

# Catalytic conversion: Effects of partial cause on argument structure

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# Broad points

- The Kiowa detransitive morpheme is more than just a ‘voice’ marker

kio : ['kʰɑɪ.owə], Kiowa-Tanoan/ Oklahoma

- It has a variety of meanings not involving voice
- It expresses a catalyst: One of the causing events
- Tells us about the structure of implicative verbs

# Kiowa detransitive

Detransitive verb marking is associated with a reduction in valence (Watkins 1984)  
suffix (+ stem conditioning → H tone)

(1) *b̥on* 'bend'

- a. á: mèn= b̥on-hèl  
stick 2SGA:3DUO= bend-PFV-HSY  
'You bent the (2) sticks.'
- b. á: è= b̥ón-dé-hèl  
stick 3DUS= bend<sub>DETR</sub>-DETR.PFV-HSY  
'The (2) sticks bent.'

subscript ( $X_A$ ) = X is conditioned by A

# Kiowa detransitive

Detransitive verb marking is associated with a reduction in valence (Watkins 1984)  
verb ending (+ stem conditioning → H tone)

(1) /k'ó:b-/ 'topple'

- a. á: **mèn**= k'ó:bè-tò:  
tree 2SGA:3DUO= topple.PFV-MODAL<sub>VT</sub>  
'You will push the (2) trees over.'

vt: transitive verb

- b. á: **è**= k'ó:báj-tò:  
tree 3DUS= topple.DETR.PFV-MODAL<sub>VI</sub>  
'The (2) trees will fall over.'

vi: intransitive verb

# Out of control too

Watkins also points out that it can be used in out-of-control contexts  
OOC agent: 'dative' (D)/ high Applicative

Pylkannen 2003, Harbour 2008

- (2) a. k'òát-tò    é=                      ót  
      dish<sub>INV-INV</sub> 3SGA:3INV0= drop\SG.PFV  
      'He dropped the dish (**deliberately**, in a fit of anger).'

INV: 'inverse' number. Here, inan. sing.

- b. k'òát-tò    ɔ=                      ót-kjá  
      dish<sub>INV-INV</sub> 3SGD:3INV\$= drop\SG<sub>DETR</sub>-DETR.PFV  
      'He dropped the dish (**accidentally**).'

# But also in control

- (3) nègó            gjá=            kʰù:tʰèl–hèl            gìgó            té+hòndè  
and.then.DS 3EMPA:3PLO= break down tipi.PFV–HSY and.then.SS all+thing  
gjà=            mò:hó:-gjáj–hèl  
3EMPD:3PLS= prepare<sub>DETR</sub>–DETR.PFV–HSY  
'And so they took the camp down and got everything ready'

McKenzie et al. 2022: S48

EMP: 'empathetic' plural number

The transitive is acceptable here

- (4) gìgó            té+hòndè gjá=            mò:hòl–hèl  
and.then.SS all+thing 3EMPA:3PLO= prepare.PFV–HSY

# Other uses of the detransitive

A DETR-marked sentence can be translated many different ways

- (5) pí:+à: nén= p<sup>h</sup>ít -té-hèl  
eat+wood 2SGD:3DUS= wipe<sub>DETR</sub> -DETR.PFV-HSY

reading	translation
passive	'The (2) tables were cleaned by you'
finish	'You finished/got done cleaning the (2) tables'
manage-to	'You managed to clean the (2) tables'
ability	'You were able to clean the (2) tables'
out-of-control	'You accidentally cleaned the tables'

## Detransitive of an intransitive

Some intransitive verbs also allow a detransitive:

- (6) **k<sup>h</sup>ɔ:-kjà èm= tsán-dé-hèl**  
car-at 2SGS= arrive-DETR.PFV-HSY  
'You reached the car.'

These are not impersonal uses like in German or Turkish  
All involve path verbs

- (7)
- |       |               |                 |                |          |               |                |
|-------|---------------|-----------------|----------------|----------|---------------|----------------|
| INTR: | <i>hîl</i>    | 'go up'         | <i>tsán</i>    | 'arrive' | <i>só:</i>    | 'go down'      |
| DETR: | <i>hít-té</i> | 'reach the top' | <i>tsán-dé</i> | 'reach'  | <i>sép-té</i> | 'reach bottom' |

# Not a modal

Similar heads have been observed in Austronesian languages. The Ability/Involuntary Action morpheme in Tagalog: modal.

