Talking about Melons:

An Analysis of Inferential Evidentials as Dimensional Shifts

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Observation

Stimulus subject perception verbs:

(1) *Die Melone klingt dumpf.*
'The melon sounds muffled.'

Observation

Stimulus subject perception verbs can express:

direct perception:

(1) *Die Melone klingt dumpf.*
'The melon sounds muffled.'

inferential evidence:

(2) *Die Melone klingt reif.*
'The melon sounds ripe.'

(Whitt 2009)

Questions

- How does the evidential use work?
- How is the evidential use restricted?

(2) *Die Melone klingt reif.*
'The melon sounds ripe.'

(3) *#Die Melone klingt oval.*
#'The melon sounds oval.'

$\text{SORT}_{\text{verb}}(\text{subj.ref.}) \wedge \text{SORT}_{\text{adj.}}(\text{subj.ref.}) \not\Rightarrow \text{acceptable}$

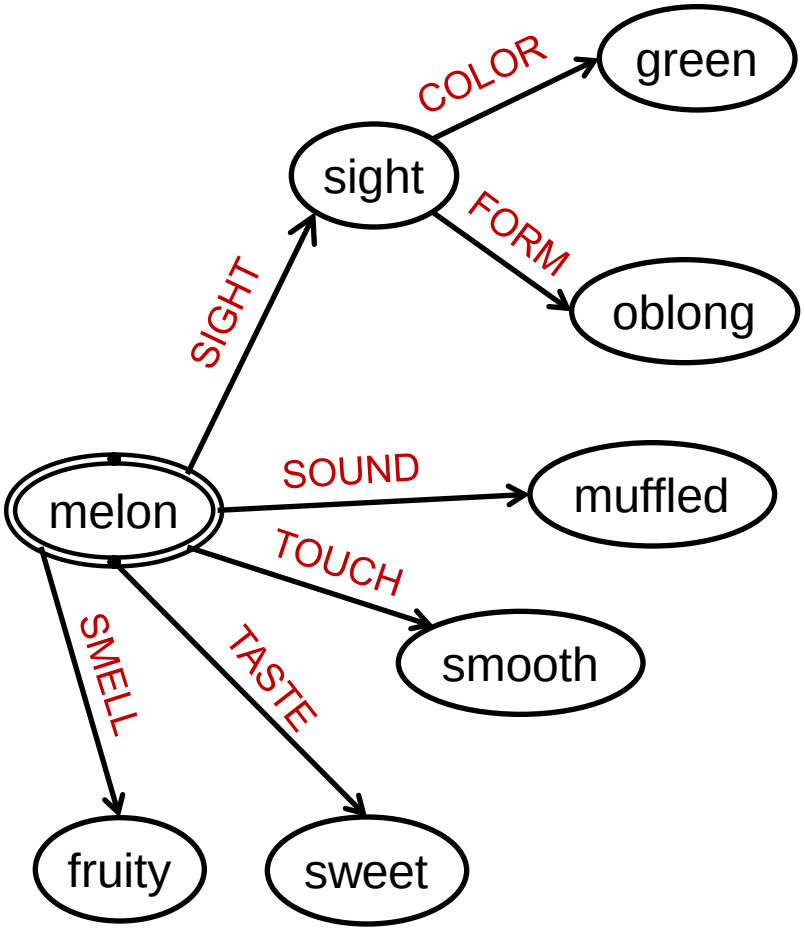
Analysis: Assumptions

- Stimulus subject perception verbs encode sense-specific attributes such as SOUND and TASTE.
- These attributes represent cognitive dimensions of the subject referent.
- Dimensions are part of the conceptual knowledge of objects.

Analysis: Framework

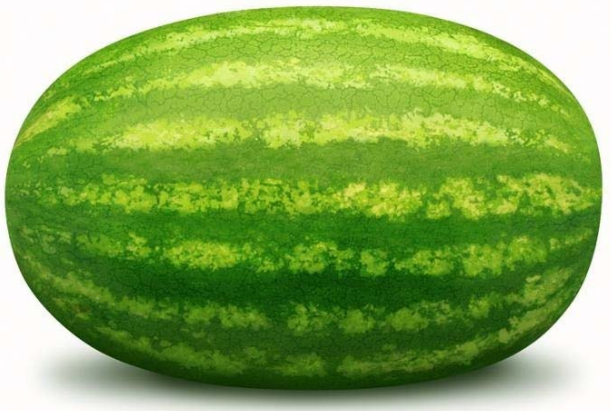
- Conceptual knowledge is captured in frame representations.
- Frames are defined as recursive attribute-value structures (Barsalou 1992).
- Attributes correspond to mathematical functions.

Partial frame of a melon



Die Melone... 'The melon...'

a. *sieht länglich aus*. 'looks oblong.'
b. *klingt dumpf*. 'sounds muffled.'
c. *fühlt sich glatt an*. 'feels smooth.'
d. *schmeckt süß*. 'tastes sweet.'
e. *riecht fruchtig*. 'smells fruity.'



