The Simple Story of Complex Causatives

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1. What introduces argument relations: the verb, or its context?
2. Answers distinguished clearly in Mandarin and Igbo:
   Grammar of CCs demands that verbs in these languages have no arguments lexically
   Relations introduced structurally, and outside the minimal CC predicate
3. Two parts to this talk:
   i) The argument from transitive CCs in Igbo and Mandarin
   ii) Implications for the role of direct objects in CC structure

1 Introduction

1.1 Two models for argument relations

(1) Al pounded the cutlet

- pound cooccurs with two argument NPs
- one names the PATIENT of pounding, and the other the AGENT

☐ **Question** What contributes this information in the derivation of (1)?

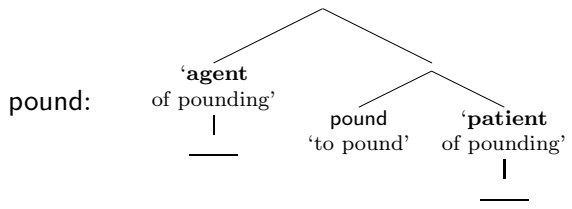
☐ **Possible answers**

1. The lexical representation of the verb
2. The grammatical context of the verb

1. **The projectionist model**

   Associate a description of the relations V must enter with the lexical representation of V

   (2) $[\![\text{pound}]\!] = \lambda y \lambda x \lambda e.[\ \textit{pound}(e) \wedge\ \text{PAT}(e) = y\ \wedge\ \text{AG}(e) = x\ ]$



   Arguments are treated as arguments *of the lexical verb*.

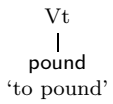
2. The nonprojectionist model

Relations are stated over structures separate from V, into which V may be inserted

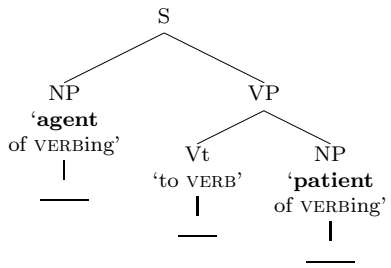
(3) a. Grammar: $\text{S} \rightarrow \text{NP VP}$
$\text{VP} \rightarrow \text{Vt NP}$
$\text{Vt} \rightarrow \textsf{pound}$

b. Semantics:
$$[\![\ [_{\text{S}}\ \text{NP}\ \ \text{VP}\ ]\ ]\!] = \lambda e.[[\![\text{VP}]\!](e) \wedge \text{AG}(e) = [\![\text{NP}]\!]]$$
$$[\![\ [_{\text{VP}}\ \text{Vt}\ \ \text{NP}\ ]\ ]\!] = \lambda e.[[\![\text{Vt}]\!](e) \wedge \text{PAT}(e) = [\![\text{NP}]\!]]$$
$$[\![\textsf{pound}]\!] = \lambda e.\mathit{pound}(e)$$

(4) pound:



(5) Grammar:



- It will be adequate to just compare the denotations of the verb:

(6) Projectionist: $\lambda y(\lambda x)\lambda e.[\mathit{pound}(e) \wedge \text{PAT}(e) = y\ (\wedge\ \text{AG}(e) = x)]$

(7) Nonprojectionist: $\lambda e.\mathit{pound}(e)$

☐ **Difference** The two models differ in whether or not 'argument structure' is associated lexically with individual verb roots

☐ **No difference** There is no necessary difference in what they say about (e.g.) *poundings*

Even under the nonprojectionist model, we can say that pound describes only events that, in fact, have an AGENT and a PATIENT:

(Dowty 1989:84–5)

(8) $\forall e.\Box[\mathit{pound}(e) \rightarrow \exists x \exists y[\text{AG}(e) = x \wedge \text{PAT}(e) = y]]$

☐ **Question** For a given relation, why choose one representation or the other?

It can be very difficult to distinguish the two models empirically.[1]

[1] Challenges to the long-dominant projectionist model include: Carlson 1984, Schein 1992, Goldberg 1995, Kratzer 1996, Marantz 1997, Borer 1994, 2003, Pietroski 2005.

