Differential Object Marking in Levantine Arabic: Exploring the role of noun type

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Differential Object Marking (DOM)

• A crosslinguistic phenomenon

• Whereby the direct object is differentially marked for case

• Marking depends on factors such as:
  ➢ Animacy
  ➢ Specificity
  ➢ Topicality
  ➢ Definiteness
  ...

(Silverstein 1976; Comrie 1989; Bossong 1991; Aissen 2003; López 2012; Kagan 2020; among others)
Levantine Arabic (LA)

- Spoken by Druze from the Upper Galilee, Israel
- The dialect is closely related to and mutually intelligible with the Druze in southern Lebanon, southwestern Syria
DOM in Levantine Arabic: basic facts

- Direct objects alternate between no case marking (accusative) and overt marking (dative)

(1) a. šof-et s-sabeyy-e  
    saw-1sg the-young lady-f.sg  
    ‘I saw the young lady.’  

    b. šof-t-a la-s-sabeyy-e  
    saw-1sg-3f.sg.obj dat-the-young lady-f.sg  
    ‘I saw the young lady.’

- DOM in LA is optional
DOM in Levantine Arabic: basic facts

• DOM obligatorily involves clitic doubling

(2) dalia šaf-at-(a) la-s-sabeyy-e
    Dalia saw-3F.SG-3F.SG.OBJ DOM-the-young lady-F.SG
    'Dalia saw the young lady.'
DOM in Levantine Arabic: basic facts

• DOM is licit only with definite objects
  (e.g., Abu-Haidar 1979, Levin 1987, Aoun 1999, Brustad 2000)

(3) aḥmad ṭaʕma-ha  la-*{(I)}-bess-e
    Ahmad fed-3F.SG.OBJ  DOM-the-cat-F.SG
    'Ahmad fed the cat.'

• Beyond definiteness, individuation has been argued to be the key factor for licensing DOM in Arabic
  (e.g., Brustad 2000, 2008; Zarka 2021; cf. Khan 1984)
Individuation: countability vs. atomicity

• Individuation has both syntactic and semantic properties
• Morphosyntactically, individuated nouns are countable: pluralization, direct combination with numerals
• Semantically, individuation parallels atomicity: denotation of individuated nouns is atomic, they contain minimal parts
Zarka (2021): DOM in LA and individuation

• In LA, only countable nouns are licit with DOM

(4) a. sara šara-at-a la-š-šant-a
Sara bought-3F.SG-F.SG.OBJ DOM-the-bag-F.SG
‘Sara bought the bag.’

b. sara šara-at-on la-š-šant-ein/-āt
Sara bought-3F.SG-3PL.OBJ DOM-the-bag-DUAL/-SP_F
'Sara bought the two bags/the bags.'

c. sara šara-at-on la-l-kraasi
Sara bought-3F.SG-3PL.OBJ DOM-the-chairs.BP
‘Sara bought the chairs.’
Zarka (2021): DOM in LA and individuation

• In LA, non-countable nouns are incompatible with DOM

(5) *aḥmad baʕ-a la-z-zeft-e
     Ahmad sold.3M.SG-F.SG.OBJ DOM-the-asphalt.SM-F
('Ahmad sold the asphalt.')
But is countability really the key factor?
Or is it atomicity?
Current study
Goals

➢ To experimentally test the role of individuation in the distribution of LA DOM
➢ To test whether countability or atomicity are the key factor in LA DOM
Methods
Design and material

<table>
<thead>
<tr>
<th>Condition</th>
<th>Example</th>
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- 6 items/condition
- 10 non-DOM fillers/distractors
Procedure

❖ Gradable acceptability judgment task
❖ Online via Qualtrics
❖ 6-point forced-choice scale
❖ Only the extreme ends of the scale explicitly labeled:
  1= btnhkaš ‘cannot be uttered’
  6= akid btnhk’a ‘can absolutely be uttered’
Participants

- 48 adult speakers of LA
- Recruited via social media
Hypotheses & predictions
Hypothesis I Countability is the key factor in licensing DOM in LA

Predictions:

Count [+countable] → high acceptability scores
Substance mass [–countable] → low acceptability scores
Object mass [–countable] → low acceptability scores
Collectives [–countable] → low acceptability scores
Hypothesis II Atomicity is the key factor in licensing DOM in LA

Predictions:
Count [+atomic] $\rightarrow$ high acceptability scores
Substance mass [−atomic] $\rightarrow$ low acceptability scores
Object mass [+atomic] $\rightarrow$ high acceptability scores
Collectives [??] $\rightarrow$ ?? acceptability scores
Results & analysis
Mean acceptability ratings across conditions

