Explaining Syntactic Universals
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5. Universals of causative verb formation

1. Some universals from the literature

Universal 22: [implicational] UA#286
If a language has causative verbs derived from transitive bases, then it also has causatives derived from intransitive bases.

Nedjalkov & Sil'nickij (1969:26):
"сли вязыке существуют каузативные аффиксы, служащие для образования V^{j} от V^{tr} то в нем существуют и каузативные аффиксы, служащие для образования V^{j} от V^{in}...Обратное утверждение не будет верным."

Figure 1. *causatives of intransitives:*

causatives of transitives:	exist	do not exist
do not exist	Arabic, Blackfoot, Coos, Estonian, Gothic, **Indonesian**, Klamath, Takelma,...	Chinese, Haruai, ...
exist	Abkhaz, Aymara, Evenki, Finnish, Georgian, Hungarian, Japanese, Mongolian, Nanay, Nivkh, Quechua, Sanskrit, Turkish, **Tuvan**, Yukaghir, Zulu, ...	—

Tuvan (from Sumbatova 1993:254, citing L. Kulikov, p.c.)

(1) a. *ool* *doŋ-gan*
boy freeze-PST
'The boy froze.'
b. *ašak* *ool-du* *doŋ-ur-gan*
old.man boy-ACC freeze-CAUS-PST
'The old man made the boy freeze.'

(2) a. *ašak* *ool-du* *ette-en*
old.man boy-ACC hit-PST
'The old man hit the boy.'
b. *Bajyr* *ašak-ka* *ool-du* *ette-t-ken*
Bajyr old.man-DAT boy-ACC hit-CAUS-PST
'Bajyr made the old man hit the boy.'

(3) a. *Bajyr* *Saryg-ool-ga* *bižek-ti* *ber-gen*
Bajyr Saryg-ool-DAT knife-ACC give-PST
'Bajyr gave Saryg-ool a knife.'
b. *ašak* *Bajyr-dan* *Saryg-ool-ga* *bižek-ti* *ber-gis-gen*
old.man Bajyr-ABL Saryg-ool-DAT knife-ACC give-CAUS-PST
'The old man made Bajyr give a knife to Saryg-ool.'

Indonesian (Cole & Son 2004, ex. 1, 2, 5)

(4) a. *Cangkir-nya pecah.*
cup-DEF break
'The cup broke.'
b. *Tono me-mecah-kan cangkirnya.*
Tono ACT-break-CAUS cup-3
'Tono broke the cup.'

(5) a. *Adik saya sudah mandi.*
brother 1SG already bathe
'My brother has bathed.'
b. *Dia me-mandi-kan adik saya.*
he ACT-bathe-CAUS brother I
'He bathed [= caused to bathe] my brother.'

(6) a. *Dia meng-goreng ayam untuk saya.*
he ACT-fry chicken for I
'He fried chicken for me.'
b. *Dia meng-goreng-kan saya ayam.*
he ACT-fry-CAUS I chicken
'*He made me fry the chicken.' (OK: 'He fried me chicken.')

Universal 23: [implicational]
If a language has causative verbs derived from ditransitive bases, then it also has causatives derived from intransitive bases.

Comrie (1975:11) "a language forms causatives from verbs with valency $n + 1$ only if it forms causatives from verbs with valency n" (and cf. Dixon 2000:56-9)

Figure 2.

causatives of ditransitives:	exist	do not exist
do not exist	Abkhaz, Basque, Dulong/Rawang, Songhai,...	Chinese, Haruai, ...
exist	Tuvan, ...	—

Songhay (Shopen & Konaré 1970, cited after Comrie 1975:9-11)

(7) a. *Feneter di ba.*
window the break
'The window broke.'
b. *Ali ba-ndi feneter di.*
Ali break-CAUS window the
'Ali broke the window.'

(8) a. *Musa nga tasu di.*
Mousa eat rice the
'Mousa ate the rice.'
b. *Ali nga-ndi tasu di Musa se.*
Ali eat-CAUS rice the Mousa DAT
'Ali made Mousa eat the rice.'

(9) a. *Ali neere bari di Musa se.*
Ali sell horse the Mousa DAT
'Ali sold the horse to Mousa.'
b. **Garba neere-ndi bari di Musase Ali se.*
Garba sell-CAUS horse the Mousa DAT Ali DAT
'Garba made Ali sell the horse to Mousa.'

Universal 24: [unrestricted]
If the causal and the plain verbs have the same shape (=if a language has causal ambitransitives), the plain is always patientive/unaccusative, never agentive/unergative.

