

Causation with a middle twist

Voice and causative-middle syncretism in Indonesian Austronesian

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Overview: What the talk needs to explain

empirical puzzle

Austronesian languages repeatedly show overlap between

- CAUS
- MID / RECIP
- PLURAC / distributive

But the formal patterns are not all identical.

theoretical tools

We combine:

- LFG modular/parallel structures (Dalrymple et al 2019, Arka et al. 2021)
- RRG-style Logical Structure (van Valin 2005)
- Spencer's (2010, 2013) GPFM

claim

The syncretism is not accidental homophony.

It reflects a principled outcome of morphological packaging of partially overlapping semantic-constructional and argument structure organisation.

Key contrast: formal syncretism ≠ full semantic identity

Defining CAUS/MID syncretism: form vs meaning

SYNCRETISM

Descriptive: one exponent realises more than one grammatical or constructional function

In this talk, syncretism includes: (i) derivational/lexical-constructional property bundles (cf. Spencer 2010, 2013); (ii) partial syncretism (cf. Baerman et al. 2005: 59)

MIDDLE SEMANTICS

Low-elaboration affected-subject construal: the Actor/Initiator is affected, internally involved, mutually co-participating, or not maximally distinct from the affected participant (cf. Kemmer 1993).

Middle form

language-specific exponent encoding some subset of the middle domain

Middle meaning

reflexive · reciprocal · body action ·
self-instigated · spontaneous ·
antipassive-like, ...

Causative overlap

only when the lexical/constructional entry permits A/U overlap or affectedness

The empirical landscape

- The ‘**complete**’ **MID/CAUS syncretism** (e.g., *pa-*) will be shown primarily with reference to Enggano, Kodhi, Nias, and Sipora Mentawai
 - However, for a nuanced analysis we also discuss ‘**partial formal syncretism**’ using data points from other Austronesian languages of Indonesia such as Balinese (*ma-* ‘MID’ vs. *pa-* ‘MID/PLURAC/CAUS’) and Indonesian (*ber-/bel-* ‘MID’ vs. *per-* ‘CAUS (with implied/embedded MID)').
- The ‘complete’ syncretic exponent (*pa-*) is always positioned AFTER AV/non-AV morphology where it appears, but is at times retained in languages where voice morphology disappears

CAUS/MID syncretism in Enggano

- CAUS and MID both have the form *pa-* in Enggano
- This appears after *bu-* (< PMP AV **<um>*) where it is present

be i-**pa**-ka'a:ua'a:è kia na'ani

Because 3-**MID**-know-FUT 3SG later

'Because one would otherwise recognise him.' (Kähler 1975, tr. Zobel and Hemmings 2024:194)

a-kinèn hapù ã' ka-püha' **pa**-kom
if-how day DEM.PROX 3-be.able.to **MID**-meet
'(in the future) as in today, (we) can **meet**' (Rajeg, Hemmings & Arka 2024)

ka-Ø-**pa**-'ueh year=de ean
3-BU-**CAUS**-sleep child=3SG.POSS DEM

'They lay the child down.' (Hemmings to appear)

CAUS/MID syncretism in Kodhi

- CAUS/MID both have the form *pa-~ha-* in Kodhi
- Although voice morphology has disappeared from Kodhi, as with many languages of the Central MP area, the CAUS/MID slot persists

a=**pa**-tobhoko

3PL.NOM=**RECIP**-meet

'They meet each other.' (Ghanggo Ate in progress)

na=**ha**-mohho=ya tobhbho
3SG.NOM=**CAUS**-destruction=3SG.ACC plate

'He destroyed the plate.' (Ghanggo Ate and Arka 2024)

CAUS/MID syncretism in Nias

- MID has the form *fa-*; CAUS has diverse forms *f-*, *fe-*, *fa-*
- *fa-* seems to be associated with 'direct causation' (Brown 2001:233)

fa-bözi ira

MID-hit 3PL.MUT

'They hit each other/one another.'

