Background to FrameNet

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Road Map

• FrameNet
• Frames
  – Frame Elements
  – Lexical Units
• FrameNet Annotation
  – Lexicographic Annotation
  – “Full-Text” Annotation
• Frame-to-Frame Relations
• FrameNet: New Developments
Road Map

✓ FrameNet
  • Frames
    – Frame Elements
    – Lexical Units
  • FrameNet Annotation
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    – “Full-Text” Annotation
  • Frame-to-Frame Relations
  • FrameNet: New Developments
Charles J. Fillmore (aka OFL)

1929-2014
What is FrameNet?

• A unique knowledge base with information on the mapping of meaning to form through the theory of Frame Semantics (Fillmore 1975, 1985, Fillmore and Atkins 1986, Fillmore and Baker 2010, Fillmore 2012, Fontenelle 2003, Petruck 1996)

• A resource that provides rich semantics for the core English vocabulary based on manually annotated corpus evidence, including valence descriptions for each item analyzed
What’s “in” FrameNet?

• ~ 1,200 semantic frames (including FEs)
• ~ 13,500 lexical units
• > 202,000 manually annotated examples
• > 1,800 frame-to-frame relations constituting a hierarchy of semantic frames
Road Map

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✓ Frames
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  – “Full-Text” Annotation

• Frame-to-Frame Relations

• FrameNet: New Developments
What's a Frame?

A Semantic Frame is a script-like structure of inferences, linked by linguistic convention to the meanings of linguistic units - here, lexical items - constituting a schematic representation of a situation, object, event, or relation providing the background structure against which words are understood. Each frame identifies a set of frame elements – participants in the frame.
Semantic Frames in FrameNet

• Situation: Being_attached, Being_necessary, Being_strong, Being_wet, etc.
• Event: Apply_heat, Borrowing, Catching_fire, Cooking_creation, Hiring, Replacing, etc.
• Object: Buildings, Containers, Intoxicants, Offenses, People_by_origin, etc.
• Relations: Locative_relation, Spacial_co-location, Interior_profile_relation, Similarity, etc.
What’s “in” a Frame?

• Frame Definition
  a prose description of a situation involving various participants and other conceptual roles, each of which constitutes a frame element

• Frame Elements (FEs):
  semantic roles as the basic unit of a frame, defined specifically to each frame

• Lexical Units (LUs):
  pairing of a lemma and a frame, i.e. “word” in one of its senses; LU evokes a frame
Apply_heat: Definition

A Cook applies heat to Food, where the Temperature_setting of the heat and Duration of application may be specified. A Heating_instrument, generally indicated by a locative phrase, may also be expressed. Some cooking methods involve the use of a Medium (e.g. milk or water) by which heat is transferred to the Food.

This frame focuses on the process of handling the ingredients, rather than the end result (See Cooking_creation).
Apply\_heat: Frame Elements

Cook
Food
Temperature\_setting
Duration
Heating\_instrument
Medium

Lila FRIED the eggs in a copper pan.
Frame Elements: Coreness

• Core: uniquely defines a frame

  Commerce: Buyer, Seller, Money, Goods

• Peripheral: for aspects of events in general

  e.g. Time, Place, Manner

• Extrathematic: situate an event against the backdrop of another state of affairs; conceptually do not belong to the frame in which they occur

  — e.g. Iteration, Recipient

  Sue BAKED the cookies [twice Iteration].

