Complex Predicates: Insights from South Asia

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Introduction: This Talk

- Perspectives from South Asia.
- Major topics:
 - Definition and structure of complex predicates
 - Groundwork as in Butt (1995)
 - Further developments: Butt (1994, 1998), Butt and Geuder (2001), Butt (2003a), Butt and Tantos (2004), Butt (2010, 2014a, 2019).
 - Diachrony of Light Verbs (Butt and Lahiri 2013)
- Main Domain of Inquiry (Urdu/Hindi)
 - permissives
 - V-V "aspectual" complex predicates
 - morphological causatives
 - N-V complex predicates (Ahmed and Butt 2011, Ahmed et al. 2012)
 - A-V complex predicates (Butt and King forthcoming)

Outline

- Background
- 2 The Empirical Domain
- 3 Complex Predicates: The Empirical Domain
- Types of Argument Merger
- Events as Key
- 6 Complex Predicates and Diachrony
- Summary and Conclusions

First Step: Determining the Domain of Inquiry

- Two (or more) items are not complex predications, compounds or collocations just because
 - they occur together fairly frequently
 - and mean something in that combination
- Example:
 - A banker at UBS is being fired.
- Neither a banker nor is being (or being fired) should be considered a complex predicate, compound or collocation under anybody's theory or description.

Staking out an Empirical Domain

- Complex predicates raise thorny problems about the nature of predication which can only be understood if the empirical domain is well demarcated.
- Overall goal of my research has been:
 - establish formal properties of complex predicates
 - use that to focus on a coherent empirical domain
 - consider the diachrony of complex predicates
 - and the challenges posed for our current understanding of predication and event semantics

What's a Complex Predicate?

Definition of a Complex Predicate (based on Butt 1995)

Complex predicates are formed when two or more predicational elements enter into a relationship of co-predication. Each predicational element adds arguments to a monoclausal predication. Unlike what happens with control/raising, there are no embedded arguments and no embedded predicates at the level of syntax.

Tests for complex predicates are language specific

Examples (for more see Butt 2010):

- Romance: include clitic climbing and long passives,
- Choi (2005) developed NPIs (negative polarity items) as a test for Korean
- Urdu/Hindi agreement, control, anaphora, (NPI)

Establishing Complex Predication

It is very important to:

- pay attention to surface morphosyntactic clues on the one hand
- test for the actual underlying structure on the other hand.
- See also Seiss (2009).

Mantra: Avoid Descriptive Confusion

Not looking beyond the surface and ignoring syntactic structure leads to confusion!

Establishing Complex Predication

- Examples: Permissive (Complex Predicate) vs. Instructive (Control)
 - (1) nadya=ne yαssin=ko pαoda kaṭ-ne Nadya.F.Sg=Erg Yassin.M.Sg=Dat plant.M.Sg.Nom cut-Inf.Obl di-ya t^h-a give-Perf.M.Sg be.Past-M.Sg 'Nadya had let Yassin cut the plant.'
 - (2) nadya=ne yɑssin=ko [pαoda kaṭ-ne]=ko Nadya.F.Sg=Erg Yassin.M.Sg=Dat plant.M.Sg.Nom cut-Inf.Obl=Acc kah-a t^h-a say-Perf.M.Sg be.Past-M.Sg 'Nadya had told Yassin to cut the plant.'
- Permissive has (slightly) different morphosyntax and behaves syntactically quite differently from the instructive (agreement, control, anaphora, NPI).

Testing for Complex Predication — Example with NPI

- NPI (Negative Polarity Item) cannot be distributed across two different clauses.
- Here the NPI is made up of the focus particle $b^h i$ and the negation.

```
(3) ek=b<sup>h</sup>i laṛke=ne sita=ko kıtab one=also boy.M.Obl=Erg S.F=Dat book.F.Sg.Nom

nαhi paṛ<sup>h</sup>-ne d-i not read-Inf.Obl give-Pf.F.Sg
'Not even a single boy let Sita read the book.' (permissive)
```

- Only the complex predicate permissive allows for the "split" NPI.
 - (4) *ek=b^hi larke=ne sita=se [kıtab one=also boy.M.Obl=Erg S.F=Inst book.F.Sg.Nom

 nahi par^h-ne]=ko kah-a
 not read-Inf.Obl=Acc say-Pf.M.Sg

 'Not even a single boy told Sita to read the book' (instructive)

