Separation and differentiation: A case study of *fenbie* in Mandarin

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Distributive adverbs in Mandarin

In Mandarin, there are many adverbs enforcing distributive readings.

1. Libai he Dufu zuo-le yi-ge dangao.

   Libai and Dufu make-ASP one-CL cake

   a. 'Libai and Dufu each made a cake' (distributive)
   b. 'Libai and Dufu made a cake together. ' (collective)

2. Libai he Dufu {dou/ge/fenbie} zuo-le yi-ge dangao.

   Libai and Dufu make-ASP one-CL cake

   a. 'Libai and Dufu each made a cake' (distributive)
   b. 'Libai and Dufu made a cake together. ' ✖ (collective)

New Descriptivism

“新描写主义认为，虽然在若干句法环境中，一些微观句法语义层面上并不相同的语言项目可能表面上表现类似，但在区别性句法环境中，它们就会有不同的表现，而这种在特定环境中的不同表现，很可能就是它们本质特性的反映。”

胡建华 2018: 476

Variations of distributive adverbs

Different distributive adverbs demonstrate different structural and interpretive properties.

3. Libai he Dufu dou zuo-le (yi-ge) dangao.
   Libai and Dufu make-ASP one-Cl cake
   'Libai and Dufu each made {cakes/a cake}.'

4. Libai he Dufu ge zuo-le *(yi-ge) dangao.
   Libai and Dufu make-ASP one-Cl cake
   'Libai and Dufu each made {*cakes/a cake}.'

Lee, Zhang and Pan (2009); Li & Law (2016); Law (2019)

Variations of distributive adverbs

Different distributive adverbs demonstrate different structural and interpretive properties.

5. Libai he Dufu dou zuo-le dangao he mianbao.
   Libai and Dufu make-ASP cake and bead
   'Libai and Dufu each made {cakes/breads}.'

6. Libai he Dufu fenbie zuo-le dangao he mianbao.
   Libai and Dufu make-ASP cake and mianbao
   1. 'Libai and Dufu each made cakes and breads.' (distributive)
   2. 'Libai made cakes and Dufu made brads.' (cumulative)

Variations of distributive adverbs

Semantically, different distributive adverbs establish distributivity in different ways

Dou

- A generalized distributive operator (Lin 1998);
- A universal quantification operator (Pan 2006);
- A strongest-prejacent operator (Liu 2016);
- An exhaustification operator (Xiang 2019)
- ...

Ge

- A one-to-one mapping function (Lee, Zhang & Pan 2009);
- An item imposing a monotonicity constraint on distributivity (Law 2019)

How about *fenbie*?

Today, we are going to …

- Describe the properties of the cumulative reading and the distributive reading;

- Propose a morpho-semantic analysis:

  fenbie ⇨ *fen*: separation + *bie*: differentiation

- Consequence

  (a) The two readings are derived in a uniform operation evaluating semantic values distributively;

  (b) The so-called ‘cumulative’ reading is a kind of distributive reading.

Cumulative readings

At least two plural expressions occur

7. Libai he Dufu fenbie gei Wangwei he Gaoshi xie-le shou shi.

   LB and DF to WW and GS write-ASP Cl poem

   a. 'LB wrote a poem for WW, and DF wrote a poem for GS.'
   b. 'Both LB and DF wrote a poem for WW and GS.'

8. Libai he Dufu fenbie gei Wangwei xie-le shou shi.

   LB and DF to Wangwei write-ASP CL poem

   a. [No cumulative reading]
   b. 'Both LB and DF each wrote a poem for WW.'

Plural expressions must co-occur in the same clause

9. Libai he Dufu fenbie gen Wangwei he Gaoshi shuo **[**wo chidao-le**]**.

   Libai and Dufu with WW and GS say I late-PER

   a. 'LB told WW I was late; DF told WW I was late.'
   b. 'Both LB and DF told WW and GS I was late.'

10. Libai he Dufu fenbie gen wo shuo **[**Wangwei he Gaoshi chidao-le**]**.

    LB and DF with I say WW and GS late-PER

    a. **??** 'LB told me that WW was late; DF told me that GS was late'
    b. 'Both LB and DF told me WW and GS were late.'

Numeral expressions and cardinality equivalence

11. Libai he Dufu fenbie gei liang-ge haizi zuo-le dangao.

    LB and DF to two-Cl kid make-ASP cake

    a. 'LB made a cake for one kid; DF made a cake for the other.'
    b. 'LB and DF each made a cake for two kids.'

12. Libai he Dufu fenbie gei shi-ge haizi zuo-le dangao.

    LB and DF to ten-Cl kid make-ASP cake

    a. [No cumulative reading]
    b. 'LB and DF each made a cake for ten kids.'