(hinted at in Hale & Keyser 1993:99; see also Kazenin 1994)

(Hale 2000:159)

	PLAIN VERB	CAUSAL VERB ≠
(10)	*The water boiled.*	*We boiled the water.*
	The shirt dried.	*The sun dried the shirt.*
	The ice melted.	*The heat melted the ice.*
	The glass cracked.	*The high note cracked the glass.*
(11)	*The child laughed.*	**The clown laughed the child.*
	The baby cried.	**The noise cried the baby.*
	Loretta sang.	**We sang Loretta.*

No cross-linguistic evidence, but no (well-)known counterevidence.

Note definitions:
PLAIN VERB = verb denoting non-caused event in a plain/causal verb pair
CAUSAL VERB = verb denoting caused event in a plain/causal verb pair

CAUSAL ≠ CAUSATIVE! (causative: 'derived causal')

Universal 25: [implicational]
If a language has synthetic causal verbs corresponding to agentive/unergative plain verbs, it also has synthetic causal verbs corresponding to patientive/unaccusative non-causatives.

'O'odham (Hale 2000:157-8)

(12)	a.	*hu/uñ*	'descend'	*hu/uñ-id*	'lower'
	b.	*cesaj*	'rise'	*cesaj-id*	'raise'
	c.	*ha:g*	'melt (intr.)'	*ha:g-id*	'melt (tr.)'
	d.	*heum*	'get cold'	*heum-cud*	'make cold'
(13)	a.	*ñe'ë*	'sing'	*ñe'i-cud*	'*make sb. sing' ('sing for sb.)'
	b.	*cikpan*	'work'	*cikpañ-id*	'*make sb. work' ('work for sb.')
	c.	*gikuj*	'whistle'	*gikuj-id*	'*make sb. whistle' ('whistle for sb.')

Hale does not actually make such a claim. He seems to claim the following (2000:160):

> If a language has a class of root-related causal-plain verb pairs, then this class will contain *break*-type verbs (= unaccusatives), but not *laugh*-type verbs (=unergatives).

But this is not a valid universal, because there are languages like Indonesian (see 4-5) where the agentive/patientive (= unergative/unaccusative) distinction is irrelevant, and agentive verbs can also be the base of derived causatives.

So all we can claim is that there is a universal preference for the 'O'odham type, i.e. for causatives to be derived from unaccusatives. But languages can also extend their causative pattern further to unergatives (as in Indonesian) and transitives (as in Japanese).

Figure 3.

causatives of agentives/unergatives	*causatives of patientives/unaccusatives:* exist	do not exist
do not exist	'O'odham, Navajo, Slave, ...	Chinese, Haruai, ...
exist	Indonesian, Japanese, ...	—

Universal 26: [unrestricted]
True causal/plain verb pairs are possible only if the causative verb meaning does not contain agent-oriented manner specifications.

(Haspelmath 1993:94)

(14) Turkish (Comrie 1975:6)
Dişçi mektub-u müdür-e imzala-t-tı.
dentist letter-ACC director-DAT sign-CAUS-PST
'The dentist made the director sign the letter.'
(= 'The dentist did something that caused the director to sign the letter.')

(15) *I opened the door.* (= 'I did something that caused the door to become open.')
The door opened.

(16) *The pig splashed mud on the wall.* (Hale & Keyser 1993:89)
Mud splashed on the wall.

(17) *Leyla broke the pot.* (= 'Leyla did something that caused the pot to break.')
The pot broke.

(18) *The tailor cut the cloth.* (Haspelmath 1993:93)
**The cloth cut.*

(19) *Roy wrote a new novel.* (Levin & Rappaport Hovav 1995:102)
**A new novel wrote.*

(20) *We smeared mud on the wall.* (Hale & Keyser 1993:89)
**Mud smeared on the wall.*

Hale & Keyser (1993:90):
"The manner component modifiers of the verbs of [15-17] are primarily "internal" in their orientation... Thus, "splashing" describes the configuration and motion of the liquid or liquid-like matter corresponding to the internal subject [=patient] of the verb *splash*... By contrast, transitive verbs of the type represented by [18-20] invoke a manner component that relates, not internally to the lexical argument structure, but to the external argument, or "agent"." (cf. also Hale & Keyser 2002:35-6)

Haspelmath (1993:94):
"A verb meaning that refers to a change of state ... may appear in an inchoative/causative alternation unless the verb contains agent-oriented meaning components or other highly specific meaning components that make the spontaneous occurrence of the event extremely unlikely."

Universal 27:
In the class of verbs that show a plain/causal alternation, 'freeze'-type ("**automatic**") verb meanings tend to be expressed as simple/causative verb pairs, whereas 'break'-type ("**costly**") verb meanings tend to be expressed as anticausative/simple verb pairs.

