The Theory and Historical Development of Expletives (and non-referential arguments)
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Transitive anticausatives: a new argument for expletive Voice

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1. Morphological marking in the causative/anticausative alternation

In many languages, verbs undergoing the **causative-anticausative alternation** (e.g. Levin & Rappaport Hovav 1995, Reinhart 2002) broadly fall into **two morphological classes** (e.g. Haspelmath 1993). For example, German, French and Greek have

- **unmarked anticausatives** (1a', 2a', 3a') **which are morphologically identical to their corresponding causatives** (1a, 2a, 3a), and

- **marked anticausatives** (1b', 2b', 3b') **which are set aside from their corresponding causatives by an extra morphological device** (1b, 2b, 3b).

- While German and French, like many Indo-European languages, uses as an anticausative marker **a reflexive pronoun or clitic** (**SE**), Greek uses a **non-active verbal affix** (**NACT**).

(1) (German **causative**)
a. Peter zerbrach die Vase.
Peter broke the vase
b. Maria öffnete die Tür.
Mary opened the door

(German **anticausative**)
a'. Die Vase zerbrach. (*unmarked*)
the vase broke
b'. Die Tür öffnete **sich**. (*marked*)
the door opened **SE**

(2) (French **causative**)
a. Ana brûle la maison.
Ana burns the house
b. Pierre ouvre la porte.
Peter opens the door

(French **anticausative**)
a'. La maison brûle. (*unmarked*)
the house burns
b'. La porte **s'** ouvre. (*marked*)
the door **SE** opens

(3) (Greek **causative**)
a. O Janis adiase ti sakula.
the John emptied.ACT the bag
b. O Janis ekapse ti supa.
the John burnt.ACT the soup

(Greek **anticausative**)
a'. I sakula adiase. (*unmarked*)
the bag emptied.ACT
b'. I supa **kaike**. (*marked*)
the soup burnt.**NACT**

- English has (kept) a few verbs that **mark the alternation via Ablaut** on the stem (4a, b).

- Turkish exemplifies languages that **morphologically mark** (a subset of) **their lexical-causative variants** (5a).

(4) a. John r**ai**ses the flag. b. The flag r**i**ses.

(5) a. Rüzgar bulut-lar-ın şekl-in-i değiş-**tir**-di. (Turkish)
wind cloud-PL-GEN shape-AGR-ACC change-**CAUSE**-PAST
'The wind changed the shape of the clouds.'
b. Bulut-lar-ın şekl-i değiş-ti.
cloud-PL-GEN shape-AGR change-PAST
'The shape of the clouds changed.'

2. Syntax and semantics of the causative alternation

Lexical causatives and anticausatives have the same event-structure. Besides a low stative projection, **they involve the same event-introducing v-head** (v_{PROC} in Ramchand 2008; v_{CAUS} in Alexiadou et al. 2006, 2015; $v_{<e>}$ in Marantz 2007, Schäfer 2008, 2012).

The causative alternation is a Voice-alternation (Alexiadou et al. 2006, 2015, Schäfer 2008): Voice does not introduce an event but introduces an argument slot which augments the event in its complement position (via event identification; Kratzer 1996).

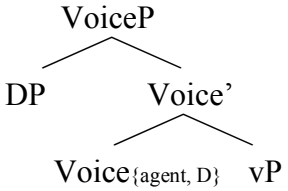
(6) a. John opened the door.
b. $[DP_{AGENT}$ Voice $[v_{CAUS} [v_{STATE} DP_{THEME}]]]$
c. λe∃s.[agent(e, John) & cause(e, s) & open(s) & theme(s, door)]

(7) a. The door opened.
b. $[v_{CAUS} [v_{STATE} DP_{THEME}]]$
c. λe∃s.[cause(e, s) & open(s) & theme(s, door)]

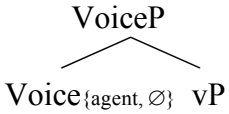
- **active Voice** (8a) introduces an agent variable and c-selects (via its D-feature) a DP in its specifier that saturates this variable.[1]
- **(medio-)passive Voice** (8b) introduces an agent variable and existentially binds it.[2]

(8) a. active Voice: $[\![\text{Voice}\{\text{agent, D}\}]\!] = \lambda x \lambda e.[\text{agent}(e, x)]$
b. passive Voice: $[\![\text{Voice}\{\text{agent, } \varnothing\}]\!] = \lambda e \exists x.[\text{agent}(e, x)]$

(9) a.



b.



2.1. Marked vs. unmarked anticausatives (ACs)

<u>Morpho-Syntax</u>: Marked ACs are more complex than unmarked ACs.

Their morphological marker is typically also used as a marker of other diatheses (e.g., Kemmer 1993), such as medio-passives (10a, 11a) or semantically reflexive verbs (10b, 11b), i.e., of structures that involve an external argument variable/theta-role.

(10)a. Trois maisons **se** sont louées hier.
three houses SE are rented yesterday
'Three houses were sold yesterday.'

b. Jean **s'**est lavé.
Jean SE is washed
'John washed (himself).'

(11)a. O Janis katijori-**thike** (apo ti Maria).
the John accused-**NACT** by the Mary
'John was accused (by Mary).'

b. O Janis pli-**thik**e
the John washed-**NACT**
'John washed (himself).'