Paul et al. 2016, Alonso-Ovalle & Hsieh  
2021

- (8) **Na-buks-an**                    ni   Lisa ang pinto  
**PFV.AIA**-open-LOC.VOICE GEN Lisa NOM door  
'Lisa managed to open the door. / Lisa accidentally opened the door.'

However AIA markers don't affect the argument structure

- (9) **Naka-bili**   ang   bata   ng   mani  
**PFV.AIA**-buy NOM child GEN peanut  
'The child {managed to buy / accidentally bought} peanuts.'

# Nothing unexpected

Also, the AIA relies on circumstantial unexpectedness, which Kiowa detransitives don't require.

- (10) hègó nō:+tʰà: áñ=                    pí:+óm—gjá=dò                    à=  
then me+wife 3SGD:3PLS= food+make<sub>DETR</sub>—DETR.PFV=due to 1SGS=  
kʰó+pʰj̥:-t'j̥:                            ôjhjɔ:  
immediately+stop.PFV—MOD<sub>VI</sub> right now  
'Since my wife has finished cooking, I'll stop now.'

Letter to Charlie Redbird, 1963

(cp. Out-of-control marking in St'át'imcets)

Davis et al 2009

# Questions

- ▶ Denotation(s) of the detransitive?
- ▶ What (syntactic) kind of morpheme is it?
- ▶ Why does it link to valence?
- ▶ How does it work with intransitive paths?

# Questions

- ▶ Denotation(s) of the detransitive?
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- ▶ How does it work with intransitive paths?
- ▶ The answer lies in catalysts

# Catalysts

A catalyst of an event  $e$  is an event  $c$  that is causally necessary but not sufficient for  $e$  to have a certain description  $P$ .

Explains ‘implicative’ verbs

Nadathur 2016

Baglini & Francez 2015

here we tweak it for events

Kartunnen 1974

- (11) *Tom managed to open the door.*

Asserts: Tom did one thing required to open the door

Presupposes: the other required conditions are already true

Thus: Tom opened the door

- (12) *Tom didn't manage to open the door.*

Asserts: Tom didn't do one (specific) thing required to open the door

Presupposes: the other required conditions are already true

Thus: Tom did not open the door

# Deriving detransitives

DETR asserts that a catalyst happened, presupposing the rest  
readings come from different catalysts

reading	catalyst
manage-to	what's undone
ability	what's undone
finish	last
reach	last
anticausative	setting-off
passive	setting-off
out-of-control	a non-controlling part

# Manage-to reading

(13) é:hò:já= gú:lj-à  
now 1SGA:3PLO= write.DETR-DETR.IPFV

'I'm managing to write now' (after having to work and receive visitors all day)

Asserts: I am doing one thing required for writing

Presupposes: the other required conditions are already true

Thus: I am writing

The presupposition may be weaker; and  
watch out for aspect

# Manage-to reading

Negating a manage reading (14b) entails that the event did not occur.

- (14) a. já= k'í:+bò:dèp — há:òj é=  
1SGA:3PLO= man+be denied by circ.IPFV<sub>VI</sub> after long 1SGD:3SGS=  
té:-gjáj  
grab<sub>DETR</sub>-DETR.PFV<sub>VT</sub>  
'I was denied a husband — much later I managed to grab one.'

- b. hón hájá é= té:-gô:  
not any way 1SGD:3SGS= grab<sub>DETR</sub>-DETR.NEG  
'I never managed to grab one.' ⇒ I didn't grab one.

Watkins (1984:144)

Asserts: I did not do one (sp.) thing required for getting a husband

Presupposes: the other required conditions are already true

Thus: I did not get a husband

# Able-to reading

The able-to reading is common as well.

- (15) nó:+kùt án= kʰóm+j̪: nò hágjá án=
- me+letter 2SGA:3SGD:3PLO= read+give.PFV.IMP and.DF maybe 3SGD:3PLS=
- kʰóm-dé-t'j̪:
- read<sub>DETR</sub>-DETR.PFV-MOD<sub>VI</sub>
- 'Give him my letter to read and maybe he'll be able to read it.'