☐ **Claim** Facts from Mandarin and Igbo CCs distinguish the two models very clearly

1. Projectionist model: (even the Marantz/Kratzer mixed model)
   (a) Cannot explain the facts from Mandarin and Igbo
   (b) Implies cross-linguistic difference on implausible dimensions

2. Nonprojectionst model: (verbs lexicalize *no* argument relations)
   (a) Facts follow directly
   (b) Implies a natural point of cross-linguistic difference

1.2 Complex Causatives

(9) **English**
Al pounded the cutlet flat

(10) **Mandarin**
tā tī duàn -le nàtiáo mùbǎn
3s kick snap -PFV that plank
'He made that plank snap by kicking it'

(11) **Igbo**
O kụ wa -ra ọba ahụ
3sS strike split -FACT gourd that
'He made that gourd split by striking it'
(ex. Hale et al. 1995)

☐ **Form** 'Means predicate' (M) and 'result predicate' (R)
M, R not introduced by a conjunction, complementizer, etc.
(9): M = pound, R = flat
(10): M = tī 'kick', R = duàn 'snap'
(11): M = kụ 'strike', R = wa 'split'

☐ **Meaning** An 'event of causation,' in which an M event 'causes' an R event;[2]
some individual changes state, entering a condition defined by R.

Terms: the phrase that names this individual '**controls**' R

Our topic: understood thematic relations to M
(9): Al names agent of pounding and the cutlet names patient

[2]This is just a rough characterization in conventional terms. For the sort of analysis I have in mind, see Pietroski 2005: Ch. 3, §1. An 'event of causation' is essentially a process of change.

- Today I'll talk only about what I call 'transitive' CCs, where O controls R.

(12) Transitive (O controls R)
  a. Al pounded the cutlet flat.
  b. Ozzy yelled his throat hoarse.

(13) Intransitive (S controls R)
  a. The lake froze solid.
  b. The door swung shut.

In English transitive CCs have both S and O, while intransitive CCs have only a surface S.

1.3 Relevance of CCs

☐ **Observations**

1. CCs often best analyzed as *complex predicates*:

   ((V_M + R) + Object)

   That is, M is a V, not a VP.

   – Adverbs cannot describe the M event alone

2. V is evidently the same verb in the CC as in a simple clause: same morphology, same aspectual properties

☐ **Predictions**

1. If requirement for argument is a lexical property of V:

   (a) CC will inherit the requirements V shows in simple clauses

   (b) No problem thematically relating V to an argument generated *outside* the minimal complex predicate, V_MR

2. If argument is introduced by structural context of V:

   (a) No prediction that the CC inherits the simple clause grammar of V

   (b) Not possible to relate V to an argument generated outside the CC predicate, given 'rule-to-rule' compositionality

1.4 English CCs and verbal valence

☐ **Observation** English verbs characteristically express the same requirements when serving as M in a CC as when heading a simple clause[3]

1. A verb in M requires a certain argument type to the extent it requires it in a simple clause

   Patients/Themes:

   (14) Al yelled (slogans)

   (15) Al yelled his throat hoarse

   (16) Al hammered ?(nails)

   (17) ? Al hammered his wrist sore

   (18) a. Al cut *(the frozen meat)
   b. Al carried *(the luggage)
   c. Al smacked *(the countertop)

   (19) a. * Al cut the knife dull
   b. * Al carried his neck sore
   c. * Al smacked his hand black and blue

   (Essentially the same goes for agents; excluded for time)

2. A verb in M finds its notional thematic relata bearing the same grammatical relations in the CC clause that they would have in a simple clause

   (20) a. Al yelled slogans
   b. * The slogans yelled Al hoarse

   (21) a. Rocky's fists pounded the ice
   b. * The ice pounded Rocky's fists bloody

☐ **Terms** English verbs characteristically show 'uniform projection'
English has the 'uniform projection property' (UPP)

☐ **Inferences** Uniform projection is explained if argument requirements are stated as **lexical properties of the verb**[4]

– since lexical properties will be expressed wherever the verb occurs
(Levin & Rappaport 1995: Ch.2)

[3] Dowty 1979:222, Carrier & Randall 1992:187, Levin & Rappaport Hovav 1995:39; see Williams 2005: 102–114 for discussion of seeming counterexamples.

[4] The implication only goes one way. If CCs are **not** complex predicates, and M is instead a VP (as in e.g. Carrier and Randall 1992 or Déchaine 1993), then uniform projection is predicted whether arguments project from the verb or not, since the verb's immediate syntactic environment will be the same in CCs as in simple clauses.