[1] If the subject is a causer (e.g. a natural force or otherwise inherently eventive DP), a semantically different Voice head $Voice_{CAUS}$ is at play; see Martin (2020) for exemplification and explicit semantic characterization.
[2] This is the structure of medio-passives. In periphrastic passives, a PASS-projection on top of active Voice executes existential binding as in Bruening (2012); cf. Schäfer (2017) for a comparision of these two passives.

Semantics: Marked ACs and unmarked ACs do not differ semantically (Alexiadou et al. 2006, 2015; Schäfer 2008; Martin & Schäfer 2014; Schäfer & Vivanco 2016).

--> Greek marked ACs are semantically not passive, but inchoative.
--> Romance/Germanic/Slavic marked ACs are semantically not reflexive, but inchoative.

=> Marked anticausatives show a morpho-syntax/semantics mismatch.

Proposal: **Expletive Voice** (Schäfer 2008, Alexiadou et al. 2015, cf. Wood 2014, 2015; Kastner 2016; Myler 2016; Wood & Marantz 2017).

Expletive Voice does not introduce any thematic relation/argument variable; it is deleted at LF (Schäfer 2008) or denotes the identity function (Wood 2014, 2015).

(12) $[\![\text{Voice}_{\text{expletive}}]\!] = \lambda P \lambda e.P(e)$

Unlike canonical Voice (8a, b), expletive Voice lacks a thematic feature (∅).
Like canonical Voice, expletive Voice comes in an active and a passive version (with and without D-feature):

(13) a. "active" expletive Voice: $[\![\text{Voice}\{\varnothing, D\}]\!] = \lambda P \lambda e.P(e)$
b. "passive" expletive Voice: $[\![\text{Voice}\{\varnothing, \varnothing\}]\!] = \lambda P \lambda e.P(e)$

In Greek, expletive Voice does not project a specifier. The **NACT-morphology** derives from a Spell-Out rule that reflects the absence of a specifier (14a'; Embick 1998, 2004):

In Germanic, Romance, Slavic, **expletive Voice comes with a D-feature** that enforces EXTERNAL MERGE of a DP in its specifier.

But expletive Voice cannot provide a theta role for this DP (the ∅-thematic feature).

--> An ordinary DP like *Mary* or *the man* would fall victim to the Theta Criterion (Chomsky 1981) in the specifier of expletive Voice (14b).

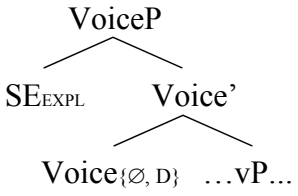
--> **The specifier of expletive Voice can only host an expletive, as only expletives can pass the Theta Criterion there (!!! to be updated !!!)**.

Unbound **SE** acts as an such **an expletive in a potential argument position**.
SE lacks inherent meaning and cannot derive any denotation via binding.
Under this use, **SE denotes the identity function** (14a).

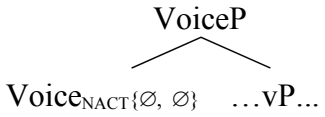
(14) a. $[\![\text{SE}_{\text{expletive}}]\!] = \lambda P \lambda e.P(e)$

a'. Voice -> $\text{Voice}_{[\text{NACT}]}$ / ___No DP specifier

b. Germanic/Romance



b'. Greek/Hebrew



(15) a. weil *(sich) die Tür öffnete
as SE the door opened
b. [$_{VoiceP}$ SE$_{expletive}$ [$_{Voice'}$ Voice$_{expletive}$ [$_{vP}$ the door open]]]

(16) a. ⟦ vP ⟧ = λe.∃s [CAUSE(e, s) & open(s) & THEME(s, the door)]
b. ⟦ Voice' ⟧ = ($\lambda P_{s,t}$.P) (λe.∃s [CAUSE(e, s) & open(s) & THEME(s, the door)])
= λe.∃s [CAUSE(e, s) & open(s) & THEME(s, the door)]
c. ⟦ VoiceP ⟧ = ($\lambda P_{s,t}$.P) (λe.∃s [cause(e, s) & open(s) & THEME(s, the door)])
= λe.∃s [CAUSE(e, s) & open(s) & THEME(s, the door)]

=> **Verbs undergoing the causative alternation** express events that **can be presented as semantically transitive or semantically intransitive** (+/- external argument)
=> **Verbs forming marked ACs** have the idiosyncratic/idiomatic property that they **must appear in the context of Voice, at least expletive Voice** (syntactically transitive)
=> Unmarked ACs are semantically and syntactically intransitive/inchoative and lack Voice.

3. Transitive anticausatives (TrACs)

- Consider the following German, French and Greek example sets. They are formed after empirical observations on German in Schumacher (1986).[3]

(17) a. Die steigende Temperatur vergrößerte [das Volumen [des Gases]]. (causative)
the rising temperature increased the volume of.the gas
b. Mit steigender Temperatur vergrößerte sich [das Volumen [des Gases]]. (anticaus)
with rising temperature increased **SE** the volume of.the gas.
c. Mit steigender Temperatur vergrößerte das Gas sein Volumen. (TrAC)
with rising temperature increased the gas.**NOM** its volume.**ACC**
'With the temperature rising, the gas increased its volume.'