(Haspelmath 1993:104, cf. also Croft 1990)

examples:

(21)		a. Indonesian	b. Japanese	c. Swahili	d. Arabic
'freeze'	(intr.)	*mem-beku*	*kooru*	*ganda*	***ta**-jammada*
	(tr.)	*mem-beku-**kan***	*koor-**aseru***	*gand-**isha***	*jammada*
'break'	(intr.)	*patah*	*war-**eru***	*vunj-**ika***	***in**-kasara*
	(tr.)	*me-matah-**kan***	*waru*	*vunja*	*kasara*

Figure 4.

costly verb meanings ('break') \ *automatic verb meanings ('freeze')*	simple/causative	anticausative/simple
anticausative/simple	Finnish, Hebrew, Japanese, Swahili, Turkish, ...	Arabic, ...
simple/causative	Indonesian, ...	—

"**Automatic**" verb meanings show a much greater likelihood of causative encoding, whereas "**costly**" verb meanings show a much geater likelihood of anticausative encoding:

Haspelmath 1993: 30 verb meanings in 21 languages; verb meanings ranked by ratio of anticausative to causative encoding (non-directed pairs omitted):

Table 1: ***30 verb meanings, from "most automatic" to "most costly" (Haspelmath 1993:104)***

		verbs	Anticausatives	Causatives	A/C ratio
18.	**'boil'**	**21**	**0.5**	**11.5**	**0.04**
25.	**'freeze'**	**21**	**2**	**12**	**0.17**
29.	**'dry'**	**20**	**3**	**10**	**0.30**
1.	**'wake up'**	**21**	**3**	**9**	**0.33**
20.	**'go out/put out'**	**21**	**3**	**7.5**	**0.41**
11.	**'sink'**	**21**	**4**	**9.5**	**0.42**
8.	**'learn/teach'**	**21**	**3.5**	**7.5**	**0.47**
13.	**'melt'**	**21**	**5**	**10.5**	**0.48**
31.	'stop'	21	5.5	9	0.61
23.	'turn'	21	8	7.5	1.07
26.	'dissolve'	21	10.5	7.5	1.40
3.	'burn'	21	7	5	1.40
14.	'destroy'	20	8.5	5.5	1.55
27.	'fill'	21	8	5	1.60
22.	'finish'	21	7.5	4.5	1.67
7.	'begin'	19	5	3	1.67
10.	'spread'	21	11	6	1.83
24.	'roll'	21	8.5	4.5	1.89
16.	**'develop'**	**21**	**10**	**5**	**2.00**
15.	**'get lost/lose'**	**21**	**11.5**	**4.5**	**2.56**
21.	**'rise/raise'**	**21**	**12**	**4.5**	**2.67**
28.	**'improve'**	**21**	**8.5**	**3**	**2.67**
19.	**'rock'**	**21**	**12**	**4**	**3.00**
17.	**'connect'**	**21**	**15**	**2.5**	**6.00**
12.	**'change'**	**21**	**11**	**1.5**	**7.33**
9.	**'gather'**	**21**	**15**	**2**	**7.50**
5.	**'open'**	**21**	**13**	**1.5**	**8.67**
2.	**'break'**	**21**	**12.5**	**1**	**12.50**
6.	**'close'**	**21**	**15.5**	**1**	**15.50**
30.	**'split'**	**20**	**11.5**	**0.5**	**23.00**
total		636	243	164.5	

Statistical ranking, not strict ranking – no strict implications. (But statistical implications are valuable, too!) To simplify the presentation, below I will only look at 'freeze' and 'break'.

Universal 28:
28a. If a language that has causatives of transitives has several causatives of different length, then the longer affixes tend to be used with transitive bases, and the shorter affixes tend to be used with intransitive bases.
(Nedjalkov & Sil'nickij 1969:27)
28b. If a language that has causatives of unergatives has several causatives of different length, then the longer affixes tend to be used with unergative bases, and the shorter affixes tend to be used with unaccusative bases.

Georgian: causatives of intransitives: *a-X-eb-* ***a-duγ-eb-s*** 'boils (tr.)'
causatives of transitives: *a-X-ineb-* ***a-c'er-ineb-s*** 'makes write'

Hale & Keyser (1987:25)
"In Athapaskan languages, for example, the [plain/causal] alternation is marked in the simplest manner, by choice of the so-called 'classifier'..., while the transitivization of unergative verbs like 'walk' and 'run' involves not only this classifier element but special causative prefix morphology as well."

