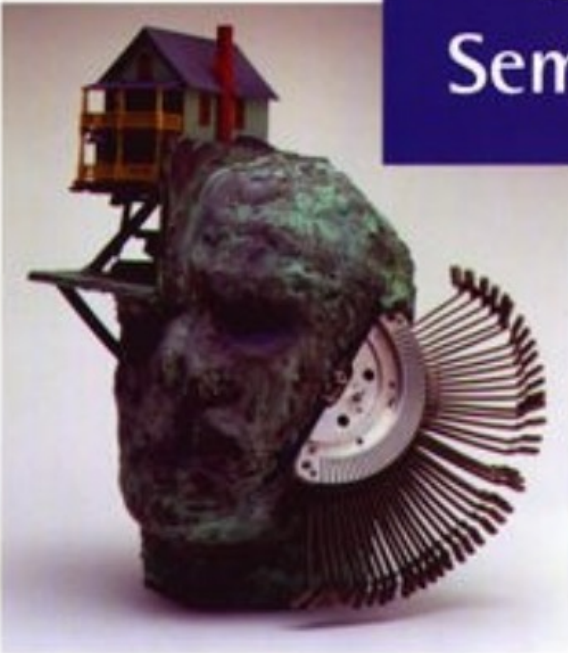


Lecture 6

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Cognitive Semantics



1. Guiding principles of Cognitive semantics

□ Cognitive semantics

sees linguistic meaning as a *manifestation of conceptual structure*: the nature and organisation of mental representation in all its diversity





Cognitive semanticists
have a diverse set of
foci and interests

Leonard Talmy

'Research on cognitive semantics is research on conceptual content and its organization in language'.

Principles underlying cognitive semantics approach


- ✓ Conceptual structure is embodied
- ✓ Semantic structure is conceptual structure
- ✓ Meaning representation is encyclopaedic
- ✓ Meaning construction is conceptualisation

The nature of conceptual organisation arises from bodily experience

Semantic structure (the meanings conventionally associated with words and other linguistic units) is equated with concepts

Words (and other linguistic units) are treated as 'points of access' to vast repositories of knowledge relating to a particular concept

Meaning construction is equated with conceptualisation, a dynamic process whereby linguistic units serve as prompts for an array of conceptual operations and the recruitment of background knowledge

A hand holding a glowing globe with a network overlay. The globe is rendered in shades of orange and yellow, with a dark blue and green network of lines and nodes overlaid on it. The hand is positioned at the bottom, with a bright light source near the palm. The background is dark with a network of white and blue lines and nodes.

1.1. Conceptual structure is embodied

the nature of conceptual
organisation arises from
bodily experience

1.2. Semantic structure is conceptual structure

Language refers to **concepts in the mind** of the speaker rather than to objects in the external world.

Semantic structure can be equated with **concepts**.

Conventional meanings associated with words are **linguistic concepts** or **lexical concepts**.

1.3. Meaning representation is encyclopaedic

Words do not represent bundles of meaning (the dictionary view) but serve as **'points of access'** to vast repositories of knowledge relating to a particular concept.

conventional meaning associated with a word is a 'prompt' for the process of **meaning construction**: the 'selection' of an appropriate interpretation against the context of the utterance



examples against the context of **a child playing on the beach**

a. *The child is safe.*

b. *The beach is safe.*

c. *The shovel is safe.*

1.4. Meaning construction is conceptualisation

Meaning construction is equated with **conceptualisation**, a dynamic process whereby linguistic units serve as prompts for conceptual operations and the recruitment of background knowledge.

Meaning construction draws upon *encyclopaedic* knowledge and involves **inferencing strategies** that relate to different aspects of conceptual structure.

2. Phenomena investigated within cognitive semantics

- 2.1. The bodily basis of meaning → **conceptual metaphors**

They give rise to systems of conventional **conceptual mappings**, held in long-term memory, which may be motivated by **image-schematic structure**:

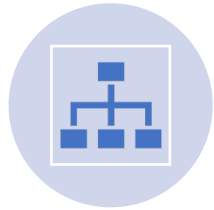
- *John got the highest score on the test.*
- *Mortgage rates have fallen.*
- *Inflation is on the way up.*



QUANTITY

VERTICAL
ELEVATION

2.2. Conceptual structure



how language **encodes conceptual structure** \Rightarrow by investigating the functions associated with *open-class* and *closed-class* semantic systems

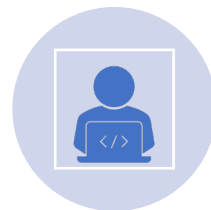
The closed-class semantic system –

the system of meaning associated with **grammatical constructions, bound morphemes, grammatical words** (*and, the*).



The open-class semantic system –

the system of meaning associated with **content words and morphemes**.



closed-class semantics

The cook baked the cakes.

