SEMANTIC ROLES
Syntactic Structure

The thief killed husband and wife with a gun.

- Clause Structure: SVO(A)
- Clause Pattern: SVO
- Lexical Pattern: kill<Subj-NP, Obj-NP>
Semantic Structure

- The specification of the semantic relations that exist between a verb and its complements

- Semantic Relations = Semantic Roles

3 levels of generality

1. Verb-specific Semantic Roles
2. Thematic Relations (θ Roles)
3. Semantic Macroroles
1. Verb-specific Semantic Roles

- \([\text{The thief}] \text{ killed } [\text{the couple}]\)
  - killer
  - Victim/killee

- \([\text{Sam}] \text{ is running}\)
  - runner
2. Thematic relations (θ Roles)

Generalizations across the verb-specific roles (Agent, Patient, etc.)

• *The thief* killed *the couple*
  
  Agent  Patient

• *Sam* is running
  
  Agent
3. Semantic Macroroles

Generalizations across thematic relations (actor, undergoer)

• [The thief] killed [the couple]
  Actor                Undergoer

• [Sam] is running
  Actor
Types of Semantic Roles

• **AGENT**: animate and volitional causer or initiator of any action/event.
  
  _John_ killed the dog

• **CAUSER**: inanimate or non-volitional entity which is directly involved in the causation of an event.

  _The rain_ ruined the crop
Types of Semantic Roles

- **PATIENT**: Something or someone undergoing a process or physically affected by an action. The affected party of an action instigated by an agent or simply the undergoer of a process

  *The ice* melted / Peter melted *the ice*

- **THEME**: entity which undergoes a change of location or possession, or whose location is being specified (i.e. Something or someone located in a place or seen as moving from one place to another)

  *The ball* is in the park / We put *the box* on the shelf
Types of Semantic Roles

- **EXPERIENCER**: animate entity which perceives a stimulus or registers a particular mental or emotional process or state. It appears with psychological verbs or verbs of perception (e.g. *see, understand, hear, taste, frighten*, etc.)

  John understood the problem
Types of Semantic Roles

- **Stimulus**: whatever causes a psychological response (i.e. Positive or negative) in the experiencer.
  
  *The situation* scares me.

- **Content**: the content of a psychological state or of a representation. It expresses an idea or a mental representation that is entertained or perceived. We’ll assign *content* only to NPs.
  
  *The jury heard* his *testimony.*
Types of Semantic Roles

- **INSTRUMENT**: inanimate entity used by an **agent** or **experiencer** in order to do something to a **patient** or **theme**
  
  John opened the lock **with a key**

- **RECIPIENT**: animate entity which receives or acquires something.
  
  John gave **Mary** a book
Types of Semantic Roles

- **LOCATION**: used to designate where a situation takes place or where an object is located.
  
  They stayed *at the village*

- **SOURCE**: it describes the origin (i.e. starting point) of a motion/trajectory.
  
  Jennifer walked home *from the office*

- **GOAL**: it describes the destination (i.e. endpoint) of a motion/trajectory.
  
  Jennifer walked *home* from the office

- **PATH**: it describes the pathway of a motion
  
  The burglar entered *through the window*
Types of Semantic Roles

– She ran \([\text{from the post-office}]_{\text{SOURCE}} [\text{via the railway station}]_{\text{PATH}} [\text{to the bus-stop}]_{\text{GOAL}}\)

– Jenny walked \([\text{from school}]_{\text{PATH}}\)

– Walter drove \([\text{home}]_{\text{GOAL}}\)

– The coin rolled \([\text{across the floor}]_{\text{PATH}}\)
Types of Semantic Roles

• **STATE OF AFFAIRS (SOA)**: It refers to situations, events, etc.

  John saw Liz *take the chocolate cookie*
Types of Semantic Roles

• **PROPOSITIONS (Props):** propositional content of clauses.

  John thinks **that Mary is coming to dinner**.
Verb-specific Semantic Roles & \( \theta \) Roles

- Giver
- Runner
- Killer
- Speaker
- Dancer
- Thinker
- Believer
- Knower
- Presumer
- Hearer
- Smeller
- Feeler
- Taster
- Liker
- Lover
- Hater

Verb-specific Semantic Roles & \( \theta \) Roles

- Given to
- Sent to
- Handed to

Recipient

- Located
- Moved
- Given

Theme

- Broken
- Destroyed
- Killed

Patient

REFERENCES

EXAMPLES

1. [John] gave [Mary] [a bouquet of roses]
   
   Agent          Recipient         Theme

2. [John] baked [Mary] [a chocolate cake]
   
   Agent            Recipient         Patient

3. [The key] opened [the lock]
   
   Instrument           Patient
EXERCISES

• S. Holmes heard a piercing scream.
• John enjoyed the novel.
• We put the box on the shelf.
• Mike drove to Jackie’s house.
• The burglar entered through the window.