2. The Spontaneity Scale and its predictions: "deductive universals"

Events can be arranged on a scale in the order of **decreasing likelihood of spontaneous occurrence** (as conceptualized by the speaker):

(22) The Spontaneity Scale
ditransitive > monotransitive > unergative > internal unaccusative > automatic > costly > agentful

di-transitive	**mono-transitive**	**unergative**	**automatic**	**costly**	**agentful**
'give'	'cut'	'play'	'freeze'	'break'	'be cut'
transitive		intransitive			
agentive			patientive		
		unergative	unaccusative		
no agent-oriented manner specification in causal member					agent-oriented

Figure 5: ***The seven positions on the Spontaneity Scale and how they are related to the concepts used in §1***

Higher frequency of occurrence generally results in: (cf. in possessive constructions:)
– (i) greater chance of synthetic expression (*id-i* vs. *il-ktieb tiegħi*)
– (ii) greater chance of shorter expression (*moglie-ma* vs. *mia terra*)
– (iii) greater chance of zero expression (*id Sandro* vs. *il-ktieb ta' Sandro*)

(i) The events higher on the scale show a lower proportion of caused occurrences**, so they are *less likely to be expressed synthetically*:**

Universal 29: [implicational]
If a language has any synthetic causal verb, it also has a synthetic causal corresponding to all plain verbs that are lower on the Spontaneity Scale.

N = non-derived
C = synthetic causative (vs. basic plain)
... = only periphrastic causative
A = anticausative (A) = expressed by anticausative if at all

examples of languages with different cut-off points: **Table 2**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
lg-1	...	...	...	...	...
lg-2	...	...	...	...	(A)
Romanian	...	...	...	N	(A)
English	...	...	N	N	(A)
Arabic	...	...	A	A	(A)
Indonesian	...	C	C	C	(A)
Japanese	C	C	C	A	(A)

(ii) The events higher on the scale show a lower proportion of caused occurrences**, so derived causals tend to be *expressed in a longer way*:**

Universal 30: [implicational]
The higher the base of a derived causal is on the Spontaneity Scale, the longer is the causative marker.

examples of languages with different cut-off points: **Table 3**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')
?	(C-lng)	(C-lng)	C-lng	C-sh
Navajo	(C-lng?)	C-lng	C-sh	C-sh
Musqueam	C-lng	C-lng	C-sh	C-sh
Georgian	C-lng	C-sh	C-sh	C-sh

(23) Musqueam Halkomelem (Suttles 2004:234-7), *-t* vs. *-stəx*^{w}

unaccusative	*c'é?*	'land atop'	*c'é?-t*	'put it on top'
	q^{w}*ə́s*	'go into the water'	*q*^{w}*sə́-t*	'put it into the water'
	kwéyəx-əm	'move'	*kwə́yx-t*	'move it'
unergative	*?íməx*	'walk'	*?íməx-stəx*^{w}	'make him walk'
	?ə́łtən	'eat (intr.)'	*?ə́łtən-stəx*^{w}	'feed him'
transitive	*k'*^{w}*éc*	'see'	*k'*^{w}*éc-stəx*^{w}	'show it to him'
	t'$^{\theta}$*x*^{w}*éls*	'wash'	*t'*$^{\theta}$*x*^{w}*éls- stəx*^{w}	'have him wash it'

(iii) The events <u>higher</u> on the scale show a <u>lower</u> proportion of caused occurrences**, so derived causals are *more likely to occur*:**

Universal 31: [implicational]
If a language has any derived causals (=causatives), it also has derived causals for any base higher on the Spontaneity Scale.

examples of languages with different cut-off points: **Table 4**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
lg-3	A	A	A	A	(A)
lg-4	N	N	N	N	(A)
lg-5	deriv-C	A	A	A	(A)
lg-6	deriv-...	N	N	N	(A)
Arabic	deriv-...	deriv-...	A	A	(A)
English	deriv-...	deriv-...	N	N	(A)
Japanese	deriv-C	deriv-C	deriv-C	A	(A)
Indonesian	deriv-...	deriv-C	deriv-C	deriv-C	(A)
lg-7	deriv-...	deriv-C	deriv-C	deriv-C	deriv-C

(iv) Conversely, the events lower on the scale show a higher proportion of caused occurrences, **so derived plains are *more likely to occur*:**

Universal 32: [implicational]
If a language has any derived plains (=anticausatives), it also has derived plains for any base lower on the Spontaneity Scale.

examples of languages with different cut-off points: **Table 5**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
lg-3	deriv-A	deriv-A	deriv-A	deriv-A	(deriv-A)
lg-5	C	deriv-A	deriv-A	deriv-A	(deriv-A)
Arabic	...	...	deriv-A	deriv-A	(deriv-A)
Japanese	C	C	C	deriv-A	(deriv-A)
English	...	...	N	N	(deriv-A)
Indonesian	...	C	C	C	(deriv-A)
lg-7	...	C	C	C	C

(v) In addition, there are a number of **unrestricted (i.e. non-implicational) universals whose general direction is predicted, though their precise cutoff point do not follow directly from the general effects of frequency**:

Universal 33: [cut-off point for universal 29]
All languages have synthetic causals for costly plains and other plains lower on the Spontaneity Scale.