open-class semantics



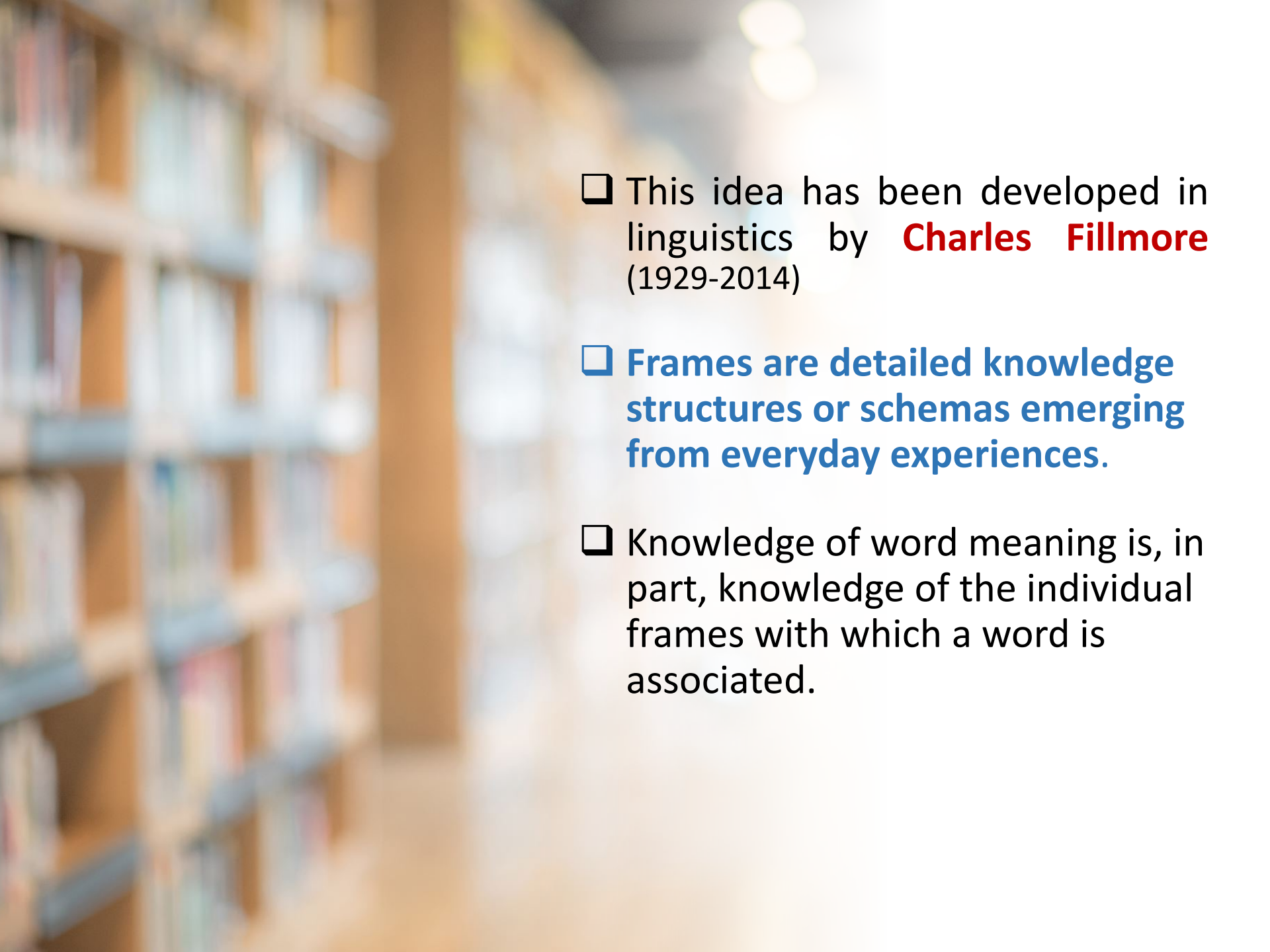
2.3. Encyclopaedic semantics



Word meaning cannot be understood independently of the vast repository of **encyclopaedic knowledge** to which it is linked.



The organisation of **word meaning** is based on the notion of a **frame** against which word-meanings are understood.

- 
- ❑ This idea has been developed in linguistics by **Charles Fillmore** (1929-2014)
 - ❑ **Frames are detailed knowledge structures or schemas emerging from everyday experiences.**
 - ❑ Knowledge of word meaning is, in part, knowledge of the individual frames with which a word is associated.

THEFT frame

rob

steal

THIEF
TARGET
GOODS

profiles
THIEF
and
TARGET

profiles
THIEF
and
GOODS

[He] **robbed** [the rich] (**of their money**). (sb of sth)
[He] **stole** [money] (**from the rich**). (sth from sb)

2.4. Mappings

Gilles Fauconnier

identified three kinds of mapping operations

- projection mappings
- pragmatic function mappings
- schema mappings









1. A **projection mapping** projects structure from one domain (**source**) onto another (**target**).

TIME IS THE MOTION OF OBJECTS

TIME is conceptualised in terms of MOTION

- 
- *Summer has just zoomed by.*
 - *The end of term is approaching.*
 - *The time for a decision has come.*
- 
- 
- 



2. **Pragmatic function mappings** are established between two entities by virtue of a shared frame of experience.

Metonymy depends upon an association between two entities so that one entity can stand for the other.



The ham sandwich is waiting for his check. (= the person who ordered the ham sandwich)



3. **Schema mappings** relate to the projection of a schema (frame) onto particular utterances.

frame PURCHASING GOODS represents an abstraction over specific instances of purchasing goods in a supermarket



*The government **purchased** twenty new helicopters from Boeing.*

2.5. Categorisation

Categorization – the act of sorting and organizing things according to group, class, or category.



The **ability to categorize** is **central to human cognition**. We expect this ability to be reflected in linguistic organisation.





3. Frame semantics

was developed in the 1970s
and 1980s by

Charles Fillmore (1929-2014)

What is a semantic frame?

Frame is a schematisation of experience (a knowledge structure), which is represented at the conceptual level and held in long-term memory.

According to **Fillmore**, 'meaning' associated with a particular word cannot be understood independently of the *frame* with which it is associated.

Gestalt psychology

```
graph TD; A[Gestalt psychology] --> B[figure]; A --> C[ground]; B --> D[the specific meaning designated by a lexical item]; C --> E[a larger frame, which represents the background against which the figure is understood];
```

