

Natural forces as causers

Semra Kizilkaya

Department of German Language and Literature I, Linguistics, University of Cologne

semra.kizilkaya@uni-koeln.de

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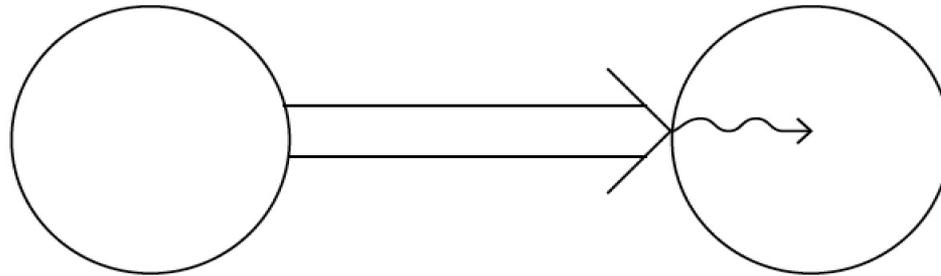
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Agentivity and O realization

Question I: How does a shift in agentivity, in particular properties of the causer, affect the morphosyntax and semantics of the undergoer?

Question II: How do natural forces as causers affect the morphosyntax and semantics of the undergoer?



Prototypical transitive event
(Langacker 1990: 211)

AGENT

causation/
initiation

UNDERGOER

change
result

Two cross-linguistic patterns (Fauconnier 2012)

1. involuntary agency leads to **anticausative voice** such that the UNDERGOER is realized as the subject of the clause and the non-volitional agent is marked with an oblique case (reduced transitivity)
2. decrease in agency leads to **culminated readings** of the change-of-state event, i.e., completive markers, non-defeasible readings (increased transitivity)

1. involuntary agency leads to **anticausative voice** such that the UNDERGOER is realized as the subject of the clause and the non-volitional agent is marked with an oblique case

(1) Guugu Yimidhir (Fauconnier 2012: 64)

- | | | | | |
|----|---|-----------|---------|-----------------|
| a. | Ngayu | galga | nhanu | dumbi. |
| | 1sg.NOM | spear.ABS | 2sg.GEN | break.PST |
| | 'I broke your spear (on purpose).' | | | |
| b. | Ngadhun.gal | galga | nhanu | dumbi-:dhi |
| | 1sg.ADESS | spear.ABS | 2sg.GEN | break-ANTIC.PST |
| | 'I accidentally broke your spear.' | | | |

2. decrease in agency leads to **culminated readings** of the change-of-state event, i.e., completive markers

(2) Bengali (Fauconnier 2012: 79)

- a. **John** aam-ta ket-e khe-l-o.
PN mango-CLF cut-PRF eat-PST-3SG
'John cut the mango and ate it.'
- b. **John** aam-ta khe-ye fel-l-o.
PN mango-CLF eat-PRF **COMPL**-PST-3SG
'John ate up the mango.'
- c. **Bataš** fuldani-ti bheᅇ-e fele čhi-l-o.
wind vase-DEF break-PRF **COMPL** be-PST-3SG
'The wind broke the vase.'

2. decrease in agency leads to **culminated readings** of the change-of-state event, i.e., completive markers

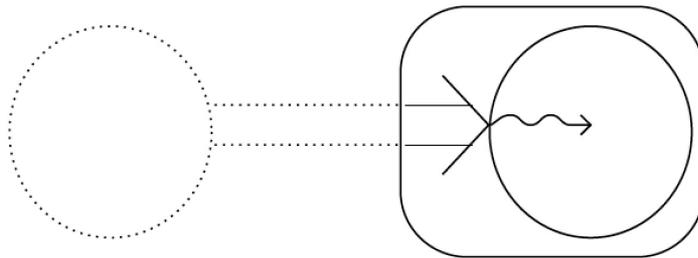
(3) French (Martin 2015: 248)

- a. **Ils** l'ont réparé mais ça ne fonctionne toujours pas.
they it=have repaired but this NEG works still NEG
'They have repaired it but it still does not work.'
- b. **Le choc** l'a réparé #mais ça marche toujours pas.
The shock it=has repaired but this works still NEG
'The shock has repaired it #but it still doesn't work.'