Testing for Complex Predication — Example with NPI

- NPI (Negative Polarity Item) cannot be distributed across two different clauses.
- Here the NPI is made up of the focus particle $b^h i$ and the negation.

```
(5) ek=b<sup>h</sup>i laṛke=ne sita=ko kıtab one=also boy.M.Obl=Erg S.F=Dat book.F.Sg.Nom

nɑhi paṛ<sup>h</sup>-ne d-i not read-Inf.Obl give-Pf.F.Sg

'Not even a single boy let Sita read the book.' (permissive)
```

Only the complex predicate permissive allows for the "split" NPI.

```
(6) *ek=\mathbf{b}^{h}\mathbf{i} larke=ne sita=se [kitab one=also boy.M.Obl=Erg S.F=Inst book.F.Sg.Nom
\mathbf{n}\alpha\mathbf{h}\tilde{\mathbf{i}} \text{ par}^{h}-\text{ne}]=\text{ko} \qquad \text{k}\alpha\text{h-a}
not read-Inf.Obl=Acc say-Pf.M.Sg
'Not even a single boy told Sita to read the book.' (instructive)
```

The Structural Explanation

- The differences in behavior in Urdu/Hiondi with respect to NPI as well as anaphora, control and agreement can be explained under the following analysis:
 - The permissive is a monoclausal complex predicate.
 - The instructive is a biclausal control construction.

In what follows, analyses are provided in terms of $\bf LFG$ (Lexical Functional Grammar) for clarity of exposition.

Instructive: A Biclausal Control Structure

Nadya told Yassin [to cut the plant].

- a(rgument)-structure:
 TELL/SAY < agent goal theme/event > CUT < agent patient >
- f(unctional)-structure:

```
SUBJ [ PRED 'Nadya' ]
OBJgo [ PRED 'Yassin' ];

PRED 'tell/say < SUBJ, OBJ, XCOMP >'

XCOMP [ PRED 'cut < SUBJ, OBJ >' ]
SUBJ [ ];
OBJ [ PRED 'plant' ] ]

TNS-ASP [ TENSE PAST ASPECT PERF ]
```

Permissive: A Monoclausal Complex Predicate

Nadya let Yassin [cut the plant].

- composed a-structure:
 GIVE/LET < agent goal; CUT < agent; patient >>
- f-structure

$$\begin{bmatrix} \text{PRED} & \text{`let-cut} < \text{SUBJ}, \text{OBJ}_{go}, \text{OBJ} > \text{`} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`Nadya'} \\ \text{CASE} & \text{ERG} \end{bmatrix} \end{bmatrix}$$

$$\begin{bmatrix} \text{OBJ}_{go} & \begin{bmatrix} \text{PRED} & \text{`Yassin'} \\ \text{CASE} & \text{DAT} \end{bmatrix} \end{bmatrix}$$

$$\begin{bmatrix} \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`plant'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \end{bmatrix}$$

$$\begin{bmatrix} \text{TENSE} & \text{PAST} \\ \text{ASPECT} & \text{PERF} \end{bmatrix}$$

Establishing Complex Predication — Another Example

- Sulger (2015): the examples in (7) look very similar on the surface.
- But:
 - Copula (Locational) in (7a)
 - N-V Complex Predicate (Dative Experiencer Construction) in (7b)
 - - b. nina=ko b^hai $h\epsilon$ $Nina.Fem.Sg=Dat\ fear.Masc.Sg\ be.Pres.3.Sg$ 'Nina is afraid.'

Tests for Complex Predication

- Some Tests for N-V complex predicates:
 - Contribution of extra argument(s) by noun
 - Determination of case on argument(s) by noun
 - Impossibility of substitution via a pronoun or wh-phrase.
 - (see Kearns (2002) for more on English)
- Tests that are generally **not** reliable for any kind of complex predicate:
 - linear adjacency, scrambling
 - negation or other adverbial modification

The latter appear to test phrase structure constituency and scope, i.e., are more surface oriented (for example, they do not work very well with morphological causatives, which are also complex predicates underlyingly).