figure

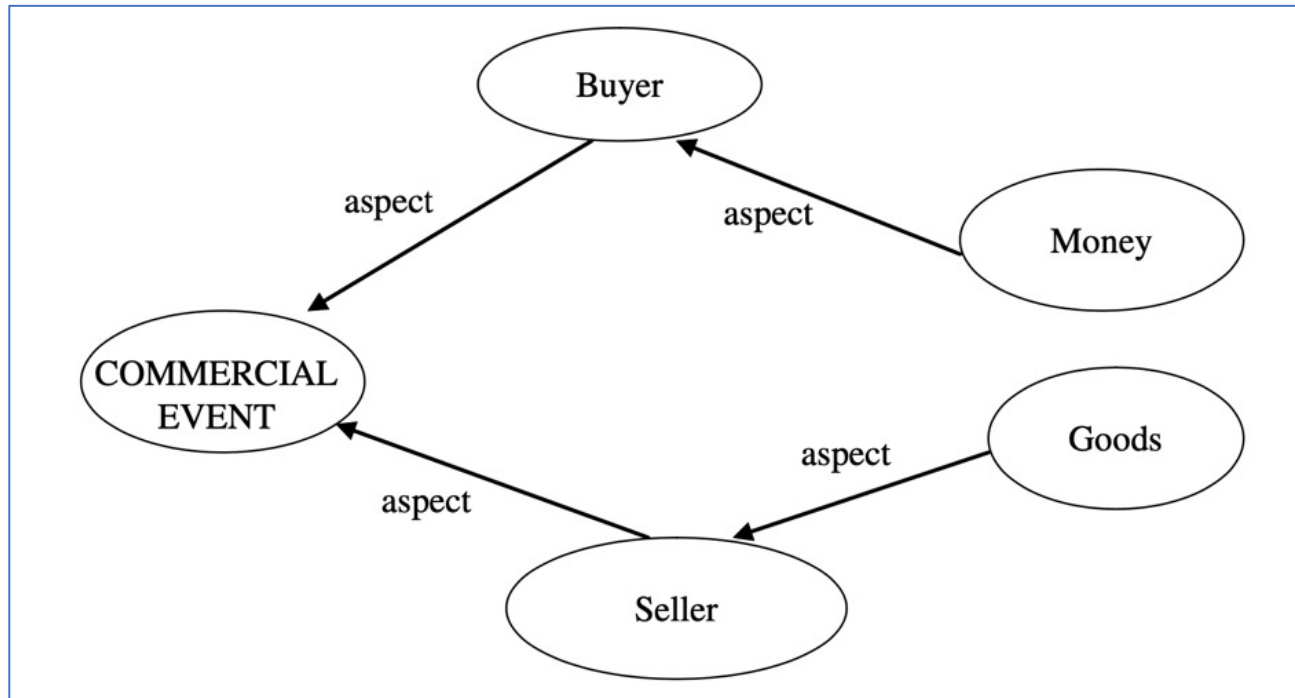
the specific
meaning
designated by a
lexical item

ground

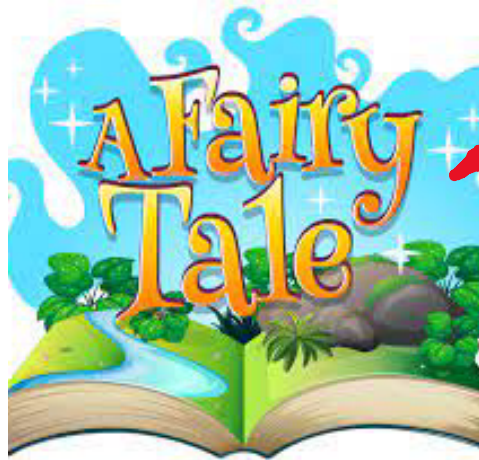
a larger frame,
which represents
the background
against which the
figure is
understood

The COMMERCIAL EVENT frame

buy, sell, pay, spend, cost, charge, tender, change



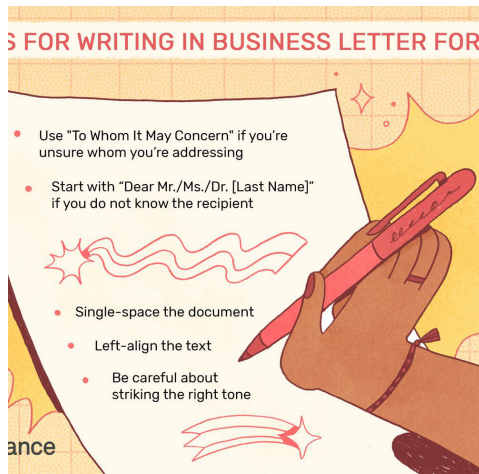
The frame includes a number of attributes / **participant roles** which include **BUYER, SELLER, GOODS, MONEY**



once upon a time...

Speech event frames

- schematise knowledge about **types of interactional context** which contribute to the interpretation of lexical items and grammatical constructions
- **speech event frames** for fairytales, academic lectures, spoken conversations, newspaper reports, horoscopes, business letters...



4. The theory of domains

Ronald W. Langacker

the assumption that meaning is *encyclopaedic*, and that lexical concepts cannot be understood independently of *larger knowledge structures*

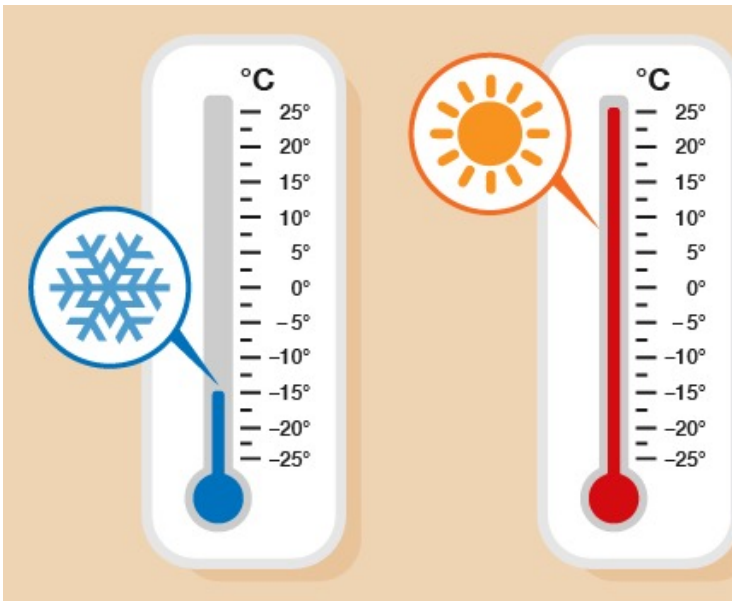


What is a domain?

- **Domains** are cognitive entities: mental experiences, representational spaces, concepts, conceptual complexes.