(18) a. Le vent a changé / modifié [la forme [des nuages]] (causative)
the wind has changed / modified the shape of.the clouds
b. [La forme [des nuages]] a changé / s'est modifiée. (anticausative)
the shape of.the clouds has changed / **SE** is modified
c. [Les nuages] ont changé / modifié leur forme. (TrAC)
the clouds.**NOM** **have** changed / modified their shape.**ACC**
'The clouds changed their shape.'

(19) a. I igrasia afksani [tin agogimotita [polon epifanion]]. (causative)
the wetness increases.ACT the conductivity many.GEN surfaces.GEN
b. [i agogimotita [polon epifanion]] **afksani / afksanete** (anticaus)
the conductivity many.GEN surfaces.GEN increases.ACT/increases.NACT
me tin igrasia / otan ine igres.
with the wetness / when they are.wet
c. [poles epifanies] **afksanun/ *afksanonde** [tin agogimotita tu] (TrAC)
many surfaces.**NOM** increase.ACT/increase.NACT the conductivity.**ACC** their
me tin igrasia / otan ine igres.
with the wetness / when they are.wet
'Many surfaces increase their conductivity when they are wet.'

[3] p.c. Fabienne Martin, Artemis Alexiadou, Elena Anagnostopoulou, Despina Oikonomou, Jaklin Kornfilt.

(20) a. The exploding star **raised** the surface temperature of the gaseous planet.
b. The surface temperature of the gaseous planet **rose**.
c. The gaseous planet **raised** its surface temperature.

(21) a. Rüzgar bulut-lar-ın şekl-in-i değiş-tir-di. (causative)
wind cloud-PL-GEN shape-AGR-ACC change-**CAUSE**-PAST
'The wind changed the shape of the clouds.'
b. Bulut-lar-ın şekl-i değiş-ti. (anticausative)
cloud-PL-GEN shape-AGR change-PAST
'The shape of the clouds changed.'
c. [Bulut-la] [şekil-lerin-i] değiş-tir-di. (TrAC)
cloud-PL shape-AGR-ACC change-**CAUSE**-PAST
'The clouds changed their shape.'

The c-sentences are SYNTACTICALLY TRANSITIVE:

- They involve two DP-dependents, **DP$_{NOM}$** and an **DP$_{ACC}$.**
- They **necessarily lack anticausative morphology (SE/NACT/stem)**, even if the corresponding simple anticausative must (or can) occur with such morphology (cf. b-examples). In Turkish they feature **CAUSE-morphology**.
- They **select auxiliary *have*** even if the corresponding anticausative selects *be* (cf. 18b, c).

The c-sentences are SEMANTICALLY ANTICAUSATIVE/inchoative:

- Despite the fact that the c-sentences are formally transitive, **these c-sentences correspond semantically to the anticausative sentences in b**, not to causative sentences of the type in a. In particular, the **DP$_{NOM}$ does not express an external θ-role of the verb** (agent or causer; I will prove this in detail in section 3.)
- I call the verbal variants in the c-sentences **"transitive anticausative" variant (TrACs).**

- The TrACs in the c-sentences have corresponding ordinary **anticausatives in the b-sentences which have a complex theme DP$_{NOM}$ expressing a possessive relation. The theme is also a *possessee* and hosts a genitive *possessor* DP (22a)**.

- **In TrACs, the possessive structure is dissociated (22b):**
  - **The possessor is realized as a NP$_{NOM}$** and **the possessee is realized as an DP$_{ACC}$**.
  - **DP$_{NOM}$** (typically) **binds a possessive pronoun inside of DP$_{ACC}$**.

(22) a. [$_{TP}$ ... [verb [POSSESSEE$_{NOM}$ [POSSESSOR$_{GEN}$]]]] (anticausative)
b. [$_{TP}$ ... POSSESSOR$_{NOM}^{k}$ [verb [PRON$_{POSS}^{k}$ POSSESSEE$_{ACC}$]]] (TrAC)

- **(22a) and (22b) do not differ truth-conditionally;** they only differ in that the **focus of interest is oriented towards the possessee in (22a) and towards the possessor in (22b)** (*sentential topic via nominative marking*).

- (One reason why) TrACs are theoretically very relevant because **TrACs do not show any anticausative morpho-syntax even though they express anticausative semantics**.

- If a marked anticausative forms a TrAC, it loses its anticausative morphology but keeps its anticausative semantics.
  => Morphology and semantics lose their match.
  => Morphology does not drive or reflect semantics.
  => **Morphology interprets and realizes syntactic structure** (DM and related theories).

4. Lexical semantic properties of TrACs

- **TrACs are formally transitive**; they involve a **DP$_{NOM}$** and a **DP$_{ACC}$** and select ***have***.
- **DP$_{ACC}$** is the internal argument of the verb syntactically (ACC) as well as semantically.
- **DP$_{NOM}$** is formally the external argument of the verb (NOM in opposition to ACC).

4.1. TrACs lack external argument entailments

Claim: **DP$_{NOM}$ is not a semantic argument of the verb; it is not an *agent*, *causer* or *effector*.** In fact, **TrACs express the same truth-conditional meaning as their correspondingcanonical anticausatives**.

