunday of the PKK **uprising**(R19,AO) approached, Turkish media **reported**(R20,AO) Friday of a **threat**(R21,AO) of a new urban *bombing* **campaign**(E22,CO) by a group of Kurdish militants. AFP\_ENG\_20040813.0336

However, if the phrase would have been written “a new campaign of urban bombing”, both “campaign” and “bombing” would be marked.

In the IC Domain, some modifiers in noun phrases are marked in the special case where the head noun is a type of count. For example, when “casualty” is used as a single noun, it is marked. Due to this rule exception for “count” phrases, when “casualty” appears in the noun phrase “casualty count”, “casualty” is marked, and “count” is not marked. Similarly, “death” is marked in the phrase “death toll”, although “toll” is not marked.

…bringing to 69 the **death**(E27,AO) *toll* in the violence this week… AFP\_ENG\_19960119.0286

### Lexicalized vs Productive Noun Phrases

Some multi-word noun phrases have a standard meaning that cannot be understood based on the individual meanings of the words taken separately (such as “ethnic cleansing” and “house arrest”). These noun phrased have become lexicalized in the vocabulary. In such cases, the entire noun phrase is considered one Markable Event and all words in the phrase are marked with the same Event ID.

Listed below are some examples of multiword noun phrases that are or are not considered Markable Events in the IC Domain.

|  |  |
| --- | --- |
| **Noun Phrases**  **Marked with same Event ID** | **Noun Phrases**  **Only One Noun Markable** |
| *ethnic cleansing* | terrorist *threats* |
| *house arrest* | massive ground and air *offensive* |
| *car bombing* | Madrid train *bombing* |
| *suicide bombing* |  |
| *armed struggle* |  |

In the case of “car bombing”, both words are marked with the same EventID, since this is a special type of bombing where a car is filled with explosives and driven into a target. In a similar fashion, but using a human body instead of a car, in a “suicide bombing” explosives are strapped to a person’s body, then set off when the person nears their target. The specialized meanings of “car bombing” and “suicide bombing” cannot be composed from the individual words, thus the entire phrase is treated as one Markable Event and marked with the same EventID.

Consider the cases of “minibus bombing” and “train bombing” below:

One of the **attacks**(E42,AO), a minibus **bombing**(E43,AO) in the popular resort town of Marmaris, **wounded**(E44,AO) 10 Britons in late August. APW\_ENG\_20060925.0461

… **condemned**(R2,AO) as “an atrocious crime” last week's Madrid train **bombings**(E6,AO)… AFP\_ENG\_20040315.0734

Only “bombing” is marked in each of these sentences, since the meaning can be determined in a productive fashion. Bombs were placed on a minibus or on a train and then they exploded, injuring people on board and possibly nearby. “Minibus” and “train” are noun modifiers of the head noun “bombing”, and are not marked, as per ***Section 2.3.2 Modifiers in Noun Phrases.***

### Phrasal Verbs

Phrasal verbs in the form verb plus particle, are multiword verbs for which the combining of the two parts create a meaning that cannot be understood based on the individual meanings of the words taken separately. For phrasal verbs (such as “set off”, “call on” and “blow up”) all words that are part of the phrase are considered part of the same Markable Event and are given the same Event ID. Even when the words are separated by intervening words in the sentence, all parts of the phrasal verb are marked with the same Event ID.

Examples of phrasal verbs marked with one EventID:

The three HAMAS members , when **called on**(R16,AO) to **surrender**(E17,EDO) , **opened fire**(E18,AO) on police with M-16 assault rifles , Palestinian sources **reported**(R19,AO). Hundreds of police reinforcements were **called out**(E20,AO) for the **battle**(E21,AO). AFP\_ENG\_19950818.0389

In some cases a verb is combined with a noun or an adjective to create a special meaning. These phrasal verbs are marked in the same fashion as verb plus particle phrasal verbs Examples in the IC Domain include: “shot dead”, “open fire”, “claim lives”, “take up arms”, “send weapons”, and “leave dead”.

A simple test to determine a phrasal verb is if the multiple terms in the phrasal verb can be paraphrased by a known Markable Event. For example, “sending weapons” can be paraphrased as “arming”, which is a Markable Event in the IC Domain.