Part I: Patients and transitive CCs in Igbo and Mandarin

2 Arguments in Igbo and Mandarin

□ **Preview** Igbo and Mandarin do not have the UPP

The relations a verb must enter in simple clauses are (in principle) not required when the verb is in M

□ **Basic description**

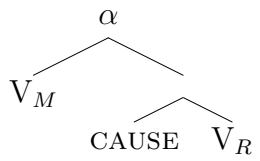
(22) **Mandarin**
tā tī duàn -le nàtiáo mùbǎn
3s kick snap -PFV that plank
'He made that plank snap by kicking it'

(23) **Igbo**
Ọ kụ wa -ra ọba ahụ
3sS strike split -FACT gourd that
'He made that gourd split by striking it'

- – The predicates in M and R are both verbs;
  - – R cannot be phrasal (cannot include an adverb);
  - – S M-R O:
    M and R cannot be separated by NPs, adverbs, tense/aspect morphemes, etc.

- For these reasons it is agreed that both M and R are just verbs, and not VPs
  Igbo and Mandarin CCs are, unequivocally, complex predicates
  (Lord 1975, Hale et al. 1995; Thompson 1973, Y. Li 1990, Huang 1992, etc.)

- Assume:



$[\![\alpha]\!] = [\![\text{CAUSE}]\!]([\![\text{V}_M]\!],[\![\text{V}_R]\!])$

2.1 Unrealized patients

□ **Observation** A verb that requires a patient in simple clauses will not require a patient when serving as M in a CC, quite generally

(For Mandarin: L. Li 1980, Lü 1986, Ma 1987, Tan 1991, etc.)

1. Examples from Mandarin

(24) tā hái qiē dùn -le nǐde càidāo
3s also cut dull -LE your food.knife
'He also made your cleaver dull by cutting.' (Adapted from Ma 1987:428)

(25) a. * tā qiē -le
1s cut -PFV
Int.: 'I cut'
(Can mean: 'He cut <u>it</u>')

b. * tā qiē -le nǐde càidāo
3s cut -LE your cleavers
Int. 'I cut with your cleaver'

(26) wǒ cā zāng -le liǎngkuài móbù
1s wipe dirty -LE two towels
'I made two towels dirty by wiping.' (ex. Wang 1995:148, tr. AW)

(27) a. * wǒ cā -le
1s wipe -PFV
Int.: I wiped
(Can mean: 'He wiped <u>it</u>')

b. * wǒ cā -le liǎngkuài móbù
1s wipe -LE two towels
Int.: 'I wiped using two towels'
(Can mean: 'I wiped two towels')

2. Examples from Igbo

(28) O bi -kpụ -rụ mma (n' osisi)
3sS cut -blunt -rV knife (P wood)
'He made the knife blunt by cutting (at wood).'

(29) b. * O bi -ri (ebi)
3sS cut -FACT (BVC)
Int.: He cut [stuff]

(30) * O bi -ri mma
3sS cut -FACT knife
Int.: He cut with a knife

(31) O gwu -ji -ri ọgụ
3sS dig.up -snap -FACT hoe
'He made the hoe snap digging up [e.g. yams]'

(32) a. * O gwu -ru (egwu)
3sS dig -rV (BVC)
Int.: 'He dug up [stuff]'

b. * O gwu -ru ọgụ (na ji)
3sS dig.up -rV hoe (P yam)
Int.: 'He dug with his hoe (at yams)'

2.2 Apparent patients found in unexpected positions

□ **Observation** A verb in M may seem to find a notional patient in the *subject* of the clause

(For Mandarin: L. Li 1980, Lü 1986, Ma 1987, Y. Li 1990, Tan 1991, etc.)

1. Examples from Mandarin

(33) a. yīfú xǐ lèi -le jiějiě
clothes wash tired -PFV elder.sister
'The clothes made big sister tired from [her] washing [it]' (Ren 2001:326, tr. AW)

b. * yīfú xǐ -le jiějiě
clothes wash -PFV elder.sister
Int.: 'Big sister washed the clothes'

2. Examples from Igbo

(34) a. % Ji ahụ gwu -ji -ri ogụ ya
yam that dig.out -snap -FACT hoe 3sPOSS
'That yam snapped his yam by [his] digging [it] out.'

b. * Ji ahụ gwu -ru ya
yam that dig.out -FACT 3s
Intended: 'He dug out that yam.'