(23) a. [The A_1] verbs [its$_1$ B]. (TrAC) b. [The B [of A]] verbs. (anticausative)
c. ⟦23a⟧ = ⟦23b⟧

Caveat: Since TrACs are formally identical to causative uses of the verb, strings that have the form of (23a) are **formally ambiguous between a use as a TrAC and a canonically causative use.** World knowledge and fine grained lexical semantic properties of verb, A and B determine whether such a string is understood as an anticausative or a causative statement.

Four tests to prove the claim:

4.1.1. Passive formation

TrACs do not undergo passivization (they fundamentally change their meaning under passivization). This suggests that the DP_{NOM} in TrACs does not receive an external argument θ-role from the verb. If it would, it should be possible to absorb this role and to re-assign it in the *by*-phrase without any change in truth-conditions and conceptual acceptance.

(24) a. Die Wolken veränderten ihre/die Form.
the clouds changed their/the form
'The clouds changed their/the shape.'
b. #Die Form (aber nicht die Farbe) wurde von den Wolken verändert.
the form (but not the color) was by the clouds. changed
'The shape (but not the color) was changed by the clouds.'

Caveat: There is a complication that DP_{ACC} in TrACs typically comes with a possessive pronoun that is obligatorily co-valued with DP_{NOM}, and it might be difficult to establish this co-valuation in passives. However, some TrACs allow the possessive pronoun to be replaced by a definite DP which, still, is understood as being possessed by DP_{NOM} (e.g. 24a). The corresponding passive strings are well-formed under an interpretation where the theme DP_{NOM} is understood as being possessed by the DP in the *by*-phrase. But such passives have a very different status than their active counterparts. They are conceptually deviant, acceptable at best in a fairy tale context because the DP in the *by*-phrase is necessarily interpreted as a causer triggering a change in its own property denoted by the DP_{NOM}.

4.1.2. Paraphrases

For a verb undergoing the causative alternation, the meaning of **a transitive causative use can be paraphrased with a periphrastic causative** embedding the anticausative version of the causative verb (modulo directness of causation):

(25) a. Der Forscher/Die steigende Temperatur vergrößerte das Volumen des Gases.
the scientist/ the rising temperature increased the volume of.the gas
=>
b. Der Forscher/Die steigende Temperatur **bewirkte**
the scientist/ the rising temperature **brought-about**
dass das Volumen des Gases sich vergrößerte.
that the volume of.the gas SE increased

TrACs are not paraphrased by a periphrastic causative construction. In fact, the periphrastic counterparts violate our world knowledge and are, thus, judged as deviant.

(26) a. [Das Gas] vergrösserte [sein Volumen].
the.NOM Gas increased its.ACC volume
=/=>
b. #Das Gas **bewirkte** dass sich sein Volumen vergrösserte.
the gas **brought-about** that SE its volume increased

(27) a. Les nuages changent leur forme.
the clouds change their form
=/=>
b. #Les nuages **font en sorte** que leur forme change.
the clouds **make so** that their form changes
c. #Les nuages **causent** le changement de leur forme.
the clouds cause the change of their form

Instead, **TrACs are truth-conditionally paraphrased by canonical anticausatives where the possessor appears inside of the nominative theme DP** (modulo different sentence topics).

A further paraphrase that keeps the sentential topic - comment structure constant **are anticausatives where the possessum appears inside a PP** (28b/28b).

(28) a. [Die Form [der Wolken]] veränderte sich
the form of.the clouds changed SE
'The form of the clouds changed.'
b. [Die Wolken] veränderten sich [**in** ihrer Form].
the.NOM clouds changed SE **in** their.DAT shape
'The clouds changed in their form.'

(29) a. The gaseous planet **raised** ***its surface temperature*** over the course of 2 million years.
b. The gaseous planet **rose** ***in surface temperature*** over the course of 2 million years.
c. #The gaseous planet **caused** that its surface temperature rose over the course of ... .

French has a further way to paraphrase TrACs that keeps the sentential topic - comment structure constant: **the presentational relative construction** (Lambrecht 2002), which shows transparently that the verb is anticausative:

(30) a. Les nuages changent leur forme.
the clouds change their form
b. Les nuages ont leur forme qui changent.
the clouds have their form that changes

4.1.3. Sentential Negation

Lexical causatives are ambiguous under sentential negation.
Either the coming about of a change is negated, or **the causal role of the subject DP in this change is negated** (cf. Schäfer & Vivanco 2016; Wood & Marantz 2017).

The latter reading is the one accessed by the well-formed continuation in (31a):

Anticausative predicates lack this latter interpretation as they lack an agent/causer argument; the continuation in (31b) is contradictory.

TrACs behave thereby exactly like anticausatives (31c).

(31) a. John/the fire did not change the temperature of the water
but the/its temperature did change.
b. The temperature of the water did not change
#but the/its temperature did change.
c. The water did not change its temperature
#but the/its temperature did change.

4.1.4. Causer PPs

Anticausatives combine with PPs introducing non-human causers or causing events (Kallulli 2006, 2007; Alexiadou et al. 2006, 2015; Schäfer 2012). Crucially, these PPs are called 'causers' because they make good subjects in lexical and/or periphrastic causatives.