He accused(R,AO) Eritrea, Egypt, Yemen, Libya and Djibouti of **sending weapons**(E54,CO) to Somalia…AFP\_ENG\_20020724.0397

Note: not all phrasal verbs are considered Markable Events. They must still meet the requirements of the domain. For example, in the IC Domain, the phrasal verb “drag on” not considered a Markable Event due to its aspectual nature similar to “continue”.

the **battle**(E1,AO) against US and Iraqi forces in the county could *drag on* for years LTW\_ENG\_20050124.0091

See the discussion of aspect in ***Section 2.3.6 Aspectual Words***.

### Light Verbs

“Light verbs” are a combination of a verb with little semantic content and usually a noun. Light verbs include “do”, “give”, “have”, “make”, “take”, etc. In the case that the noun could be used as a verb without the light verb and retain a similar meaning, only the noun is marked.

Some examples of Markable Events in sentences with light verbs are:

These terrorists have *done* so much **damage**(E37,AO) to the country. APW\_ENG\_19970515.1200

The authorities in Yemen have *made* no **mention**(R10,NO) of the **attack**(E10,AO). AFP\_ENG\_19970509.0516

In the case of “he took responsibility for”, it could be argued that there is no event to mark, since “take” is a light verb and “responsibility” is not a Markable Event in the IC Domain. However, in the IC Domain “claim responsibility for” is considered a multiword Illocutionary Speech Act which is marked with one Event ID.

“Hamas' armed wing, …, **claimed responsibility for**(R14,AO) the **attack**(E15,AO)” XIN\_ENG\_20040511.0422

Thus it could also be argued that the meaning of “take responsibility for” is a paraphrase of “claim responsibility for”, so “take responsibility for” should be marked in the same fashion.

He **said**(R30,AO) he believed the Jaish Ansar group had also **taken responsibility for**(R32,CO) Saturday's **car bombing**(E33,AO) at a Mosul police station that **killed**(E34,AO) nine Iraqis and **injured**(E35,AO) about 45. APW\_ENG\_20040205.0306

### Idioms, Metaphors, and Metonyms

Metaphors, metonyms, and idioms often involve multiple words. Some metaphors and idioms also fit the definitions of phrasal verbs or light verbs. In the IC Domain metaphors, and idioms are marked or not depending on their meanings. If the meaning of the metaphor or idiom can be paraphrased by a known Markable Event, then all of the words in the metaphor or idiom should be marked with one EventID.

The hotel **said**(R26,AO) about 80 guests were staying in the hotel and about 30 people were in the casino when the bomb **went** **off**(E27,AO). APW\_ENG\_19950524.1108

Palestinians **say**(R22,OO) the Israeli **raids**(E23,AO) have been counterproductive , weakening the security forces expected to **crack** **down**(E24, EDO) on Hamas , Arafat 's main political rival. APW\_ENG\_20030303.0093

In the next example, “claim lives” means “kill” and “take up arms” means “arm (V)”. Both “kill and “arm (V)” are Markable Events in the IC Domain.

The Kurdish **conflict**(E30,AO) in Turkey has **claimed**(E31,AO,subto E30) some 37,000 **lives**(=E31) since 1984 when the PKK **took** **up** **arms**(E32,AO) for Kurdish self-rule in the southeast. AFP\_ENG\_20051209.0012

The example below contains no Markable Events, since a synonym of “put the screw to” in this case is “challenge”, and “challenge” is not markable in the IC Domain.

… allowing the government to isolate and *put the screw* to the guerrillas … AFP\_ENG\_20030712.0389

In the next example, “stamp out” means “stop”. Since aspectual terms (see Section 2.3.6 below) are not marked in in the IC Domain, “stamp out” is not marked, although it does influence the Epistemic Status of “terrorism”.

She forcefully **reiterated**(R1,AO) what she **described**(R2,AO) as her government's determination to "*stamp out* **terrorism**(E3,NOO) against the state." LTW\_ENG\_19950320.0124

In the next example, “scurry” means “hurry”, which is not marked in the IC Domain.