  Sue BAKED the cookies [for me Recipient].
Frame Elements

Triple of Information

Frame Element
- semantic role

Grammatical Function
- External, Object, Dependent

Phrase Type
- full range of PTs for language
Apply _heat_: Lexical Units

*bake.v, baking.n* *barbecue.v, blanch.v, boil.v, braise.v, braising.n, broil.v, brown.v, char.v, coddle.v, cook.v, deep fry.v, fry.v, frying.n, grill.v, microwave.v, parboil.v, plank.v, poach.v, roast.v, saute.v, scald.v, scorch.v, sear.v, searing.n, simmer.v, singe.v, steam.v, steep.v, stew.v, toast.v*
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Lexicographic Annotation

• What?
  – Dependents of one **TARGET** per example sentence
    • constituents that instantiate Frame Elements (semantic roles), including prepositions
  – Null Instantiated Core FEs

• Why?
  – show **TARGET** word (= LU) use in language
  – determine valence description of each **TARGET**
  – account for non-instantiated FEs
  – FN began as a computational lexicography project

24 May 2016
Null Instantiation

• Constructional Null Instantiation (CNI)
  – construction licenses omission
    • imperative, agentless passive

• Definite Null Instantiation (DNI)
  – lexically specific, understood from discourse, knowledge of missing material required for determining referent
    • Frank RETALIATED after the bar incident. Offender DNI

• Indefinite Null Instantiation (INI)
  – lexically specific, intransitive use of transitive verbs (e.g. eat, drink, sew, bake), knowledge of category of missing material, even if not mentioned in previous discourse or context
Apply-heating-bake-apply-heat-bake

FE: BAKE [the souffle Food] [for 12 minutes Duration]
GF: Object Dep
PT: NP PP for
Cover and **BAKE** in a preheated 200°C/400°F/Gas 8 oven for 15-20 minutes. 

**[200°C/400°F/Gas 8 **HEATING** _INSTRUMENT]**
### Lexicographic Annotation Results:

**Apply_heat.bake.v**

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</table>
Cooking_creation: Definition

A Cook creates a Produced_food from (raw) Ingredients. The Heating_Instrument and/or the Container may also be specified. This frame describes food and meal preparation.
Cooking_creation: Frame Elements

Cook
Produced_food
Ingredients
Heating_Instrument
Container

Sam MADE vegetable soup for dinner last night.
Cooking_creation: Lexical Units

bake.v, baking.n, concoct.v, cook up.v, cooking_up.n, cook.n, cooking.n, cook.v, make.v, put together.v, whip up.v,
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Lexicographic Annotation:
Cooking_creation.bake.v

429-s20-lcoll-bread
1. The bread would then be slipped in, the oven door sealed, and when the oven cooled, the bread would be BAKED.

429-s20-rcoll-bread
1. It is also illegal in Norway for a bakery to BAKE bread on a Saturday or Sunday.
2. Almost all the food is grown at camp; they BAKE their own bread and the food is not only 100% nutritious but very delicious.
3. Rosalind BAKES her own bread and croissants and will prepare an evening meal with advance notice.
4. And she BAKED some bread with the millet flour that she had brought from her own garden.

429-s20-rcoll-cake
1. Some larger stores sell special tins of all the numbers so you can BAKE a cake in the shape of your child’s age.
2. Believing in economy, Miss Lodsworth had already BAKED rock and fairy cakes and spread hundreds of sandwiches with crusts still on with Marmite and plum jam which was cheaper than strawberry.

429-s20-rcoll-minute

429-s20-rcoll-oven

550-s20-np-np
1. And she would BAKE a chocolate mousse torte.
2. And for tomorrow’s Sunday dinner, she was going to roast a leg of mutton and BAKE an apple pie.
3. I BAKED some currant buns for you.
4. The wife of Senator Arlen Specter even BAKED Ali a double chocolate-mousse pie.

570-s20-np-pfor
1. Louise had BAKED a pie for him and was bringing a new pair of sheets from the airing cupboard.

620-s20-np-pother
650-s20-np-pother
660-s20-trans-simple
670-s20-pass-by

680-s20-pass
1. In Spain, breads flavoured with cinnamon and dried fruit are BAKED at Easter, and some contain hard-boiled eggs, according to Elizabeth Luard’s European Festival Food.
2. A special birthday cake was BAKED to mark the occasion, which was held in Graham School.
Lexicographic Annotation Results:

**Cooking_creation.bake.v**

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Lexicographic Annotation Results:

**Cooking_creation**: `bake.v`

[Cook The wife of Senator Arlen Specter] even BAKED Target [RecipientAlt] [Produced_food a double chocolate-mousse pie].