- **Domains** provide background information against which *lexical concepts can be understood and used in language.*

hot, cold, lukewarm designate lexical concepts in the domain of **TEMPERATURE**



Basic domains according to *Langacker*

Basic domain	Pre-conceptual basis
SPACE	Visual system; motion and position (proprioceptive) sensors in skin, muscles and joints; vestibular system (located in the auditory canal – detects motion and balance)
COLOUR	Visual system
PITCH	Auditory system
TEMPERATURE	Tactile (touch) system
PRESSURE	Pressure sensors in the skin, muscles and joints
PAIN	Detection of tissue damage by nerves under the skin
ODOUR	Olfactory (smell) system
TIME	Temporal awareness
EMOTION	Affective (emotion) system

5. Prototype theory

is most closely associated with the experimental research of cognitive psychologist

Eleanor Rosch

(born 1938)





1. *Principle of cognitive economy*



A human being attempts to gain as much information as possible while minimizing cognitive effort and resources.



2. *Principle of perceived world structure*



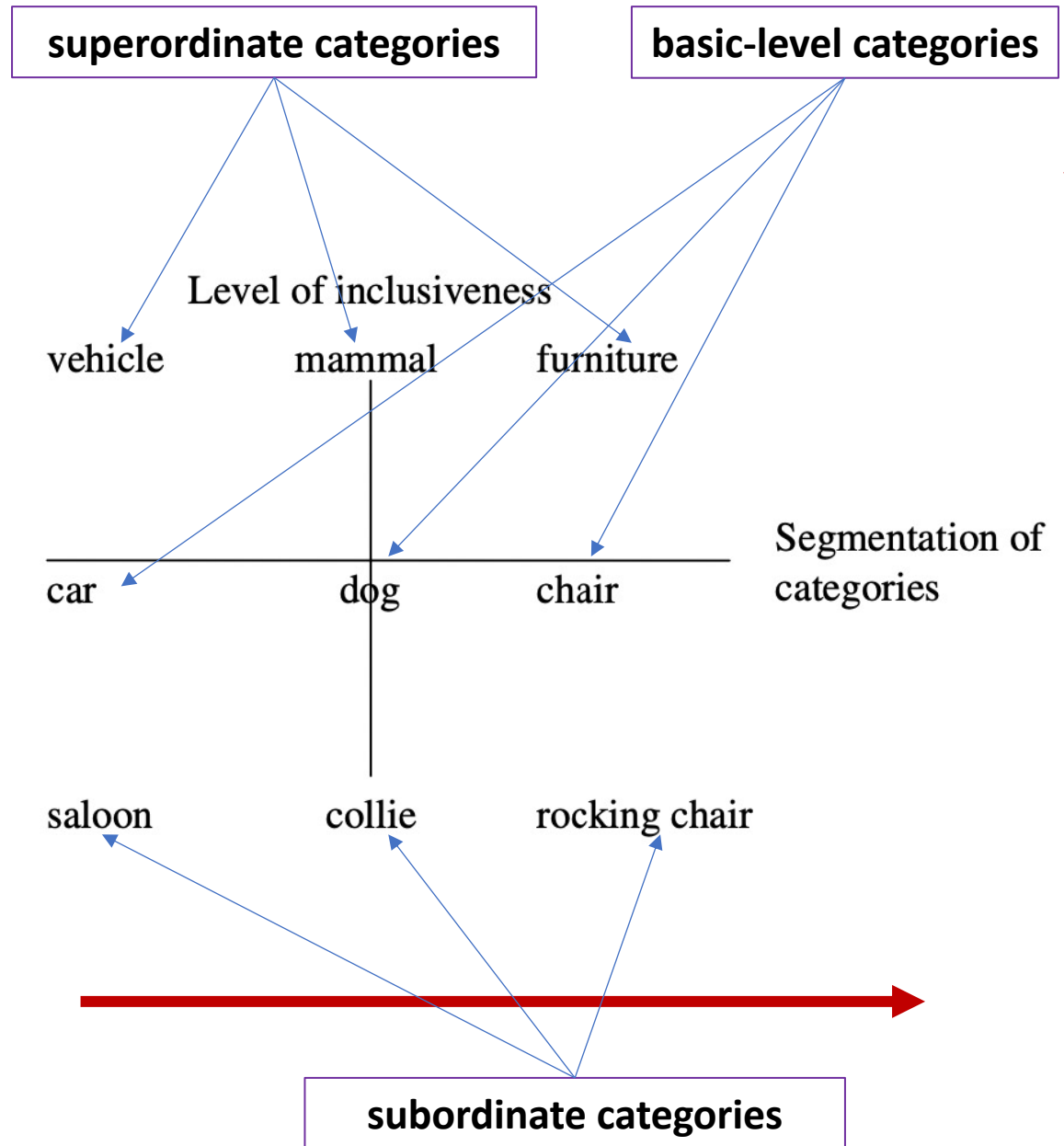
The world around us has *correlational structure*: the wings frequently co-occur with feathers and the ability to fly (birds)



humans rely upon correlational structure in order to form and organise categories



The human categorization system



The **basic level** is the most inclusive level and the most informative level

Superordinate level	Basic level	Subordinate level
FURNITURE	CHAIR	KITCHEN CHAIR
		LIVING-ROOM CHAIR
	TABLE	KITCHEN TABLE
		DINING-ROOM TABLE
	LAMP	FLOOR LAMP
		DESK LAMP

The **basic level** appears to be the most inclusive and the least specific level at which it is possible to form a **mental image**.

Basic-level terms in language

- ❖ Basic-level terms are typically *monolexemic*: comprised of a single word-like unit.
- ❖ Basic-level terms appear to occur more frequently in language use than superordinate or subordinate level expressions.



- The world possesses *correlational structure*.
- The category *prototype* reflects the greater number of correlational features.
- Categories exhibit *typicality effects*, where certain members of the category are judged as ‘better’ examples of that category than other members.
- *Prototypical members* of a category exhibit a large number of *attributes common to many members in the category*, while less prototypical members exhibit fewer attributes common to other members of the category.