…sending the panicked militiamen *scurrying* to **defend**(E19,EDO) themselves… AFP\_ENG\_19961012.0077

In the example below, the meaning of “to go missing” is similar to a hostage situation in the IC Domain. It is a euphemism for “most likely abducted and killed” which would be marked. This the phrase “gone missing” is marked.

…an unspecified number of leftist activists who have **gone missing**(E13,AO) in the civil **war**(E14,OO)… AFP\_ENG\_20040823.0382

Below is an example of a metonym, where “Sept 11” is used to refer to “the Sept 11 attack”.

Officials traced a number of financial transactions between him and several hijackers, but Shaikh Saiid was not believed to have the wherewithal to **plan**(E66,NCO) an **operation**(E67,NCO) of *Sept.11's* magnitude. APW\_ENG\_20020605.0452

For the IC Domain, we are not annotating metonyms.

### Aspectual Words

Aspectual words signal the stages of the main event. Aspectual verbs include “start”, “end”, “continue”, “launch” (when it means “start” not “set a projectile in motion”), etc. Aspectual nouns include “the beginning”, “the outbreak”, “the interruption”, etc. Aspectual words in the IC Domain are not considered Markable Events.

Some examples of aspectual words not marked in the IC Domain :

“in an effort to *thwart* **attacks**(E55,NEDO)” XIN\_ENG\_20040703.0205

“Police said Z. usually spent nights in different places in Madrid to *avoid* **investigations**(E21,NEDO).” XIN\_ENG\_20040511.0422

The New Year has seen previous *outbreaks* of **violence**(E16,AO) in Germany. AFP\_ENG\_19950321.0171

Arafat *launched* the wide-ranging **crackdown**(E55,OO) against Hamas even before Thursday’s **attack**(E34,AO). APW\_ENG\_19981101.0355

Aspectual words may influence the Epistemic Status of other events. See ***Section 2.4.4 Negation in Epistemic Status*** for details.

## Epistemic Status

The answer to the question “Did the event occur?” is captured by the choice of Epistemic Status, which deals with the belief, degree of confidence in, or judgment of the occurrence of the event. Epistemic Status can be actual (AO), expected or desired or future (EDO), ongoing or habitual (OO), conditional (CO), and their respective negations – NO, NEDO, NOO, and NCO.

Examples from the IC Domain for each Epistemic Status are listed below.

AO - Actual occurrence

Three **blasts**(E2,AO) **went off**(E3,AO) almost simultaneously in a town in mainly Kurdish southeast Turkey Friday, **injuring**(E4,AO) at least one person and causing material **damage**(E5,AO), officials and press reports **said**(R6,AO). AFP\_ENG\_20051209.0012

NO - Negation of occurrence

At the same time, two small fire bombs **went off**(E12,AO) in a movie theater in the middle-class Lima district of San Borja, but no **injuries**(E13,NO) were reported(R14,AO). APW\_ENG\_19970521.1259

EDO - Expected or desired or future occurrence

Information as to which train they are going to **attack**(E73,EDO) and where is not easy to come by," the Times of India **quoted**(R74,AO) a top Indian intelligence official as **saying**(R72,AO). UNK\_ENG\_20060712.0002

NEDO - Negation of future/desired/expected occurrence

“Most of them will not **murder**(E49,NEDO) Arabs tomorrow just for being Arabs, but each such Zada has a short fuse, and nobody knows what will light it.[...],” he **said**(R50,AO). AFP\_ENG\_20050805.0248

OO - Ongoing or habitual occurrence

About 35,000 Turkish troops, backed by warplanes and tanks, have **entered**(E21,AO) the enclave to **wipe out**(E22,EDO) bases of the Kurdistan Workers Party, or PKK, which is **fighting**(E23,OO) for independence in eastern Turkey. (APW\_ENG\_19950328.0066)

NOO - Negation of ongoing or habitual occurrence

**Ignoring**(OO) U.N. efforts to halt the **war**(NOO) in Yemen, northern Yemeni ground forces backed by bombers have **pushed**(AO) closer to Aden LTW\_ENG\_19940617.0063

CO - Conditional occurrence

If **convicted**(E22,CO), Saddam and his seven co-defendants could be **sentenced**(E23,CO) to death by hanging. APW\_ENG\_20051127.0031