[Cook] BAKED Target [Produced_food some currant buns] [Recipient for you].

[CookLouise] had BAKED Target [Produced_food a pie] [Recipient for him] and was bringing a new pair of sheets from the airing cupboard.

FE: [I **Cook**] BAKED [some currant buns PRODUCED FOOD] [for you **Recipient**].
GF: External Object
PT: NP PP for
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Full-Text Annotation

• What is full-text annotation?
  – annotation with respect to every frame evoking element in a text
  – multiple layers of lexicographic annotation

• Why did FN *add* full-text annotation?
  – demonstrate the contribution of Frame Semantics to text understanding
  – client/user considerations
39. A series of DISASTROUS Catastrophic DECISIONS at the BEGINNING temporal subsection of the 20th CENTURY Calendar unit BEGAN Activity start to SOUND Make noise a DEATH knell for the Ottoman EMPIRE political locales. The Tursks LOST their competition a SHORT duration description WAR hostile encounter with Italy, and were FORCED to RELINQUISH their claiming possession the Dodecanese ISLANDS natural features to the ITALIANS people by origin, Greece took this opportunity to absorb the ISLANDS natural features of the NORTHERN part orientational and EASTERN part orientational Aegean and to add Macedonia to its mainland TERRITORIES political locales.

40. FOLLOWING relative time this DEBACLE catastrophe, the OTTOMAN people by origin then allied themselves to Germany in the World WAR hostile encounter I. LOSING engagements and losses more Increment TERRITORY political locales with the DEFEAT best opponent of the GERMANS people by origin that WAR hostile encounter, Greece was HANDS over giving a STRIP changes of land along the WESTERN part orientational COAST relational natural features of Asia Minor, which for over 2,000 YEARS duration had HAND possession a substantial GREEK ethnic POPULATION aggregated Greece moved in to ADMINISTER leadership the land, but a NEW AGE INFLUENCE Objective influence UPSET Preventing any GRAND dimension dreams of MAKING cause change this REGION locale a PART part whole of greater Greece.

41. IN Temporal location 1923, Turkey broke away from the TIED Biological urge OTTOMAN people by origin RULERS leadership, and Kemal Atatürk ROSE Motion directional to POWER leadership on a WAVE Quantified mass of POPULAR community support. He PROMISED commitment a MODERN stage of progress STATE for his PEOPLE, but as the situation BECAME becoming Volatile, civil STRIFE hostile encounter BROKE Process start OUT IN Interior profile relation TURKISH CITIES political locales, and those CONSIDERED the Categorization GREEK people by origin were VICTIMs Undergoing of THREATS commitment and violence. Many HAD required event to LEAVE departing their birthplaces, FLEEING Fleeing to Crete, Lesbos, Chios, and Samos, the Greek ruled ISLANDS natural features just OFFSHORE relation. THOUSANDS Quantified mass of PEOPLE ARRIVED arriving with little MORE Increment than the CLOTHES clothing they WORE Wearing. PUTTING Placing a great strain on the resources of the ISLANDS natural features. FINALLY Time vector Greece was OUSTED removing from its NEW AGE TERRITORY political locales IN Interior profile relation Asia Minor, which BECAME becoming PART part whole of the NEW AGE Turkish onion STATE political locales.

42. Greece ATTEMPTED Attempt to STAY state continue out of World WAR hostile encounter II, but Mussolini SAW categorization Greece as an IDEAL usefulness addition to his ITALIAN origin EMPIRE political locales. His FORCES military made a series of ATTACKS attack from their BASES locale by use IN Interior profile relation the Dodecanese ISLANDS natural features INCLUDING inclusion siding a GREEK origin NAVAL military VESSEL vehicle IN Interior profile relation the HARBOR locale by use of THESE TOWN political locales, but they only SUCCEEDED success or failure in STRENGTHENING cause of change strength the resolve of the POPULATION aggregate AGAINST taking sides those. LATER Time vector the GERMANS people by origin came arriving in FORCE military and occupied MANY Quantified mass of the ISLANDS natural features.