Contextually partition

13. Zhou Jielun, Fang Wenshan he Liu Huang fenbie xie-le liang-shou ge.

    ZJ FW and LH write-PER two-CL song

    a. 'ZJ and FW wrote one song; LH wrote the other.'
    b. 'Both the group of ZJ and FW and LH wrote two songs.'

14. Libai (he) Xiaohua, Wangwei he Xiaoming fenbie jiecheng-le liang-dui

    LB and XH WW and XM marry-PER two-CL

    Fuqi.

    husband.and.wife

    'LB and XH get married; WW and XM get married'

Schwarzschild (1996); Lin (1998)

Distributive readings

Many-to-one: Different spatial-temporal intervals

15. Libai, Dufu he Gaoshi fenbie qu jian Wangwei.

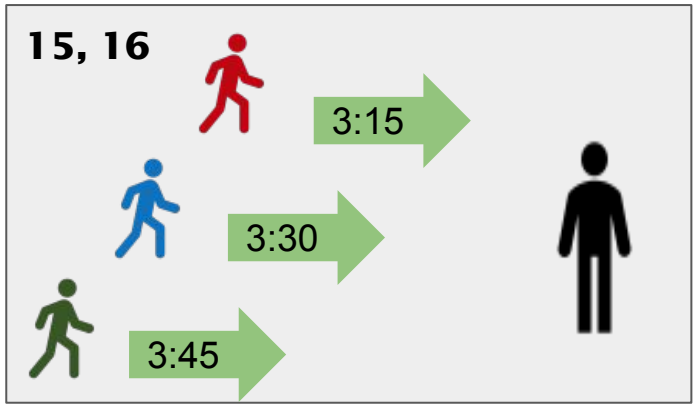
    LB DF and GS go meet WW

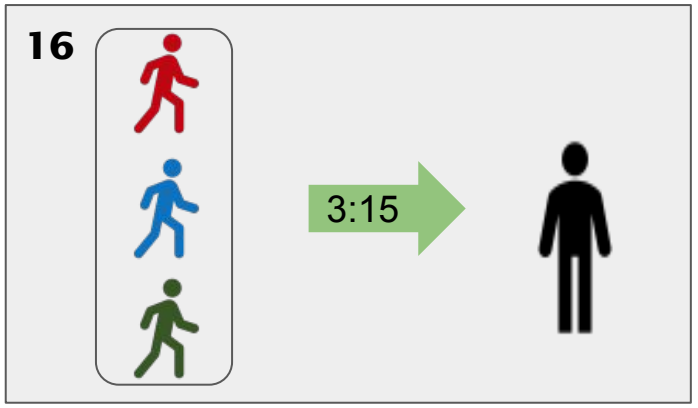
    'LB , DF, and GS are going to meet WW at different times.'

16. Libai, Dufu he Gaoshi dou qu jian Wangwei.

    LB DF and GS go meet WW

    'LB, DF, and GS are all/each going to meet WW.'





One-to-many: Different spatial-temporal intervals

17. Libai fenbie jian-le Wangwei, Dufu he Gaoshi.

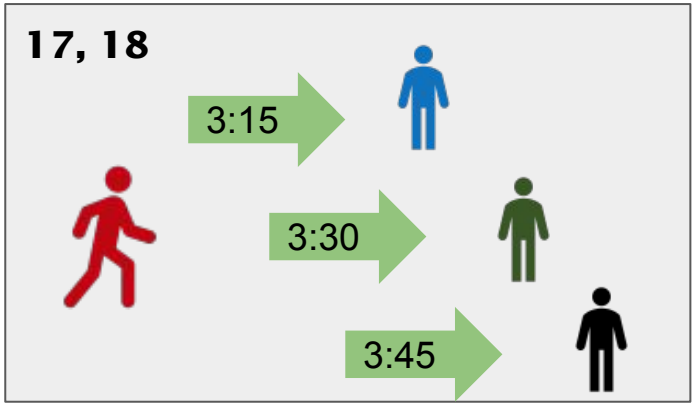
    LB meet-PER WW DF and GS

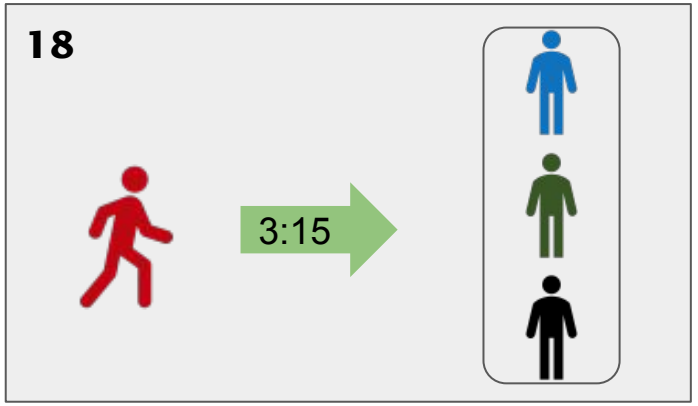
    'LB meet WW, DF, and GS at different times.'