la-**fa**-sindro gehomo

3PL-**CAUS**-stand pillar

'They erected the pillar.' (Brown 2001:233, 235)

CAUS/MID syncretism in Sipora Mentawai

- CAUS/MID both have the form *pa-* in Sipora Mentawai
- This appears after *m-* (< PMP AV **<um>*) where it is present

a-lepa?-an ra-**pa**-tibo
REAL-finished-PRF 3PL-**MID**-speak

'They have spoken.'

ku-**pa**-lina? motor
1-**CAUS**-clean motorcycle

'I will clean the motorcycle.'

toga=nia m-asi-pa-lolit lalep=ta
child=DEF **AV-TR-CAUS**-dirty house=1PL.INCL.POSS

'The child dirtied our house.' (Keith and Tatubeket in progress)

Partial CAUS/MID/PLURAC syncretism in Balinese

after **paR* (MID) / **paN* (PLURAC) merger in this language

ROOT	MID: intransitive	CAUS: transitive	NOTE
<i>tegeh</i> ‘high’	<i>ma-tegeh-an</i> ‘X (has been CAUSED to) become higher’	<i>pa-tegeh-an/pa-tegeh-in</i> ‘X CAUSE Y to be higher/as high as possible’	{inchoative.middle, (anti)-causative }

ROOT	MID: intransitive	PLURAC-MID: intransitive	NOTE ON PLURAC-MID
<i>gelut</i> ‘hug’	<i>ma-gelut</i> ‘X hug each other’	<i>pa-gelut</i> ‘X[PL] hug each other collectively/ simultaneously’	{recip, group/event plurality}
<i>saut</i> ‘answer’	<i>ma-saut</i> ‘X answer’	<i>pa-saut</i> ‘X[PL] answer at once; possibly reciprocal’	{speech.middle, pluractional co-participation}
<i>kenyem</i> ‘smile’	<i>ma-kenyem</i> ‘X smile briefly/spontaneously’	<i>pa-kenyem</i> ‘X[PL] smile briefly/ spontaneously together’	{spontaneous/punctual, plural simultaneity}

MID and PLURAC are semantically adjacent but not identical; root semantics controls whether *pa-* is available.

DISCUSSION

- Logical (conceptual) Structure:
lexical-aspectual classes and fine-grained representations
- Causative-middle-pluractional semantic overlap/compatibility:
accounting for the distribution and patterns of complete/partial
syncretism in Indonesian Austronesian

CAUSE_fused

- We propose the a-structure schema CAUSE_fused and related LCS (Logical Conceptual Structure) to deal with CAUS/MID/PLURAC syncretism
 - It's part of the 'lexical properties' of the exponent *pa-*.
- This schema differs from CAUSE_disjoint, used for non-MID CAUS/APPL morphemes (e.g., reflexes of **akān/*i*, as in Arka 1993; Arka et al. 2009), in that it permits A and U to be fused or coindexical
 - Role fusion is indicated by the same index (e.g., *i*) in the a-structure, or by the same argument variable (e.g. *x* or *A/U*) in the semantic LCS.

A-structure:

CAUSE_fused < $\begin{array}{c} \text{SUBJ} \text{ OBJ} \\ | \quad | \\ \text{ }_i \quad (\text{ }_{ij}) \\ \hline (\text{A}) \quad (\text{U}) \end{array}$, STEM.PRED <..., A/U , ...>

CAUSE_disjoint < _{-i} , (_{-j}) , STEM.PRED <..., _{-} , ...>
 $(\text{A}) \quad (\text{U})$ A/U

LCS (Logical Conceptual Structure):

pelajari 'study/learn', with CAUSE_fused:

[do'(x, study'(x,y))] CAUSE [BECOME know'(x, y)]

besar-kan 'enlarge', with CAUSE_disjoint:

[do'(x, ∅)] CAUSE [BECOME big'(y)]

Why RRG-style Logical Conceptual Structure (LCS)?

