

17.12.2013

# HebFN

The Hebrew FrameNet

Created by: Imri Heppner  
NLP group, Ben-Gurion University

# So... what is it?

CJFillmore - ICSI/Berkeley

Hypothesis: People understand things by performing **mental operations** on what they already know.

Such knowledge is describable in terms of information **packets called FRAMES.**

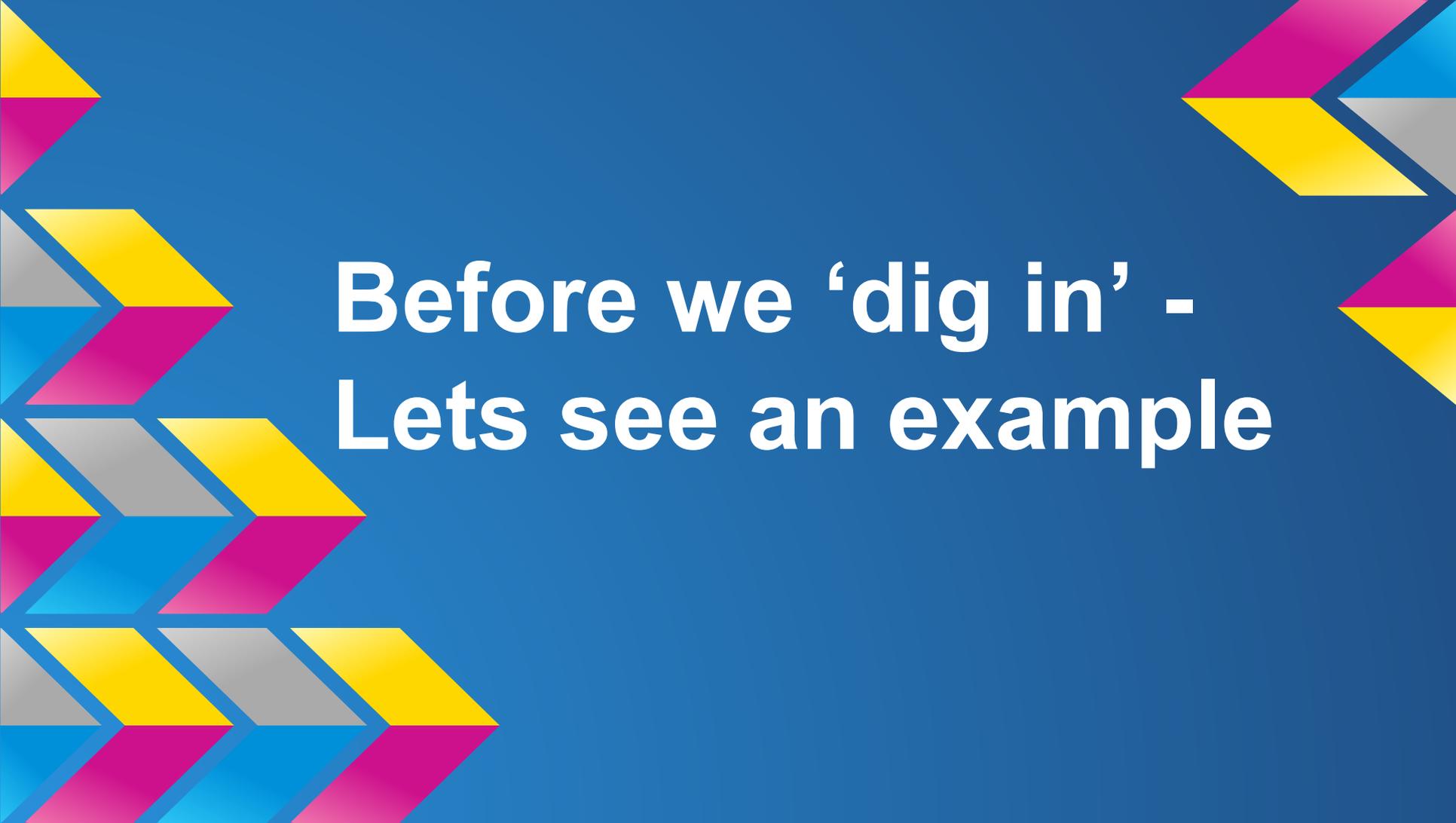
# Final Goal

Document the range of semantic and syntactic combinatory possibilities– valences–of each word in each of its senses