(32) a. The window broke *from* the strong pressure.
b. The strong pressure broke the window/caused the window to break.

(33) a. Die Tür öffnete sich *durch* einen Windstoß.
The door opened SE through a blast.of.wind
b. Ein Windstoß öffnete die Tür.
a blast.of.wind opened the door

TrACs license causer-PPs just as well as their corresponding anticausatives:[4]

(34) a. [Das Gesicht [der Erde]] änderte sich (**durch den Klimawandel**) (anticausative)
the face of.the earth change SE through the climate-change
'Due to climate-change, the face/appearance of the earth changed.'
b. Die Erde änderte (**durch den Klimawandel)** ihr Gesicht. (TrAC)
the earth changed through the climate-change her face
'Due to climate-change, the earth changed its face/its appearance.'

[4] Lexical causative verbs can combine with causer PPs, but there are clear restrictions (Schäfer 2008) which are not fulfilled by the examples in the main text. If the subject is an agent, the PP-causer must be under the agent's control. If the subject is a causer, the PP-causer must be in a part/whole relation with the subject as in (i):
i) Das Meer hat mit/durch seine(n) Wellen die Sandburg zerstört.
the sea has with/through its waves the sand-castle destroyed

4.2. The scalar dimension and the possessive relation in TrACs

Verbs undergoing the causative alternation are (typically) **change-of-state verbs**.

Change-of-state verbs **denote a measure-of-change function** that provides "the difference between the degree to which an object possesses some scalar property at the beginning and end of an event" (Kennedy 2012:108).

To set up a measure function, **change-of-state verbs** (or their underlying adjectives) **lexicalize a SCALE S** (Kennedy & McNally 2005, Beavers 2008; Kennedy and Levin, 2008; Rappaport Hovav, 2008; Rappaport Hovav and Levin 2010):

(35) $S = \langle D, \succ, DIM \rangle$, where

- **D** is **a set of degrees** (points or intervals indicating measurement values). The respective sets of degrees are interpreted as e.g. *temperature values, height values or weight values*.
- $\succ$ is **an ordering relation** on D (e.g. increasing (e.g. *warm*) or decreasing (e.g. *cool*)).
- DIM is **a particular measurement dimension** (e.g., *temperature*, *height*, *cost*, *speed*, *weight*, , *depth*, …).

- 'property scales' underlie change-of-state verbs (e.g. *to warm*, *to deepen*, to widen, ...),
- 'path scales' underlie verbs of inherently directed motion (e.g. *to rise*, *to descend*, ...).

(36) a. The soup warmed. (DIM = temperature)
b. The balloon rose. (DIM = height (over the ground))

The dimension represents a property or an attribute of the entity undergoing the scalar change. This entity is realized as the internal argument of the verb.

- Bartsch and Vennemann (1972:172):
  - **a dimension is inherently a nominal concept**, and so is the value associated in it with an individual by the measure function.
  - The verbs *to warm* and *to rise* in (36a, b), thus, implicitly lexicalize a nominal dimension (*temperature*, *height*).
  - The names of the objects compared are hidden in the measure function:

(37) $[\![$the soup warmed$]\!]$ = TEMP(END(t), the-soup) > TEMP(BEG(t), the-soup)

=> A verb like *warm* treats 'the soup' as **first degree surface argument** even though **it is a second degree argument of the semantic representation**.

<u>Observation 1</u>: Only a small subset of the verbs undergoing the causative alternation can form TrACs.

<u>Observation 2</u>: The verbs that form TrACs have metaphoric uses in which they **are deprived of their literal and lexicalized scale** (Löbner 1979, Schumacher 1986, Rappaport Hovav 2014, Fleischhauer & Gamerschlag 2014, Zwarts 2018).

In this use, **these verbs leave their scale of change underspecified.**

To specify an actual scale, **these verbs select for a definite 'dimensional noun' as their internal argument.**

(38) a. The *temperature* (of the soup) rose. b. The *price* (of potatoes) rose.

While the verb in (38a, b) is construed intransitively, its internal argument dimensional noun is necessarily understood as the attribute of some nominal entity, i.e., **the dimensional noun selects for an entity and it is this entity that undergoes the scalar change**.

Dimensional nouns (called 'individual concepts' in Montague 1974 or 'intensional nouns' in Löbner 1979) denote values on some scale of some ordinary individual at some time; they **are functions from individuals and times to degrees** (39a):

(39) a. TEMP is a function from ordinary individuals and times to (temperature) degrees
b. ⟦ the temperature of the soup at t ⟧ = TEMP(t, the-soup)
c. ⟦ the soup warms/the temperature of the soup rises over t ⟧ = TEMP(END(t), the-soup) > TEMP(BEG(t), the-soup)

(37) and (38a) have the same meaning, (39c).
But while the verb in (37) (*to warm*) treats 'the soup' as **first degree surface argument** in syntax, the syntax of (38a) treats 'the soup' as **second degree argument** and, thereby, **directly reflects the semantic structure**: *The soup* 'possesses' *temperature that rises.*

5. The analysis of TrACs

5.1. SE-marked anticausatives

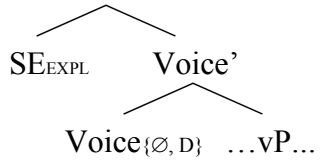
(40) "active" expletive Voice: ⟦Voice{∅, D}⟧ = λPλe.P(e)

- Expletive Voice selects a DP in its specifier (via a D-feature) but it cannot provide a thematic role for this DP (the ∅-sign).