Letter to Charlie Redbird, 1963; PM  
Archives, 20-01-33

# English abilities

In English, the partial cause is asserted, but that is all, leaving the rest possible.

- (16) *Tom was able to read the book*

Asserts: Tom did one thing required for reading it

Implicates: nothing else Thus: no entailment

- (17) *Tom was able to read the book, but he didn't*

# Abilities entailed

In Kiowa though, the entailment comes through.

- (18) Tom kút án= kʰóm-gjá, #né hón gjà= kʰó:m-᷑:  
T. book 3SGD:3PLS= readDETR-DETR.PFV but not 3SGA:3PLO= read.NEG

‘Tom was able to read the book, but he didn’t (read it)’

Asserts: Tom did all things required for reading it

Presupposes: the other conditions were met

Thus: Tom read the book

The ability reading comes from entailment, and must be proven.

# Inability

Negating this reading negates at least one thing required for the event, so it entails the event did not happen.

bágî:=                            kʰòm+ঁ:  
1INCLA:3SGD:3PLO= read+give.PFV

'We gave him the letter.

- (19) hón án=                    kʰóm-g̪ɔ:                    # né gjà=                    kʰɔm  
not 3SGD:1PLS= read<sub>DETR-DETR.NEG</sub>    but 3SGA:3PLO= read.PFV  
He couldn't read it, #but he read it'

Asserts: There's one thing he didn't do that was required to read it

Thus: He did not read it

# General ability?

For general abilities the DETR can be used with a habitual particle.

- (20) pá: hóndé àn gjà=                    ÿ:m-à                    gjá pá: hóndé hón àn  
some thing HAB 3PLD:3PLS= do<sub>DETR</sub>-DETR.IPFV and some thing not HAB  
gjà=                    ÿ:m-g-ÿ:  
3PLD:3PLS= do<sub>DETR</sub>-DETR-NEG  
'Some things we can do, some things we can't do.'

## Finish reading

The ‘finish’ or ‘get done’ reading involves full control; the agent is dative-marked.

Also, there is no lexical verb for 'finish'



Letter to Charlie Redbird, 1963  
PM Archives, 20-01-33

Here there is no sense of his wife having a hard time; she's merely wrapped up.

## Finish reading

Elicitation confirms this reading is available, sometimes with a broader sense of 'get it done'.

- (22) pí:+à:      ján=      p<sup>h</sup>ít–kjá=è:,      bà=
- food+wood 2SGD:3PLS= wipe<sub>DETR</sub>–DETR.PFV=when.DIFF, LINCLS=
- k<sup>h</sup>ó+bà:–t’ò:
- immediately+go.PFV–MOD<sub>VI</sub>
- 'When you get the tables cleared, we'll go right away.'

## Deriving the finish reading

Only occurs with ordered processes: Asserts the final condition

- (23)    nój:+t<sup>h</sup>à: áñ=                pí:+óm-gjá  
        me+wife 3SGD:3PLS= food+make<sub>DETR</sub>-DETR.PFV

Assertion: My wife has done **the last required** condition for cooking

Presupposition : The other required conditions are already complete

Thus: My wife has finished cooking

# Get-done reading

Get-done readings work the same way, but with more than the last condition.

- (24) pí:+à:      ján=      pʰít–kjá  
food+wood 2SGD:3PLS= wipe<sub>DETR</sub>–DETR.PFV

Assertion: You have done **the last few required** conditions for cleared the tables

Presupposition : The other required conditions are already complete

Thus: You have cleared the tables

# Deriving the reach reading

We can extend this to explain how intransitives can bear the detransitive. Each of the intransitives denote a path verb.

- (25) k<sup>h̄</sup>ɔ:-kjà à= tsán-gjá gìgó mó: há:tsò à=
- car-at 1SGS= arrive-DETR.PFV and then.SAME somewhat somehow 1SGS=
- mòhâ:+dò:
- somewhat+be

'I got to the car and I was pretty tipsy.'