<u>1</u> TOTAL	Assailant	Means	Victim	
(1)	NP Ext	PPing[by] Dep	NP Obj	

[X] When Chadian forces , with French support , launched a surprise attack on a military base inside Libya ,

, Qadhafi ordered his forces to ATTACK the Chadian troops by dropping Iranian-supplied mustard gas bombs from a transport aircraft .



**Before we 'dig in' -  
Lets see an example**

# Frame: Attack

bomb.n

attack.v

attack.n

hit.v

strike.v

strike.n

offensive.a

assault.v

# Frame Example (Attack)

Definition

Frame Elements (FE)

Lexical Units (LU)

Annotation

more: semantic types,  
FE-FE relations etc.

assault.v

attack.n

[Asl]

attack.v

[Vic]

attacker.n

[Inces]

[dur]

bomb.v

[Mnr]

bombard.v

bombardment.n

bombing.n

An **Assailant** physically attacks a **Victim** (which is usually but not always sentient), causing or intending to  
Whenever **the Palestinians** **ATTACKED** **Israeli targets** **abroad**, the Israelis invariably assaulted Lebanon. The  
usual **Place**, **Time**, **Purpose**, **Reason**, etc. Sometimes a location is used metonymically to stand for the **Assailant**  
or the **Victim**, and in such cases the **Place** FE will be annotated on a second FE layer.

# 'FRAME'

A FRAME is any system of concepts related in such a way that to understand any one concept it is necessary to understand the entire system

## Frame-frame Relations:

Inherits from: [Intentionally\\_affect](#)

Is Inherited by: [Besieging](#), [Counterattack](#), [Invading](#), [Suicide\\_attack](#)

Perspective on: [Hostile\\_encounter](#)

Is Perspectivized in:

Uses:

Is Used by: [Defending](#)

Subframe of:

Has Subframe(s):

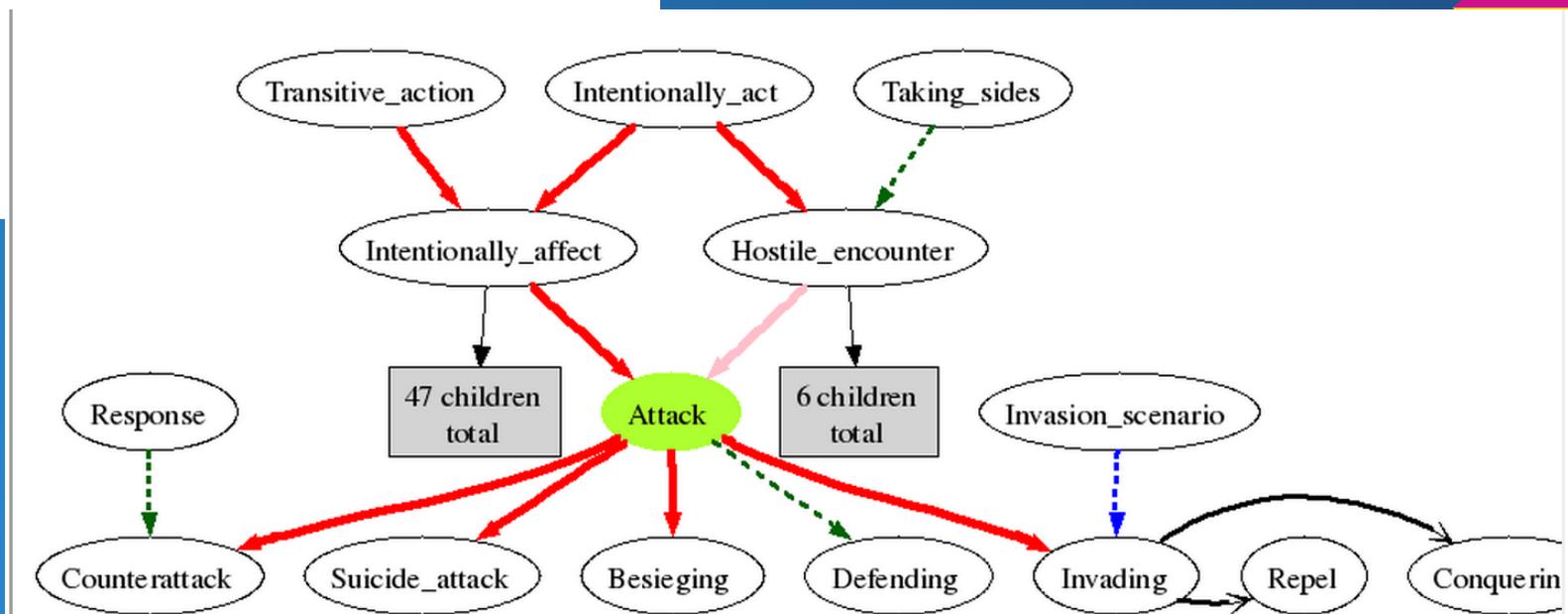
Precedes:

Is Preceded by:

Is Inchoative of:

Is Causative of:

See also:



# Lexical Unit (LU)

*important*

- We look for words in the language that bring to mind the individual frames
- We say that the words evoke the frames.
- Instead of words, we have to work with **lexical units** (LUs), each of these being a pairing of a word with a sense. (ambiguity)

1. She earns a lot less than she deserves.
2. I made a lot of money, but I earned it.

Complementation patterns should go with particular meanings of a word.

- Medical sense of complain:  
*the patient* complained [of back pains]
- Official act sense of complain:  
*we* complained [to the manager] [about X]  
*she* complained [that her checks were late]

# FEs

An **Assailant** physically attacks a **Victim** (which is usually but not always sentient), causing or intending to cause the **Victim** physical damage. A **Weapon** used by the **Assailant** may also be mentioned, in addition to the usual **Place**, **Time**, **Purpose**, **Reason**, etc. Sometimes a location is used metonymically to stand for the **Assailant** or the **Victim**, and in such cases the **Place** FE will be annotated on a second FE layer.

As soon as he stepped out of the bar he was **SET** upon by four men in ski-masks.

we use FEs in labeling the constituents of sentences exhibiting the frame.

**Assailant [Asl]**

**Victim [Vic]**

**Circumstances []**

**Duration [dur]**

**Manner [Mnr]**

# Annotations

Type 1: annotation sentence

Type 2: full text annotation (books, articles)

we focus on 'Type 1'

Whenever **the Palestinians** **ATTACKED** **Israeli targets** **abroad**, the Israelis invariably assaulted Lebanon .

# Numbers!

- 1020 frames (and growing)
- ~12,000 Lus
- 2-60 LUs per frame (avg 11)
- 20 annotated sentences for LU
- 120K sentences in total

# Until now..

- Imported the english FN data + adjustments
  - XML -> JSON ->mongoDB
- Built Hebrew DB
  - Frames, FEs - copy paste
  - NO - sentences, LUs, annotations..
- created WebApp
  - nodeJS server (Imri)
  - UI: Angular Js + Bootstrap (Asaf)

# Until now.. (cont)

- English LUs translations
  - Google Translate and morphix
  - not bad - but not so good..
- Sentences Pipeline (Itay & Alon)
  - import all Corpora to ElasticSearch:
    - constituents tree
    - dependency V2+ segmentation
    - +some calculated fields
  - search engine: diversification (most 'different' sentences)