Cross-linguistic observations

both strategies make the right edge prominent

- anticausative voice (right boundary of causal chain)
- culmination (right boundary of temporal chain)



Fauconnier (2012: 123)

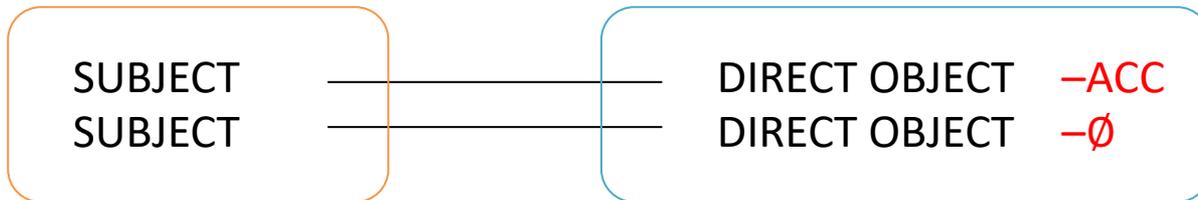
- mostly discussed: agentivity, volition/control, causation, animacy (animate-inanimate, natural forces), change
- today: animacy (animate-inanimate, **classes of natural forces**), causation, case marking

Structure of the talk

1. Introduction: Agentivity and O realization
2. The view from Differential Object Marking (DOM)
3. Discussion/ open questions
4. Conclusion

2. The view from DOM

- Differential Object Marking (DOM): morphological case marking of the direct object is **optional** (Bossong 1985; Aissen 2003; Bárány and Kalin 2020)



- depends on nominal factors like **animacy, referentiality, topicality** and verbal factors like **agentivity** and **affectedness**
- Turkish exhibits differential object marking (DOM) of indefinite direct objects with the **accusative marker** **-(y)I** (vowel harmony: xʔʔW !"#\$%&'()*
(y)u, -(y)ü)
- traditionally depending on specificity (Enç 1991; Erguvanlı 1984; von Heusinger & Kornfilt 2005), but also affectedness (Kizilkaya 2021)
- **sensitive to role semantic distinctions**

2. The view from DOM

In Turkish,

- **animate causers** as subjects like in (4a) allow for **optional accusative marking** of direct object
- **inanimate causers** as subjects like in (4b) invoke a **shift towards accusative marking preference**

- (4) a. **Öğretmen** bir karton(-**u**) kes-ti. agent
teacher a cardboard-ACC cut-PST
'The teacher cut a cardboard.'
- b. **Makas** bir karton*(-**u**) kes-ti. instrument
scissors a cardboard-ACC cut-PST
'The scissors cut a cardboard.'

2.1 Natural forces as causers

Forces of nature as a class of entities

- semantically inanimate
- possess the ability to initiate movement and cause actions
- split pattern observable with regard to DOM
- some of them grammatically similar to **animates**: optional DOM
 e.g., *the storm*, *the draft*, *the river*

Optional DOM

- | | | | |
|--------|------------------------------|------------------------|---------------|
| (5) a. | Komutan | bir gemi(- yi) | bat-ır-dı. |
| | commander | a ship-ACC | sink-CAUS-PST |
| | ‘The commander sank a ship.’ | | |
| b. | Fırtına | bir gemi(- yi) | bat-ır-dı. |
| | storm | a ship-ACC | sink-CAUS-PST |
| | ‘The storm sank a ship.’ | | |

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Optional DOM

- (6) a. **Odacı** bir kapı(-**yı**) aç-tı.
janitor a door-ACC open-PST
'The janitor opened a door.'
- b. **Cereyan** bir kapı(-**yı**) aç-tı.
draft a door-ACC open-PST
'The draft opened a door.'

2.1 Natural forces as causers

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e.g., *the storm*, *the draft*, *the river*

Optional DOM

- (7) a. **Çiftçi** bir dal(-ı) getir-di.
farmer a branch-ACC bring-PST
'The farmer brought a branch.'
- b. **Nehir** bir dal(-ı) getir-di.
river a branch-ACC bring-PST
'The river brought a branch.'