Partial frame of a melon

melon
- SIGHT
  - COLOR [green]
  - FORM [oblong]
- SOUND [muffled]
- TOUCH [smooth]
- TASTE [sweet]
- SMELL [fruity]
- RIPENESS [ripe]
- CONTENT [...]
- ORIGIN [...]
- ...

Die Melone... 'The melon...'

a. *sieht länglich aus*. 'looks oblong.'
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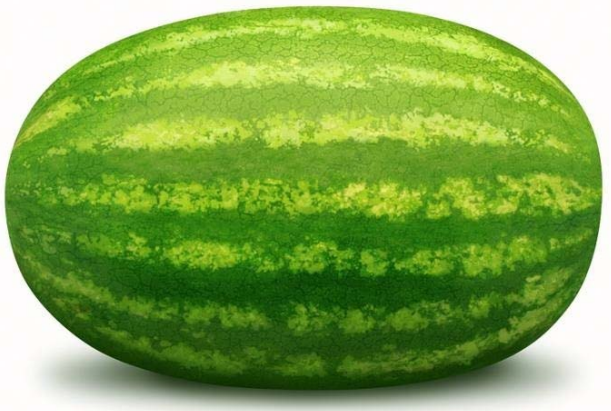


Analysis: direct perception

Direct perception (trivial case):

(1) *Die Melone klingt dumpf.*
'The melon sounds muffled.'

encoded dimension and specified quality are compatible

→ an intra-dimensional quality is specified

Direct perception: intra-dimensional value specification

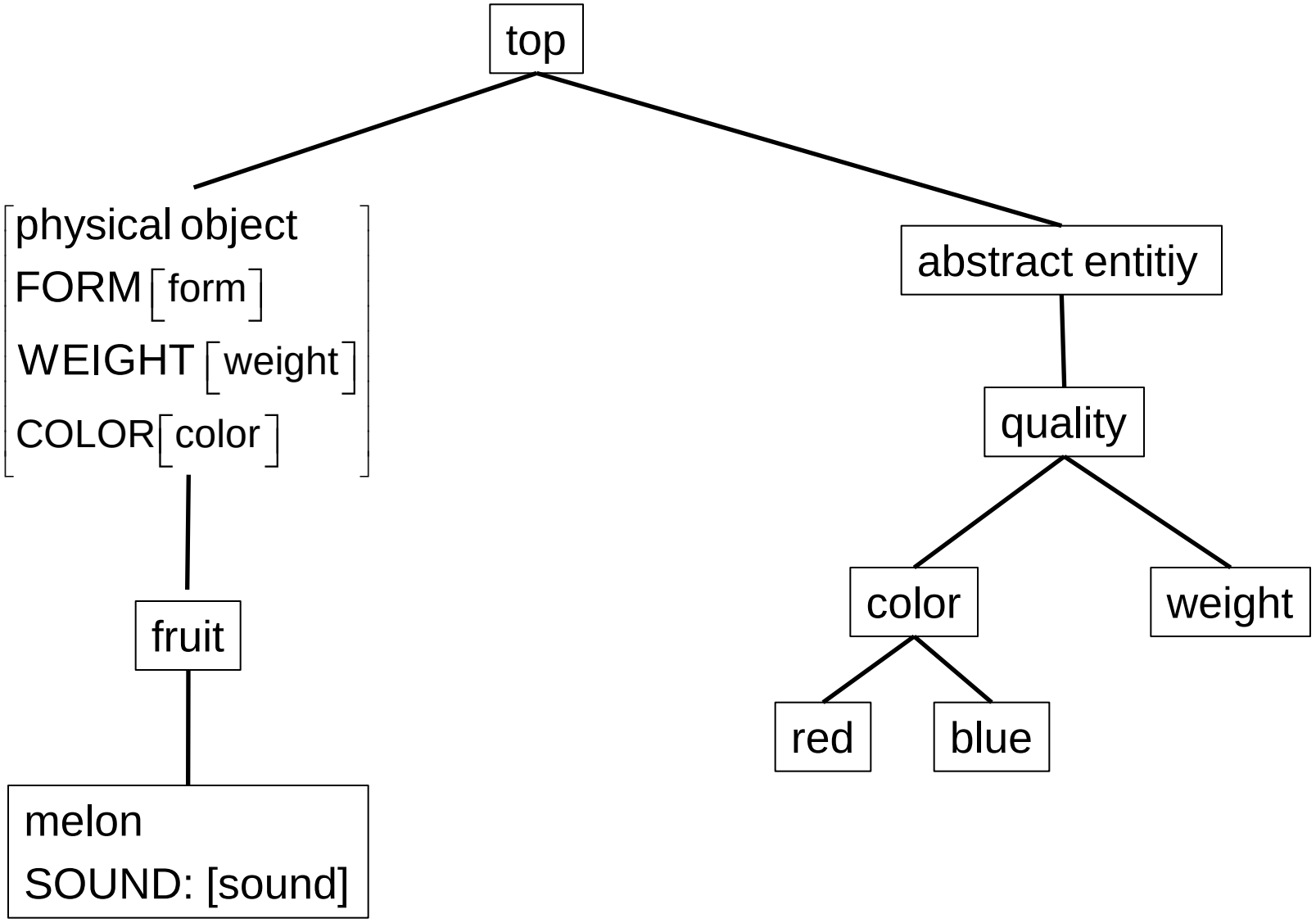
(1) *Die Melone klingt dumpf.*
'The melon sounds muffled.'