NCO - Negation of conditional occurrence

Officials traced a number of financial transactions between him and several hijackers, but Shaikh Saiid was not believed to have the wherewithal to **plan**(E66,NCO) an **operation**(E67,NCO) of Sept.11's magnitude. APW\_ENG\_20020605.0452

### Perspective of Agent

Actual occurrence (AO) is the most common Epistemic Status in the IC Domain. Most events in the newspaper articles are being reported as having actually occurred. However, it is often not that simple. Considering the perspective of the agent can help when assigning Epistemic Status. For example, an event that has already occurred at the time of the writing of the article could be discussed in the article from the perspective of its planning phase (i.e., before it actually happened). Or the article could discuss warnings that were given of the event’s possible future occurrence (even though at the time of writing the event had by then taken place). In such cases, the mention of the event happens before the event actually takes place. From the perspective of the agent doing the planning or the warning, the event will occur in the future, even though at the time the document was written, the event may have already occurred[[2]](#footnote-2).

In this example, the September 11 attacks are still in the future (Epistemic Status EDO) when Mzoudi was allegedly involved in their preparations.

If correct, that would support prosecution **claims**(R26,AO) that Mzoudi was already then **involved**(E37,CO) in **preparations**(E27,CO) for the September 11 **attacks**(E28,EDO). AFP\_ENG\_20031029.0426

Some words indicate that, from the perspective of the agent, another event is a desired, predicted or future event (EDO). These “trigger” words may be marked themselves or not. Some are temporal (“yet”) and some indicate preparation (“plan”, “prepare”).

**yet** - Pakistan President Pervez Musharraf was quick to **condemn**(R11,AO) the **bombings**(E12,AO) and *no one*has*yet***taken responsibility for**(R13,EDO) the **attacks**(E14,AO)…UNK\_ENG\_20060712.0002

**plan** - A second U.S. official, also **speaking**(R29,AO) on condition of anonymity, **acknowledged**(R30,AO) that Mohammed played a critical role in **planning**(E31,AO) the **attacks**(E32,EDO) but said questions remain about the extent of his leadership. APW\_ENG\_20020605.0452

**prepare** - Turkish police have intelligence that a group, calling itself “The August 15 Initiative”, is **preparing**(E40,OO) for **attacks(**E41,EDO) in big cities, news reports **said**(R42,AO). AFP\_ENG\_20040813.0336

### Conditional Occurrence

Conditional occurrence (CO) means that an event’s occurrence is subject to or conditional upon something else. Often “if”, “could”, “might” or “would” signal the conditional. Care should be taken to assign the conditional to the appropriate Markable Event.

In this example, “captured” and “detained” are conditional.

In recent days, rumors have spread throughout the capital that al-Zarqawi might have been **captured**(E41,CO), or that American forces might have **detained**(E42,CO)… **NYT\_ENG\_20050125.0022**

In this example the “cracking down” will happen if the violence persists, so “crack down” is marked CO, but “violence” is ongoing (OO). The conditional would be on “persisted”, if it were marked. But “persist” is aspectual, therefore not marked in the IC Domain.

Maj. Gen. Uzi Dayan, who is in charge of Israeli troops in the West Bank, **warned**(R51,AO) that Israel would **crack down**(E52,CO) on city residents if the **violence**(E53,OO) *persisted*. APW\_ENG\_19970713.0540

The next example is the conditional occurrence is that the rocket attacks could be halted if the residents would emigrate. “Halted” and “emigrate” are not marked in the IC Domain, but if they were, they would be given an Epistemic Status of CO. The “attacks” could cease to continue, thus are marked NOO to be no longer ongoing.

However, Abu Obaida **said**(R10,AO) they can *halt* rocket **attacks**(E12,NOO) if

Sderot residents *emigrated* from their town. XIN\_ENG\_20061121.0149

### Uncertain Occurrence

Currently, in the IC Domain we are marking uncertain events with the Epistemic Status of CO. Uncertain events are ones that are alleged, supposed or reported to have occurred. Whether or not they actually occurred is uncertain.

In the following example, “conflagration” is assigned an Epistemic Status of CO due to “supposed”. No markings are given to “supposed” since it is a psychological/cognitive verb not marked in the violent IC Domain, not to “trigger” since it is aspectual.