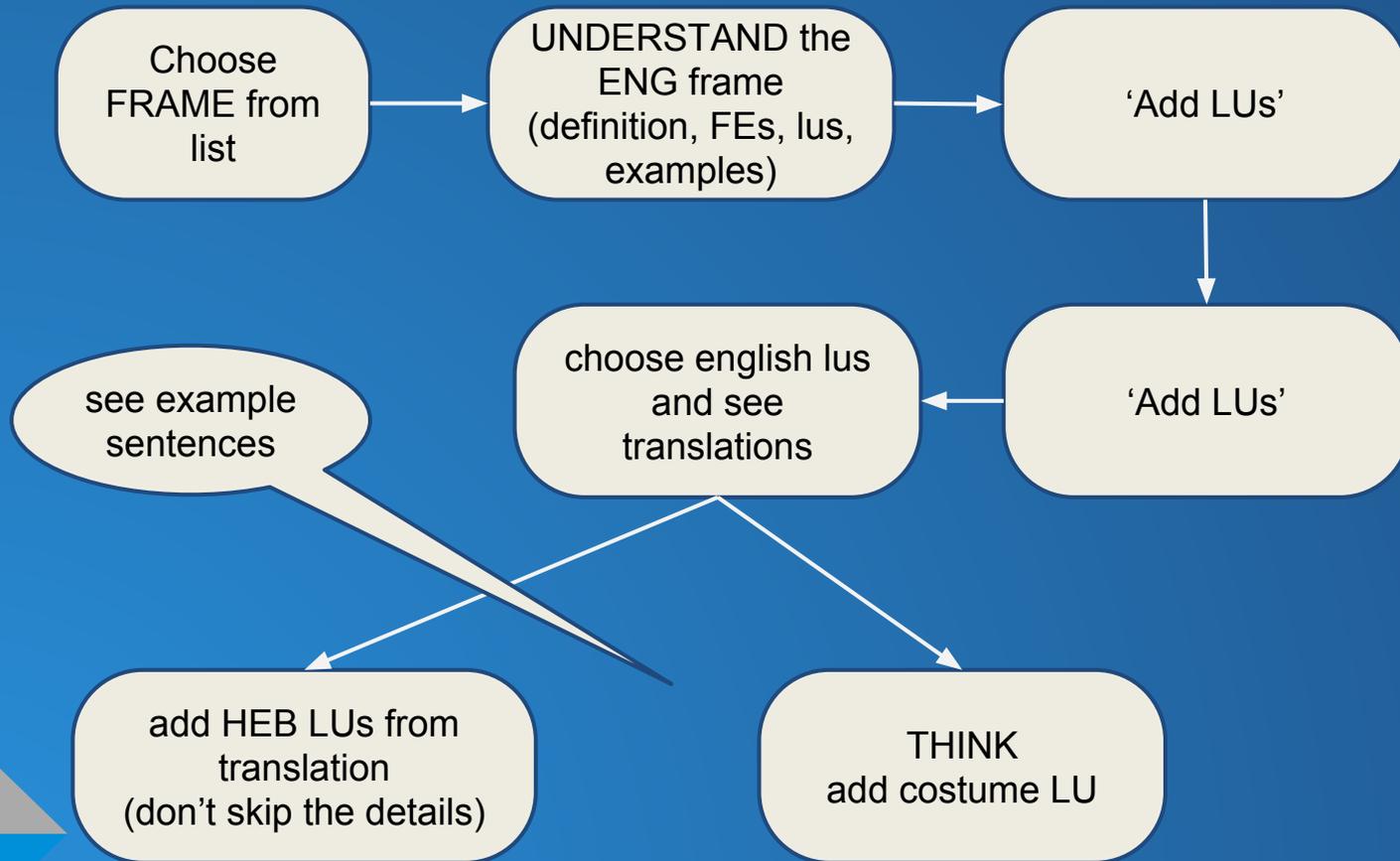
# SO.. what are we doing?

- characterize frames (and Fes) - **DONE**
- **find words that fit the frames**
- develop descriptive terminology - **DONE**
- extract sample sentences
- annotate selected examples
- derive "valence" descriptions - ?

# HebFN V0.5

- Explore the english data
- Add hebrew LUs to frame (see example sentences)
- Edit LUs

next: add sentences, annotated sentences, reviewer screen





The screen you are about to see are not  
the final screens!