(Because beyond this point, the proportion of caused occurrences is so high that periphrastic causatives are too unlikely.)

This excludes the logically possible types "lg-1" and "lg-2": **Table 6**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
lg-1	...	...	...	...	...
lg-2	...	...	...	...	(A)
Romanian	...	...	...	N	(A)
English	...	...	N	N	(A)
Arabic	...	...	A	A	(A)
Indonesian	...	C	C	C	(A)

These would be languages that have only periphrastic expressions for 'break' or even 'cut', e.g. 'break' is expressed as 'make break', or 'cut' as 'make undergo-a-cutting-process'.

Universal 34: [cut-off point for universal 31]
No language has non-derived causals for unergatives or other plains higher on the Spontaneity Scale.

(Because beyond this point, the proportion of caused occurrences is so low that non-derived causals are too unlikely.)

This excludes the logically possible types "lg-3"-"lg-6": **Table 7**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
lg-3	A	A	A	A	(A)
lg-4	N	N	N	N	(A)
lg-5	deriv-...	A	A	A	(A)
lg-6	deriv-...	N	N	N	(A)
Arabic	deriv-...	deriv-...	A	A	(A)
English	deriv-...	deriv-...	N	N	(A)
Turkish	deriv-C	deriv-C	deriv-C	A	(A)
Indonesian	deriv-...	deriv-C	deriv-C	deriv-C	(A)

These would be languages that either have only ambitransitive verbs for 'laugh/make laugh' or even 'cut/make cut' (e.g. 'I made her laugh' would be expressed by 'I laughed her'; 'I made her cut the bread' would be expressed by 'I cut her the bread').
Or they have anticausatives for the plain verb: 'laugh' would be expressed as 'undergo laughing (tr.)', and 'cut bread' would be expressed as 'make onself cut bread'.

Universal 35: [cut-off point for universal 32]
No language has non-derived (or other) plain verbs for agentful processes ~~or other plains lower on the Spontaneity Scale~~.

(Because beyond this point, the proportion of caused occurrences is so high that non-derived plains are too unlikely.)

This excludes the logically possible type "lg-7": **Table 8**

	mono-transitive ('cut')	**unergative** ('laugh')	**automatic** ('freeze')	**costly** ('break')	**agentful** ('be cut')
Arabic	deriv-...	deriv-...	A	A	(A)
English	deriv-...	deriv-...	N	N	(A)
Turkish	deriv-C	deriv-C	deriv-C	A	(A)
Indonesian	deriv-...	deriv-C	deriv-C	deriv-C	(A)
lg-7	deriv-...	deriv-C	deriv-C	deriv-C	deriv-C

This would be a language where 'cut' is expressed as 'make be-cut'.

3. Universals 22-28: Spontaneity vs. alternative explanations

Universal 22:
If a language has causative verbs derived from transitive bases, then it also has causatives derived from intransitive bases.

Universal 23:
If a language has causative verbs derived from ditransitive bases, then it also has causatives derived from intransitive bases.

- These universals follow directly from the deductive universals 29 and 34.

That the favored status of causatives from intransitive bases has to do with frequency of use is hinted at in Nedjalkov & Sil'nickij (1969:26):

> "В этой же связи следует отметить гораздо бóльшую частотность ситуаций, отображаемых V^{j} от V^{in} (типа 'сжечь'), чем ситуаций, отображаемых V^{j} от V^{tr} (типа 'велеть сжечь')."
>
> "Note in this connection the much higher frequency of situations representing causatives from intransitives (like 'burn (something)') than situations representing causatives from transitives (like 'make (someone) burn (something)')

An **alternative explanation** (the only one I know) is found in Comrie (1975:11):

– Assume the Syntactic Functions Scale ("Case Hierarchy") of Keenan & Comrie 1977 as part of universal grammar:
Subject – DO – IO – Obl (– Gen – OComp)

– Assume that the Causee is underlyingly a Subject, but must be demoted in causatives; it takes the highest available position on the Scale.

– Assume that the demotion can be limited by languages, so that it is allowed "only down to a certain level on the Scale, but no further".
Songhay, Basque: allow demotion to IO, but no further
Indonesian etc.: allows demotion to DO, but no further

All these assumptions (presumably all part of universal grammar) can be dispensed with on the frequency-based explanation.

> (Sometimes language-particular accounts of the restricted productivity of causatives are given; e.g. Alalou & Farrell 1993 for Middle Atlas Berber, Cole & Son 2004 for Indonesian. Such accounts could be correct, but the universal preference and its explanation reduce the motivation for them.)

Universal 24: [unrestricted]
If the causal and the plain verbs have the same shape (=if a language has causal ambitransitives), the plain is always patientive/unaccusative, never agentive/unergative.