“The newspaper **said**(R32,AO) the **attack**(E33,AO) was *supposed* to trigger communal **conflagration**(E106,CO) in Bombay, the country 's financial capital," which is home to 16 million people.” UNK\_ENG\_20060712.0002

This table lists words that indicate uncertainty in Markable Events within their scope. Since Psychological States are not marked in the IC Domain, those words are not considered Markable Events. Illocutionary Speech Acts are considered Markable Events in the IC Domain.

|  |  |
| --- | --- |
| **Uncertain**  **Psychological State**  (Not Marked  in IC Domain) | **Uncertain**  **Illocutionary Speech Acts**  (Marked  in IC Domain) |
| believe  know  suppose  suspect (V) | allege  accuse  blame  claim (V)  convince  suggest |

Some additional words show uncertainty on events within their scope, such as “allegedly”, “supposedly”, “reportedly”.

Here are example sentences from several words in the table above with uncertainty words which trigger an Epistemic Status of Conditional Occurrence.

The men, who *allegedly* were **planning**(E21,CO) **attacks**(E22,CO) against U.S. and British warships in the Strait of Gibraltar, were **arrested**(E23,AO) in May. APW\_ENG\_20020617.1175

El Pais also **quoted**(R36,AO) its security service sources as **saying**(R37,AO) that Spanish police were **looking for**(E38,AO) four more people *believed* to be **involved**(E40,CO) in last week 's **attacks**(E41,AO). AFP\_ENG\_20040315.0040]

Abu Dahdah and two other suspects who are also **detained**(E15,OO). Ghasoub al Abrash Ghalyoun, who extensively filmed the Twin Towers in New York, and Driss Chebli are **accused**(R16,OO) of direct **involvement**(E17,CO) with the September 11 **attacks**(E18,AO) in New York and Washington. AFP\_ENG\_20040315.0734

**According to**(R15,AO) Del Olmo, Bendouda also has links to Imad Eddin Barakat Yarkas, alias "Abou Dahdah," currently on **trial**(E39,OO) along with 23 other suspected Al-Qaeda operatives, three of whom are *suspected* of having helped **prepare**(E17,CO) the September 11, 2001 **attacks**(E18,EDO) in the United States.” AFP\_ENG\_20050524.0499

### Negation in Epistemic Status

Determining the influence of negation on the Epistemic Status of a Markable Event can be challenging. When a “not” is used, it can sometimes be difficult to know what the “not” applies to. In “They did not attack for political reasons”, did they not attack, or did they attack but not for political reasons? The test here is to try to move the “not” to another position in the sentence, as in “They attacked not for political reasons.” If the negation can successfully be moved without changing the intended meaning, then it doesn’t apply to the verb and AO, EDO, OO, or CO should be used as appropriately determined by the rest of the sentence. If moving the “not” *does* change the intended meaning, then it does apply to the verb and NO, NEDO, NOO, or NCO should be used.

Some words indicate a negation, but the words themselves might not be Markable Events, depending on the marking rules for the Domain. Other words indicate negation and they are also Markable Events themselves. The negation can be indicated on a Markable Event within the same clause, whether the negating word itself is marked or not. Determining the scope of the negation can be challenging due to the semantics involved.

The following examples from the IC Domain show negated Epistemic Status on events due to the influence of other words for the unmarked words “abort”, “fail”, “halt”, “prevent”, “stop”, and “suspend”, and the marked word “refuse”, because “refuse” is an Illocutionary Speech Act which is marked in the IC Domain.

**NOT MARKED + NEGATION**

abort - "We have been lucky that our **investigations**(E22,AO) have managed to *abort* other **plots**(E23,NOO) before **acts of terrorism**(E24,NEDO) took place…” NYT\_ENG\_20050312.0073

fail - But that was before the sheik was put under **house arrest**(AO) following a Hamas **claim of responsibility for**(AO) a *failed***suicide bombing**(NO) on Thursday aimed at Jewish settler children in the Gaza Strip. APW\_ENG\_19981101.0355

halt - Ignoring U.N. efforts to *halt* the **war**(NOO) in Yemen, northern Yemeni ground forces backed by bombers have **pushed**(AO) closer to Aden LTW\_ENG\_19940617.0063