2.1 Natural forces as causers

Forces of nature as a class of entities

- semantically inanimate
- possess the ability to initiate movement and cause actions
- split pattern observable with regard to DOM
- some of them grammatically similar to **inanimates**: DOM strongly preferred
e.g., *the sun*, *the quake*, *the fire*

Optional DOM

- (8) a. **Aşçı** bir çorba(-**yı**) ısı-t-tı.
chef a soup-ACC warm-CAUS-PST
'The chef warmed a soup.'
- b. **Güneş** bir çorba*(-**yı**) ısı-t-tı.
sun a soup-ACC warm-CAUS-PST
'The sun warmed a soup.'

2.1 Natural forces as causers

Forces of nature as a class of entities

- semantically inanimate
- possess the ability to initiate movement and cause actions
- split pattern observable with regard to DOM
- some of them grammatically similar to **inanimates**: DOM strongly preferred
e.g., *the sun*, *the quake*, *the fire/heat*

Optional DOM

- (9) a. **Misafir** bir bardağ(-ı) kır-dı.
 guest a glass-ACC break-PST
 ‘The guest broke a glass.’
- b. **Sarsıntı** bir bardağ*(-ı) kır-dı.
 quake a glass-ACC break-PST
 ‘The quake broke a glass.’

2.1 Natural forces as causers

Forces of nature as a class of entities

- semantically inanimate
- possess the ability to initiate movement and cause actions
- split pattern observable with regard to DOM
- some of them grammatically similar to **inanimates**: DOM strongly preferred
e.g., *the sun, the quake, the fire/heat*

Optional DOM

- (10) a. **Temizlikçi** bir havlu(-**yu**) kuru-t-tu.
housekeeper a towel-ACC dry-CAUS-PST
'The housekeeper dried a towel, but it did not fully dry.'
- b. **Isı** bir havlu*(-**yu**) kuru-t-tu.
heat a towel-ACC dry-CAUS-PST
'The heat dried a towel, #but it did not fully dry.'

2.2 Similar observations

In Western Austronesian languages

- limited-control constructions as in (11a) used when the ability of the agentive argument to control the eventuality expressed by the predicate is at issue
- generally excludes inanimate agents as due to lack of control
- some natural forces as in (11b) are allowed

- (11) Tagalog (Western Austronesian) (Himmelman 2004:105)
- a. *na-dalá* *ko* *ang* *libró*
RLS.POT.PV-carried 1.SG.POSS SPEC book
'I took the book by accident.'
- b. *ang* *dahun* *ay* *na-dà-dalá* *ng* *tubig*
SPEC leaf PM RLS.POT.PV-RDP-carried GEN water
'The leaf was being carried along by the water, ...'

2.2 Similar observations

Natural forces as agents (Lowder & Gordon 2015)

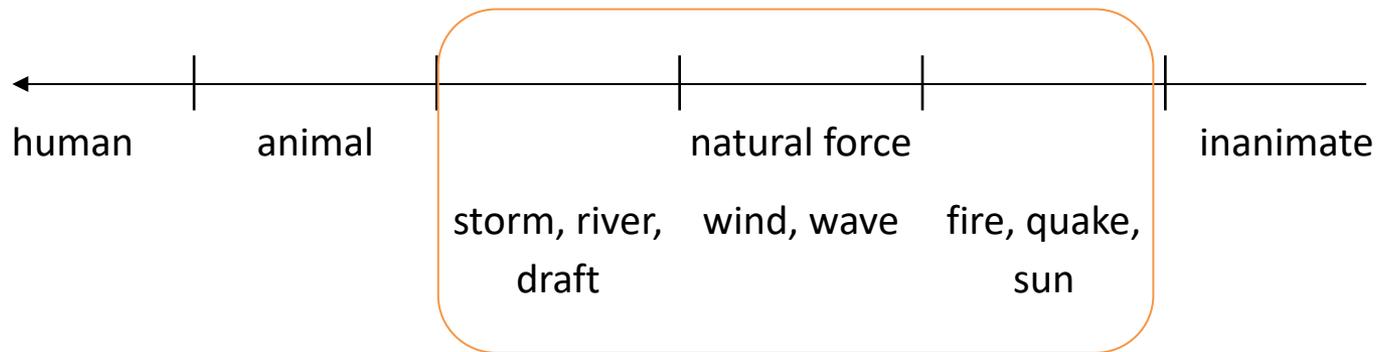
Online sentence processing (eye-tracking study)

