

Force variability and aspect in German adjectival suffixes

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Project A02 on Negative Adjectives and Language Change

Examples: **unaufhörlich** (incessant) vs. **anfänglich** (initial)

Some adjectives do not allow for dropping the **negative affix**, some do not allow to add a negative affix. Why is this so?

Motivation for this talk: What about **-lich**?

Helmut Weiß



05.06.25

Carolin Reinert



Force variability and aspect with -lich



NegLaB

Negation in Language
and Beyond



Deutsche
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Overview: The three parts of the talk

- Part I Data: Examples for **-lich** affixation show a
 - a) difference in voice (active/passive) wrt the verbal root
 - b) difference in modal force
 - c) difference in actuality entailments → three types of classification
- Part II Hypothesis: **-lich may lexicalize parts of the clausal spine**: The difference in actuality entailments follows from a habituality operator. Modals are interpreted force variable. And voice is related to difference in point-of-view aspect.
- Part III Application

Bigger picture

- According to Flury (1964) **-lich** adjectives are „structurally impoverished“ – but we will see that this is too quick a conclusion.
- Our insights may help translating **-lich** derivations from German to other languages and it probably helps capturing the difference between **-lich** and **-bar** derivations, e.g., for at least some adjectives.

Topic: Deverbal adjectives on -lich

Several types of **-lich** adjectives

- De-nominal adjectives: **Arzt** „physician“ → **ärztlich** „medical“

- De-verbal adjectives: **vergessen** „forget“ → **vergesslich** „forget-ful“

- De-adjectival adjectives: **blau** „blue“ → **bläulich** „similar to blue“

Data

Part Ia): Active and passive voice

- There are **passive** modal deverbal adjectives
- There are **active** modal deverbal adjectives

→ Well-received classification: Henzen 1957 ... Descriptive Grammars etc.

1a) Passive modal adjectives

Passive modal de-verbal derivations

(1) eine erträgliche Lösung „a solution possible *to be* tolerated“
(we judge the result of the solution)

- They are often derived from verbal stems **with prefixes** (70%, according to DUDEN 1984)
- Sometimes the prefixes change the number of arguments of the verbal stem
- Word formation is not productive, but semantically transparent

They have counterparts ending in **-bar**

eine ertragbare Lösung „a solution possible to be tolerated“
(we witness the solving event and judge it)

1a) Active modal adjectives (and Negation)

- Active modal de-verbal derivations

(5) **ein vergesslicher Mensch** „a forgetful person“ → **vergessen**
„not getting it anymore“, the prefix is negative, the meaning aspectual

- Negative Affix seems to passivize, as well.

(6) **Ein unvergessliches Ereignis** „an unforgettable event“
„an event that is impossible to be forgotten“

- Some examples based on reflexives (also a reduction in valency?)

(7) **eine ärgerliche Person** „an angry person“ → **sich ärgern**
(But **ärgerlich** also has a “passive” meaning in the sense of **ungehalten**, DWDS)

Part Ib) Modality

- There are **possibility** **-lich** adjectives
- There are **necessity** **-lich** adjectives

→ **-lich** seems to be **force variable** modal affix

Ib) Deverbal Adjectives: **Möglichkeitsadjektive**

- **-lich** may signal a **modality with existential force**: like „be able to“

- (8) a. **bestechlich** "sb. *has the inclination* to be corrupt"
b. **entbehrlich** "sth. is *dispensable*", "not necessary"

Root modality: stereotypical/deontic modality

More examples: **fasslich**, **verkäuflich**, **vernehmlich**, **verzeihlich**, **zerbrechlich**,
...

◇ (possibility) readings are quite normal.

Ib) Deverbal Adjectives: **Notwendigkeitsadjektive**

- **-lich** may signal **modality** with **universal** force: like „it is necessary to“

- (9)
- a. **bedauerlich** "sth. *has to be* regretted", "regrettable"
 - b. **verwerflich** "sth. *has to be* discarded", "reprehensible"
 - c. **beachtlich** „sth. *Has to be* considered“, „considerable“

Root modality: stereotypical/deontic modality

More examples: **erforderlich**, **ergötzlich**, **förderlich**, **befremdlich**

cf. Leo Weisgerber also **versteuerbar**

□ (necessity) interpretation seems a rather rare phenomenon.