Example Test — NV Complex Predicates

- In the N-V complex predicate the noun licenses an extra argument.
- This is not the case in the copula construction in (8a).
 - (8) a.
- *nina=mẽ yasin=se pyar hε
 Nina.Fem.Sg=Loc_{in} Yassin.Masc.Sg=Inst love.Masc.Sg be.Pres.3.Sg
 'Nina loves Yassin.' (lit. 'There is love in Nina from Yassin.')
- b.
- nina=ko **yasin=se** pyar h ϵ Nina.Fem.Sg=Dat Yassin.Masc.Sg=Inst love.Masc.Sg be.Pres.3.Sg 'Nina loves Yassin'

Predicate Composition and LFG

Current State in LFG

- Complex predicate formation involves a complex a(rgument)-structure with embedding(s) which corresponds to a monoclausal simplex f(unctional)-structure.
- Complex predicate formation can be triggered via
 - periphrastic means (as in the Urdu permissive example above)
 - via morphological means (i.e., morphological causatives)
- The underlying mechanism is the same (cf. Alsina 1993).
- But different types of argument merger appear to exist (cf. also Rosen 1989).
- Butt (1998, 2013)
 - proposes there are basically only two types
 - these mirror syntactic control/raising

Argument Identification at Different Modules of Grammar

Butt (1998, 2013):

- Argument Identification at the level of syntax (f-structure) has been called control/raising
- Similarly, Argument Identification exists at the level of a-structure.
- This leads to complex predication (or clause union or argument merger, as it has variously been called).

			Complex Predicate
	Control	Raising	Predicate
syntax	PRO controlled	Exceptional	No
(f-structure)		Case Marking	
a-structure	argument controlled	arguments unified	Yes
	(fusion)	(raising)	

Argument Identification at Different Modules of Grammar

Stated with other theoretical assumptions:

- Complex Predication happens within the ν P, control/raising happens above that (VP) (cf. Ramchand (2008), First Phase Syntax)
- Subevents merge into one complex event with the force-dynamic interpretation of a primary predication (cf. DeLancey (1985), Talmy (1988), Croft (1998, 2001, 2012)).

Argument Identification at Different Modules of Grammar

However, note that most approaches either cannot or do not make a difference between control/raising at a-structure vs. control/raising in the syntax.

			Complex Predicate
	Control	Raising	Predicate
syntax	PRO controlled	Exceptional	No
(f-structure)		Case Marking	
a-structure	argument controlled	arguments unified	Yes
	(fusion)	(raising)	

 But without this, the exact nature of complex predication cannot be understood.

Examples of Different Argument Mergers

- Argument Fusion (analogous to syntactic control)
 - (9) mã=ne baccõ=ko kitab-ẽ paṛ^h-ne mother.F.Sg=Erg child.M.Pl.Obl=Dat book.F-Pl.Nom read-Inf.Obl di give.Perf.F.Pl 'Mother let (the) children read (the) books.'
- Argument Raising (analagous to syntactic raising)
 - (10)

 pita=ne **per** kat-ne di-e
 father.M.Sg=Erg tree.M.Nom be.cut-Inf.Obl give-Perf.M.Pl
 'Father allowed the trees to be cut.'

Example: Argument Raising (Complex Predicate)

■ The permissive in (11) was analyzed as syntactic raising by Davison (2014) and as raising cum restructuring in the sense of Wurmbrand (2001) by Bhatt (2005).

```
(11)

pita=ne per kaṭ-ne di-e
father.M.Sg=Erg tree.M.Nom be.cut-Inf.Obl give-Perf.M.Pl
'Father allowed the trees to be cut.'
```

- Butt (2014b) shows that syntactically **both** types of permissives must be analyzed as complex predicates (tests from agreement, anaphora, control, etc.)
- But they instantiate different types of argument merger.

Different Argument Mergers

 "Allow-to-do" reading — Permittee fused with highest argument of embedded a-structure (argument fusion)

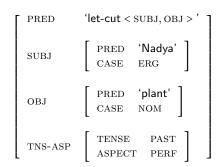
```
GIVE/LET < agent goal; CUT < agent; patient >>
```

■ "Allow-to-happen" reading — Arguments from both predicates are taken together, but no argument fusion happens — argument "raising"

Example: Argument Raising (Complex Predicate)

Nadya allowed the plant to be cut.