(4) *#Die Farbe klingt dumpf.*
'The color sounds muffled.'

CONSTRAINT 1

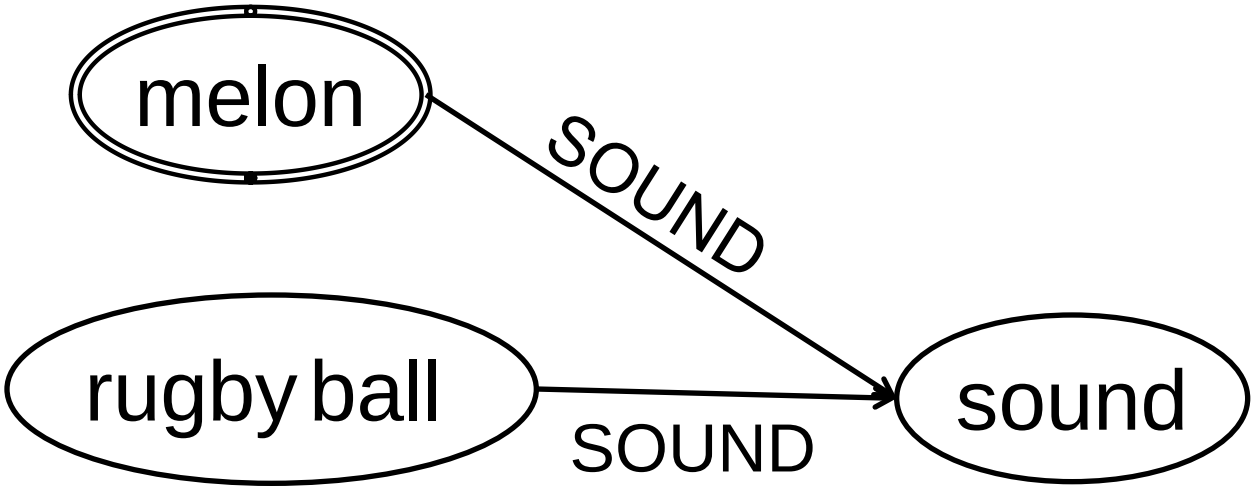
The subject referent must exhibit the dimension encoded by the verb.

Constraint 1: type hierarchy



Direct perception: simple comparison

(5) *Die Melone klingt wie ein Rugbyball*.
'The melon sounds like a rugby ball.'



Analysis: inferential evidence

Inferential evidence:

mismatch between the encoded dimension and the specified quality → dimensional shift

Dimensional shift:

A compatible dimension is inferred from the dimension explicitly encoded by the verb.

(2) *Die Melone klingt reif.*
'The melon sounds ripe.'

SOUND → RIPENESS: ripe

Inferential evidential as incomplete comparison

The inferential use can be analyzed as an incomplete comparison:

2a. *Die Melone klingt reif.*
'The melon sounds ripe.'