Part Ic) Actuality Entailments (new?)

- There are **-lich** adjectives that force **actuality entailments**
- There are **-lich** adjectives that force **no actuality entailments**

→ linked to modality

Background:

Modality and actuality entailments

- **be able to** is apparently ambiguous between a version that comes with an actuality entailment and one that does not.
- **John was able to eat five apples in an hour...**
 - Past episodic: „yesterday, John was able to ...“ → actuality entailment
 - Past generic: „In those days, John was able to ...“ → no actuality entailment

...but he didn't

(no actuality entailment means the actuality entailment is cancellable)

- Bhatt (1999) proposes a lexical ambiguity for **be able to**.

Actuality entailments with –lich adjectives

(14) Der Baulöwe war bestechlich. Aber niemand hat ihn bestochen.

"The tycoon was corruptible. But no one bribed him. "

→ There possibly was no event of bribery.

(15) Die Niederlage war bedauerlich. #Aber niemand hat sie bedauert.

"The defeat was unfortunate. #But no one felt sorry for it."

Apparent necessity goes hand in hand with an actuality entailment,
Apparent possibility comes with no actuality entailment

Modality and Aspect

- In languages that mark modals with aspectual information, the actuality entailment is triggered by the perfective mood on the ability modal.

For Greek/Hindi (according to Bhatt 1999) and French (according to Hacquard 2020 and earlier)

- **Jean a pu-PFV manger cinq pommes dans une heure.** → actuality entailment
- **Jean pouvait-IPF manger cinq pommes dans une heure.** → no actuality entailment

Aspectual information disambiguates. Bhatt's account does not account for aspect. Hacquard takes aspect seriously.

- # **mE apne-aap-ko maar sak-aa.** (Hindi ex. 9, Bhatt 1999) → Contradiction
I self-Acc kill can-PFV
'I could kill myself.'

Voice and aspect? Participles in German

- **ein gelesenes Buch** „a book that is read“

→ Passive and perfective (Rapp/von Stechow 2015)

- **Eine lesende Frau** „a woman who is reading“

→ Active and imperfective (Rapp 2014)



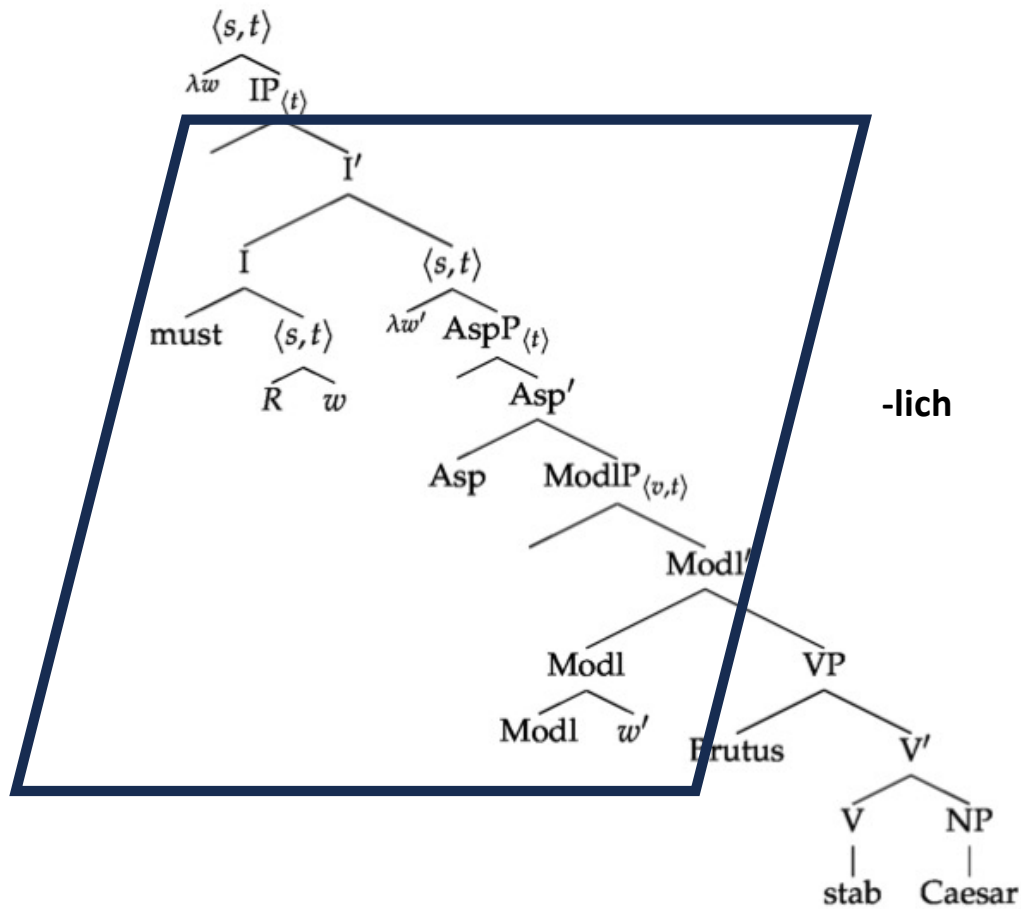
We observe a **link** between passivization and point-of-view aspect.