- a-structure:
 - LET < agent CUT < patient >>
- f-structure



Example: Modals as Syntactic Raising

Compare this to an established example of syntactic raising: Urdu/Hindi modals.

(12)

yasin per kaṭ **sαk-ta** hε
Yassin.M.Sg=Erg tree.M.Nom cut can-Impf.M.Sg be.Pres.3.Sg
'Yassin can cut the tree.'

- For a fairly comprehensive description and analysis of Urdu/Hindi modals see Bhatt et al. (2011).
- Note that modals are very different from light verbs and auxiliaries.
- Both in terms of syntax and semantics.

Example: Modals as Syntactic Raising

Yassin can [cut the plant].

- a-structure:
 CAN ____ < theme/event > CUT < agent patient >
- f-structure

```
SUBJ [];

PRED 'can < XCOMP > SUBJ'

XCOMP | PRED 'cut < SUBJ, OBJ >'
SUBJ [PRED 'Yassin'];
OBJ [PRED 'plant']

TNS-ASP | TENSE PRES ASPECT PERF |
```

Aspectual V-V Complex Predicates

Another type of V-V complex predicate (cf. Hook 1974, 1993, 2001).(13) a.

C.

 $\label{eq:nadya} \begin{array}{lll} \text{nadya} {=} \text{ne} & \text{x} \text{ot} & \textbf{lik}^{\mathrm{h}} & \textbf{li-ya} \\ \text{Nadya}.F {=} \text{Erg letter.M.Nom write take-Perf.M.Sg} \\ \text{`Nadya wrote a letter (completely).'} \\ \text{b} \end{array}$

nadya=ne mαkan **bαna di-ya** Nadya.F=Erg house.M.Nom make give-Perf.M.Sg 'Nadya built a house (completely, for somebody else).'

ram **ga** vṭ^h-a Ram.M.Sg.Nom sing rise-Perf.M.Sg 'Ram sang out spontaneously (burst into song).'

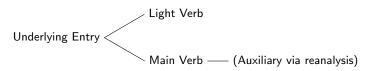
■ See Slade (2016) for a fairly recent overview and references.

Event Modification

- As with the permissive, a *light verb* is involved.
- But this light verb seems "lighter" than the permissive....
 - The light verb does not independently contribute an argument to the overall predication.
 - The complex predicates are all "completive".
 - Different light verbs contribute different defeasible information (suddenness, responsibility, benefaction, surprise, etc.)
- Butt and Geuder (2001) and Butt and Ramchand (2005) analyze these as instances of *Event Modification* (event fusion).
- This is another different type of complex predicate no embedding of a-structures.

Characteristics of Light Verbs

- Light verbs are always form-identical with a main verb
- Butt and Lahiri (2002) show that light verbs as in the Aspectual V-V complex predicates are historically stable in Indo-Aryan (as a syntactic configuration).
- They propose that light verb and main verb versions be derived from the same underlying entry.
- Grammaticalization that may occur is always based on the main verb version.



Open Questions

- How are light verb versions related to the underlying lexical-semantic representation?
- For that matter, what should the underlying representation be?
- From my perspective:
 - Information about valency (how many argument slots)
 - Lexical semantic information pertaining to case marking (e.g., experiencer vs. agent).
 - Aktionsart type information (e.g., ± telic).

Most importantly:

- information about event semantics
- systematic way of relating light to full verb entries

Events and Subevents

General solution so far: Assume some sort of lexical event decomposition and think of light verbs as contributing information at the level of subevents.

- Butt (1995):
 - used Lexical-Conceptual Structures (LCS) based on Jackendoff (1990)
 - But: system is too unconstrained as is (Caudal, Nordlinger, Seiss 2013)
 - Seiss (2013) argues that one needs to think in terms of predicational "blue prints".

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Events and Subevents — vP

The same basic idea can be found in an interesting manner in quite a different framework: First Phase Syntax (Ramchand 2008).