A Curious Car Accident,  
McKenzie et al (2022: S229)

Assertion: I did **the last few required** conditions for arriving at the car  
(that is, the last few steps on the path)

Presupposition : The other required conditions were already complete  
Thus: I arrived at the car

# Out-of-control (OOC) reading

Watkins (1984: 142)

- (26) a. k'òát-tò    é=                   ót  
            dish<sub>INV-INV</sub> 3SGA:3INV0= drop\SG.PFV  
            'He dropped the dish (**deliberately**, in a fit of anger).'  
b. k'òát-tò    ó=                   ót-kjá  
            dish<sub>INV-INV</sub> 3SGD:3INV\$= drop\SG<sub>DETR</sub>-DETR.PFV  
            'He dropped the dish (**accidentally**).'

Watkins finds that an agent must be sentient and in control of the event.

# OOC and scope

In addition, crucially, the sense of OOC is not negatable

- (27) hón k'òát-tò      ót-kô:  
not dish<sub>INV-INV</sub> 3SGD:3INV\$= drop \ SG<sub>DETR-DETR.NEG</sub>  
'He didn't drop the dish (accidentally)' (accident > not)

CANNOT mean that he dropped it on purpose ( not > accident)

# Extending partial cause

DETR indicates a non-controlling catalyst

- (28) n̄ó= ót-kjá  
lSGD:3INV\\$= drop \ SG<sub>DETR</sub>.DETR.PFV  
'I dropped it' (on accident)

- ▶ ¬a: I decided to drop it
- ▶ ¬b: I raised it up
- ▶ c: I let it go
- ▶ d: I did not stop it falling

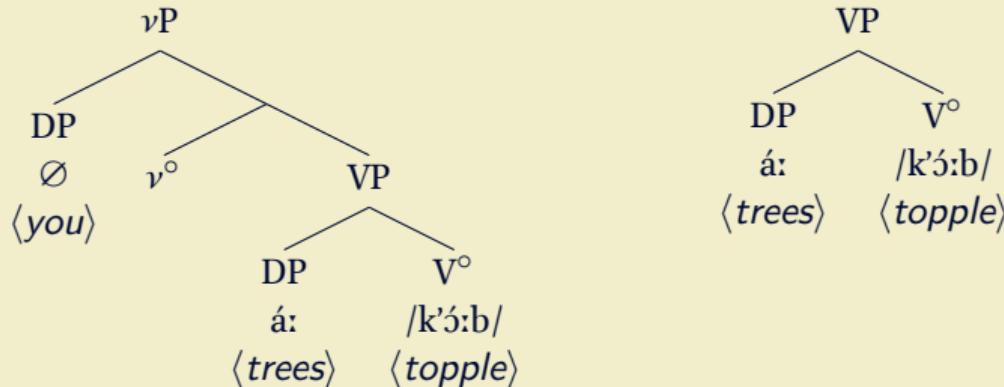
# Anticausatives?

Anticausatives come about from the removal of agentivity  
Kiowa morphosyntax supports this

Harbour 2003, 2008

- (29) á: **mèn**=  
tree **2SGA:3DUO**=  
**k'ò:bè-tò:**  
topple.PFV=**MODAL<sub>VT</sub>**  
'You will push the (2) trees over.'

- (30) á: **è**= **k'ó:báj-tò:**  
tree **3DUS**= topple.DETR.PFV=**MODAL<sub>VI</sub>**  
'The (2) trees will fall over.'



# Detransitives in anticausatives

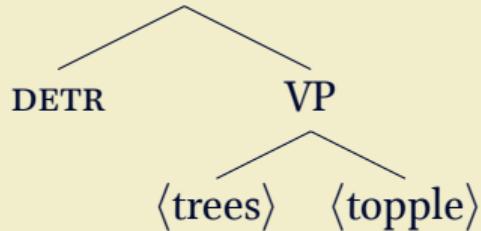
DETR's catalyst: the setting into motion

- (31) a. \***té:gjà** é=                    **t<sup>h</sup>êm**  
            ice    3SGA:3INV O= break.PFV  
            'The ice broke it'
- b. **té:gjà+pè:dò** è=        **t<sup>h</sup>ém-gjá**  
            ice+due to    3INV= break<sub>DETR</sub>-DETR.PFV  
            'It broke because of the ice.'
- c. è=        **té:gjà+t<sup>h</sup>èm-gjá**  
            3INV= ice+break<sub>DETR</sub>-DETR.PFV  
            'It broke because of the ice.'