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Substance mass</th>
<th>Object mass</th>
<th>Collectives (sg. clitic)</th>
<th>Collectives (pl. clitic)</th>
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</thead>
<tbody>
<tr>
<td>Condition</td>
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<tr>
<td>1</td>
<td>5%</td>
<td>40%</td>
<td>9%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
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<td>5%</td>
<td>19%</td>
<td>7%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
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<td>12%</td>
<td>8%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>4</td>
<td>9%</td>
<td>11%</td>
<td>16%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>5</td>
<td>19%</td>
<td>10%</td>
<td>23%</td>
<td>18%</td>
<td>24%</td>
</tr>
<tr>
<td>6</td>
<td>55%</td>
<td>8%</td>
<td>37%</td>
<td>28%</td>
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- **Friedman’s Chi-Square**: main effect of noun type (p<0.001)
- **Ordinal regression**: effect due to significantly different distributions in each condition (mass, object mass and count nouns, collectives(sg) and substance mass, and collectives(pl) and substance mass were all significant (p<0.0001)
Mean ratings across conditions all significantly different from each other (all $p<0.0001$)
Discussion
Countability?

- Count [+countable] → high acceptability scores → borne out
- Substance mass [-countable] → low acceptability scores → borne out
- Collectives [-countable] → low acceptability scores → borne out
- Object mass [-countable] → low acceptability scores → not borne out

DOM sentences with object mass: high acceptability ratings (M = 4.56)
Countability?

If countability were the relevant factor for DOM

⇒ Acceptability scores for DOM + object mass would have been low

 формировала high acceptability, therefore...
Countability *cannot* be the right dimension for characterizing the distribution of nominals with DOM
Atomicity?

- Count [+atomic] $\rightarrow$ high acceptability scores
- Substance mass [−atomic] $\rightarrow$ low acceptability scores
- Object mass [+atomic] $\rightarrow$ high acceptability scores

Atomicity predictions are borne out by these data
Atomicity is the right dimension for characterizing the distribution of DOM in LA
However, data on collectives challenge the atomicity conclusion...
Collectives

- Arabic collectives: ambiguous between atomic and non-atomic reference (Dali 2020)
- To control for this, we manipulated the clitic form (singular/plural)
  - Singular clitic → group reading
  - Plural clitic → atomic reading (individual entities)
Collectives

Hypothesis II Atomicity is the key factor in licensing DOM in LA

Predictions:

- Collective + plural clitic: atomic reference $\rightarrow$ high acceptability scores
- Collective + singular clitic: non-atomic reference $\rightarrow$ low acceptability scores
Collectives

Results

<table>
<thead>
<tr>
<th>Atomicity</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective + sg clitic</td>
<td>✗</td>
</tr>
<tr>
<td>Collective + pl clitic</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Ordinal regression: Difference in ratings is not significant ($p=0.22$)
Results on collectives challenge atomicity hypothesis
How can we account for the non-uniform effect of atomicity across noun-types?
Atomicity: a scalar property (Grimm 2012, 2018)

• Atomicity is not a binary distinction (atomic vs. non-atomic)

• But rather a scalar distinction

• Scale of atomicity
  Substance < Collectives < Individuals

• The scale is derived via a connection-relation

• The connection relation: strongly connected, proximate, or separated
Scalar atomicity and DOM

➢ Count, object mass: high on atomicity scale → DOM: most likely
➢ Substance mass: lowest on atomicity scale → DOM: least likely
➢ Collectives: lower than count and higher than mass on atomicity scale → DOM: less likely than count, object mass; more likely than substance mass

◆ This is what our data show:

\[ M = 2.56 \]  \hspace{1cm}  \[ M = 3.05/3.12 \]  \hspace{1cm}  \[ M = 4.56 \]  \hspace{1cm}  \[ M = 4.93 \]

Substance mass
‘Sara saw DOM-the blood’

Collectives
‘Sara saw DOM-the cows’

Object mass
‘Sara returned DOM-the tools’

Count
‘Sara returned DOM-the books’
Conclusion

• Our study provides novel experimental evidence for the role of individuation in the distribution of DOM in LA

• Contra Zarka (2021): countability is not the relevant property in the distribution of DOM in LA

• Instead, our data show that atomicity is the relevant parameter in LA DOM

• Crucially, atomicity is gradable

• And hence, so is the relative gradable acceptability of DOM with the different nominal categories tested
THANK YOU!