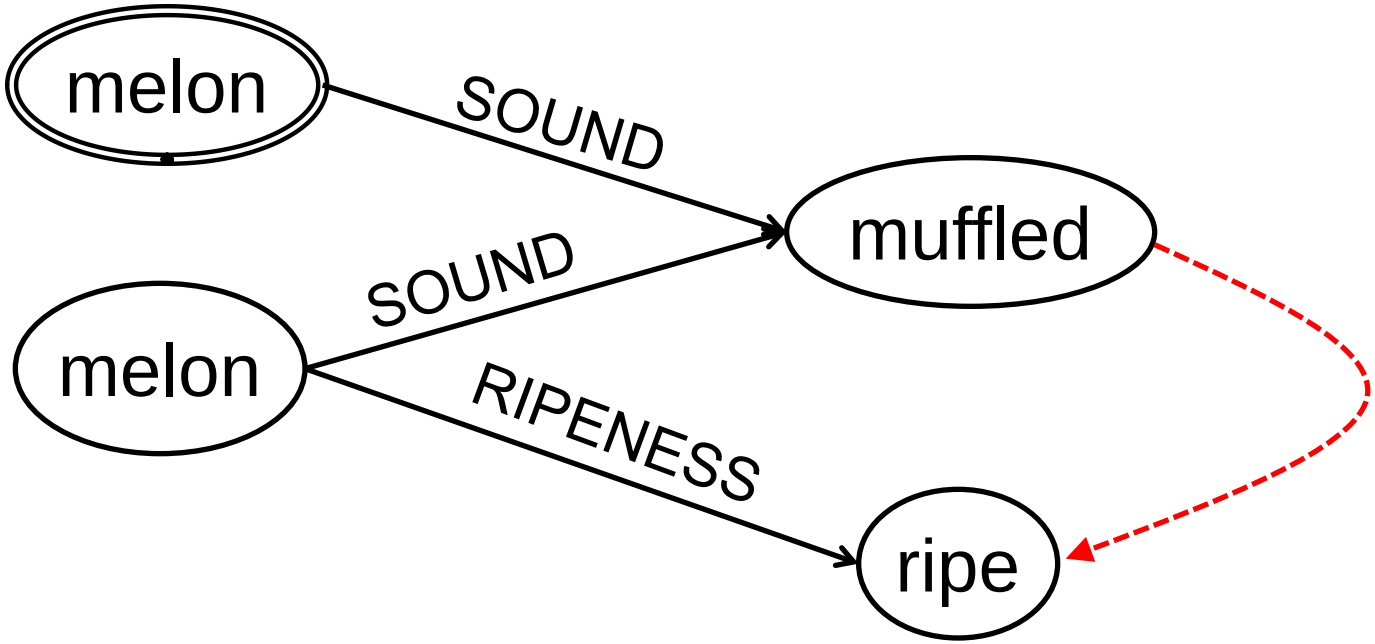
≈ 2b. *Die Melone klingt wie eine reife Melone*.
'The melon sounds like a ripe melon.'

≈ 2c. *Der Klang der Melone ist wie der Klang einer reifen Melone.*
'The sound of the melon is like the sound of a ripe melon.'

Inferential evidential as incomplete comparison

2a. *Die Melone klingt reif.* ‘The melon sounds ripe.’

≈ 2c. *Der Klang der Melone ist wie der Klang einer reifen Melone.*
‘The sound of the melon is like the sound of a ripe melon.’