Theory

Part II: My proposal: structural enrichment

- Ingredients for the meaning components of **-lich**:
 - A PASSIVE operator that closes off the external argument.
 - A PERFECTIVE operator if passive and IMPERFECTIVE if active, cf. the argumentation by Rapp (2014) and Rapp/von Stechow (2015) for participle I and II.
 - A force variable MODAL à la Rullmann/Matthewson/Davis (2008): a universal quantifier over possible situations/worlds that is restricted by a choice function.
 - A HABITUALITY operator that operates on time intervals introduced by Paslawska/von Stechow 2003.

-lich may introduce something like a **clausal spine**: LF architecture for times and events by Beck/von Stechow (2015).



Brutus must stab Caesar

-lich

Clausal spine in an affix

- PAST > HAB > MOD > ASP > VOICE

Voice – Passivization: Existential closure

- $[[\text{PASSIVE}]]^{w,t} = \lambda P.\lambda y.\lambda e.\exists x[P(e)(y)(x)]$
- $[[\text{ACTIVE}]]^{w,t} = \text{Id}$ (Identity)
- Passivization is hosted probably by an independent feature in the tree that can be added or omitted if there is no functional node for it.

Clausal spine in an affix

- PAST > HAB > MOD > ASP > VOICE
- Standard text book assumptions on aspect
- Passivization seems iconic to Perfectivity

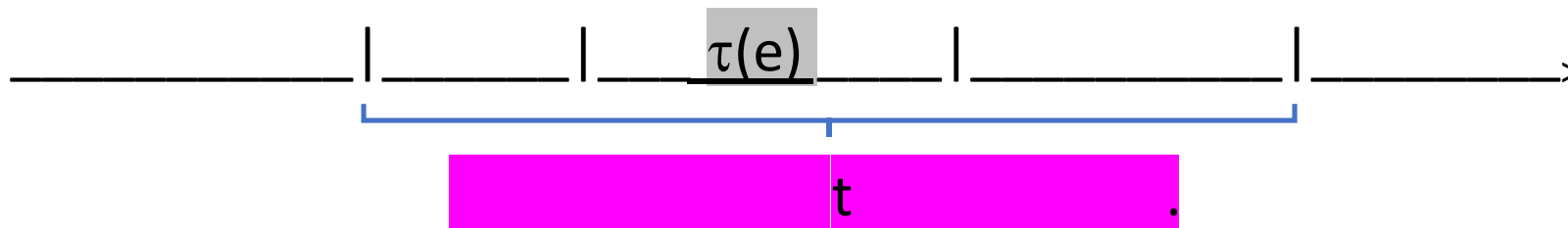
On Aspect: Perfective: event quantifier

- The actuality entailment is unexpected from the point of view of the perfective mood: It relates the event time to the reference time.

- $[[\text{PFV } \varphi]]^{w, t} \leftrightarrow \exists e[\tau(e) \subseteq t \ \& \ [[\varphi]]^{w, t}(e)]$

Perfective
INCLUDES

- The event time is bounded by the reference time.