Category
members
exhibit
family
resemblance
relations

Rank	BIRD	FRUIT	VEHICLE
Top eight (from more to less representative)			
1	Robin	Orange	Automobile
2	Sparrow	Apple	Station wagon
3	Bluejay	Banana	Truck
4	Bluebird	Peach	Car
5	Canary	Pear	Bus
6	Blackbird	Apricot	Taxi
7	Dove	Tangerine	Jeep
8	Lark	Plum	Ambulance
9	Swallow	Grapes	Motorcycle
10	Parakeet	Nectarine	Streetcar

BIRD category

Attributes	ROBIN	OSTRICH
lays eggs	yes	yes
beak	yes	yes
two wings	yes	yes
two legs	yes	yes
feathers	yes	yes
small	yes	no
can fly	yes	no
chirps/sings	yes	no
thin/short legs	yes	no
short tail	yes	no
short neck	yes	no
moves on the ground by hopping	yes	no

The number of relevant attributes possessed by a particular category member correlates with how **representative** that member is judged to be.

6. Conceptual Metaphor Theory

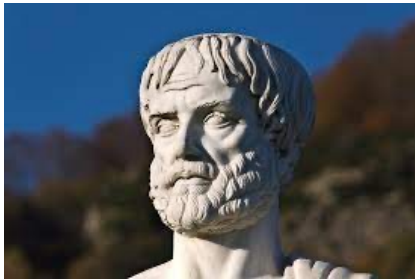


George Lakoff



Mark Johnson

Metaphor



Aristotle



metaphor ⇨
**implicit
comparison**

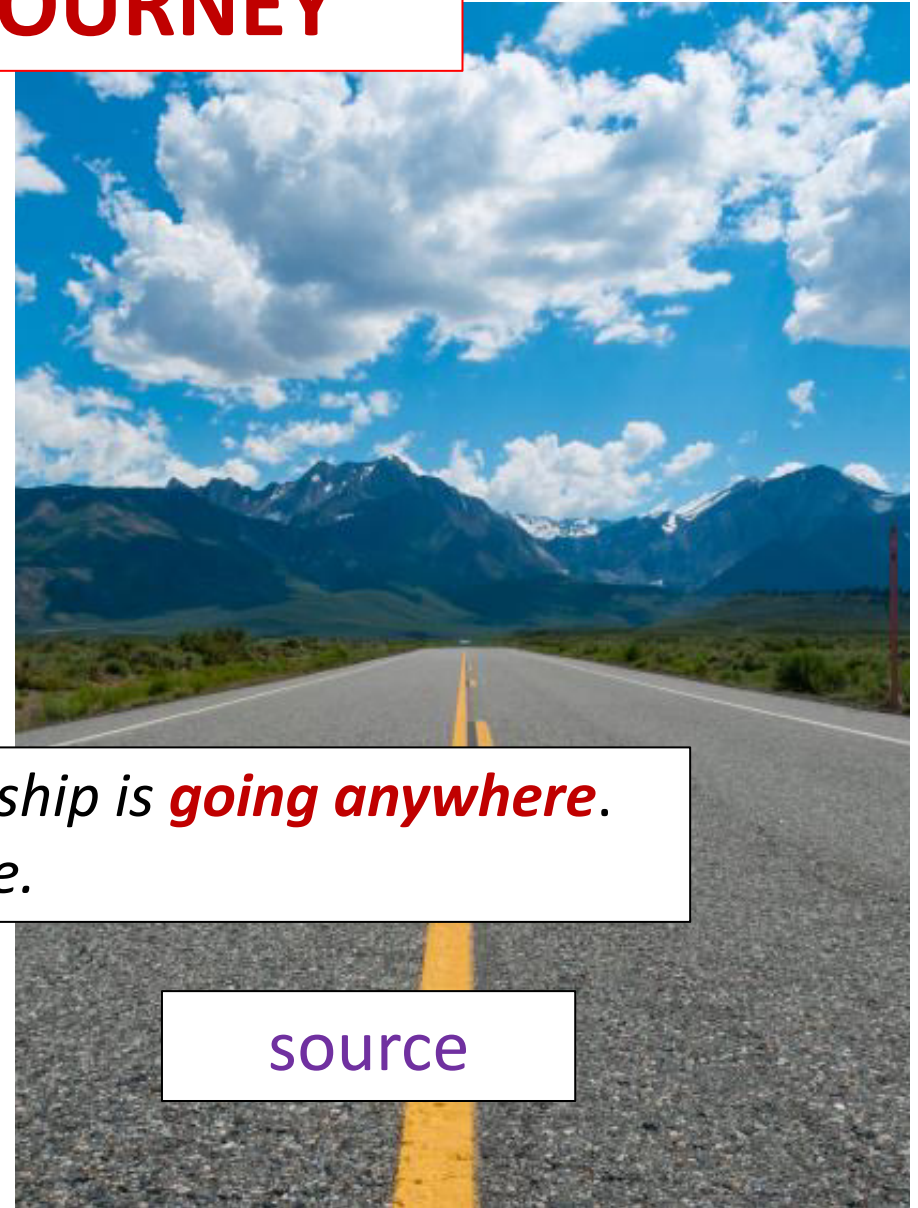
Cognitive semanticists



metaphor ⇨ a **conceptual
mapping between source
and target domain**

the comparison is based
on **perceived
resemblance** between
two objects

LOVE IS A JOURNEY



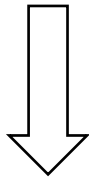
*I don't think this relationship is **going anywhere**.
Look **how far** we've come.*

target

source

There are a number of distinct roles that populate the **source** and **target** domains.

LOVE RELATIONSHIP

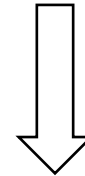


LOVERS

become



JOURNEYS



TRAVELLERS

MEANS OF TRANSPORT

ROUTE

OBSTACLES

We're at a crossroads.

We're spinning our wheels.

Our relationship went off course.

Our marriage is on the rocks.

7. Mental space theory



(1944–2021)

MENTAL SPACES



Gilles Fauconnier

- **Meaning construction** is the process whereby language 'prompts for' novel cognitive representations of varying degrees of complexity.