43. AFTER Time vector the WAR hostile encounter IN Temporal location 1949, the Dodecanese ISLANDS natural features FINALLY Time vector BECAME becoming PART part whole of the GREEK origin NATION political locales. BUT the COUNTRY political locales was politically FRAGMENTED cause of fragment, with ARGUMENTS bickering between monarchists and republicans, right and left and tension escalated into civil WAR hostile encounter. THE STRUGGLE Hostile encounter bypassed most of the ISLANDS natural features. ALTHOUGH Concessive THERE existence, WAS existence fierce FIGHTING hostile encounter ON spatial conflict Samos. EVEN AFTER Time vector the FIGHTING hostile encounter STOPPED Process stop MORE Increment than a DECADE Calendar unit. LATER Time vector the COUNTRY political locales was not stable.

44. At the same time, the massive GROWTH change position on a scale in air and ROAD Roadways transport SAW cessation shipping DECLINE change position on a scale in IMPORTANCE. The Aegian ISLANDS natural features which for CENTURIES Measure duration had been IMPORTANT Importance PORT locale by use on the trading ROUTES Roadways became becoming the BACKWRARDS Isolated places of this NEW AGE TRANSPORT bringing NETWORK network and the ECONOMY economy of several ISLANDS natural features came close to collapse.

45. IN Temporal location 1967, the MILITARY military took the reins of POWER leadership IN Interior profile relation Athens, and UNTIL Time vector 1974, the " Colonels " held sway with a repressive and brutal REGIME leadership, MANY Quantified mass GREEK people by origin ISLANDS chose choosing to LEAVE departing rather than live in POVERTY, Wealthlessness and TERROR, and MANY Quantified mass MADE Made intentionally create NEW AGE HOMES buildings IN Interior profile relations the United States and Australia. THE EXPANSION Expansion of air TRAVEL travel BEGAN Activity start the AGE calendar unit of mass TOURISM Tourism, and Greece along with the Aegean ISLANDS natural features BECAME Becoming EXCITING Stimulus focus destinations for NORTHERN part orientational Europeans ESCAPING Avoiding their DAMP being wet, COOL Temperature SUMMERS Calendar unit.
39. A series of DISASTROUS Catastrophe DECISIONS Deciding at the BEGINNING Temporal sub-region of the 20th CENTURY Calendric unit BEGAN Activity start to SOUND Make noise a DEATH Death knell for the Ottoman EMPIRE Political locales. The Turks LOST Finish competition a SHORT Duration description WAR Hostile encounter with Italy, and were FORCED Causation to RELINQUISH Surrendering possession the Dodecanese ISLANDS Natural features to the ITALIANS People by origin. Greece took this opportunity to absorb the ISLANDS Natural features of the NORTHERN Part orientational and EASTERN Part orientational Aegean and to add Macedonia to its mainland TERRITORIES Political locales.