- Assume that all verbal predication takes place within a vP (determination of number and type of arguments)
- Assume that this is closely tied to an (sub)evental event semantics.
- A vP is decomposed into init(iator), proc(ess) and res(ult).
- The init, proc and res heads represent subevents that can be interpreted in the formal semantic Neo-Davidsonian event semantics.

(cf. also work within force-dynamics, i.e., Talmy, deLancey, Croft)

Verb Blue Prints

- A verbal (vP) predication can be instantiated by one verb, or by parts that are composed into a complex predicate.
- Each part of the complex predicate instantiates some subevent in this predicational "blue print" or "template".

Events and Subevents — vP

■ Analysis of (14) based on Ramchand's system:

(14)

nadya=ne xɑt **lık**^h **li-ya** Nadya.F=Erg letter.M.Nom write take-Perf.M.Sg 'Nadya wrote a letter (completely).'

- The main verb 'write' is actually a participle form.
- Assume that the main verb instantiates the process and the result part of the predication and contributes a patient argument.
- The light verb 'take' instantiates the initiator part of the predication and contributes an agent argument.

Lexical Decomposition and Subevents

- As per Seiss' "blue print" or template idea, the init, proc and res parts of an event provide a blue print for verbal predication.
- This is formulated below loosely based on Jackendoff.
- The AFF tier is meant to model agency and affectedness in his system. (15)

$$\left[\begin{array}{c} \mathsf{INIT}([\alpha],\mathsf{PROC}([\beta],\mathit{RES}[[\gamma]])) \\ \mathsf{AFF}([]^{\alpha},[]^{\beta/\gamma}) \end{array}\right]$$

■ The different parts of the complex predicate instantiate parts of the overall schema to give a complete verbal predication.

Lexical Decomposition and Subevents

- On the AFF tier: Nadya as an agent affects the letter (causes it to exist).
- On the subevental tier: the light verb contributes the initiation part of the event, signaling agentivity (complex predicates with 'take' require an agentive/ergative subject).
- The main verb contributes the process and result part of the event, which involves the undergoer (the letter).

- Taking event semantics into account allows a clear distinction between auxiliaries/modals and light verbs.
 - Light verbs contribute to an independently existing event predication at the subevental level.
 - Auxiliaries situate an event in time. They do not modify the basic event predication.
 - Modals situate an event with respect to possible worlds. They do not modify the basic event predication.
- Auxiliaries and modals do not modify the primary event predication → they do not form complex predicates
 - --- and are subject to diachronic reanalysis

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Problematic: "Super" Events

Serial verbs consist of several "full" events that are bundled together in some way into a construable coherent "super" event (Durie 1997).

```
(17) a.

miyt ritm muh-hambray-an-m
tree insects climb-search.for-1S-3PI
'I climbed the tree looking for insects.' (Alamblak, (Bruce 1988, 29))
b.

*miyt guñm muh-hëti-an-m
tree stars climb-see-1S-3PI
'I climbed the tree and saw the stars.' (Alamblak, (Bruce 1988, 29))
```

Not clear to me how this can be handled within current versions of formal event semantics.

Historical Stability

- Butt and Lahiri (2013) show that V-V aspectual complex predicates are historically stable as a syntactic configuration in Indo-Aryan.
- The modern Indo-Aryan morphological causative is also not much different from how it was over 2000 years ago Butt (2003b).
- Davison (2014) notes that the permissive with 'give' also already appears to have existed in Old Indo-Aryan.

Diachrony of Indo-Aryan

- (18) A. Old Indo-Aryan 1200 BCE — 600 BCE (Vedic) 600 BCE — 200 BCE (Epic and Classical Sanskrit)
 - B. Middle Indo-Aryan (Aśokan inscriptions, Pāli, Prākrits, Apabhramśa—Avahattha)
 200 BCF — 1100 CF
 - C. New Indo-Aryan (Bengali, Hindi/Urdu, Marathi and other modern North Indian languages) 1100 CF — Present

Diachrony of Indo-Aryan

Note: Indo-Aryan is not historically conservative in other areas

- Case system eroded and was reinvented.
- Tense/Aspect system eroded and was reinvented
- Verb Particles were gotten rid of.
- **...**

Light Verbs and Historical Stability

- Further crosslinguistic evidence confirms that light verbs are historically stable (cf. Bowern 2008, Brinton and Akimoto 1999).
 - They do not grammaticalize further into auxiliaries or inflections.
 - A light verb use is not independent of the main verb use when the main verb is lost, so are all light verb uses.
 - Example: English take replacing nimen (Iglesias-Rábade 2001).