We need a semantic representation fine-grained enough to distinguish **types of “causation”**, and **related semantic constraints** associated with the stem (e.g. ‘scalar’ [SCALE+] associated with CAUSE_fused (*pa-*), but not with CAUSE_disjoint).

- **CAUSE is not one thing:**

causation relates two Logical Structures: α **CAUSE** β , where α and β may be **states, activities, achievements, accomplishments**, etc.

- **Lexical-aspectual class matters:**

- BECOME pred'(x) = telic change into a result state
- do'(x, [pred'(...)]) = activity/process
- PROC/SCALE+ pred'(x,d) = scalar process/increase along a degree scale
- α CAUSE β = causative relation between event structures

Distinguishing CAUSE_fused from CAUSE_disjoint in LCS

Type	LCS schema	Example
Strong CAUSE_fused: A/U overlap or role fusion	$\Sigma_{i,j} [\text{do}'(x_i, V'(x_i, x_j))]$, $x_i = A$ relative to x_j , $x_i = U$ relative to x_j	Enggano <i>ki-pa-pù-pù</i> ‘see each other’ (vs. <i>ki-pù</i> ‘see P’), <i>pa-kom</i> ‘meet each other’
Weak CAUSE_fused: ¹ scalar/processual affectedness without A=U	$[\text{do}'(A)] \text{ CAUSE } [\text{PROC SCALE+ pred}'(U, d)]$	Indonesian <i>per-besar</i> ‘make bigger/enlarge’
CAUSE_disjoint	$[\text{do}'(A)] \text{ CAUSE } [\text{BECOME pred}'(U)]$, $A \neq U$	Indonesian <i>besar-kan/besar-in</i> ‘make big’; <i>mati-kan/mati-in</i> ‘make dead’
Collective/pluractional middle	$[\text{do}'(X_{pl}, V'(X_{pl}))] / \text{COLL-PROC } V'(X_{pl})$	Enggano <i>ki-pa-ru-ru</i> ‘gather together’

Note 1: causation is fused with internal scalar development of U, a middle-compatible property; the scalarity of *per-* overlaps with middle semantics, but only partially.

CAUSE_fused and CAUSE_disjoint: Explained

- The CAUS/MID-RECIP/PLURAC syncretism is **predictable from**, or **constrained by** the interaction of the semantic properties of the stem/root and the morphosyntactic feature bundles involved:
 - The strong CAUSE_fused allows A=U fusion (e.g., Enggano), or scalar/processual affectedness with (implied) causation without A=U fusion (e.g. Indonesian *per-debat-kan*, *per-besar*). These semantic properties **overlap** with (typical) middle semantics giving rise to CAUSE/MID syncretism.
 - CAUSE_disjoint imposes **no A=U fusion** by default, and has no middle-semantics overlap

Predicting output readings from root semantics and feature bundles:

GPFM predicts output readings by matching input root semantics with morphosemantic feature bundles

Input root profile	Feature bundle σ	Output reading	Example
see'(x,y), transitive perception	{middle, reciprocal, cause.fused}	Strong CAUSE_fused: reciprocal A/U overlap	Enggano <i>ki-pa-pù-pù</i> 'see each other'
meet'(x,y), relational interaction	{middle, reciprocal}	reciprocal middle	Enggano <i>pa-kom</i> 'meet each other'
gather'(Xpl), collective event	{middle, pluractional, collective}	Collective/pluractional middle	Enggano <i>ki-pa-ru-ru</i> 'gather together'

Predicting output readings from root semantics and feature bundles:

Input root profile	Feature bundle σ	Output reading	Example
big'(y,d), gradable state	{cause.fused, scalar}	Weak CAUSE_fused: scalar affectedness	Indonesian <i>per-besar</i> 'make bigger'
visible'(y,z,d), perceptual access	{cause.fused, scalar, applicative}	Manifestation causative	Indonesian <i>per-lihat-kan</i> 'show/make visible'
(result-)state root	{cause.disjoint, applicative}	Ordinary disjoint causative	Indonesian <i>besar-kan, mati-kan</i>
normative/evaluative root: problem'(y,C,d)	{cause.fused, scalar, applicative}	Problematisation causative: increase Y's problematonicity in context C	Indonesian <i>mem-per-masalah-kan</i> 'problematise/make an issue of'
speech/activity root: answer'(x)	{middle}	General activity middle	Balinese <i>ma-saut</i> 'answer'
speech/activity + plural co-participation	{middle, pluractional, reciprocal}	PLURAC-MID; many participants act/respond together, possibly reciprocally	Balinese <i>pa-saut</i> 'many answer at once, possibly reciprocally'
learning/educational root: study'(x,y)	{middle, cause.fused, learning}	Affected-learner causative; Actor is also affected as learner	Indonesian <i>bel-ajar, pel-ajar-i</i> ; Balinese <i>mal-ajah, pel-ajah-in</i>

GPFM implementation

$\text{GPF}(\langle \text{LEXEME}, \sigma \rangle) = \langle \text{LEXEME}' \rangle$

component functions:

fFORM → morphophonological form

fSYN → syntactic distribution / valency

fSEM → LCS / semantic-constructional content

fLI → lexemic identity / relatedness

For our present discussion, the feature bundle σ includes morphosemantic features:

{ transitive, (speech.)middle, pluractional, reciprocal, cause.fused, cause.disjoint, actor.voice, ... }

General schema for -kan

$\text{GPFM}_{\text{CAUS}}(\langle L_V, \sigma: \{\text{intrans}, \text{disjoint.cause}\} \rangle) =$
 $\text{F.FORM}_{\text{CAUS}}(\langle L_V, \sigma \rangle) = \langle \text{Xkan}, \sigma' \rangle$
 $\text{F.SYN}_{\text{CAUS}}(\langle L_V, \sigma: \{[\text{intrans}: \text{SUB}j i] \} \rangle) = \langle \text{Xkan}, \sigma': \{[\text{trans}: \text{SUB}j j, \text{OBJ} i] \} \rangle$
 $\text{F.SEM}_{\text{CAUS}}(\langle L_V, \sigma \rangle) = \langle \text{Xkan}, \sigma': [\text{do}'(A_j, \emptyset)] \text{ CAUSE } [\text{BECOME pred}'(P_i)] \rangle$
 $\text{F.LI}(\langle L_V, \sigma \rangle) = \text{CAUSE}(L_V)$

INPUT: *jatuh*

OUTPUT: *jatuhkan*

$\text{GPFM}_{\text{CAUS}}(\langle \text{JATUH}_V, \sigma: \{\text{intrans}, \text{disjoint.cause}\} \rangle) =$
 $\text{F.FORM}_{\text{CAUS}}(\langle \text{JATUH}, \sigma \rangle) = \langle \text{jatuhkan}, \sigma' \rangle$
 $\text{F.SYN}_{\text{CAUS}}(\langle \text{JATUH}, \sigma: \{[\text{intrans}: \langle \text{SUB}j i \rangle] \} \rangle) = \langle \text{jatuhkan}, \sigma': \{[\text{trans}: \langle \text{SUB}j j, \text{OBJ} i \rangle] \} \rangle$
 $\text{F.SEM}_{\text{CAUS}}(\langle \text{JATUH}, \sigma \rangle) = \langle \text{jatuhkan}, \sigma': [\text{do}'(A_j, \emptyset)] \text{ CAUSE } [\text{BECOME pred}'(P_i)] \rangle$
 $\text{F.LI}(\langle \text{JATUH}, \sigma \rangle) = \text{CAUSE}(\text{JATUH})$

Deriving Nias MID/CAUS syncretism with *fa-*

- ***fa-bözi*** ‘hit each other’ = MID/RECIP derivation: transitive root → intransitive reciprocal-middle output, with distributed A/U overlap.
- ***la-fa-sindro*** ‘they erect P’ = CAUS derivation: intransitive/stative-position root → transitive causative output, with A ≠ U.