- This universal follows directly from the deductive universal 34.

I know of **no alternative explanations**.

exceptions: (Levin & Rappaport Hovav 1995:111)

(24) a. *The soldiers marched to their tents.*
b. *The general marched the soldiers to their tents.*
(25) a. *The horse jumped over the fence.*
b. *The rider jumped the horse over the fence.*

This is possible with manner of motion verbs in English, as well as with a few others (*The baby burped/The nurse burped the baby; The flashlight shone/We shone the flashlight*). It seems to be very rare cross-linguistically.

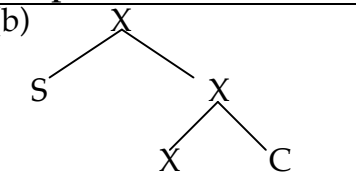
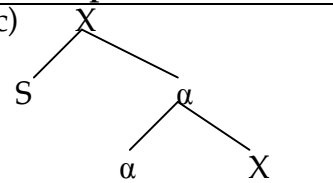
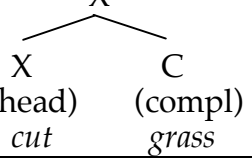
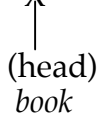
Such occasional violations of a cut-off point universal are not a problem for the frequency-based explanation.

Universal 25: [implicational] If a language has synthetic causal verbs corresponding to agentive/unergative plain verbs, it also has synthetic causal verbs corresponding to patientive/unaccusative non-causatives.

• This universal follows directly from the deductive universal 29.

An elaborate **alternative explanation for the preference for causative/unaccusative pairs (over causative unergative pairs)** has been offered by Hale (2000) (see also Hale & Keyser 1993, 2002).

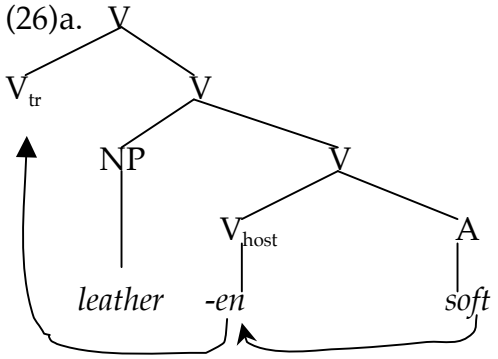
Universal Grammar offers four different posibilities for heads (X) to combine with other elements:

Figure 6. (Hale 2000:162; Hale & Keyser 2002:13)	**head X takes complement C**	**head X takes no complement**
head X takes specifier S	(b) 	(c) 
head X takes no specifier	(a) 	(d) 

Hale 2000:163: "The existence of these types, it is reasonable to assume, is universal and invariant... (but) nothing forces a one-to-one correspondence between the structural projection of a nuclear element and the morphosyntactic category which realizes it (English: P, A, V, N)."

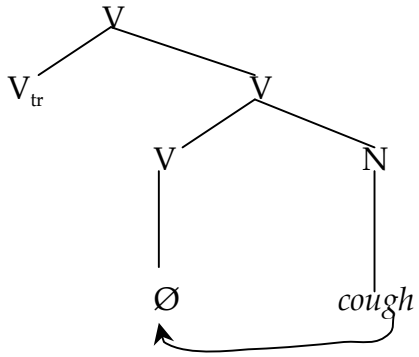
"If adjectives are (c)-class heads and nouns are (d)-class heads, the difference among verbs derived from them follows pretty straightforwardly..."

(26)a.



the leather softens/
(someone) softens the leather

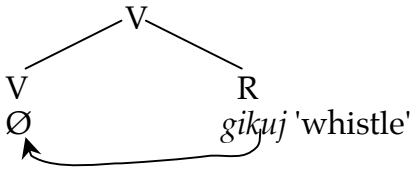
b.



(someone) coughs/
**(someone) coughs someone*

This explanation is OK for deadjectival and denominal verbs, but it cannot be extended to other verbs. But Hale does just this:

(Hale 2000:167; Hale & Keyser 2002:138) "It is **the behavior of a verb**, not its form, which **gives evidence of its argument structure**. Since the [unergative verbs] behave as they do, their argument structure type is defined straightforwardly..."



"Since [this figure] is an (a)-type structure, **it follows** that it cannot be further transitivized as a causative."

But the behavior that gives evidence of its argument structure is precisely the behavior with respect to causativization! The reasoning is completely circular.

Note also that the interesting observation made by Hale, that "the **same** verbs fall into the alternating and non-alternating classes in unrelated languages" (2000:160) refers exclusively to **verb meaning**. Hale has not shown that they are similar with respect to other grammatical behavior. So it is not surprising that an explanation where meaning plays no role fails.