2.3 Synopsis

□ **Facts**

1. Relations a verb must enter when in simple clauses, it need not enter when in M
2. Interpretation of S and O with respect to V is fixed in simple clauses, but largely free when V is in M
3. Yet two aspects of interpretation do stay fixed even in these cases:
   (a) Subject is understood as the 'causer' (AGENT of causation)
   (b) Object controls R

□ **Goal** Account for these facts simply, and in a way that locates the difference between Igbo/Mandarin and English on a plausible dimension of variation.

3 The No Argument Theory

□ **Proposal** The facts follow directly if:

1. Patients (and agents) are typically not arguments of the verb in Igbo and Mandarin
2. CCs in Igbo and Mandarin are complex predicates, with the distribution of a simple verb

3.1 NAT basics and simple clauses

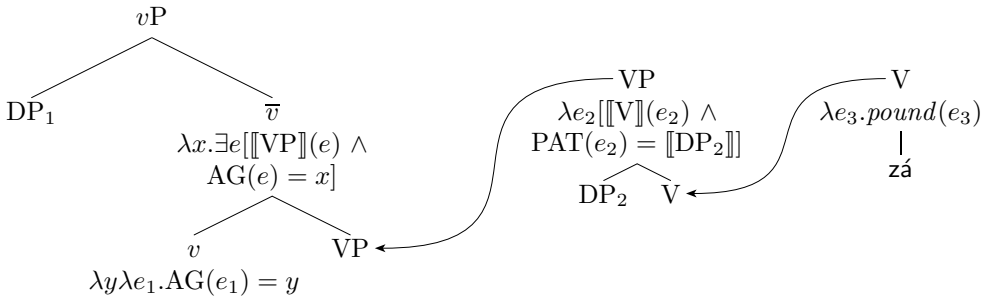
□ **No Argument Theory**

1. Verbs in Mandarin and Igbo characteristically 'have no arguments', neither agents nor patients They denote sets of events simply:

(35) **Mandarin** 'cut': $[\![\text{qiē}]\!] = \lambda e.cut(e)$
Igbo 'pound': $[\![\text{bi}]\!] = \lambda e.cut(e)$

2. Thematic relations are instead introduced by the environment in which the verb occurs (whether by heads or interpretive rules)

(36) Implementation (cp. Kratzer 1996)



□ **Consequence** Interpretation of complements in simple clauses is fixed:
The grammar establishes that the object names the patient of the V event, and the subject names the patient

3.2 The NAT and complex causatives

☐ **Given** Igbo and Mandarin CCs are complex predicates (M is just a verb)
Thus the M verb enters **no** 'thematic structure' before combining with R

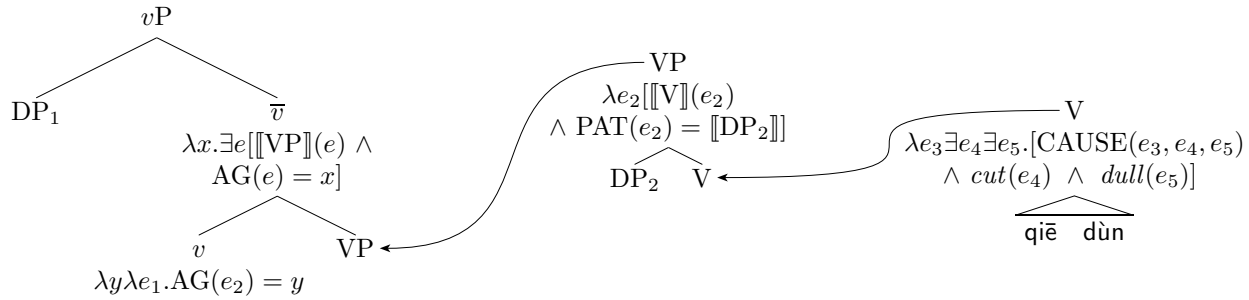
☐ **Consequence** The denotation of the complex predicate MR specifies no thematic relations to the M event individually

$[\![\text{MR}]\!]$ = A set of events of causation, where an M event causes an R event
$[\![\text{MR}]\!] = \lambda e \exists e_1 \exists e_2 [\textsc{cause}(e, e_1, e_2) \wedge M(e_1) \wedge R(e_2)]$