from Watkins 1984

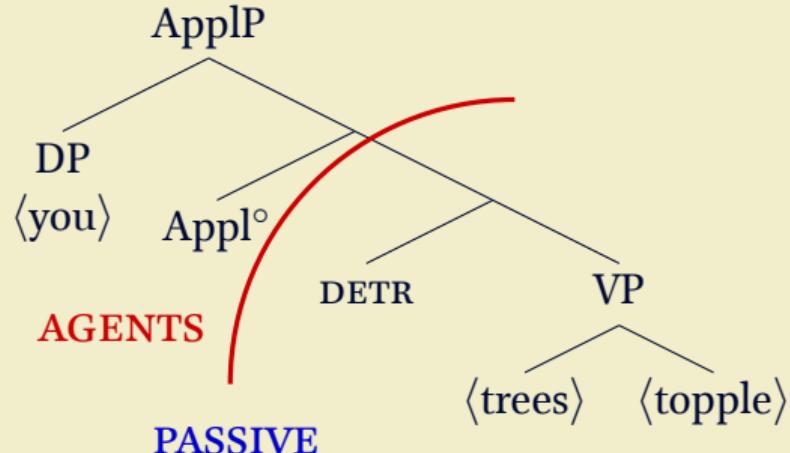
# Working out the catalyst

The catalyst can be controlled → passive



## ANTICAUSATIVE

Asserts: There is a catalyst for the event of the trees toppling.  
Presupposes: The other requirements will be met  
Thus: The trees fell over



## PASSIVE

Asserts: There is a catalyst for the event of the trees toppling whose agent is you  
Presupposes: The other requirements will be met  
Thus: You made the trees fall over

# Valence shift

- ▶ DETR's name suggests its point
- ▶ But here we've shown it indicates a catalyst
- ▶ How does a catalyst interfere with valence ?
- ▶ Semantically: AGENTS must be asserted in full control
- ▶ anything less : oblique or bust

Watkins 1984

# Role of the oblique ‘agent’

Oblique DP's role? Certainly agentive

Dowty 1993

But the AppL can be used for possessors with anticausatives

- (32) á:-dò gó= k'ó:báj-t'ò:  
tree-INV 2SGD:3INV\$= topple.DETR.PFV-MODAL<sub>VI</sub>

‘You will manage to topple the tree.’

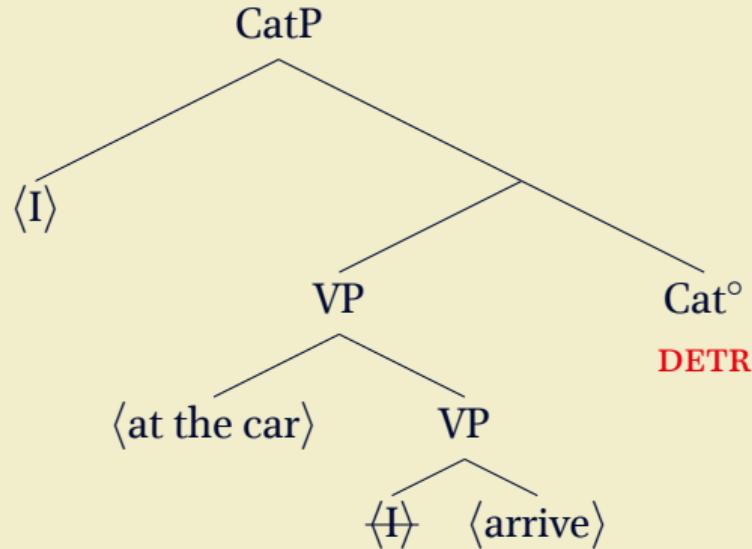
‘Your tree will fall over.’

So it seems to be a vague role

# What kind of head?

Cat<sup>°</sup> introduces DETR. It attracts the internal argument.

- (33) k<sup>h̪ɔ:</sup>-kjà à= tsán-gjá  
car-at 1SG\$= arrive-DETR.PFV  
'I reached the car.'