- ✓ According to Fauconnier, each utterance in discourse evokes a **mental representation** of some situation.
- ✓ **Mental spaces** are ‘partial structures that proliferate when we think and talk, allowing a fine-grained partitioning of our discourse and knowledge structures’.
- ✓ For the interpretation of mental representations we draw not only on the linguistic expression, but also on the speech situation, and on **encyclopedic knowledge**, often called **world knowledge**.

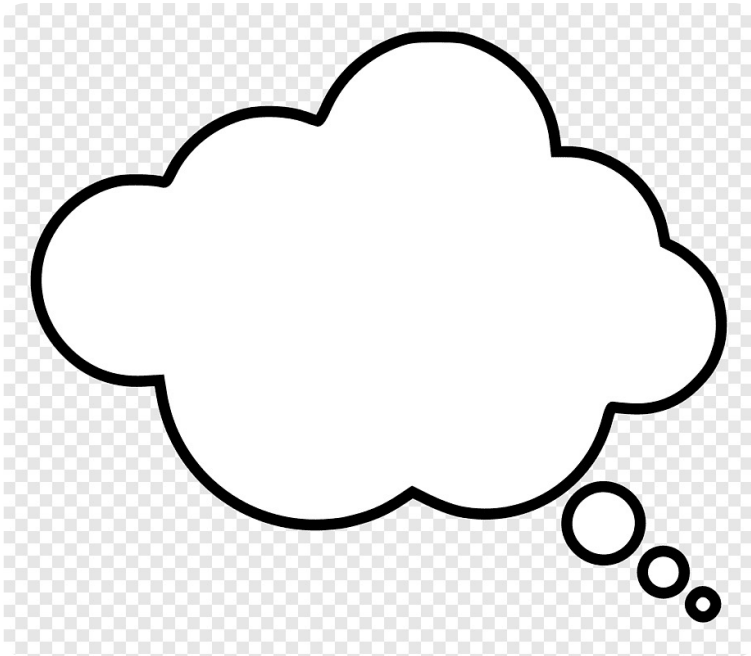
Meaning construction

```
graph TD; A[Meaning construction] --> B["(1) the building of mental spaces"]; A --> C["(2) the establishment of mappings between those mental spaces"]; style B stroke-dasharray: 5 5; style C stroke-dasharray: 5 5;
```

(1) the building
of **mental
spaces**

(2) the
establishment of
mappings
between those
mental spaces

processes



- Mental space is a 'thought bubble'
- People can have many 'thought bubbles' working simultaneously.

Mental spaces are regions of conceptual space that contain specific kinds of information.

If I were your father, I would smack you.

Three interpretations of the sentence

sets up a **scenario** that runs counter to a presupposed reality

The lenient father interpretation

(‘your father should be stricter’) ⇨ in the reality scenario, the father is being critically compared to the speaker

The stern father interpretation

(‘you’re lucky I’m not as strict as your father’) ⇨ it is the father who is strict and the speaker who is lenient in reality

The role interpretation

(‘the only reason I’m not smacking you is because I’m not allowed to’) ⇨ this interpretation assumes nothing about the child’s father who may (or may not) smack the child in reality



Three important points emerge

- the same utterance can prompt for a number of **different interpretations**, each of which arises from **different mappings** between reality and the counterfactual scenario that is constructed
- each of the mappings brings with it **different implications** for how we view the participants in reality (criticism / positive assessment).
- meaning is not 'there in the words' but relies on the **conceptual processes** that make connections between real and hypothetical situations.

architecture of mental space construction

Space builders

linguistic units that either prompt for the construction of a new mental space or shift attention back and forth between previously constructed mental spaces:

- **prepositional phrases** (*in 2021, at the shop, in Lucy's mind's eye, from their point of view*)
- **adverbs** (*really, probably, possibly, theoretically*)
- **connectives** (*if . . . then . . .; either . . . or . . .*)
- **subject-verb combinations** that are followed by an embedded sentence (*Rose believes [Mary likes bananas], David hopes . . ., Susan states . . .*).

architecture of mental space construction

Elements

either entities constructed on-line or pre-existing entities in the conceptual system.

- The linguistic expressions that represent elements are **noun phrases (NPs)**:
- **names** (*Elvis, Madonna, Elizabeth Windsor, Boris Johnson, James Cameron*)
- **descriptions** (*the Queen, the Prime Minister, a Whitehouse intern, an African elephant*)
- **pronouns** (*she, he, they, it*)

noun phrases (NPs)

```
graph TD; A[noun phrases (NPs)] --> B[definite interpretation]; A --> C[indefinite interpretation];
```

definite interpretation

the definite article

the sleepy bear

names

Joe Biden, James Bond

indefinite interpretation

the indefinite article

a sleepy bear

'bare plurals'

koalas

NPs with **indefinite interpretation**

introduce **new elements**
into the discourse:
unfamiliar or not
mentioned in the
conversation

I've bought a new coat.

NPs with **definite interpretation**

function in the
presuppositional mode,
because they presuppose
existing knowledge

architecture of mental space construction

Properties and relations

Space builders specify the **properties** assigned to elements and the **relations** that hold between elements within a single space.

In that play, Othello is jealous.

- The space builder is the phrase *in that play*, which sets up a mental space.
- The name *Othello* introduces an element into the mental space.
- The expression *jealous* assigns a property to the element.

OTHELLO



WILLIAM
SHAKESPEARE

THE WAY WE THINK



CONCEPTUAL BLENDING
AND THE MIND'S
HIDDEN COMPLEXITIES

GILLES FAUCONNIER
AND MARK TURNER

8. Conceptual blending theory / Conceptual Integration theory

- **Gilles Fauconnier & Mark Turner**
- process of **conceptual integration or blending** is a general and basic cognitive operation which is central to the way we think
- ability to perform conceptual integration may have been the key mechanism in facilitating the development of advanced human behaviours that rely on complex symbolic abilities

The origins of Blending Theory



That surgeon is a butcher.