prevent – The KDP and PUK had "perverted the course of justice, *preventing* any effective **investigations**(NEDO) into scores of political **assassinations**(AO) and **killings**(E25) of prisoners and peaceful demonstrators," **said**(AO) Amnesty AFP\_ENG\_19950228.0176

stop - Jewish settlers from the 500-member community in Hebron **demonstrated**(AO) outside the Prime Ministry in Jerusalem Sunday, **demanding**(AO) that the government use harsher measures to *stop* the **violence**(NOO). APW\_ENG\_19970713.0540

suspend - …offering to *suspend* **attacks**(E7,NCO) if his new right-wing government agrees to a long list of demands. AFP\_ENG\_19960620.0340

**MARKED + NEGATION**

refuse - On June 22, Zarqawi's group **beheaded**(AO) South Korean hostage Kim Sun-il, after Seoul **refused**(R75,AO) to **withdraw**(E26,NEDO) its forces from Iraq. XIN\_ENG\_20040703.0205

## Elliptical: Missing Markable

Sometimes a Discourse Element is syntactically omitted, and we call this an elliptical event. If there is an elliptical expression referring to a Markable Event, then the symbol for the null set (Ø) is inserted into the text at the point of the missing element. Then EventID, Epistemic Status, and links can be assigned to the Ø just as these annotations are assigned to other Markable Events. For example, the following sentence contains an elliptical Markable Event of “blew himself up”.

The Kurd blew himself up in the offices of the Patriotic Union of Kurdistan and the Arab in the offices of the Kurdistan Democratic Party.

The Ø should be inserted after the word “Arab” to represent “blew himself up.” The Markable Event can then be assigned an Event ID and marked appropriately using the same rules as for other Markable Events.

The Kurd **blew**(E1,AO) himself **up**(=E1) in the offices of the Patriotic Union of Kurdistan and the Arab **Ø**(E2,AO) in the offices of the Kurdistan Democratic Party.

Elliptical events are actual syntactic parts in a sentence that are omitted from the sentence. In the example above, the reflexive verb “blow oneself up” is omitted.

Elliptical events may or may not be part of an implicit event. Implicit events are partially coreferential Markable Events that are not explicitly mentioned in the text. See the separate document ***Event Coreference Annotation Manual*** for a more detailed description of implicit events and partial coreference.

# Reporting Events

This section will discuss issues surrounding the marking of reporting events such as “say”, “tell”, “deny”, or “accuse”.

## What is a Reporting Event?

In the IC domain, we mark reporting events - when the text says that someone said something about an event. While a reporting event is any event in which someone makes a statement relating to a Markable Event, often the making of the statement is also in itself an event. This type of reporting event is an illocutionary speech act, as in “blamed” and “denied”. Both locutionary acts (like “say” and “tell”) and illocutionary acts (like “confirm”, “promise”, and “condemn”) are marked as reporting events.

Here is the list of some words representing the two types of reporting events found in the IC document set.

|  |  |
| --- | --- |
| **Locutionary Reporting Events** | **Illocutionary Speech Acts** |
| according to\*  add  announce  communicate  mention (v, n)  note (v)  quote  report (v)  say  state (v)  tell  \* “According to” is not a verb. However, we treat it as a locutionary reporting event, because it indicates the agent of reporting, such as “According to the BBC.” | accuse  admit  agree  allege  appeal (v)  argue  call on  claim (take) responsibility for  claim (v)  command  condemn  confess  confirm  convince  declare  demand (v)  deny  explain  hint  insist  order (v)  persuade  promise  refer  refuse  request  suggest  urge  vow (v)  warn |

## How to Mark Reporting Events

A Markable Reporting Event will be assigned an EventID of the form R*n*, where *n* is the next available number assigned sequentially by the system. Markable Events which are not reporting events have EventIDs of the form E*n*. As a document is annotated, each new EventIDs is assigned the next available number by the system. In this example below, the reporting event was assigned R9 and the next Markable Event was assigned E10.