40. FOLLOWING Relative_time this DEBACLE Catastrophe, the OTTOMANS People by origin then allied themselves to Germany in the World WAR Hostile encounter I, LOSING Earnings and losses MORE Increment TERRITORY Political locales with the DEFEAT Beat opponent of the GERMANS People by origin in that WAR Hostile encounter. Greece was HANDED Giving a STRIP Shapes of land along the WESTERN Part orientational COAST Relational natural features of Asia Minor, which for over 2,000 YEARS Measure duration had HAD Possession a substantial GREEK Origin POPULATION Aggregate. Greece moved in to ADMINISTER Leadership the land, but a NEW Age INFLUENCE Objective influence UPSET Preventing any GRAND Dimension dreams of MAKING Cause change this REGION Locale a PART Part whole of greater Greece.
40. FOLLOWING Relative_time this DEBACLE Catastrophe, the OTTOMANS People_by_origin then allied themselves to Germany in the World WAR Hostile_encounter I, LOSING Earnings_and_losses MORE Increment TERRITORY Politicallocales with the DEFEAT Beat_opponent of the GERMANS People_by_origin in that WAR Hostile_encounter. **Greece** was HANDED Giving a STRIP Shapes of land along the WESTERN Part orientational COAST Relational natural_features of Asia Minor, which for over 2,000 YEARS Measure duration had HAD Possession a substantial GREEK Origin POPULATION Aggregate. **Greece** moved in to ADMINISTER Leadership the land, but a NEW Age INFLUENCE Objective_influence UPSET Preventing any GRAND Dimension dreams of MAKING Cause_change this REGION Locale a PART Part_whole of greater **Greece**.

Clear Sentences  Turn Colors On

[X] FOLLOWING Target [Landmark_occasion this debacle], [Focal_occasion the Ottomans then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war].
40. **FOLLOWING** Relative_time **this DEBACLE** Catastrophe, the **OTTOMANS** People_by_origin then allied themselves to **Germany** in the World **WAR** Hostile_encounter I, **LOSING** Earnings_and_losses **MORE** Increment **TERRITORY** Politicallocales with the **DEFEAT** Beat_opponent of the **GERMANS** People_by_origin in that **WAR** Hostile_encounter. **Greece** was **HANDED** Giving a **STRIP** Shapes of land along the **WESTERN** Part orientational **COAST** Relational natural_features of **Asia Minor**, which for over 2,000 **YEARS** Measure_duration had **HAD** Possession a substantial **GREEK** Origin **POPULATION** Aggregate. **Greece** moved in to **ADMINISTER** Leadership the land, but a **NEW** Age **INFLUENCE** Objective_influence **UPSET** Preventing any **GRAND** Dimension dreams of **MAKING** Cause_change this **REGION** Locale a **PART** Part whole of greater **Greece**.

Clear Sentences   Turn Colors On

[X] **FOLLOWING** Target [Landmark_occasion this debacle], [Focal_occasion the Ottomans then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war].

[X] Following this [Undesirable_Event DEBACLE Target], the Ottomans then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war. [Undergoer_DNI]
40. **FOLLOWING** Relative_time this **DEBACLE** Catastrophe, the **OTTOMANS** People_by_origin then allied themselves to **Germany in the World WAR** Hostile_encounter I, **LOSING** Earnings_and_losses **MORE** Increment TERRITORY Political_locales with the **DEFEAT** Beat_opponent of the **GERMANS** People_by_origin in that **WAR** Hostile_encounter. **Greece was HANDED** Giving a STRIP Shapes of land along the **WESTERN** Part orientational **COAST** Relational_natural_features of **Asia Minor**, which for over 2,000 **YEARS** Measure duration had **HAD** Possession a substantial **GREEK** Origin **POPULATION** Aggregate. **Greece moved in to ADMINISTER** Leadership the land, but a **NEW** Age **INFLUENCE** Objective_influence **UPSET** Preventing any **GRAND** Dimension dreams of **MAKING** Cause_change this **REGION** Locale a **PART** Part_whole of greater **Greece**.

**Clear Sentences  Turn Colors On**

[X] **FOLLOWING** Target [Landmark_occasion this debacle], [Focal_occasion the Ottomans then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war].