- (12)
- a. **The criminal** injured the farmer in the field beside the barn.
 - b. **The revolver** injured the farmer in the field beside the barn.
 - c. **The tornado** injured the farmer in the field beside the barn.
- distinct processing patterns for instruments and natural forces
 - integration of an instrument with an action verb causes early and sustained processing difficulty compared to integration of natural force
 - natural forces possess ability to generate their own energy (Wolff et al 2009), initiate movement, cause events

2.3 Natural forces as causers

The class of natural forces

- are semantically inanimate
- possess the ability to initiate movement and cause actions
- differ with respect to ability of directed motion
- split patterns in grammar

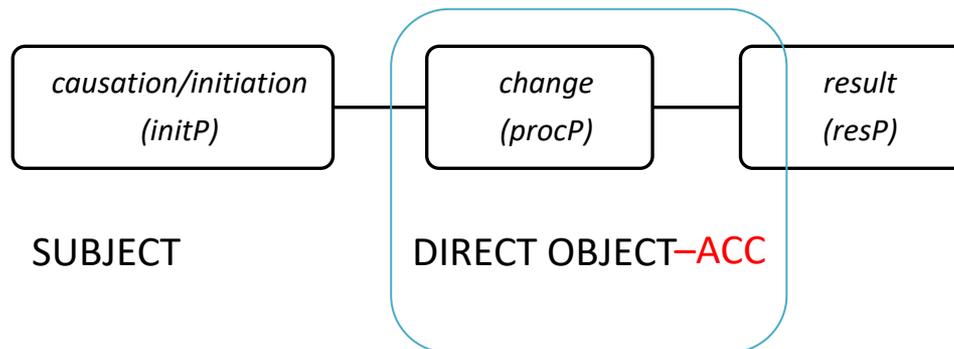


3.1 Discussion

Transitive dynamic events can be maximally decomposed into three subevents (Ramchand 2008):

- in typical transitive change-of-state verbs, the direct object is associated as the holder of the change subevent
- direct object is case marked

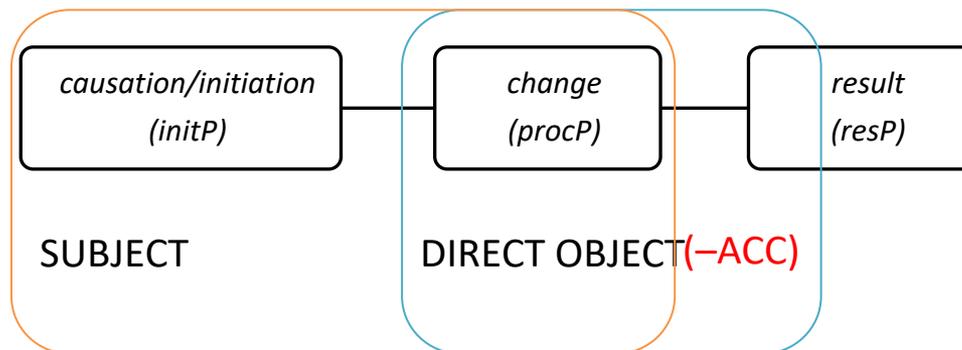
- (13) a. Alex killed a soldier.
b. The kid broke a vase.
c. The politician toppled a leader.