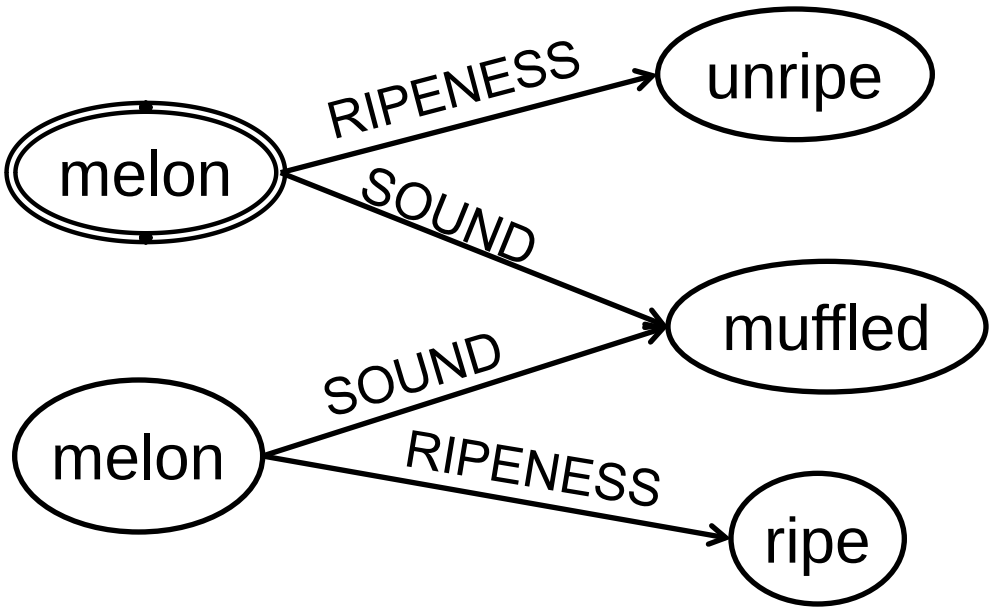


Inferential evidence and negation

Negation of inference $\not\Rightarrow$ contradiction

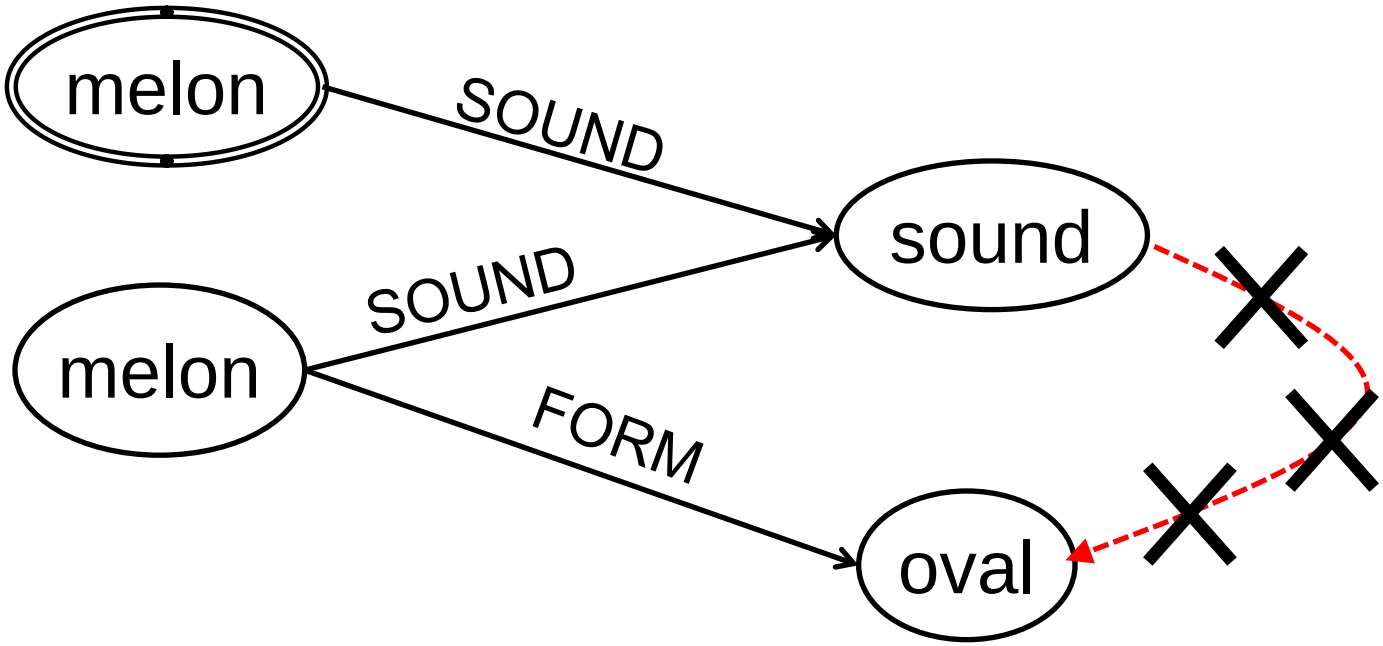
(6) *Die Melone klingt reif, ist aber nicht reif.*

‘The melon sound ripe, but it is not ripe.’



Inferential evidential as incomplete comparison

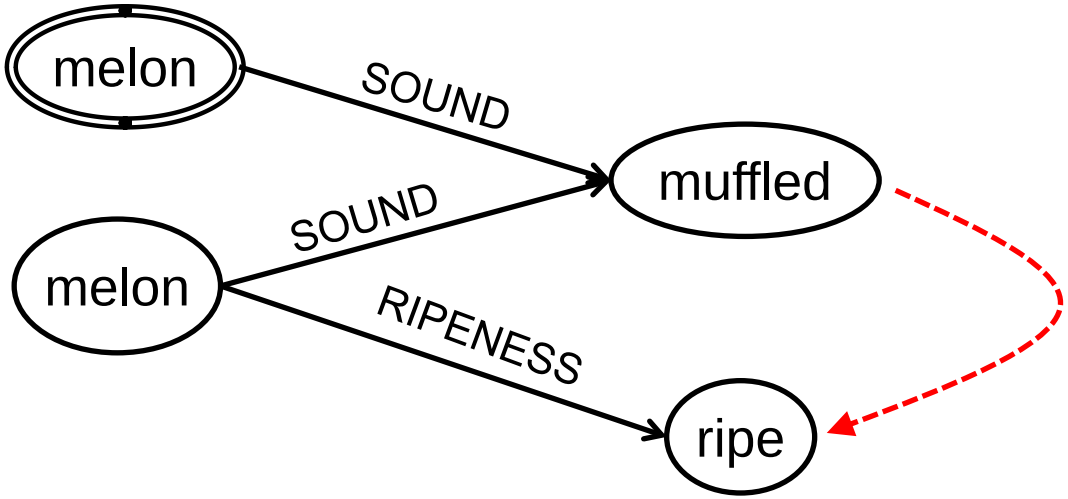
(3) *#Die Melone klingt oval.* 'The melon sounds oval.'