A Western diplomat **said**(R9,AO) **bloodshed**(E10,AO) was on the cards from the very start… AFP\_ENG\_19950228.0176

In the IC Domain, we mark both locutionary reporting events and speech acts only when there are Markable Events in the scope of those reporting events. When there are no Markable Events within the scope of the reporting, we do not mark the reporting event. Annotators need to use their judgement on the scope of the reporting event, defaulting to a broad reading when in doubt.

In the first example below, “said” is marked since at least one Markable Event is within its scope. In the second example, “said” is not marked, since there are no Markable Events within its scope.

The military also **said**(R72,AO) another soldier had **died**(E73,AO) Tuesday morning in a roadside bomb **attack**(E74,AO). NYT\_ENG\_20050125.0022

Al-Naqib *said* al-Jaaf also used the name Abu Omar al-Kurdi and is considered to be a lieutenant of Abu Musab al-Zarqawi , a Jordanian militant who has a $ 25 million bounty on his head. NYT\_ENG\_20050125.0022

## Psychological States are Not Reporting Events

Verbs and phrases which describe psychological states (how someone feels) and cognitive states (what someone perceives) are not considered reporting events in the IC Domain. Although those words and phrases may seem to represent speakers’ perspectives on Markable Events, they are not considered reporting events. In the following text, for example, only “said” is considered a reporting event.

Spanish security services *believe* that the people who **carried out**(E42,AO) last week's deadly **bombings**(E5,AO) on trains in Madrid may have had links to the Islamic extremist group Al-Qaeda and also be part of the group which **carried out**(E43,AO) devastating **attacks**(E6,AO) in the Moroccan city of Casablanca almost a year ago, the El Pais newspaper **said**(R7,AO) on Monday.

AFP\_ENG\_20040315.0040

We do not mark “believe” in the first clause because it is a psychological verb, although there are Markables Events which lie within its scope.

Here is the list of psychological and cognitive verbs and phrases which are neither locutionary reporting events nor speech acts. These are not marked as reporting events in the IC Domain.

|  |
| --- |
| **Psychological States Not Marked** |
| appear  believe  concern  consider  feel  find  forget  grieve  guess  know  notice  oppose  realize  recognize  remember  remind  seem  send condolences  suppose  suspect  think  understand  unknown  want |

One common mixup to avoid can occur between “suggest”, which can be a Markable Reporting Event, and “suppose”, which is never markable in the IC Domain.

## Examples of Markable Reporting Events

The following sentences are the example of reporting events which are to marked. Those excerpts show Markable Events (i.e., violent events) within the scope of locutionary reporting event “said” and illocutionary speech act “claimed.”

Heavy **fighting**(E3,AO) has erupted in Somaliland between forces loyal to the breakaway republic's leader Mohamed Ibrahim Egal and opposition militia in the region's second largest city of Buro, the opposition group's spokesman Mohamed Ismail **said**(R5,AO) here Wednesday. AFP\_ENG\_19950329.0171

HAMAS and Islamic Jihad, both opposed to the peace process with Israel, have **claimed**(R55,AO) most anti-Israeli **attacks**(E56,AO) since self-rule was launched in the Gaza Strip and Jericho in the West Bank in May 1994.

AFP\_ENG\_19950818.0389

## Examples of Unmarked Reporting Events

The next two sentences are examples of reporting events which are not marked, since they have no Markable Events within their scope of reporting.

Hussein was a member of a tribe in the Chabwa region which has been engaged in a long-running feud with another local tribe, the source *added*.

AFP\_ENG\_19970509.0516

The three men are Saudi citizens between the ages of 25 and 35 and *claim* to be members of Osama bin Laden's al-Qaida terrorist network.

APW\_ENG\_20020617.1175

There are no Markables Events within the scope of the locutionary reporting event “added” or the illocutionary speech act “claim.” Therefore, those words are not marked, although they are reporting events.

1. Often but not always, Events also have patients —the entities to whom the Events happen— and perhaps agents — the entities who somehow cause the Events to happen. “There was a storm yesterday” is an Event because it can have a location and time, but “my chair” is not an event because although is has a location, talking about the time of the chair is marked. [↑](#footnote-ref-1)
2. Generally, we adopt Reichenbach’s (1933) analysis of tense as respecting three times: the time of Occurrence, the time of Reporting, and the time of Perspective taken in the reporting. [↑](#footnote-ref-2)