# A denotation for DETR

Adapting Nadathur 2016

$$(34) \quad [\![\text{DETR}_i]\!]^g = \lambda f \lambda x \lambda c \lambda w : \forall c' [ c' \in \text{Catalyst}(f(g^{i \rightarrow x}(i))(e))(w), c' = c \vee c' \leq w ]. \quad c \leq w$$

Given the VP ( $f$ ):

Presuppose that  $c$  is a catalyst for  $f(x)$  to hold of  $e$  in the world  $w$

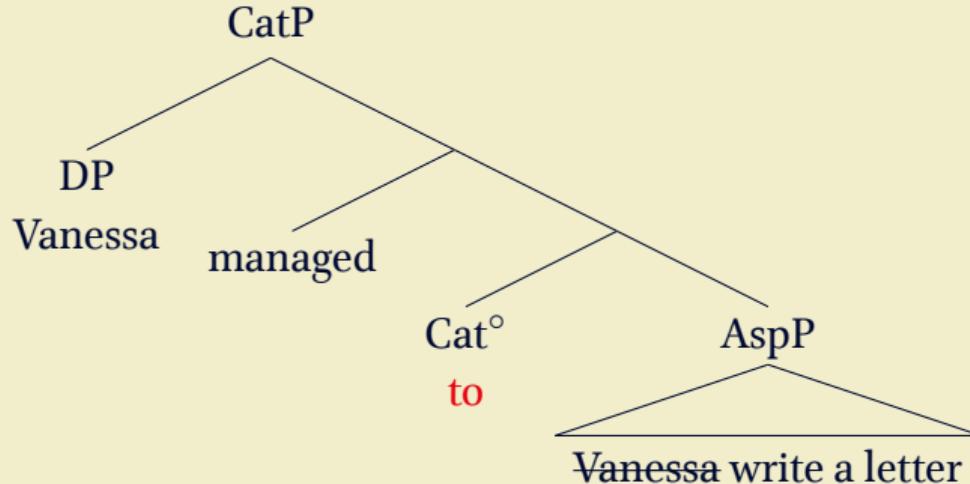
Presuppose that other catalysts for  $f(x)$  to hold of  $e$  in the world  $w$  are part of  $w$

Assert that  $c$  is part of  $w$  (thus actual for the world)

# Implicative verbs

This meaning also works for *manage to*, except that it's higher in the structure.

- (35) Vanessa managed to write a letter



# The role of the verb

As Nadathur points out, the verb really just modifies the catalyst.

- (36) Vanessa dared/bothered/set out to write a letter
- a.  $\llbracket \text{dare}_{\text{IMPL}} \rrbracket = \lambda c \lambda w. c \text{ is daring in } w$
  - b.  $\llbracket \text{bother}_{\text{IMPL}} \rrbracket = \lambda c \lambda w. c \text{ is the least effort in } w$
  - c.  $\llbracket \text{set out}_{\text{IMPL}} \rrbracket = \lambda c \lambda w. c \text{ is an intended start in } w$

*manage*, she says is exceptionally bland

# Managing just fine

Or is it?

As a main verb it essentially means ‘do what is necessary despite difficulties.’

OED *manage*, no 10

- (37) from *Vanity Fair* (Thackeray 1848) : He managed a couple of plates full of strawberries and cream, and twenty-four little rout cakes.
- (38) from *Mrs. Warren's Profession* (Shaw 1895): Not one of them getting wages enough to live on.  
How d'ye suppose most of them manage?

Maybe:  $\llbracket \text{manage}_{\text{IMPL}} \rrbracket = \lambda c \lambda w. c \text{ is what needs to be done in } w$

## Sum up

- ▶ Kiowa detransitives assert partial causing (catalyst)
- ▶ the rest is filled in to get the main event
- ▶ this allows a wide variety of readings without a modal
- ▶ since agents require full control of cause – intransitives
- ▶ splits implicative machinery from implicative verbs

## Sum up

- ▶ Kiowa detransitives assert partial causing (catalyst)
- ▶ the rest is filled in to get the main event
- ▶ this allows a wide variety of readings without a modal
- ▶ since agents require full control of cause – intransitives
- ▶ splits implicative machinery from implicative verbs
- ▶ maybe: catalysts elsewhere in the verbal spine?
- ▶ may clear up other phenomena: AIA, OOC, Greek anticausatives...