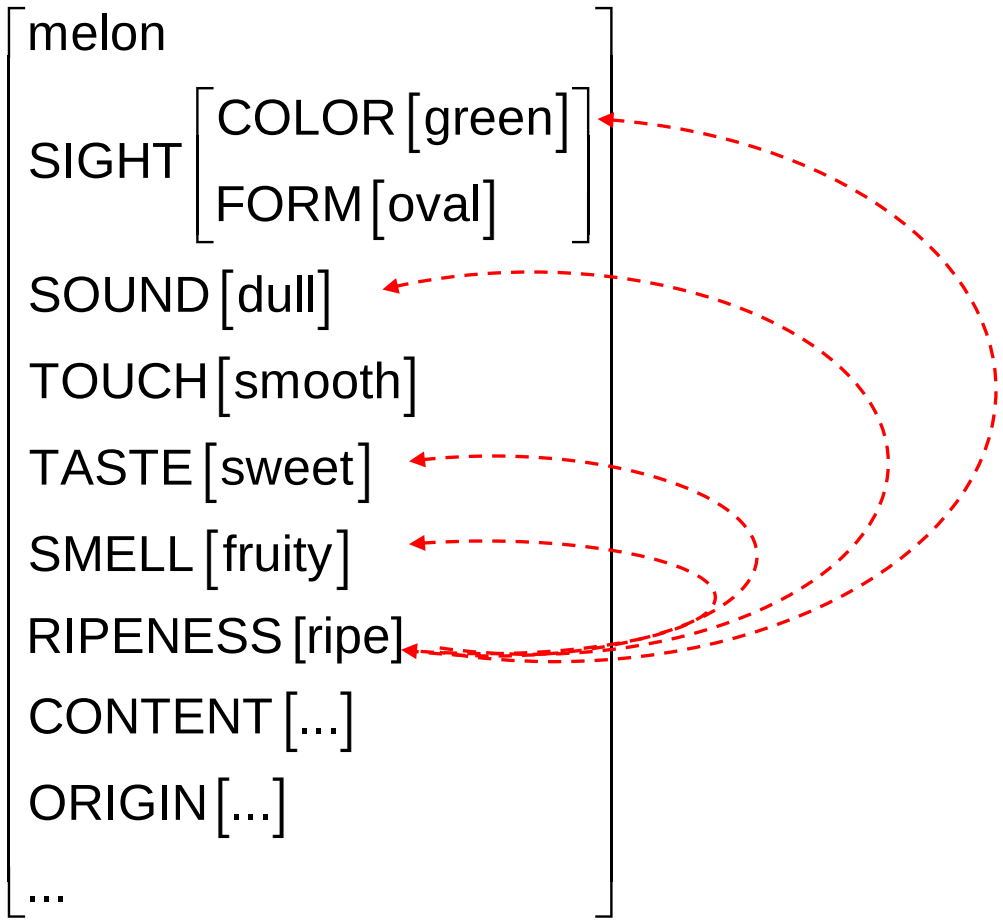
Constraint on inferential evidential

CONSTRAINT 2 (preliminary)

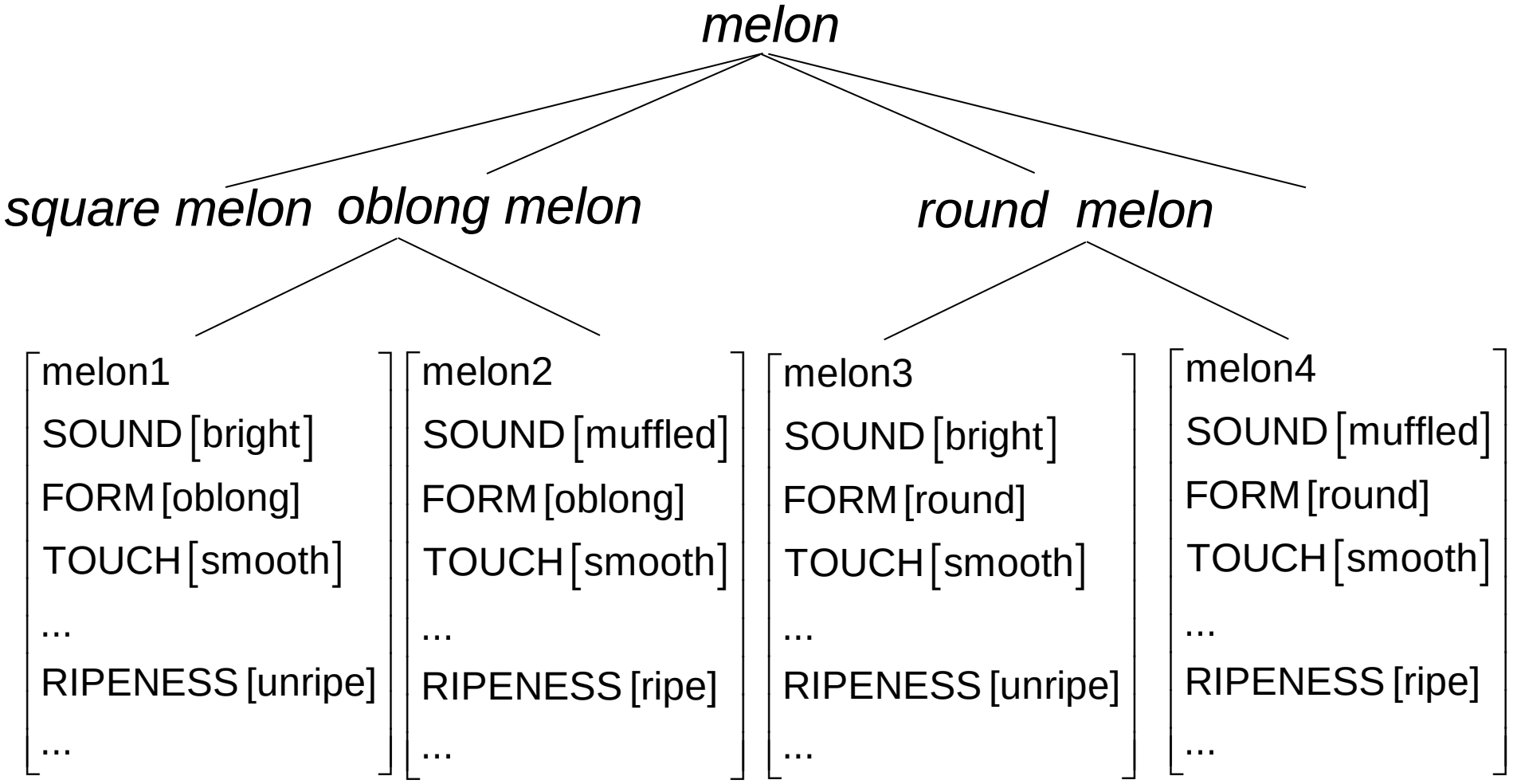
In a dimensional shift the implicit dimension must be inferable from the dimension encoded by the verb.