Historical Change

But:

- Aspectual V-V complex predicates have become more frequent over time in Indo-Aryan (Hook 1993, 2001, Hook and Pardeshi 2009).
- This appears to be connected to the demise of verb particles (Deo 2002).
- Particle-Verb combinations do lexicalize.
- Adj/N-V complex predicates lexicalize (cf. Caudal et al. 2013)
- Serial verbs change over time → Prepositions, Complementizers (e.g., Lord 1993).

Historical Change and Complex Predication

- Bowern (2008) conducts a historical survey of the diachrony of complex predication.
- Overall Butt&Lahiri's central claim holds up there are no instances of auxiliaries that have developed from light verbs.
- However, historical change does apply:
 - Univerbation or Lexicalization. E.g., Urdu/Hindi la-na 'bring' probably from le 'take' + a 'come'.
 - Changes in the productivity/frequency of the complex predicate construction (cf. Hook 1993, 2001, Hook and Pardeshi 2009).

Historical Change and Complex Predication

- Slade (2013) and Ittzés (2022) take issue with Butt&Lahiri's claim of historical pertinacity of light verbs.
- However: Slade (2013) adduces evidence for grammaticalization:
 - with respect to an **auxiliary** derived from a main verb (rah 'stay/remain') (cf. Bybee et al. 1994 for instances of this well-established type of change).
 - 2 with respect to a **modal** sak 'can/be able to', which we saw is not a light verb.
 - 3 cites Nepali data from Pokharel (1991) who does not distinguish between light verbs, auxiliaries and modals in this first description of complex predicates in Nepali.
- The analytic confusion undermines his arguments.

Mantra: Avoid Descriptive Confusion

Not looking beyond the surface and ignoring syntactic structure leads to confusion!

Historical Change and Complex Predication

- Ittzés (2022) looks at Sanskrit (and Vedic) N-V formations and ends up painting a picture of their distribution and properties that looks much like modern Hindi N-V complex predicates (Mohanan 1994).
- There are three major light verbs involved: 'do', 'be', 'become'.
- These show constraints on permissible combinations and frequency effects.
- This is exactly what is found for Urdu/Hindi (Ahmed and Butt 2011).
- Ittzés (2022) couches the discussion in terms of looking at the grammaticalization of the perfect in Indo-Aryan.
- But this is a red herring, since the modern perfect/perfective did not derive from an N-V combination, but the past participle in -ta.

Upshot

Ittzés (2022) provides more evidence for Butt&Lahiri's claim but in a different domain: N-V complex predicates.

Conclusions

Suggestion:

- Predicational "blue prints" or templates exist as part of language structure.
- More than one lexical or morphological item can predicate together and slot into the overall predication template.
- The combinatory possibilities are constrained by
 - constraints on number and type of arguments
 - argument fusion/merger vs. argument raising
 - semantic/pragmatic selectional restrictions (completion, suddenness, responsibility, benefaction, etc.)
- Complex predication as a **syntactic mechanism** is stable diachronically.

Conclusions

But:

- Whether or not a particular type of complex predication is used can be subject to change.
- (Relatedly: whether or not a language uses verbal particles is subject to change.)
- The frequency of use of complex predicates as a predicational strategy can change (expand or contract).
- Individual light verbs (and main verbs) are subject to change (drop out of the language, change meaning, be newly recruited).
- Observation: Small numbers of main verbs (Urdu/Hindi has about 800) make complex predication likely.

Summary

- It is important to understand/define (different types of) complex predicates.
- This involves developing tests that bring out the underlying structure (look beyond the surface).
- The types of complex predicates that exist are best understood in terms of event semantics.
- The different parts of the complex predicate instantiate different subparts/subevents of the overall predication.
 - Light verbs contribute to an independently existing event predication at the subevental level.
 - Auxiliaries situate an event in time. They do not modify the basic event predication.
 - Modals situate an event with respect to possible worlds. They do not modify the basic event predication.

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