18. Wangwei, Dufu he Gaoshi, Libai dou jian-le.

    WW DF and GS LB meet-PER

    'LB met WW, DF, GS.'





Events: Different spatial-temporal intervals

19. Libai, Dufu he Gaoshi fenbie tiaoxia-le shui.

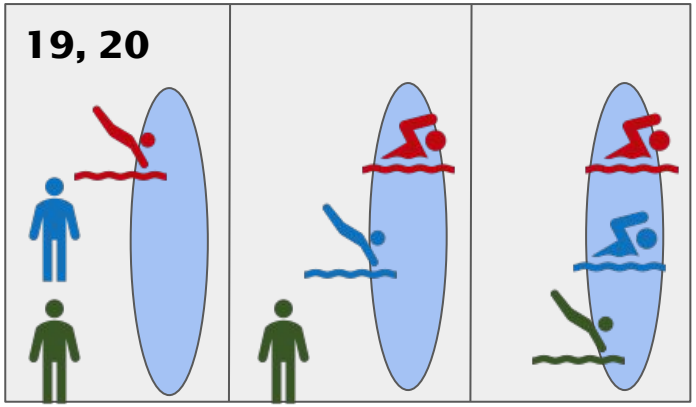
    LB DF and GS jump.into water

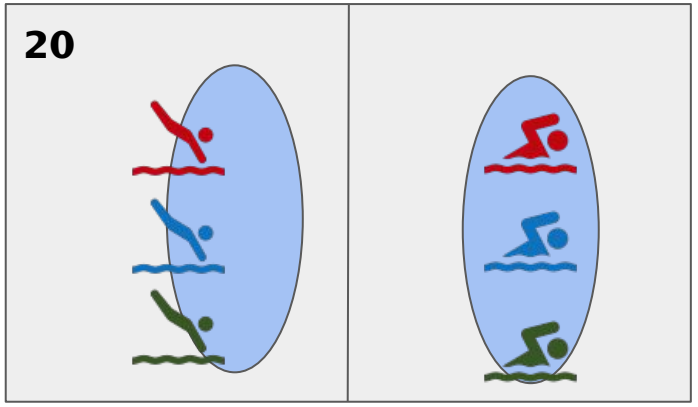
    'LB, DF, and GS jumped into the pool at different times.'

20. Libai, Dufu he Gaoshi dou tiaoxia-le shui.

    LB DF and GS jump.into water

    'LB, DF, and GS all/each jumped into the pool.'





A common feature

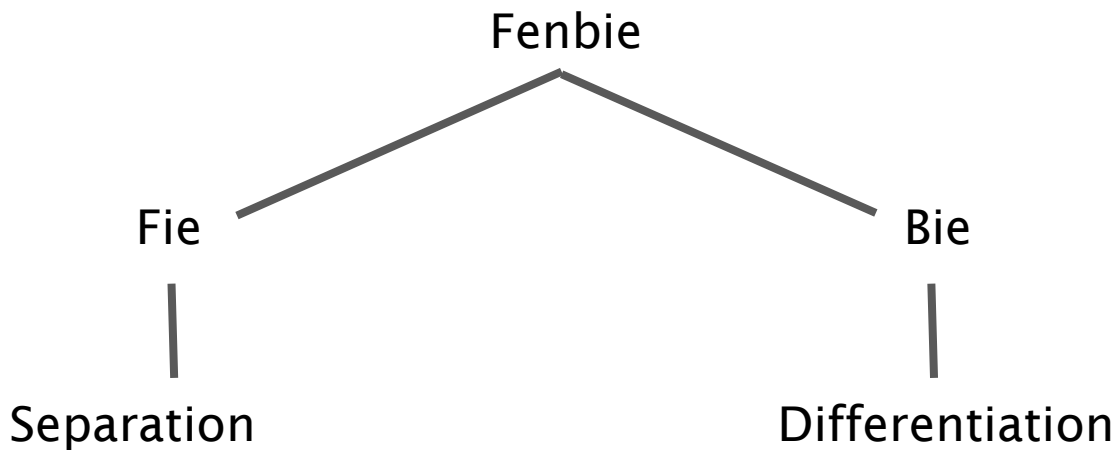
21. Libai he Dufu fenbie jian-le Wangwei he Gaoshi.
    LB and DF meet-PER WW and GS