Partial frame of a melon with inferences



Melon: partial type hierarchy with covariation of sound and ripeness



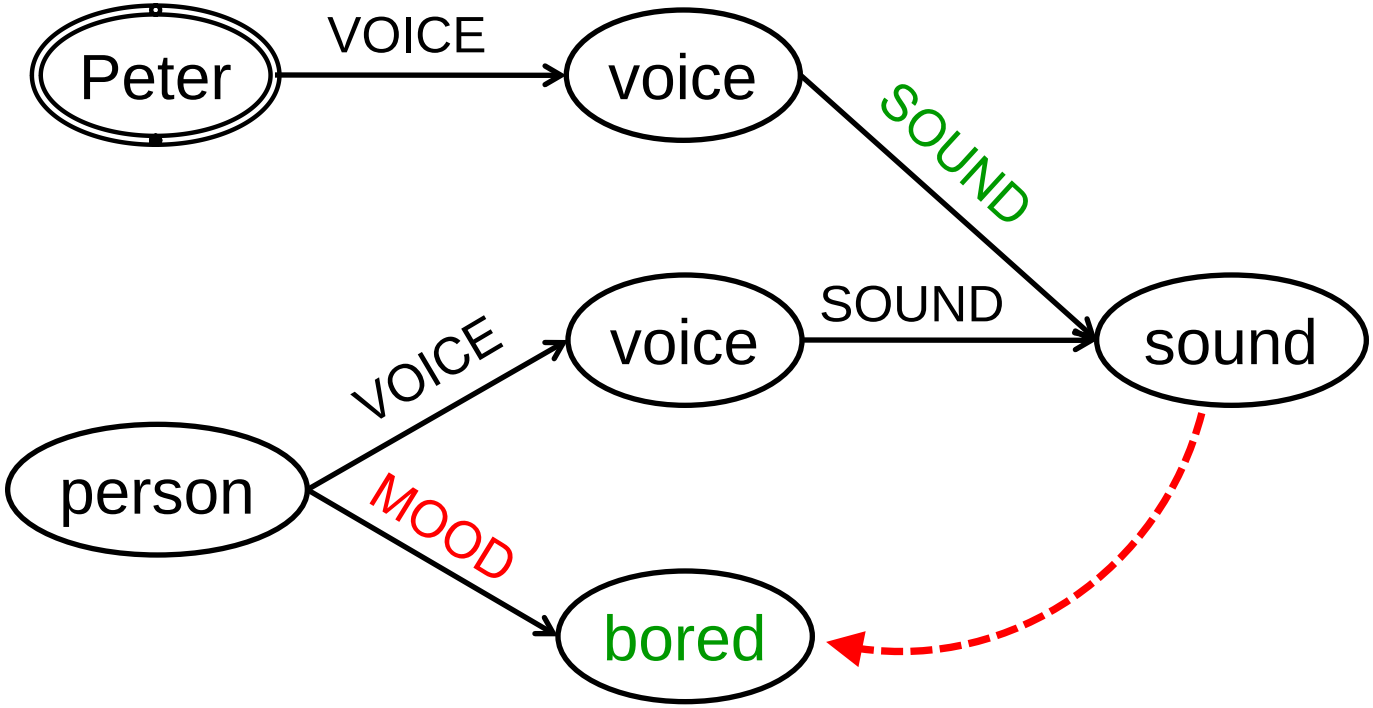
Constraint on inferential evidential

CONSTRAINT 2 (revised)

In a dimensional shift the values of the implicit dimension and of the dimension encoded by the verb must exhibit covariation.