General schema:

$\text{GPFM_RECIP-MID}(<L_v, \sigma:\{\text{trans, middle, reciprocal, cause.fused}\}>) =$
 $\text{F.FORM_RECIP-MID}(<L_v, \sigma>) = <\text{fa-X}, \sigma'>$
 $\text{F.SYN_RECIP-MID}(<L_v, \sigma:\{[\text{trans}:<\text{SUBJ}_i, \text{OBJ}_j>]\}>) = <\text{fa-X}, \sigma':\{[\text{intrans}:<\text{SUBJpl.i/j}>]\}>$
 $\text{F.SEM_RECIP-MID}(<L_v, \sigma>) = <\text{fa-X}, \sigma': \text{RECIP}[\text{do}'(\text{x}_i, \text{V}'(\text{x}_i, \text{x}_j))], i \neq j>$
 $= <\text{fa-X}, \sigma': \Sigma_{i,j} [\text{do}'(\text{x}_i, \text{V}'(\text{x}_i, \text{x}_j))], i \neq j>$
 $\text{F.LI}(<L_v, \sigma>) = \text{RECIP-MID}(L_v)$

INPUT: *bözi* ‘hit’ → OUTPUT: *fa-bözi* ‘hit each other/one another’

$\text{GPFM_RECIP-MID}(<\text{BÖZI}_v, \sigma:\{\text{trans, middle, reciprocal, cause.fused}\}>) =$
 $\text{F.FORM_RECIP-MID}(<\text{BÖZI}, \sigma>) = <\text{fa-bözi}, \sigma'>$
 $\text{F.SYN_RECIP-MID}(<\text{BÖZI}, \sigma:\{[\text{trans}:<\text{SUBJ}_i, \text{OBJ}_j>]\}>) = <\text{fa-bözi}, \sigma':\{[\text{intrans}:<\text{SUBJpl.i/j}>]\}>$
 $\text{F.SEM_RECIP-MID}(<\text{BÖZI}, \sigma>) = <\text{fa-bözi}, \sigma': \Sigma_{i,j} [\text{do}'(\text{x}_i, \text{hit}'(\text{x}_i, \text{x}_j))], i \neq j>$
 $\text{F.LI}(<\text{BÖZI}, \sigma>) = \text{RECIP-MID}(\text{BÖZI})$

Deriving Nias MID/CAUS syncretism with *fa-*

- ***fa-bözi*** ‘hit each other’ = MID/RECIP derivation: transitive root → intransitive reciprocal-middle output, with distributed A/U overlap.
- ***fa-sindro*** ‘they erect P’ = CAUS derivation: intransitive/stative-position root → transitive causative output, with $A \neq U$.

General schema:

GPFM_CAUS(< L_V , σ :{intrans/state, disjoint.cause}>) =

F.FORM_CAUS(< L_V , σ >) = <*fa-X*, σ' >

F.SYN_CAUS(< L_V , σ :{[intrans:]}>)
= <*fa-X*, σ' :{[trans:<SUBJj, OBJi>]}>

F.SEM_CAUS(< L_V , σ >)
= <*fa-X*, σ' : [do'(Aj, Ø)] CAUSE [BECOME pred'(Pi)]>

F.LI(< L_V , σ >) = CAUSE(L_V)

INPUT: *sindro* ‘stand’ →

OUTPUT: *fa-sindro* ‘cause to stand, erect’

GPFMCAUS(<SINDROv, σ :{intrans/state, disjoint.cause}>) =

F.FORM_CAUS(<SINDRO, σ >) = <*fa-sindro*, σ' >

F.SYNCAUS(<SINDRO, σ :{[intrans:]}>)
= <*fa-sindro*, σ' :{[trans:<SUBJj, OBJi>]}>

F.SEMCAUS(<SINDRO, σ >) = <*fa-sindro*,
 σ' : [do'(Aj, Ø)] CAUSE [BECOME stand'(Pi)]>

F.LI(<SINDRO, σ >) = CAUSE(SINDRO)

When voice system Fades, CAUS/MID remains:

Retention without voice alternation in Kodhi

In Kodhi, AN voice has disappeared

- (a) a=**pa-tobhoko**
3PL.NOM=**RECIP**-meet
'They meet each other.'
- (b) a=**tobhoko**=ya
3PL.NOM=meet=3SG.ACC
'They met him.'