3.1 Discussion

- under certain circumstances (affected, animate, experiencer subjects), the subject can also be associated as the holder of the change subevent
- the direct object is optionally case marked

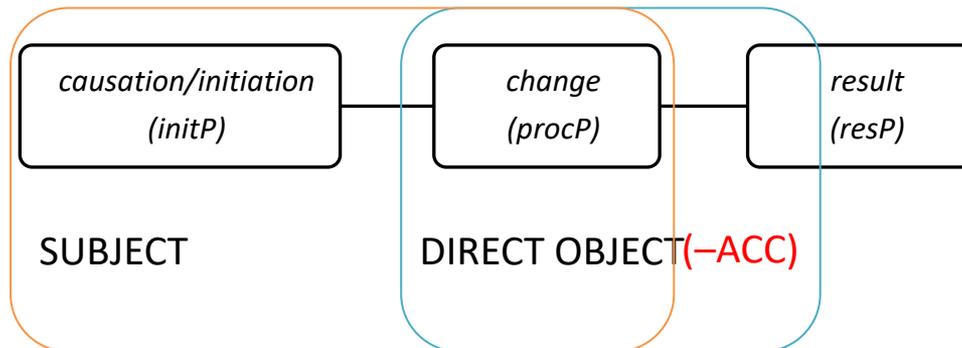
- (14)
- a. Alex ate an apple.
 - b. She ran a marathon.
 - c. The craftsman painted the wall.
 - d. Alex remembered the poem.



3.1 Discussion

... with these kind of subjects the change in the direct object is defeasible:

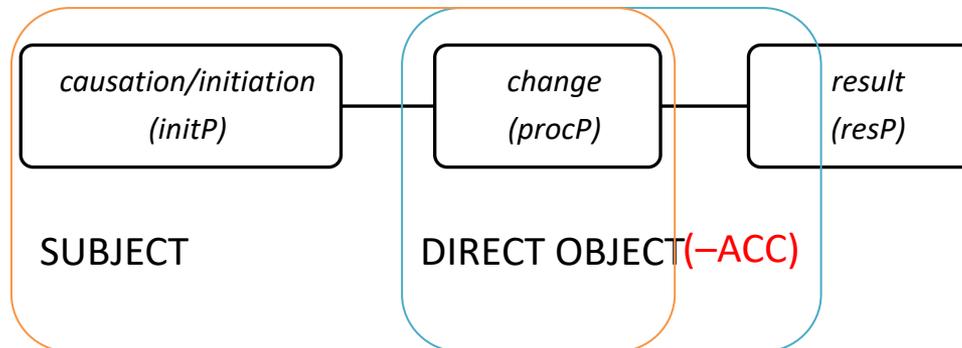
- (15) Temizlikçi bir havlu(-**yu**) kuru-t-tu, ama kuru-ma-dı.
housekeeper a towel-ACC dry-CAUS-PST but dry-NEG-PST
'The housekeeper dried a towel, but it did not dry.'



3.1 Discussion

- those natural forces which generate their own forceful directed motion can be associated as holders of the change subevent
- the direct object is optionally case marked

- (16) a. The storm sank a ship.
b. The river brought a branch.
c. The draft opened the door.

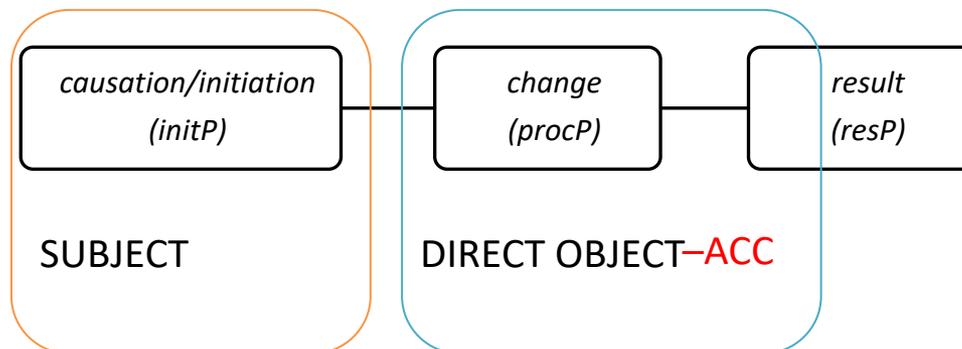


3.1 Discussion

- instruments and less-agentive natural forces cannot be associated as holders of the change subevent
- the direct object is case marked

(17) a. The heat dried the towels.
b. The sun warmed a soup.
c. The quake broke a glass.