--> **The specifier of expletive Voice can only host an expletive, as only expletives can pass the Theta Criterion there (!!! to be updated !!!)**.

SE (in Romance, Germanic, Slavic) can act as an such **an expletive in argument position**: Under this use, **SE denotes the identity function** (41a).

(41) a. ⟦ $SE_{expletive}$ ⟧ = λPλe.P(e)
b. VoiceP



5.2. TrACS

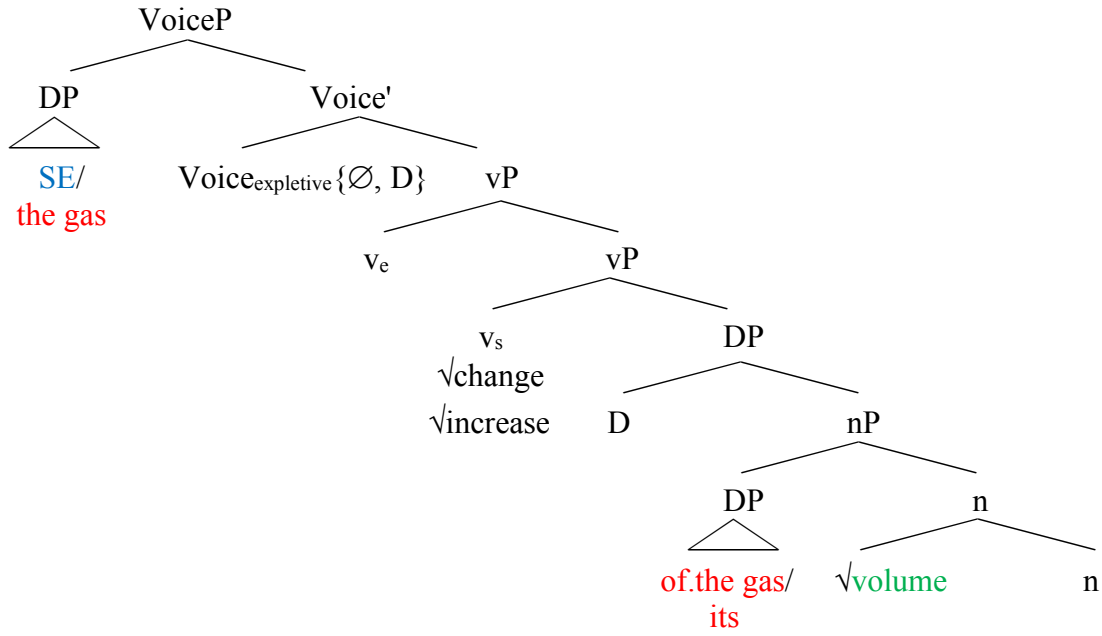
TrACs are syntactically transitive but their external argument DP is not a semantic argument of the verb.

Proposal: The syntax of TrACs involves exactly the same functional syntactic formatives as SE-marked anticausatives.

TrACs are marked anticausatives in which the specifier of expletive Voice is filled by a dislocated possessor of the theme.

(42) a. weil sich [das Volumen [des Gases]] veränderte/vergrösserte.
b. weil [das Gas] [sein Volumen] veränderte/vergrösserte
as SE/the gas the/its volume of.the gas changed/increased

c.



- **The DP_{NOM} is externally merged in Spec,$Voice_{EXPL}$** due to the D-feature on $Voice_{EXPL.}$
- **$Voice_{EXPL}$ does not assign a thematic role to DP_{NOM}.**
- **DP_{NOM} receives the possessor role via binding of the possessive pronoun inside of the theme DP. This allows the DP_{NOM} in Spec,$Voice_{EXPL}$ to pass the Theta Criterion even though it is not an expletive**.

- This is a kind of **left-dislocation within VoiceP**, i.e., within the domain of dependent structural case. Compare:

(43) a. I do not like the taste/temperature/color of the soup.
b. The soup - I do not like its taste/temperature/color.

(44) a. The temperature of the soup raised.
b. The soup - its temperature raised.

-> Truth-conditionally identical, though different in information structural terms.

=> **Anticausative morphology is predicted to be absent:**
- In languages where anticausative morphemes are expletives merged in Spec,VoiceP, **the possessor and the expletive are predicted to be in complementary distribution**.
- In languages where NACT morphology appears in the $\text{Voice}_{\text{EXPL}}$ head, it is triggered by **the property of Spec,VoiceP being empty (cf. 14a'). But Spec,VoiceP is filled in TrACs. Thus, active morphology is predicted.**
- **In Turkish, CAUSE-morphology is triggered by Spec,VoiceP being filled.**

=> **Accusative Case and Burzio's Generalization**: Dependent case theory (Marantz 1991, and later work).

