Talking about Melons: An Analysis of Inferential Evidentials as Dimensional Shifts

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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.’

\[ \text{SORT}_{\text{verb}}(\text{subj.ref.}) \land \text{SORT}_{\text{adj.}}(\text{subj.ref.}) \not\Rightarrow \text{acceptable} \]
• 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.
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

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.’
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) \textit{Die Melone klingt dumpf}.
    ‘The melon sounds muffled.’

(4) \textit{#Die Farbe klingt dumpf}.
    ‘The color sounds muffled.’

\textbf{CONTRAINT 1}

The subject referent must exhibit the dimension encoded by the verb.
Constraint 1: type hierarchy

physical object
FORM [form]
WEIGHT [weight]
COLOR [color]

fruit
melon
SOUND: [sound]

abstract entity

quality

color
weight
red
blue
(5) *Die Melone klingt wie ein Rugbyball.*
‘The melon sounds like a rugby ball.’
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
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.’
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.’
Negation of inference $\not\Rightarrow$ contradiction

\[ (6) \quad \text{Die Melone klingt reif, ist aber nicht reif.} \]
‘The melon sound ripe, but it is not ripe.’
(3) #Die Melone klingt oval. ‘The melon sounds oval.’
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

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<th>melon</th>
<th>COLOR [green]</th>
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<td>SIGHT</td>
<td>FORM [oval]</td>
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</tr>
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<td>TOUCH [smooth]</td>
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<tr>
<td>TASTE [sweet]</td>
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<tr>
<td>SMELL [fruity]</td>
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<tr>
<td>RIPENESS [ripe]</td>
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<tr>
<td>CONTENT [...]</td>
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<td>ORIGIN [...]</td>
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...
Melon: partial type hierarchy with covariation of sound and ripeness

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melon

square melon  oblong melon  round melon

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<th>melon4</th>
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<tr>
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CONSTRAINT 2 (revised)

In a dimensional shift the values of the implicit dimension and of the dimension encoded by the verb must exhibit covariation.
Peters Stimme klingt gelangweilt.
‘Peter’s voice sounds bored.’
(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.
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