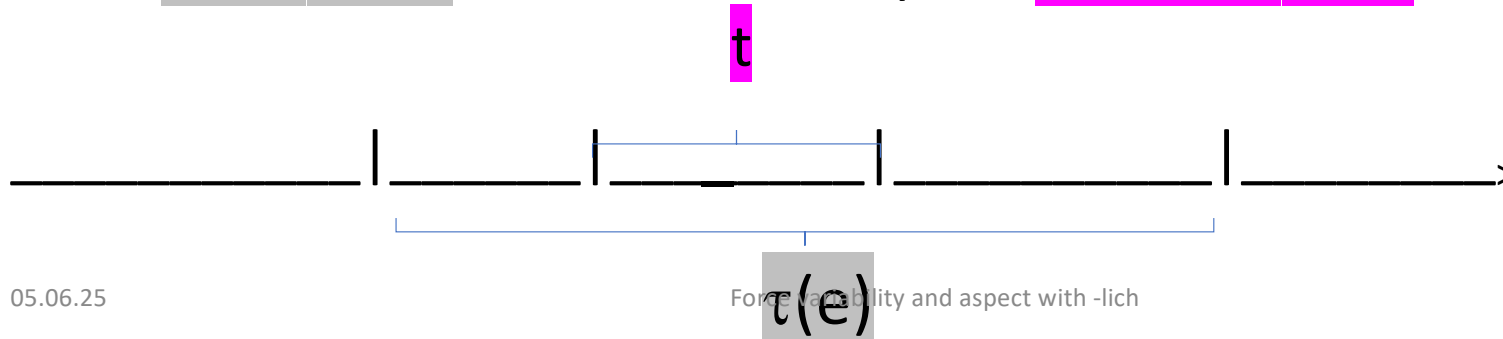
On Aspect: Imperfective

- The actuality entailment is unexpected from the point of view of the imperfective mood: event time and reference time are related in reverse order (compared to the perfective).

- $[[\text{IPF } \varphi]]^{w, t} \leftrightarrow \exists e [t \subseteq \tau(e) \ \& \ [[\varphi]]^{w, t}(e)]$

Imperfective
INCLUDED

- The event time is not bounded by the reference time.



Clausal spine in an affix

- PAST > HAB > MOD > ASP > VOICE
- The modal meaning component in **-lich** adjectives is force variable.
- Non-standard

Force Variability

- In English auxiliary modals come with a Horn Scale [**have to** > **can**]:
- **With this amount of milk she **can** make a pound of butter (but she does not *have to*)**
- The use of **possibility** implicates the negation of stronger alternatives (**necessity**).

→ There are languages that show **force variability for overt modals: Nez Percé** (first nation language spoken in today's Idaho, US) and **for St'át'imcets** (first nation language spoken in today's British Columbia, Canada) they don't make a lexical difference between possibility and necessity.

Compare: Covert Modality infinitives in English (Bhatt 2000)/German (Ehrich 1991):

Tim knows how to solve the problem [should/can be solved]

Das Problem war zu lösen [should/can be solved]

On Modality

- Text book:

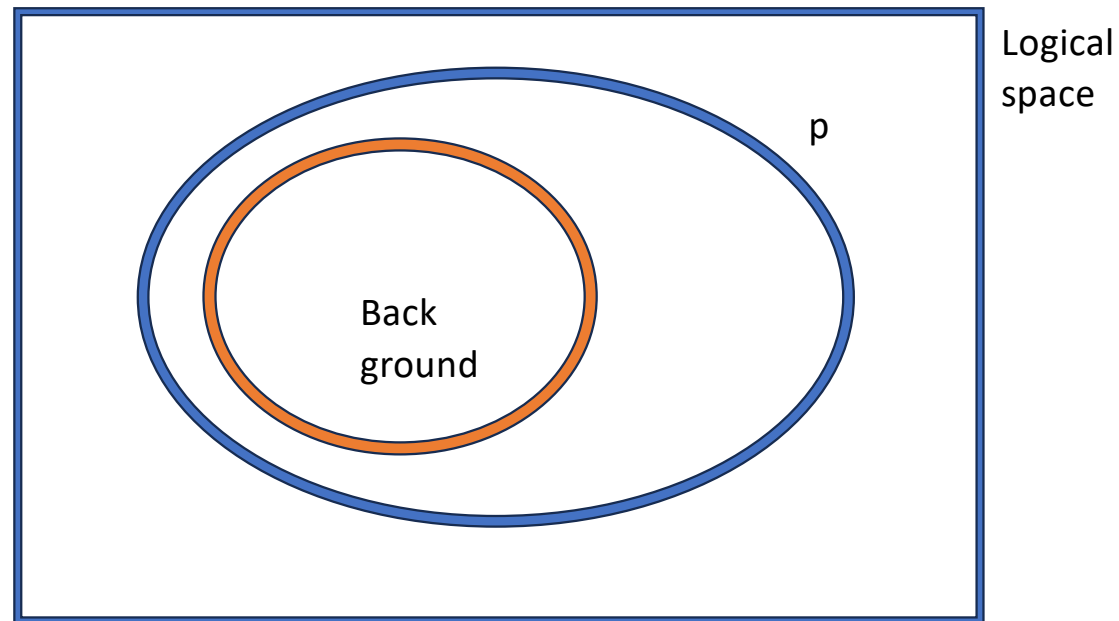
$$[[\text{can } \varphi]]^s \leftrightarrow \exists s' [s' \in \text{ACC}_s \ \& \ [[\varphi]]^{s'}]$$