- No robust AV/UV/PASS alternation comparable to Balinese.
- But CAUS/MID *pa-* syncretism persists.
- Expected: no SUBJ/OBJ/OBL linking alternations of A/U arguments as in languages with robust voice systems.
- Instead, *pa-* directly derives CAUS/MID outputs from root semantics and feature bundles.

General schema:

GPFM_RECIP-MID(<LV, σ :{trans, middle, reciprocal, cause.fused}>) =

F.FORM_RECIP-MID(<L_V, σ >) = **<pa-X, σ '>**

F.SYN_RECIP-MID(<L_V, σ :{[trans:<SUBJ_i, OBJ_j>]}>) = **<pa-X, σ ':{[intrans:<SUBJ_{pl.i/j}>]}>**

F.SEM_RECIP-MID(<L_V, σ >) = **<pa-X, σ ': $\Sigma_{i,j}$ [do'(xi, V'(xi,xj))], i ≠ j>**

F.LI(<L_V, σ >) = **RECIP-MID(L_V)**

DERIVING RECIP-MID *taboko* (intrans.) from *tabhoko* (trans.):

GPFM_RECIP-MID(<TOBHOKO, σ :{trans, middle, reciprocal, cause.fused}>) =

F.FORM_RECIP-MID(<TOBHOKO_V, σ >) = **<pa-tobhoko, σ '>**

F.SYN_RECIP-MID(<TOBHOKO_V, σ :{[trans:<SUBJ_i, OBJ_j>]}>) = **<pa-tobhoko, σ ':{[intrans:<SUBJ_{pl.i/j}>]}>**

F.SEM_RECIP-MID(<L_V, σ >) = **<pa-tobhoko, σ ': $\Sigma_{i,j}$ [do'(xi, V'(xi,xj))], i ≠ j>**

F.LI(<L_V, σ >) = **RECIP-MID(TOBHOKO)**

Lexeme-building vs. argument-linking

- CAUS/MID morphology is lexeme-building:
 - it contributes semantic content to LCS and changes the LI of the lexeme.
- Voice morphology is argument-linking:
 - it takes the derived CAUS/MID lexeme as input and maps its arguments to grammatical functions.
- **GPFM ordering:**
 - inner derivation before voice/linking;
 - CAUS/MID **first**;
Voice/linking **second**

ROOT / BASE LEXEME

↓

CAUS/MID GPF

changes FORM + SEM/LS + LI

builds CAUSE_fused, CAUSE_disjoint, RECIP-MID, PLURAC-MID may enrich valency or fuse roles

↓

VOICE / LINKING GPF

maps existing A / non-A arguments to SUBJ

AV: Actor → SUBJ

NAV/PASS: non-Actor / Undergoer → SUBJ

Sigulai: *ma-pe-eba* / *ni-pe-eba*

AV-CAUS-big / NAV-CAUS-big

Sipora Mentawai: *m-asi-pa-lina?*

AV-TR-CAUS-clean

This explains why CAUS/MID syncretism can persist after AV/NAV attrition, as in Kodhi.