$[\![$qiē dùn 'cut dull'$]\!] = [\![$bi kpụ 'cut dull'$]\!]$
$= \lambda e \exists e_1 \exists e_2 [\textsc{cause}(e, e_1, e_2) \wedge \mathit{cut}(e_1) \wedge \mathit{dull}(e_2)]$

☐ **Assumption** The CC complex predicate enters the same slot as a simple verb:

(37) Derivation of CC clause



(38) $[\![\ v\text{P}\ ]\!] = \lambda e.[\text{CAUSE}(e, e_1, e_2) \ \wedge \ \mathit{kick}(e_1) \ \wedge \ \mathit{snap}(e_2) \ \wedge \ \text{PAT}(e) = [\![\text{DP}_1]\!] \ \wedge \ \text{AG}(e) = [\![\text{DP}_2]\!]\ ]$
(cp. Rothstein 2001:158–9)

☐ **Consequence**

· The semantics tells us *only*:

1. The subject is the agent of causation
2. The object is the patient of causation

· So interpretation with respect to M and R is free –

– except insofar as this is constrained:

1. semantically, by stated AG and PAT relations to CAUSE
2. inferentially, by what we know about M or R events, etc.

This vagueness is what accounts for the data

3.3 Control of R and the structure of events of causation

□ **Assumption** Any definition of the predicates PAT and CAUSE has (39) as a consequence:

(39) If x is the PATIENT of a event of causation with result event e_r, then x is the PATIENT of e_r

Compare Parsons (1990:119) on BECOME: "The Theme of [BECOME's] event is the same as the Theme of its Target state:
$\text{BECOME}(e, s) \rightarrow [\text{Theme}(e, x) \equiv \text{Theme}(s, x)]$"

□ **Consequence** Control of R follows definitionally from being the patient of causation.

(E.g. 'The knife' controls 'dull' because it is the patient of causation)

- Thus the object's relation **to R** is **not** vague; it is fixed by the semantics
  Yet it comes about **by entailment**, not by a relation stated in the logical form[5]

3.4 Attractions of the theory

- The NATs explanation of the facts:

  1. Derives **solely** from:
     (a) Defining the lexical denotations
     (b) The accepted fact that CCs are complex predicates

  2. Implies a natural point of cross-linguistic difference:
     · Difference follows just from the presumed difference in valence:

Mandarin 'cut':	⟦qiē⟧	=	$\lambda e.cut(e)$
Igbo 'cut':	⟦bi⟧	=	$\lambda e.cut(e)$
English 'cut':	⟦pound⟧	=	$\lambda x \ldots \lambda e.[cut(e) \ \wedge \ \text{PAT}(x, e) \ldots]$

     · This seems a plausible point of variation:
     Verbs which describe similar events do not always have the same apparent 'valence' properties, even within a single language:

     (discuss vs. argue, donate vs. give, write vs. xiě 'write')

[5]Evidently no definitional postulates relate the Agent of CAUSE to the M event—and this is as we should expect, since one can initiate a change by means of an event of which one is not the agent. Of course there does seem to be a default inference: the agent of causation is the agent of its means.

4 Alternatives

1. Conditional ambiguity

   (a) A verb may have several different lexical argument structures
   (some violating the 'Thematic Hierarchy')

   (b) But most are permitted only in the M context

2. Nonfunctional CC formation (Y. Li 1990, 1995; cp. Williams 2001)

   (a) When a verb is in M, the syntactic realization of its arguments is entirely arbitrary

   (b) So combining M and R yields multiple outputs, from the same two inputs

3. Destructive CC formation

   (a) When a verb is in M, its argument structure is deleted, or suppressed by ∃-binding

   (b) Understood thematic relations to M are inferred (as in the NAT, and cf. Sybesma 1999)

□ **Basic problem** *Why* is the M context special?

Why should some argument structures be licit only in M?
Why should CC formation permute the arguments of M?
Why should CC formation suppress the arguments of M?

And why in Mandarin and Igbo, but not English?

No natural answer is obvious

□ **Conclusion** The alternatives are empirical failures

It is impossible to explain Igbo and Mandarin, so long as arguments in simple clauses are taken to project from the verb.