- Rullmann/Matthewson/Davis (2008):

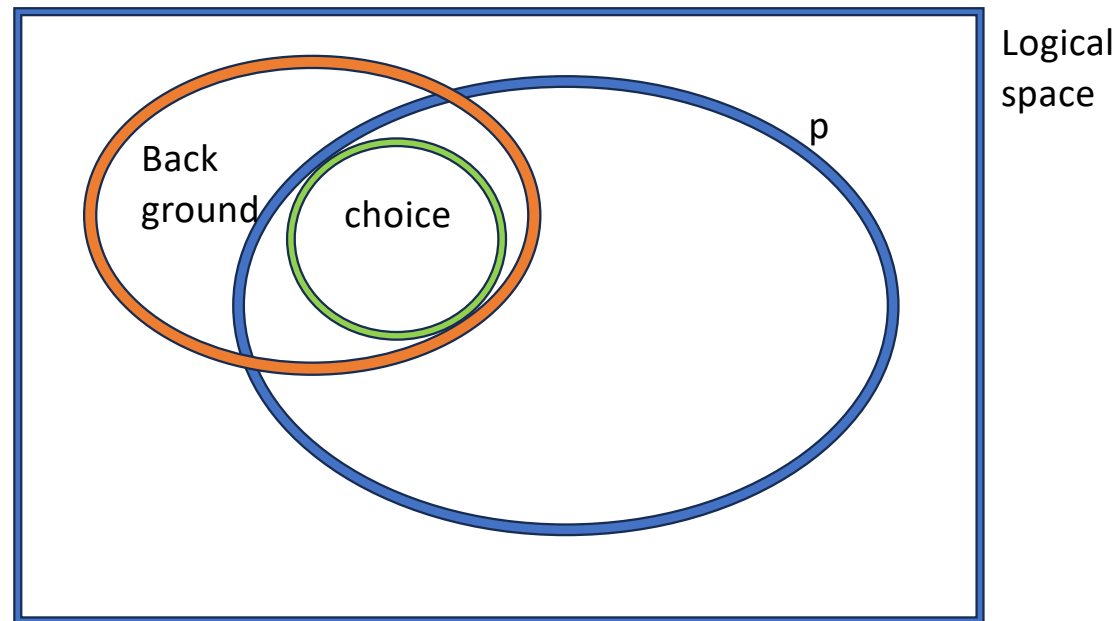
$$[[\text{can/should } \varphi]]^s \leftrightarrow \exists f \ \& \ \forall s' [s' \in f(\text{ACC}_s) \rightarrow [[\varphi]]^{s'}]$$

- f is a contextually determined choice function and restricts the universal quantifier.
- The larger the subset of ACC_s that is selected by f , the stronger the proposition that is expressed.

„Pure Necessity“:
choice function has no impact



„Possibility“: selected subset of the background ACC_s : Acc_s is compatible with p



Clausal spine in an affix

- PAST > HAB > MOD > ASP > MODI > VOICE
- An additional head MODI relates events to possible situations that the modal operators quantify over (Beck/von Stechow 2015). In Hacquard's work this head is part of the aspectual information.