Source: BUTCHER	mappings	Target: SURGEON
BUTCHER	→	SURGEON
CLEAVER	→	SCALPEL
ANIMAL CARCASSES	→	HUMAN PATIENTS
DISMEMBERING	→	OPERATING

Mappings for SURGEON IS A BUTCHER

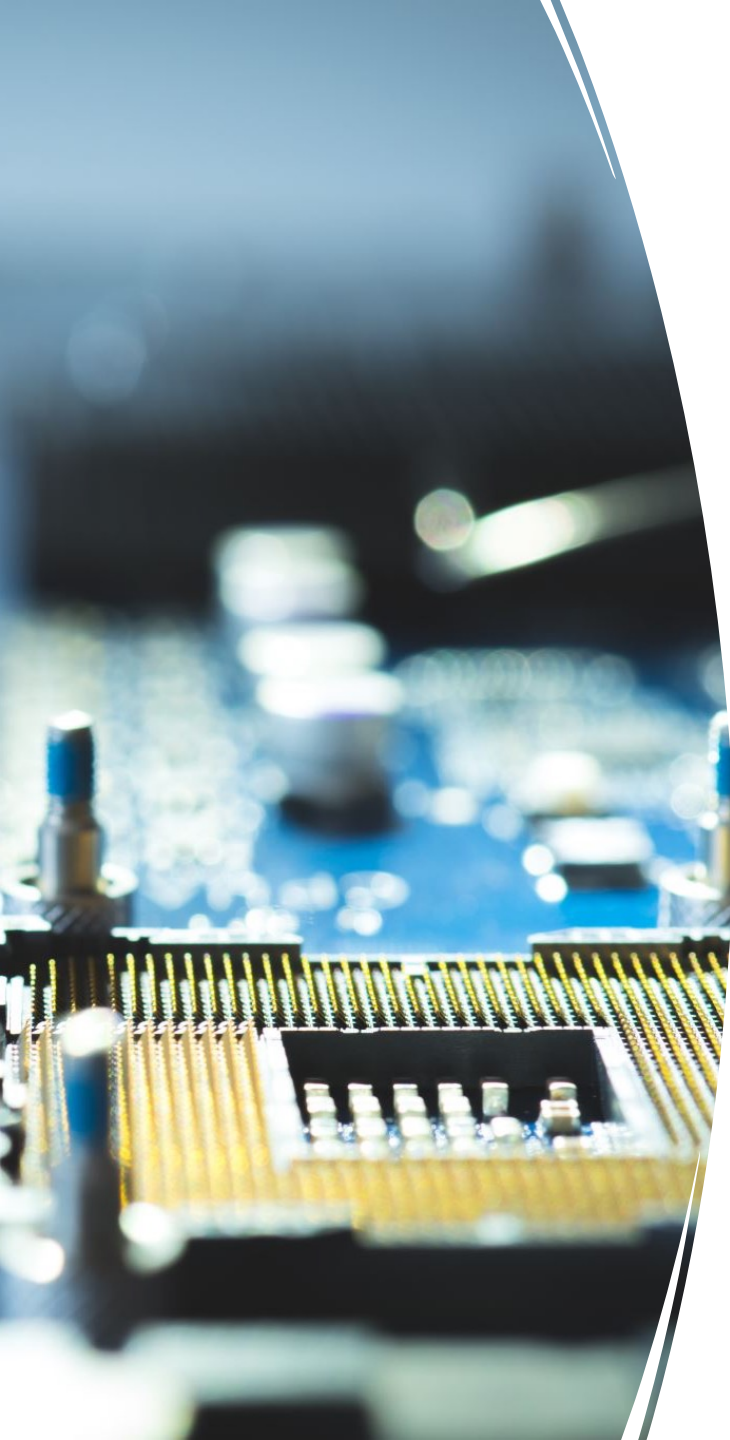
What is the conceptual origin of the **negative assessment** arising from this example?

Meaning

Meaning construction cannot rely solely upon **'simple' conceptual projection** processes like structuring one conceptual region in terms of another.

Blending

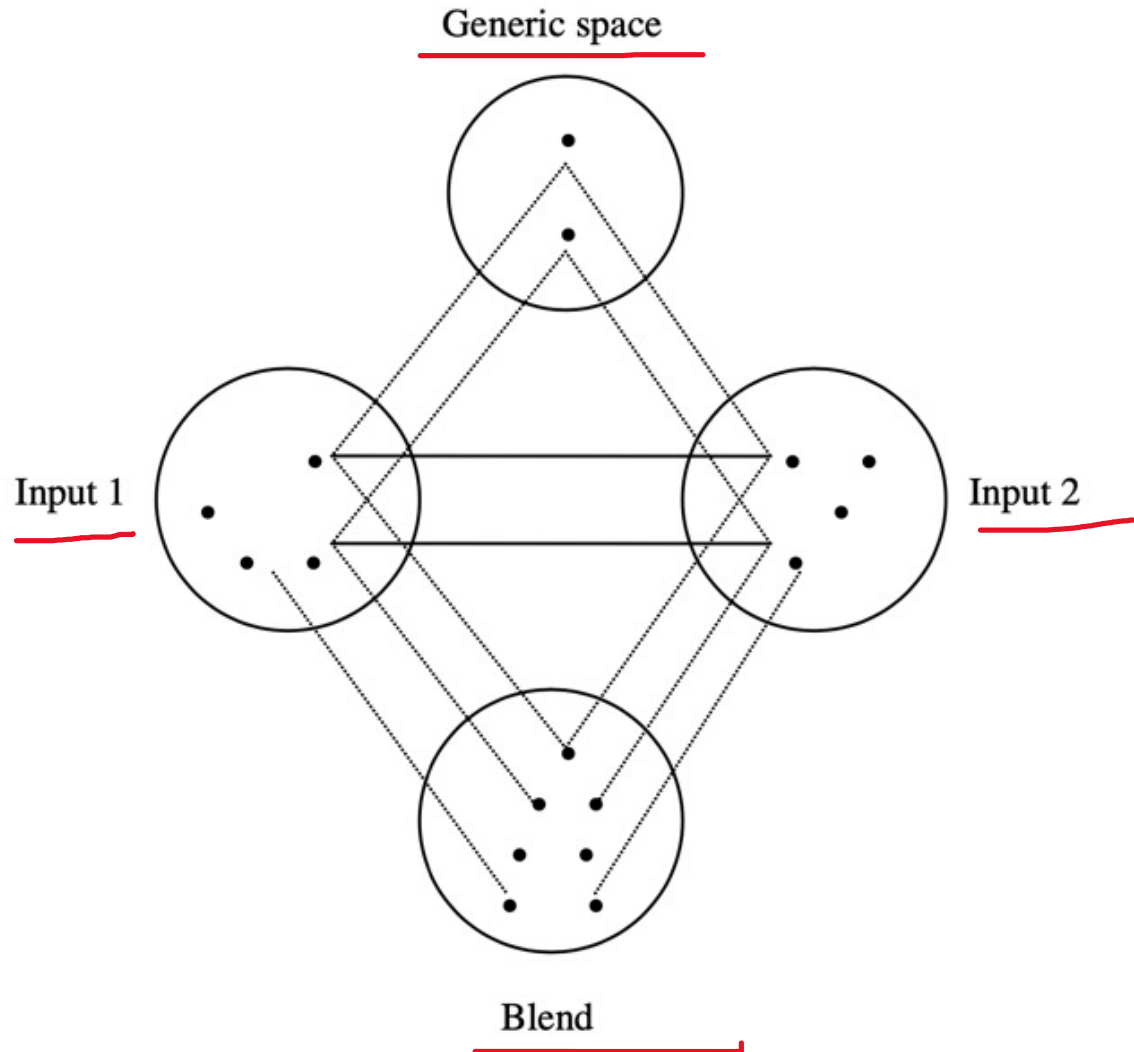
Blending Theory accounts for the emergence of negative meanings by adopting the view that **meaning construction involves emergent structure**: meaning is more than the sum of its component parts.