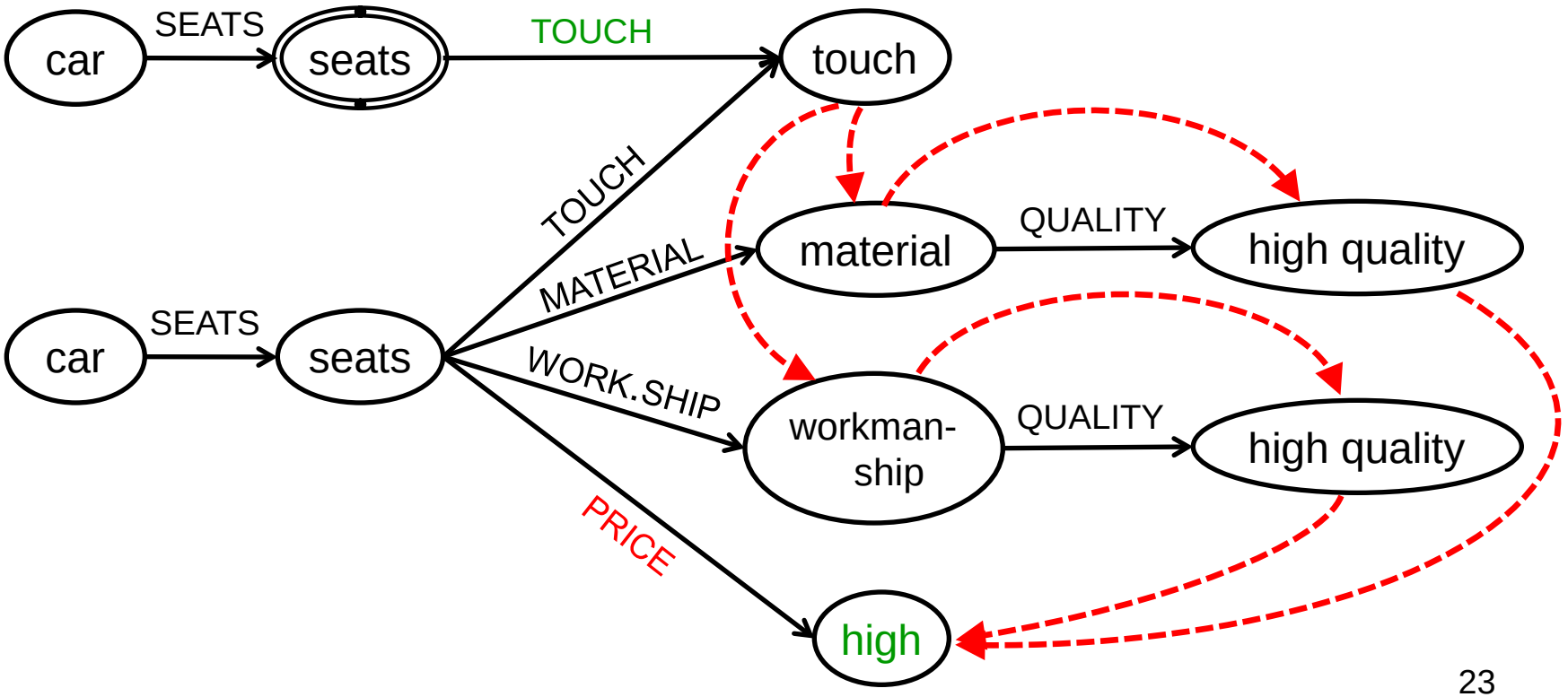
Dimensional shift with attributes attached to different nodes

(7) *Peters Stimme klingt gelangweilt.*
'Peter's voice sounds bored.'



Dimensional shift with multiple inferences

(8) *Die Autositze fühlen sich teuer an.*
'The car seats feel expensive.'



Conclusion

- The analysis of both the direct perception use and the evidential use of stimulus subject perception verbs requires explicit reference to object dimensions.
- A frame theoretic approach, which captures object dimensions as frame attributes, is ideally suited for the analysis of both uses.

Conclusion

Contribution to Lakoff's theory of conceptual mapping

- explicit reference to shifts between properties which are part of the conceptual knowledge of objects

Relation to Pustejovsky's theory of type coercion

- predicates which trigger dimensional shifts are of the same logical type as predicates which occur in the non-inferential use, hence they do not involve type coercion.

thanks for listening