[X] Following this [Undesirable_Event **DEBACLE** Target], the Ottomans then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war. [Undergo_DNI]

[X] Following this debacle, the [Person **OTTOMANS** Target] then allied themselves to Germany in the World War I, losing more territory with the defeat of the Germans in that war.
Road Map

• FrameNet

• Frames
  – Frame Elements
  – Lexical Units

• FrameNet Annotation
  – Lexicographic Annotation
  – “Full-Text” Annotation

✓ Frame-to-Frame Relations
Frame-to-Frame Relations in FN

- Inheritance
- Using
- Subframes
- Precedes
- Perspective_on
- See also
- Inchoative_of
- Causative_of

regular lexical relations
Inheritance

• Relationship between a more general frame, the **parent** frame, and a more specific one, the **child** frame
• Child frame **elaborates** parent frame
• **Corresponding entities**, FE, frame relation, and semantic characteristics, in both child and parent
• Child frame entity is the same as or more specific than in parent frame

Apply\_heat **inherits** Intentionally\_affect
FrameGrapher

Current Frame: Apply_heat

Legend
- Parent frame ➔ Child frame
- Parent—Child Relation Types:
  - Inheritance
  - Synonym
  - Perspective
  - Using
  - Classification
  - Indication
  - See Also
- Ordering Relation:
  - Precedes
Using (weak inheritance)

• ...a relationship between a more general frame (*parent*) and a more specific frame (*child*) in which only *some* of the FEs in the parent frame have a corresponding entity in the child frame; if correspondences exist, they are more specific.

_Cooking_creation_ uses _Apply_heat_
FrameGrapher

Activity

Intentionally_affect

Creating

Intentionally_act

Apply_heat

Cooking_creation

Absorb_heat

Intentionally_create

9 children total

Legend

Parent frame → Child frame

Parent → Child Relation Types:
- Inheritance
- Subframe
- Perspective On
- Using
- Constituents Of
- Inclusive Of
- See Also

Ordering Relation:
- Proceeds
Subframes

• ...a relationship that characterizes the different (typically, ordered) parts of a complex event in terms of the sequences of states of affairs and transitions between them, each of which can itself be described as a frame.

Getting _a_job_ is a **subframe** of Employee_scenario

Hiring  is a **subframe** of Employer_scenario
Precedes

...captures the temporal ordering of subevents within a complex event. The relation holds between component subframes of a single complex frame, and provides additional information to the set of Subframe relations

Being_awake precedes Falling_asleep
Subframes and Precedes

Subframes

Precedes
FrameGrapher
Road Map

• FrameNet
• Frames
  – Frame Elements
  – Lexical Units
• FrameNet Annotation
  – Lexicographic Annotation
  – “Full-Text” Annotation
• Frame-to-Frame Relations
✓ FrameNet: New Developments
FrameNet: New Developments

✓ Annotation of Support Verbs

• Collections of (New) Frames
  – Spatial Relations
  – Force Dynamics
Annotation Conventions

• Support Constructions
  – Support Verbs
    • Plain Support Verbs
      – make a decision, take a nap, have a fit
    • Lexical Functions (Mel’čuk 1996)
      – say a prayer, submit to interrogation, break a promise
  – Support Prepositions
Intersecting Criteria

• **Bleached Semantically**
  – take a test vs. take the book (home)
  – make a decision vs. make a cake

• **Idiomaticity**
  – hit the hay vs. hit the ball
  – hit the sack vs. fold the sack

• **FE Providing**
  – He attempted a robbery
  – He prevented the robbery
# Representing Support Verbs

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<td>-FE</td>
<td>+FE</td>
</tr>
<tr>
<td>+Idiomatic</td>
<td>Support</td>
<td>Support</td>
</tr>
<tr>
<td>-Idiomatic</td>
<td>Copula or Controller</td>
<td>Copula</td>
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</tbody>
</table>

24 May 2016
FrameNet: New Developments

• Annotation of Support Verbs
• Collections of (New) Frames
  ✓ Spatial Relations
  Force Dynamics
Beyond Language: Spatial Relations

- Challenges statistical NLP
- Largely stopwords
- Prepositions often just dropped in NLP tasks
- Frequent preposition/case errors in MT
Beyond Language: Spatial Relations