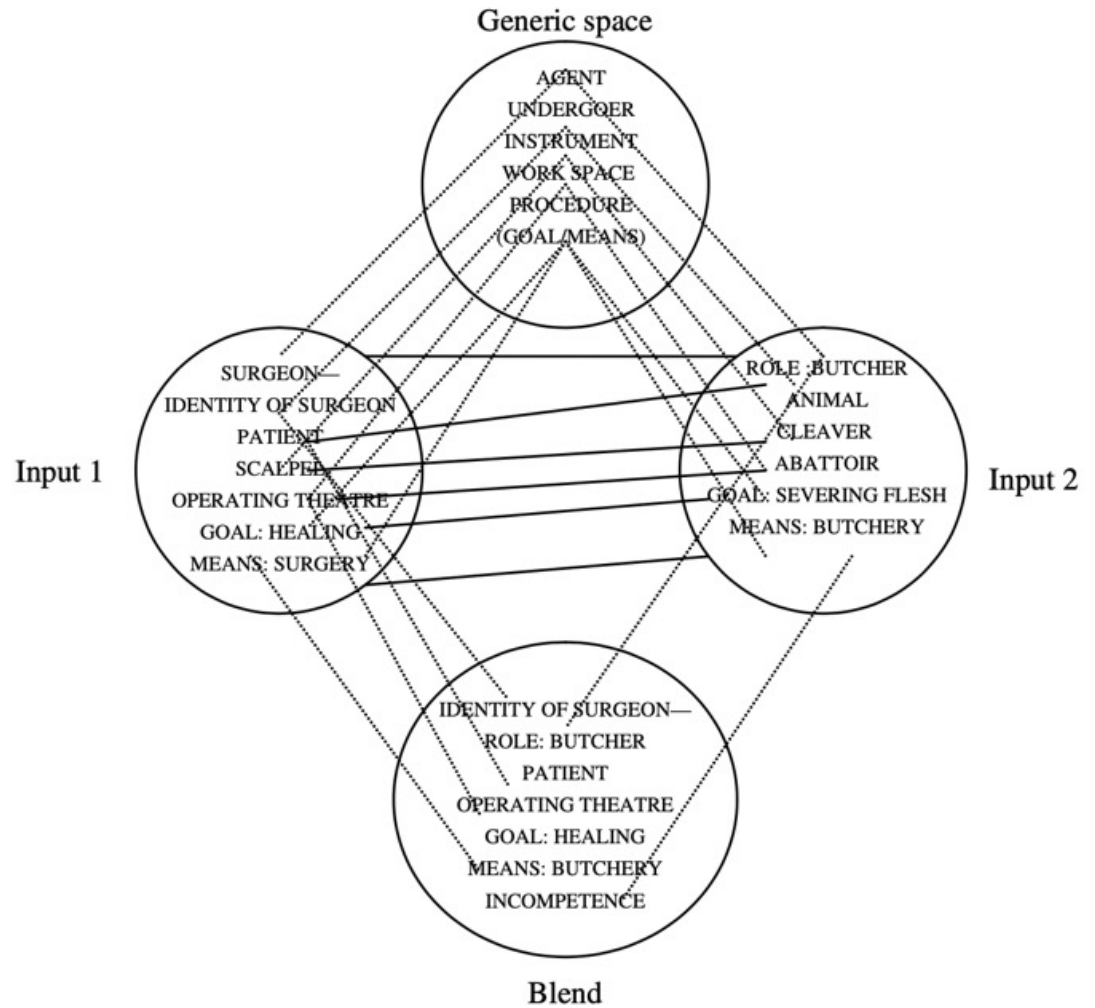
Gilles Fauconnier and Mark Turner produced a theory of integration networks

an integration network consists of *inputs* in which elements in each input are linked by mappings

The basic
architecture of
the
**Blending
Theory model**



SURGEON
as
BUTCHER
blend





Summary

- Meaning construction results in meaning that is '***more than the sum of its parts***'.
- Blending is distinguished by an architecture that includes a ***generic space***, two or more ***input spaces*** and a ***blended space***.
- Counterparts between input spaces are connected by virtue of a ***matching*** operation.
- ***Conceptual blending*** is argued to be a ***fundamental cognitive operation*** that is central to general properties of human thought and imagination.