Universal 26: [unrestricted]
True causal/plain verb pairs are possible only if the causative verb meaning does not contain agent-oriented manner specifications.

- This universal follows directly from the deductive universal 35.

alternative explanation (sketched) in Hale & Keyser (1993:91), Hale & Keyser (2002:34-37):

Agent-manner features (notation: $_{\{i\}}$) need an external binder; patient-manner features can be internally bound:

(27)	a.	*Leecil*$_{\{i\}}$		*smeared*$_{\{i\}}$	*saddle soap*	*on my chaps.*
	b.		**Saddle soap*	*smeared*$_{\{i\}}$		*on my chaps.*
(28)	a.	*The pigs*		*splashed*$_{\{p\}}$	*mud*$_{\{p\}}$	*on the wall.*
	b.		*Mud*$_{\{p\}}$	*splashed*$_{\{p\}}$		*on the wall.*

> Hale & Keyser (1993:90-91): "...the manner component of the verb smear receives no licensing index in the LRS [lexical relational structures] representation...The intransitive variant is formed by moving the internal subject into [Spec, IP]. If this raising process applied to the verbs in question, the appearance of an external argument would be blocked. This would prevent licensing of the manner component of these verbs, violating Full Interpretation."

This seems to be just a fancy way of saying that verbs with an agent-oriented manner component need to occur with an expressed agent

Exceptions: St'át'imcets (=Lillooet) Salish (Davis 2000:42-3)

(29) intransitive (agentful)		transitive	
qaḿt	'be hit (by thrown object)'	*qaḿt-š*	'hit (by throwing)'
ʔuš	'get thrown out'	*ʔuš-č*	'throw out'
q ́wəl	'be cooked'	*q ́wə́l-ən*	'cook'
ʔacx̣	'be seen'	*ʔácx̣-ən*	'see'
ɬwal	'be abandoned'	*ɬwál-ən*	'abandon'

Such occasional violations of a cut-off point universal are not a problem for the frequency-based explanation.

Universal 27:
In the class of verbs that show a plain/causal alternation, 'freeze'-type ("**automatic**") verb meanings tend to be expressed as simple/causative verb pairs, whereas 'break'-type ("**costly**") verb meanings tend to be expressed as anticausative/simple verb pairs.

- This universal follows directly from the deductive universal 31-32.

I know of **no alternative explanation**.

The automatic/costly distinction as a challenge (I-II):

(I) Levin & Rappaport Hovav (1995:ch. 3) seem to assume that *additional morphology means additional meaning* (p. 87-88) – English 'break (intr.)' is derived from 'break (tr.)' (p. 108):

(30) transitive *break*

LSR	[[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]
Linking rules	
Argument structure	*x* <*y*>

(31) intransitive *break*

LSR	[[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]
Lexical binding	Ø
Linking rules	
Argument structure	<*y*>

Since intransitive 'break' requires an additional operation, it is expected that it should be coded as **anticausative** in languages with morphological coding of plain/causal pairs.

> Cf. also Koontz-Garboden's (2005) **Principle of Monotonic Composition** (inspired by Levin & Rappaport Hovav's (1998:103) discussion of monotonicity): "The idea is that while meaning, in the form of event structure operators, can be added to an event structure as a consequence of word formation processes for example, meaning may not be removed."

Counterevidence: plain/causal alternations showing **causative** coding

Saving monotonicity:
Plains are in fact (conceptualized as) **internally caused verbs** (i.e. almost a type of unergative; typical internally caused verbs are *rot*, *rust*, *decay*, *blossom*, *deterirorate*):

> "It is likely that this cross-linguistic variation arises because the meaning of a verb such as melt is consistent with its describing either an internally or an externally caused eventuality. In fact, it should be possible to verify this prediction by looking at the range of subjects found with melt in various languages; presumably, in languages where melt is internally caused, it will only be found with ice or ice cream or other substances that melt at room temperature as its subject when intransitive (Levin & Rappaport Hovav 1995:100)."

French	*fondre/faire fondre*	'melt (intr.)/melt(tr.)'
Arabic	*saaħa/sayyaħa*	
Finnish	*sulaa/sula-ttaa*	
Georgian	*ga-dn-eba/ga-a-dn-obs*	
Hindi/Urdu	*pighal-naa/pighl-aa-naa*	
Hungarian	*olvad/olvasz-t*	
Indonesian	*men-cair/men-cair-kan*	
Lezgian	*c'uru-n/c'uru-run*	
Mongolian	*xajl-ax/xajl-uul-ax*	
Turkish	*eri-mek/eri-t-mek*	

(II) Haspelmath (1993:87) assumed a similar principle (cf. also Jacobsen 1985):

> "The formally derived (or marked) words are generally also semantically derived in that they have some additional meaning element that is lacking in the formally basic (or unmarked) word. This correlation between the formal and the semantic basic-derived (or markedness) relationships has been identified as an instance of **diagrammatic iconicity**."