5 Size doesn't matter

□ **Objection** In English, R is phrasal, while in Igbo and Mandarin R is a lexical head
So maybe M is a special context in Mandarin and Igbo
because it's part of a 'lexical compound'

□ **Response**
1. There is no reason 'compounding' should have these effects
2. Evidence from Mandarin that size of R is *not* what matters

□ **The Mandarin V-*de* Construction** [$_{VP}$ V-de (NP) VP_2]
'V such that (NP) VP'

(40) tā hǎn -dé wǒmén dōu lùoxià -le yǎnlèi
3s scream -DE we all fall -PFV tear
'He screamed such that we all shed tears' (L. Li 1963:405)

□ **Agreed** V and VP_2 combine to form a **complex predicate**
(L. Li 1963, Huang 1988)

□ **Observation** The V-*de* construction shows the same effects as the V-V CC:

1. Thematic relations required in simple clauses may go unrealized

(41) a. wǒ pāi Lǎo Wèi -de mǎpì, kūa -dé lián ta tàitài yě bùhǎoyìsī le
1s smack Lao Wei's horse-rump, praise DE even his wife also embarrassed PRT
'Flattering Wei, I praised [him] such that even his wife got embarrassed'

b. * wǒ kūa -le
3s praise -PFV
Int. 'He praised'

c. * . . . (tā) kūa (tā) -dé (tā) lián tā tàitài yě bùhǎoyìsī le
(him) praise (him) DE (him) even his wife also embarrassed -PRT
Int.: '. . . praised him such that even his wife got embarrassed'

2. Notional thematic relata may be found in unusual places:

(42) wāndòu chī -dé rén tǔi fā ruǎn
peas eat -DE people legs go soft
'Peas make people go weak in the legs from eating them' (L. Li 1963:405, citing Liu Ke)

□ **Conclusion** The lack of 'uniform projection' has to do with **complex predicate formation** generally, and not with the size of the secondary predicate[6]

Part II: Objects in Resultatives

6 Patients of causation and the DOR

- Because Mandarin and Igbo lack the UPP, they allow us to clearly distinguish the structure of CCs from the structure of the verbs that occupy them

  Because English has the UPP, the two things are often confounded, resulting in a variety of arbitrary constraints on the semantic structure of CCs

- The confound is persistent in discussions of the DOR.

  (43) Direct Object Restriction (DOR)
  The phrase that controls R is always the underlying direct object of its clause.
  (Simpson 1983, Levin and Rappaport Hovav 1995)

  The direct object restriction is about the direct object **of the clause**; it is not about relations to the means verb:

  (44) a. Ozzy yelled his throat hoarse.
  b. * Ozzy yelled his throat.

- Still we find attempts to explain the DOR in terms of semantic relations to the means event.

  (45) Wrong but common type of idea:
  The patient of the result eventuality must bear some particular thematic relation to the means event.

  With the results of Part I, we will see more clearly what the mistakes are.

7 The DOR in Mandarin (and Igbo)

- For me, the DOR comes to this:

  (46) a. O identifies the patient of the VP event.
  b. Hence when the predicate is a CC, O controls R.

  Seen like this, the DOR is in no sense a constraint on either syntactic or semantic structures, much less a constraint on CC structure in particular[7]

  It is a consequence of what predicates of change *mean*, given the blunt distributional fact that such predicates occur in VPs with objects

- Subtract the Unaccusative Hypothesis from the DOR, and you have (47).

(47) Theory-neutral content of the DOR, correctly understood

a. Surface O controls R iff the CC refers to an agent of causation

b. Surface S controls R iff the CC does not refer to an agent of causation

- It should thus be clear that Mandarin sentences like (48) do **not** defy the DOR, *pace* Li 1995

(48) a. tā zǒu fá -le.
3s walk weary -LE
'I got weary from walking.'

b. tā hē zuì -le.
3s drink drunken -LE
'He got drunk from drinking.

True, the surface subject is construed as the agent of the means event
But absent the UPP, this does **not** mean that it is the underlying subject

Even in (48) the subject is demonstrably **not** an agent wrt the VP event:

(49) Lǎo Wèi zuò -le shénme?
L.W. do -PFV what
'What did Lao Wei do?'

a. # (tā) zǒu fá -le.
L.W. walk -weary -LE
'Lao Wei got weary from walking.'

b. # (tā) hē zuì -le.
(3s) drink drunk -LE
'S/he got drunk from drinking.'