• Entangled with cognitive models
• Prepositions famously untranslatable
• Cognitive Effects:
  – Verb framed (Spanish): *entered the cave drifting*
  – Satellite framed (English): *drifted into the cave*
  – Spanish speakers don't remember manner of motion (Slobin)
FrameNet’s Approach to Spatial Relations

- Incorporate cognitive research (Talmy, Slobin, Langacker)
- Create frames for image schemas
- LUs in frames that Inherit `Locative_relation`, also Use image schemas
- Semantic types for non-relational features
- LUs marked with multiple semantic types
FrameNet’s Goal

To build models of mental spaces and the mappings between them that are computationally tractable.
Inherit from Locative_relation

- Abounding_with
- Adjacency
- Containing
- Directional_locative_relation
- Distributed_position
- Expected_location_of_person
- Goal

- Gradable_proximity
- Interior_profile_relation
- Location_on_path
- Non-gradable_proximity
- Spatial_co-location
- Spatial_contact
- Within_distance
Spatial Relation Frames: Spatial Contact

Definition: A Figure is located in contact with a Ground. With some words that evoke this frame, the Figure is also asserted to be fully or partially supported by the Ground (on), while in others a support relation is either denied or unspecified (against). Also, some LUs assert a direction in which to find the Figure from the Ground (atop).

Frame Elements

Figure: The Figure is perceived as located relative to a certain Ground location. The Figure can be an entity or an event.

Ground: The Ground serves as a basis for describing the location of the Figure.

Figures: The Figures are items that mutually serve to identify the location of the other items.
Spatial Relation Frames: Spatial Contact

Lexical Units:

*against.prep, atop.prep, contact.n, contact.v, off.prep, on top (of).prep, on.prep, tangent.a, touch.v, touching.a, upon.prep*

Example Annotation:

He packed his tribe with their guns **AGAINST** the brothers.
The cat is **ON** the mat.
The wire bristles **CONTACT** only the joint area.
...in the small squares which lie **TANGENT** to the central square.
FrameNet: New Developments

• Annotation of Support Verbs
• Collections of (New) Frames
  Spatial Relations
✓ Force Dynamics
Force Dynamics: New Frames

• Level_of_force_exertion

• Level_of_force_resistance

• Dynamism
Level_of_force_exertion

• Definition: A Force, Action, or Exerter is capable of exerting a force at a level that the target specifies.

• Frame Elements:
  
  **Force:** The Force that can or does exert a force of the level that the target specifies.
  
  **Action:** The Action that can or does exert a force of the level that the target specifies
  
  **Exerter:** The Exerter that can or does exert a force of the level that the target specifies.
Level_of_force_exertion

Lexical Units:

dynamic.a, dynamism.n, energetic.a, energy.n, intense.a, intensity.n, laziness.n, lazy.a, lethargic.a, lethargy.n, sluggish.a, sluggishness.n, stamina.n, vibrant.a, vigor.n, vigorous.a

Example Annotation:

A **POWERFUL** force tore off the tree's branches.
Spartacus dealt the Roman soldier a **MIGHTY** blow.
Eugenie loved the sea and was a **STRONG** swimmer.
Force Dynamic Frames: See also!

Level_of_force_exertion, differs from Level_of_force_resistance in that it describes the level of force exertion instead of the level of resistance, and in that it includes three categories of Core FEs available (FORCE, ACTION, EXERTER). Level_of_force_resistance only has two Core FEs (RESISTING_ENTITY, OPPOSING_FORCE). Of its FEs, OPPOSING_FORCE specifies the thing that the main entity resists to the level designated in the target. Its parallel in Level_of_force_exertion is implied, but backgrounded so much so that it rarely appears as explicit lexical material; hence, no analogous Core FE exists. Level_of_force_exertion differs from Dynamism in individual-level cases. Level_of_force_exertion targets/LUs express the FE's capability, while Dynamism targets/LUs express the FE's tendency.
Thanks!

http://framenet.icsi.berkeley.edu
References


References