Linkage of events to situations (Beck/von Stechow 2015)

- $[[\mathbf{modI}]] = \lambda s. \lambda e. e \leq s$

Clausal spine in an affix

- PAST > **HAB** > MOD > ASP > VOICE
- Habituality adds the meaning that the a property is an inherent „wesentliche“ property of the something.
- **-bar** affixes seem to lack this meaning component
- Consider: **zerbrechlich** vs. **zerbrechbar**

Habituality (Paslawska/von Stechow 2003)

- **HAB** is a temporal modifier
- It is defined only for summative properties of intervals, more accurately ‘habits’.
- $\| \mathbf{HAB} \| := \lambda P \lambda I \exists J [I \subseteq J \ \& \ P(J)]$
- Imperfective morphology could be interpreted as HABITUALITY
- Operator that introduces an additional interval that subsumes the reference time: „like imperfectivity“.

Application

Part III: Application

- What **-lich** contributes may differ from adjective to adjective or there is a core meaning that does not vary: the force variable modal.

Bestech-lich (passive)

• PAST > HAB > MOD_{can} > PFV > PASS > VP

• **Jedes Mal war der Politiker bestechlich.**

• „there is a past time I which is contained in a larger time interval K such that for every occasion in K it was possible that there was a bribing-the-politician event whose time was included in the interval K.“

→ No actuality entailment, no extra assumptions except habituality.

→ Passivization may trigger perfectivity.

un-bestech-lich (passive)

- PAST > HAB > NEG > MOD_{can} > PFV > PASS > VP: impossibility
- **Jedes Mal war der Politiker unbestechlich.**
- „there is a past time I which is contained in a larger time interval K such that for every occasion in K it was impossible that there was a bribing-the-politician event whose time was included in the interval K.“

→ Affixal negation is internal negation

ärger-lich (active) → no un-ärgerlich

• PAST > HAB > MOD_{can} > IPF > ACTIV > VP

• **Jedes Mal war der Politiker ärgerlich.**

• „there is a past time I which is contained in a larger time interval K such that for every occasion in K it was possible that there was a event where the politician is angry and whose time **includes** the (bigger) interval K.“

→ No actuality entailment, no extra assumptions except habituality.

→ Negation seems impossible because there is no passivation possible and imperfective may not be negated??

vergess-lich (active) → no un-vergesslich

• PAST > HAB > MOD_{can} > IPF > ACTIV > VP

• **Jedes Mal war der Politiker vergesslich.**

• „there is a past time I which is contained in a larger time interval K such that for every occasion in K it was possible that there was a event where the politician is forgetting something and whose time includes the (bigger time of occasion in the) interval K.“

→ No actuality entailment, no extra assumptions except habituality.

→ Why should negation not intervene between modality and habituality?
Triviality?

bedauer-lich (passive) → no un-bedauerlich

- PAST > MOD_{must} > PFV > PASS > VP
- **Der Vorfall war bedauerlich.**
- „there is a past time I such that it was necessary (with respect to what is the case) that there was a event where the speaker regrets the incident and whose time is included in the past time.
→ Actuality entailment, no extra assumptions ~~except habituality~~, maybe triggered here by the factual presupposition of the verbal stem.

Un-vergess-lich (passive)

- PAST > HAB > NEG > MOD_{can} > PFV > PASS > VP
- PAST > HAB → MOD_{must} > NEG > PFV > PASS > VP (equivalence?)
- **Der Vorfall war un-vergess-lich.**
- „there is a past time I which is contained in a larger time interval K such that for every occasion in K it was impossible that there was a event where the speaker forgot the incident and whose time included the (bigger) interval K.“

→ Actuality entailment? Habituality??

Conclusion

- Proposal is a fairly standard account for the meaning contribution of **-lich**.
- Non-standard is force variability but this is attested in other languages and in cases of covert modality in German and English.
- The difference between **-lich** and **-bar** presumably lies in the meaning components active in each meaning (habituality vs. no habituality): consider **bestechbar**. But **-bar** affixation is also force variable: **versteuerbar**.
- Color blue signals habitually and possibility, Color green signals necessity but not point-of-view aspect (contra Hacquard).
- There are two types of habituality (generic, Krifka et al – temporal, von Stechow)
- Many questions are open...

- Thank you!

Literature

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