=> **Auxiliary selection: *have* is the response to Spec,VoiceP being filled by some DP (Schäfer 2008; Myler 2016).** It is not the response to the argument structure of the verb that the auxiliary governs (e.g. Haider & Rindler-Schjerve 1987). Romance SE can shift *have* to *be*, but this is not a sign of unaccusativity or an argument against SE being located in Spec,VoiceP as this happens with all different uses of SE (e.g. indirect object anaphors) and underlies dialectal variation; further children start with *have* in the context of SE.

6. Conclusions and further considerations

- I discussed transitive anticausatives (TrACs).
- **TrACs are syntactically transitive** (like SE-marked anticausatives).
- I argued that **TrACs are semantically inchoative** (like SE-marked anticausatives).
  Their external argument DP is not a semantic argument of the verb but of the internal argument DP (the dimensional noun).
- This **syntax/semantics mismatch** can be understood and implemented based on **the concept of 'expletive Voice' projecting an 'expletive external argument position':**
  A DP must *externally* merge in Spec,VoiceP but Voice does not provide any instruction about how to integrate the DP into the semantic representation (no theta role/no variable to saturate).
- The expletive external argument position can be filled by **'argument expletives' (SE).**
- It can also be filled by **a DP with denotation iff this DP finds an alternative way to pass the Theta Criterion.** In TrACs, it binds the possessor slot of the internal argument DP and receives, thereby, the role of an 'attribute holder'.

=> If it is correct that DP_{NOM} in TrACs does not receive any theta-role from the verb, **TrACs support the concept of i) Voice, ii) expletive Voice and iii) specifier positions of expletive Voice**.

6.1. Further questions to be answered and to be implemented

- **Why only attribute holders but not other possessors, e.g., part-whole possessors**? The semantics of dimensional nouns must be decisive. The possessor is the entity undergoing scalar change in (45) but not in (46).

(45) a. [The temperature [of the soup]] rose.
  b. [The soup] rose [[its] temperature].
  c. The soup warmed (meaning: temperature-raised)

(46) a. [The roof [of the house]] burnt.
b. #[The house] burnt [[its] roof].
c. The house *xilted* (meaning: roof-burnt). (Does not exist in natural languages)

- **Why not possessor raising?** Left-branch extraction otherwise not allowed in German. Overt pronoun instead of covert copy. Danger of overgeneration as the internal argument DP should be able to move and to replace SE even in canonical anticausatives.

- **Why can Greek use 'active' expletive Voice if it only uses 'passive' expletive Voice in marked anticausatives?**
  Both expletive Voice heads in (13a, b) are, in principle, available across languages. Greek cannot use (13a) to form marked anticausatives, because it lacks a suitable argument expletive (Greek has no SE-reflexives). But it can use it in TrACs. [6]

- Since I assume that unmarked anticausatives do not combine with expletive Voice, **why can verbs forming unmarked anticausatives form TrACs** (cf. Greek or French examples in section 2)?
  See Schäfer (to appear, ms) for a proposal that expletive Voice is filtered out with unmarked anticausatives due to economy considerations which are, however, not at play if the specifier of expletive Voice features a DP with semantic content (the attribute holder).

- **Do lexical-causative verbs that lack an anticausative variant form TrACs if they allow a dimensional noun as their internal argument?**
  No (see Schäfer ms. for exemplification/('den Preis der Kartoffeln drücken'). This supports the claim that DP$_{NOM}$ in TrACs is not a semantic argument of the verb.

- **Do pure unaccusative (i.e., unaccusatives that lack a lexical-causative variant) form TrACs if they allow dimensional nouns as their internal argument?**
  There is at least one such unaccusative in French (see Schäfer ms. for exemplification/(*le prix de I-Phone 5 chûte*)). This supports the claim that DP$_{NOM}$ in TrACs is not a semantic argument of the verb.

6.2. Locating (anti-)causative mophology in Grammar

TrACs show that anticausative morphology is not a prerequisite for anticausative semantics (cf. Embick 1998, 2004, Schäfer 2008, Alexiadou et al. 2006, 2015) and **CAUSE-morphology does not necessarily lead to causative semantics**.

A syntactic theory of argument structure and event structure can do this because morphology reflects syntax, and different syntactic structures can lead to anticausative semantics.

Lexicalist Theories (e.g. Grimshaw 1982, Reinhart & Siloni 2005) that, in some way or another, treat **anticausative morphology as the reflex of the application of a lexical operation of decausativization** fail to account for **TrACs**.

A: Grimshaw (1982:101ff.) on French "intrinsic SE":
- "Intrinsic *se* ... is a reflex of ... the lexical rule of inchoativization".

[6] I assume that an expletive projection must be PF-visible to be learnable. French, thus, does not use (13b) as it lacks a spell-out rule as in (14a').