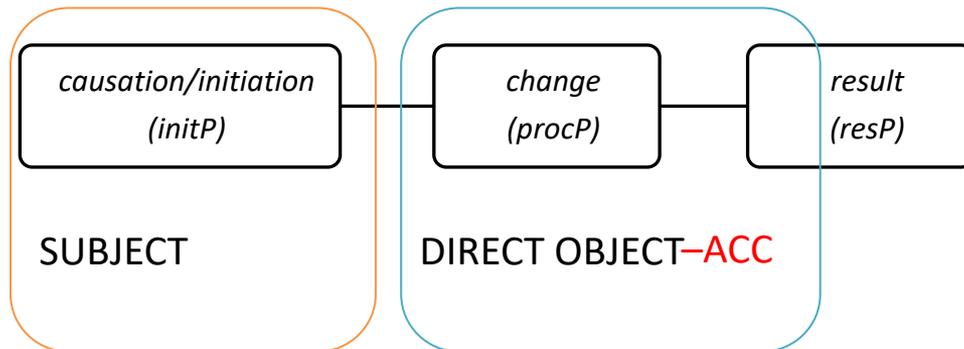
(18) a. The scissors cut the cardboard.
b. The needle burst the balloon.
c. The stove boiled the syrup.



3.1 Discussion

... with these kind of subjects the change in the direct object is defeasible:

- (19) Isı bir havlu*(-**yu**) kuru-t-tu, #ama kuru-ma-dı.
heat a towel-ACC dry-CAUS-PST but dry-NEG-PST
'The heat dried a towel, #but it did not fully dry.'



3.2. Causation literature

Agent control hypothesis (Demirdache and Martin 2015; Martin 2015: 259)

Agentive ongoing causation events (including processes involving instruments) are ontologically independent of their effects (they come into existence with the intention or plan put into action), while non-agentive ongoing causation events ontologically depend on their effects (they come into existence once they are efficacious only).

3.2. Causation literature

Instruments, 'simple' inanimates

- lack intention
- it is the agent behind them controlling the event
- uniform pattern

(20) The scissors cut the cardboard. (+ACC)

Natural forces

- lack intention
- split pattern
- those possessing directed motion are better controllers of the event
- control as constant presence in all phases of the dynamic event; only as long as the controller is acting does the change of state continue

- (21) a. The river brought a branch. (\pm ACC)
b. The sun warmed a soup. (+ACC)

3.2. Causation literature

Dispositions

- include both intentions of animate entities and physical tendencies
- notions like volition, control, ability follow from dispositions
- Dispositional structure for disposer y , dispositional state e , manifestation e' , eventuality description p :

- (22)
- y is the holder of e
 - e is a state that directly causes e' , *ceteris paribus*
 - e' instantiates p
 - y is disposed toward p

(23) Futurates

- I make the coffee tomorrow.
- #I get sick tomorrow.
- The sun rises at 6 tomorrow.

3.2. Causation literature

How are the classes of causers different in terms of their dispositions?

- (24) Animates and certain natural forces
- a. The teacher cut the cardboard. (\pm ACC)
 - b. The housekeeper dried the towels. (\pm ACC)
 - c. The storm sank a ship. (\pm ACC)
 - d. The river brought a branch. (\pm ACC)
- (25) Inanimates and certain natural forces
- a. The scissors cut the cardboard. (+ACC)
 - b. The heat dried the towels. (+ACC)
 - c. The sun warmed a soup. (+ACC)
 - d. The fire burned the letter. (+ACC)

4. Conclusion

Shifts in agentivity

- affect the morphosyntax and semantics of the complex event
- different readings (culminating, non-culminating)
- morphosyntactic realization of O argument (undergoer)

Natural forces

- the animate-inanimate distinction is probably an epiphenomenon of more basic properties relating to force/causal structure
- grammatically split behaviour along the lines of directed motion

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