But he assumed a different semantic relationship between inchoatives (=plains) and causals:

(32) 'break (intr.)': [*y* BECOME *BROKEN*]]
'break (tr.)': [[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]

Counterevidence: plain/causal alternations showing **anticausative** coding (as was recognized by Mel'čuk 1967, who used such cases to argue against an iconicity/monotonicity principle).

Saving iconicity/markedness:

> "Iconicity in language is based [not on objective meaning but] on conceptual meaning... Events that are more likely to occur spontaneously will be associated with a conceptual stereotype (or prototype) of a spontaneous event, and this will be expressed in a structurally unmarked way." (Haspelmath 1993:106-7)

Better alternative solution: discard monotonicity/iconicity/markedness, explain coding asymmetries by frequency asymmetries.

Universal 28:
28a. If a language that has causatives of transitives has several causatives of different length, then the longer affixes tend to be used with transitive bases, and the shorter affixes tend to be used with intransitive bases.
(Nedjalkov & Sil'nickij 1969:27)
28b. If a language that has causatives of unergatives has several causatives of different length, then the longer affixes tend to be used with unergative bases, and the shorter affixes tend to be used with unaccusative bases.

• These universals follows directly (as special cases) from the deductive universal 30.

I know of **no alternative explanation**.

A length difference has also been observed for different types of causatives, not just for different bases (cf. Dixon 2000:74-78):

(33)		**indirect causative**	**direct causative**
a.	Amharic (Haiman 1983:786, Hetzron 1976:379)	*as-bälla* CAUS-eat 'force to eat'	*a-bälla* CAUS-eat 'feed'
b.	Hindi (Dixon 2000:67, Saksena 1982)	*ban-vaa-* be.built-CAUS 'have sth. built'	*ban-aa-* be.built-CAUS 'build'
c.	Jinghpaw	*-shangun*	*sha-* (Maran & Clifton 1976)
d.	Creek	*-ipeyc*	*-ic* (Martin 2000)

(34)	**longer marker**	**shorter marker**
	action	state
	transitive	intransitive
	causee having control	causee lacking control
	causee unwilling	causee willing
	causee fully affected	causee partially affected
	accidental	intentional
	with effort	naturally

It is plausible to assume that the same explanation holds here – the causatives with longer markers are those that occur less often than those with the shorter marker.

4. Evidence from usage frequency for the Spontaneity Scale

claim: the higher a verb meaning is on the Spontaneity Scale, the less frequently it will occur in a caused context, i.e.

increasing frequency:

'make sb. cut sth.' – 'make sb. talk' – 'make sth. freeze' – 'make sth. break ' – 'make sth. be cut '
(=break sth.) (=cut sth.)

Ideally to be tested on a language that uses the same causative construction for all these types, in the best case ambitransitives – but such languages don't exist!

Very preliminary suggestive data from English [please don't quote!]
(BNC; boldface percentages from Wright 2001:127-28):

	causal		**plain**	
agentful	*cut*	100%	*undergo cutting*	0%
costly	*break (tr.)*	**90%**	*break (intr.)*	**10%**
	open (tr.)	**80%**	*open (intr.)*	**20%**
	split (tr.)	78%	*split (intr.)*	22%
(intermediate)	*burn (tr.)*	**76%**	*burn (intr.)*	**24%**
automatic	*melt (tr.)*	**72%**	*melt (intr.)*	**28%**
	freeze (tr.)	**62%**	*freeze (intr.)*	**38%**
	dry (tr.)	**61%**	*dry (intr.)*	**39%**
	sink (tr.)	58%	*sink (intr.)*	42%
internally caused	*sprout (tr.)*	**33%**	*sprout (intr.)*	**67%**
	rot (tr.)	**14%**	*rot (intr.)*	**86%**
	rust (tr.)	**5%**	*rust (intr.)*	**95%**
agentive intransitive	*make laugh*	20.8%	*laugh*	...
	make cry	6.0%	*cry*	
	make jump	5.6%	*jump*	
	make vomit	2.6%	*vomit*	
	make dance	1.8%	*dance*	
	make weep	1.1%	*weep*	
	make sing	0.4%	*sing*	
	make wait	0.4%	*wait*	
transitive	*make throw*	0.13%	*throw*	
	make buy	0.11%	*buy*	
	make accept	0.10%	*accept*	
	make kill	0.05%	*kill*	
	make avoid	0.05%	*avoid*	
	make hit	0.03%	*hit*	
	make build	0.01%	*build*	
	make destroy	0.00%	*destroy*	100%
	make teach	0.00%	*teach*	100%

Table 9.

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