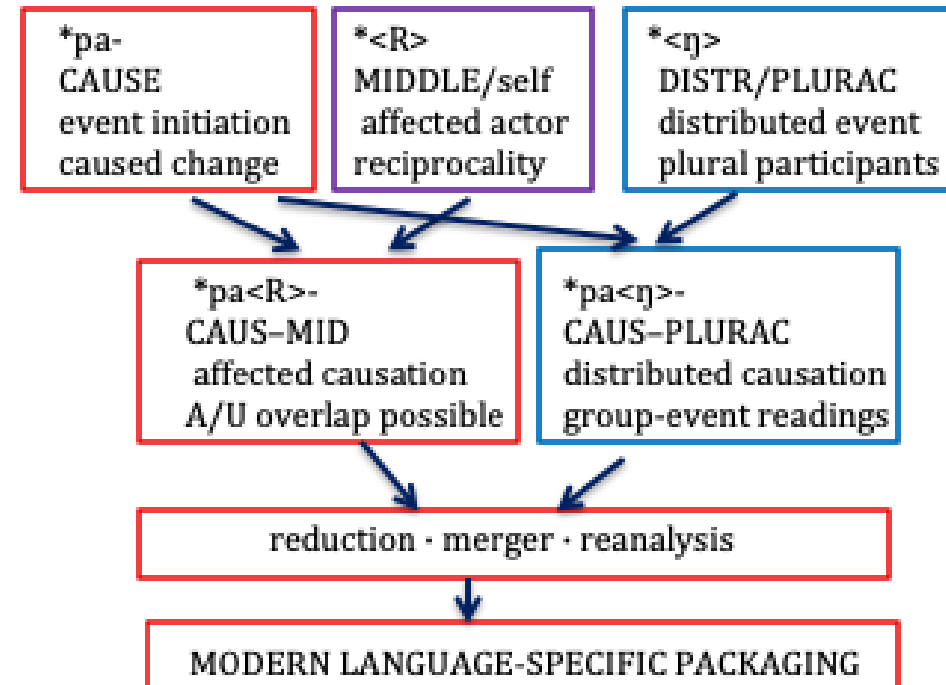
Historical packaging → modern repackaging of CAUS, MID, and PLURAC (cf. Kaufman 2009, 2018)

- In all the languages surveyed, CAUS/MID syncretism is represented by reflex of PMP **pa-*
- PMP is typically reconstructed with a CAUS **pa-*, but MID as **R-* or **paR-* (Kaufman 2009, 2018)
- Reconstructing the first development of CAUS/MID syncretism is difficult at such a time-depth, but its repeated emergence in multiple branches suggests it is not accidental
- Balinese suggests a route where **pa<η>*-like distributive/ pluractional material can merge with MID and yield PLURAC–MID readings.

Take-home point:

- diachrony supplies separable pieces; synchrony repackages them according to root semantics and constructional feature bundles.

HISTORICAL SEMANTIC FORMATIVES



Enggano	<i>pa-</i>	complete CAUS/MID syncretism
Kodhi	<i>pa-/ha-</i>	CAUS/RECIP-MID after voice loss
Nias	<i>fa-</i>	CAUS + RECIP-MID in same formal zone
Sipora	<i>pa-</i>	CAUS/MID, with voice-stacked variants
Indonesian	<i>per-</i>	scalar CAUSE_fused; contrast with -kan/-in
Balinese	<i>pa-</i>	PLURAC-MID; merger/reallocation of MID + PLURAC

Conclusion

- **Empirically:** CAUS/MID/PLURAC syncretism recurs across Indonesian-area Austronesian.
- **Theoretically:** the pattern is principled **semantic packaging**, not accidental homophony and not full semantic identity.
- **Semantic core:** MIDDLE = low-elaboration affected-subject construal. It overlaps with CAUSE only in fused configurations: self-instigated change, affected-Actor causation, reciprocal A/U overlap, scalar affectedness, and pluractional co-participation.
- **Key distinction:**
CAUSE_fused packages causation with affectedness, scalarity, A/U overlap, or internal event organisation.
CAUSE_disjoint introduces ordinary result-state/applicative causation.
- **Morphological model:** LFG/GPFM-style parallel structures capture how FORM, SYN, SEM/LS, and LI compete and interact, constrained by specificity and root compatibility.
- **Explanatory payoff:** the analysis accounts for complete and partial syncretism and CAUS/MID persistence after voice attrition, as in Kodhi.
- **Future directions:** extend the analysis across Austronesian and beyond, focusing on how causative, middle, reciprocal, reflexive, and pluractional morphology become packaged, reduced, and reallocated over time.

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