[7]Notice, for example, that in each of the following pairs, the ungrammaticality of *a* and *b* have precisely and literally the same explanation. This is not possible unless we recognize a nonlexical patient relation to the event of causation.

(1) a. * Rocky's fists pounded the frozen meat bloody.
Intended: 'Rocky's fists got bloody from their pounding the frozen meat.'

b. * Cliff decapitated the window.
Intended: 'The window decapitated Cliff.'

(2) a. * Ozzy yelled hoarse.
Intended: 'Ozzy made himself hoarse by yelling.

b. * Cliff decapitated.
Intended: 'Cliff decapitated himself.

8 Rappaport Hovav and Levin 2001

☐ **Observation** Not every semantic type of complex predicate obeys the DOR

So RHL decide to replace the syntactic statment of the DOR with constraints that are sensitive to meaning

☐ **Approach** RHL divide the data that support the DOR into two piles, (50) and (51) They give each pile its own account, unrelated to the other

(50) a. Al pounded the cutlet flat.
b. * Al pounded the cutlet weary.

(51) a. The lake froze solid.
b. * Ozzy yelled hoarse.

☐ **Claim 1** Facts like (50) are supposed to be explained by a principle about how we 'conceptualize' CC meanings:

> The thing changed in the event of causation must be the canonical "force recipient" in the M event, namely the participant identified by the direct object when the M verb heads a simple clause.

☐ **Objection** This is exactly what the Igbo and Mandarin facts show is not true!

☐ **Claim 2** Facts like (51) are supposed to be explained by (52) together with (53)

(52) Argument-per-Subevent Condition
There must be at least one argument XP in the syntax per subevent in the event structure (pg. 779)

(53) Event Complexity Metric
If progress towards R is an intrinsic consequence of undergoing M, then the event structure of a CC is unitary.

Freezing implies solidification, so freeze solid can be intransitive
But shouting does not imply hoarsening, so shout hoarse must be transitive

□ **Objection** This is disproven by (inter alia) Igbo intransitives like (54)
Striking does not imply splitting (see Williams 2005: 197–200)

(54) Ọba a kụ -wa -ra akụwa
gourd this strike -split -FACT BVC
'This gourd split as a result of striking.' (Hale et al. 1995:84)

9 Rothstein 2004

□ **Observation** Resultatives are accomplishment predicates, describing an event which which culminates with O entering the R condition

N.B. When Al pounds the cutlet flat, what culminates is the event of *pounding flat*, not the activity of pounding

(55) Al pounded the cutlet flat in a minute, but the pounding went on without interruption for an hour.

□ **Mistakes**

1. Semantic mistake:
The event measured by the condition of O's referent is the M event

2. Lexicalist mistake:
The condition of XP's referent measures the course of an accomplishment's event only if it is a **lexical** argument of its **verb**

(Wechsler 2005, Rothstein 2004)

□ **Rothstein's theory**

1. Activity Vs can freely take on accomplishment meanings, which embed their basic meaning:

(56) a. ⟦ pound ⟧ = 'pound'
b. ⟦ SHIFT(pound) ⟧ =
'become P in incremental correspondence with a pounding'

(57) a. ⟦ yell ⟧ = 'yell'
b. ⟦ SHIFT(yell) ⟧ =
'become P in incremental correspondence with a yelling.'

By design, the b meaning is exactly the meaning of a full resultative VP, just with the result state (here, P) left undescribed

2. Only the accomplishment meaning works in a CC, due to the semantics of adding R:

   ⟦ M R ⟧ = R eventuality is:
   (a) cotemporal with, and
   (b) shares the same Theme as

   the **culminating subevent** of the event described by M

   Culminations are the ends of **telic** events. Activities (and semelfactives) don't have them
   So adding R directly to an activity verb yields nonsense

3. So the DOR follows **if** the theme of the culmination is identified by the D.O. –

   – because the R event is constrained to share the Theme of M's culmination

☐ **Question** Why should the theme of the culmination be identified by the direct object?

☐ **Mistake** Rothstein assumes (58), and builds this into SHIFT

(58) The Theme of the accomplishment's culmination is the Theme of its activity part

(59) a. ⟦ SHIFT(pound) ⟧ =
'y becomes P in incremental correspondence with a pounding whose Theme is y'

b. ⟦ SHIFT(yell) ⟧ =
'y becomes P in incremental correspondence with a yelling whose Theme is y.'