- The rule has two parts:
  i) An operation on predicate argument structure
  ii) the addition of a morphosyntactic equation (via **lexicon-internal insertion of SE**)

"Effectively then, an intrinsic clitic [SE] can cooccur with a verb only if the verb has undergone Inchoativization, and **a verb which has undergone Inchoativization must occur with an intrinsic clitic** [SE]**.**" Grimshaw (1982:103)
Problem: TrACs have inchoative semantics, but SE/NACT disappears in TrACs.
B: Reinhart & Siloni (2005) on decausativization and accusative Case:
- Anticausatives are derived by a lexical rule of decausativization.
- Decausativization "... **reduces not only the number of syntactically realized theta-roles**, **but also the accusative Case of the verb**." (p. 427)

Problem: TrACs lack a causer argument, but the theme DP is marked with accusative.
Concerning SE, they propose:
- "accusative Case has two components to be checked, thematic and structural" (p. 430)
- The arity operation that reduces the external-role also reduces the thematic accusative.
- In some languages, a residue of 'structural accusative' must be checked in the syntax by a non-argument.
- Dutch and German *zich*/*sich* are structural Case checkers. (While they cannot check thematic Case, they can check structural Case.)

Problem: TrACs have inchoative semantics, but the theme is a THEMATIC argument that should need THEMATIC accusative according to this theory.

=> TrACs should not exist within Lexicalist Theories.[7] The fact that a possessor DP is dissociated in syntax can simply not be foreseen at the lexical level.

The present proposal has a "lexical residue", too (cf. Ramchand 2008 for a system of type in (47). We need to code what functional projections a verb/root must or can combine with.

(47)	a.	$\sqrt{}$A [v_s, v_e, Voice$_{\{Theta\}}$]	(only lexical causative; e.g., *kill*)
	b.	$\sqrt{}$B [v_s, v_e, Voice$_{\{Theta/Expl\}}$]	(alternate; marked anticausative)
	c.	$\sqrt{}$C [v_s, v_e, (Voice$_{\{Theta/Expl\}}$)]	(alternate; unmarked anticausative)
	d.	$\sqrt{}$D [v_s, v_e]	(pure unaccusative; e.g., *arrive*)

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[7] Similarly, if TrACs are truth-conditional paraphrases of corresponding SE-marked anticausatives, they are incompatible with the 'reflexivization analysis of anticausativization' (Koontz-Garboden 2009). Further, in the absence of a theory of morpho-syntax, TrACs challenge the conceptual motivation of anticausative/lexical-causative morphology proposed in Haspelmath (1993, 2021), Haspelmath et al. (2014) as well as the predictive power of this proposal.

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Appendix: Further examples of TrACs[8]

(48)a. Dank dieses Futters verdoppelten die Hunde ihre Lebenserwartung. (**German**)
thanks this food doubled the dogs their life-span-expectation
'Thanks to this food, **the dogs doubled their life expectancy**.'

b. Schon bei einer geringen Erwärmung der Meere verkleinern die Eiskappen
already at a slight warming of.the seas reduce the ice-caps
an den Polen ihre Fläche.
at the poles their surface
'Already with a slight warming of the oceans, **the ice caps at the poles shrink their surface**.'

c. Die Atemzüge steigerten ihre Frequenz sogar auf das zwanzigfache pro Minute.
the breaths increased their frequency even at the twenty-fold per minute
'**The breaths increased their frequency** by a factor of twenty per minute.'

(49)a. L'eau change sa couleur du bleu clair au bleu foncé. (**French**)
the water changes its color from blue light to dark blue

b. La température de l'eau augmente son niveau.
the temperature of.the water increases its level

c. La terre change son apparence à cause du changement climatique.
the earth changes its appearance due to change climate

(50) Ta sinefa allaksan / metevalan to sxima tus. (**Greek**)
the clouds.**NOM** changed.ACT / changed.ACT the shape.**ACC** theirs

(51)a. If water ***changed*** *its temperature* easily, we would constantly be too hot or too cold.

b. This condition causes a progressive and painless alteration of the visual field. Since it generally ***increases*** *its frequency* with age, glaucoma needs to be screened …

c. Only in the past one month the lake has ***expanded*** *its surface* area by more than 200 square kilometers.

d. It is founded that Marukh glacier is retreating and has ***reduced*** *its surface* area by 17% for the past 66 years. Glacier volume is 0,273 km^3 in 2011 and has ...

e. By the early sixteenth century, family had ***widened*** *its meaning* to include all the other people living in a household.

f. The word "love" is thrown around and has ***diminished*** *its* value in some regards.

g. I don't think there'll be a pill where people are going to ***double*** *their lifespan*.

h. Nominal salary in Armenia in Q I of 2016 ***slowed down*** *its growth* to 1,1% due to the fdropdown of state employees salaries.

(52) Ha-'ananim sinu 'et tsurat-am. (**Hebrew**)
the-clouds changed.ACTIVE2 ACC shape-their
'The clouds changed their shape.'

(53)a. Yasai-no situ-ga (ooame-no eikyou-de) oti-ta. (**Japanese**)
Vegetable-GEN quality-NOM heavy.rain-GEN influence-by decrease-PAST
'Vegetables' quality decreased (due to the heavy rain).'

b. Yasai-ga (ooame-no eikyou-de) situ-o ot-osi-ta.
vegetable-NOM heavy.rain-GEN influence-by quality-ACC decrease-**CAUS**-PAST
'The vegetables decreased their qualities (due to the heavy rain).'

[8] p.c. Fabienne Martin (French), Artemis Alexiadou, Elena Anagnostpoulou, Despina Oikonomou (Greek), Daiki Asami (Japanese), Odelia Ahdout (Hebrew). English examples are taken from the web.