Rothstein presents (58) as if it follows from a common observation about simple accomplishment predicates, like "drink":

(60) "The semantic constraint [*sic*] is that the argument of the incremental process must be the theme or affected argument **of the lexical verb**" (pg. 115, boldface AW)

So for SHIFT(pound) or SHIFT(yell) too, the theme of the incremental culmination must be "the theme of the *lexical* verb," which Rothstein takes to be the **basic** verbs pound and yell, with their activity meanings

☐ **Objection** Rothstein is aware of odd implications when M is intransitive: e.g. her theory says that Ozzy's throat is the Theme of his yelling

But Mandarin and Igbo make clear that the problem is comprehensive (58) is falsified, even when the means verb is 'transitive'

☐ **Correction** The correct generalization is not (60) but (61)

(61) The incremental theme of a VP describing a telic process is identified by a direct argument in the VP

English sometimes seems to support (58), but only because of the UPP

10 Goldberg and Jackendoff 2004

☐ **Agreed** Goldberg and Jackendoff correctly assume that the object in a resultative has a Patient relation to a "constructional" event of causation[8]

☐ **Claim** But they say that the semantics of resultatives is "constrained" by (62):

(62) "Principle of Semantic Coherence
Roles of the construction (rC) and roles of the verb (rV) may unify only if they are semantically compatible." (pg. 550)

Codicil: "an agent role cannot combine with a patient role"

This is supposed to explain data like (63) and (64), since the controller of R ipso facto has the constructional role of patient:

(63) * Ozzy yelled hoarse.
Intended: 'Ozzy got hoarse from his yelling.'

(64) * Rocky's fists pounded the frozen meat bloody.
Intended: 'Rocky's fists got bloody from their pounding the frozen meat.

☐ **Objection** Sentences with this sort of interpretation *are* possible in Mandarin!

[8]It should be noted, however, that this assumption is either obscured or contradicted by the Jackendovian formula they use to represent the semantics of the resultative: SBJ CAUSE (OBJ BECOME R), MEANS : V

□ **Responses** What is the PSC?[9]

1. A constraint on how a sentence can be interpreted.

   · Then the PSC is falsified by Mandarin.

2. A constraint on the composition of semantic representations, or perhaps on the *asserted* content of a sentence

   · Then the PSC can be saved by assuming my NAT for Igbo and Mandarin

   · But if the PSC is to explain (63) and (64), it must be that *English* verbs are constrained to enter the same network of thematic relations in resultatives as in simple clauses

   · This assumption is *itself* sufficient to explain (63) and (64)

□ **Conclusion** The PSC is either false or superfluous

This is a happy result:

We discard a "principle" of semantic composition that, by its authors' own admission, has no justification either in the meaning or in the syntax of the objects being combined

[9]G&J stress that the PSC is a constraint "on the combination of roles in a clause, not as a real world constraint on the referent of those roles." (550) But this is compatible with both of the interpretations considered here.

Part III: Final comments

1. Severing arguments from the verb in Igbo and Mandarin permits an account of cross-linguistic difference whereby these languages differ from English only lexically

   Case for a nonprojectionist model especially strong:

   (a) Empirical differences are clear

   (b) Does not rely on particular assumptions about the lexicon, or category-change, etc.

   (cf. arguments in Kratzer 1996, Marantz 1997)

2. Evidence for the use of a generalized PATIENT relation in natural language grammars, contra Kratzer 2003 and many others.

   This in turn requires that our 'events' are very finely individuated, far more finely than actual happenings in the world. (Parsons 1990, Landman 2000, Schein 2002, Pietroski 2005)

3. The structure of CCs is simple: an event wherein M 'causes' R, plus Agent and Patient.

   (a) Not constrained by an argument's relation to the M verb, or its event

   (b) Any further constraints follow solely from the lexical properties of M and R

4. Valence $\neq$ Meaning

   The combinatory requirements of a verb do not follow trivially from what event it describes

   (*pace* Lidz, Gleitman and Gleitman 2003, Kratzer 2003, and many others; but compare e.g. Bhatt and Embick 2004, Davis and Demirdache 2000)

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