Cumulative		
x	*y*	relation
LB	WW	*x* met *y*
DF	GS	*x* met *y*

Distributive		
x	*i*	relation
LB	3:15	*x* met WW and GS at *i*
DF	4:00	*x* met WW and GS at *i*

Analysis

Separation and differentiation

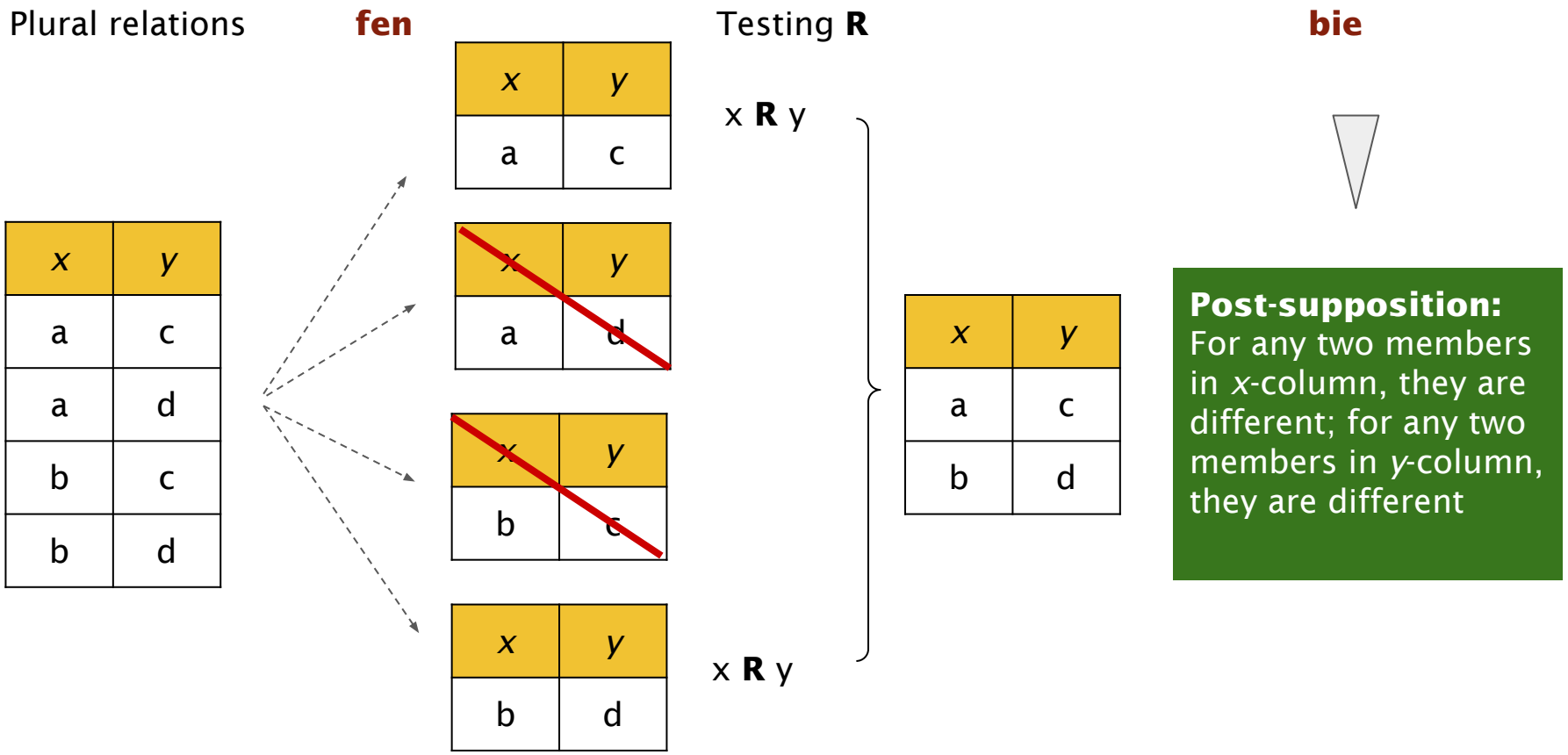


分：分开、区划开、跟“合”相对

别：分辨、区分；[引申] 差别、差异

---《新华字典》2011，第11版，商务印书馆

Separation and differentiation



x	*y*
a	c
a	d
b	c
b	d

x	*y*
a	c

x	*y*
a	d

x	*y*
b	c

x	*y*
b	d

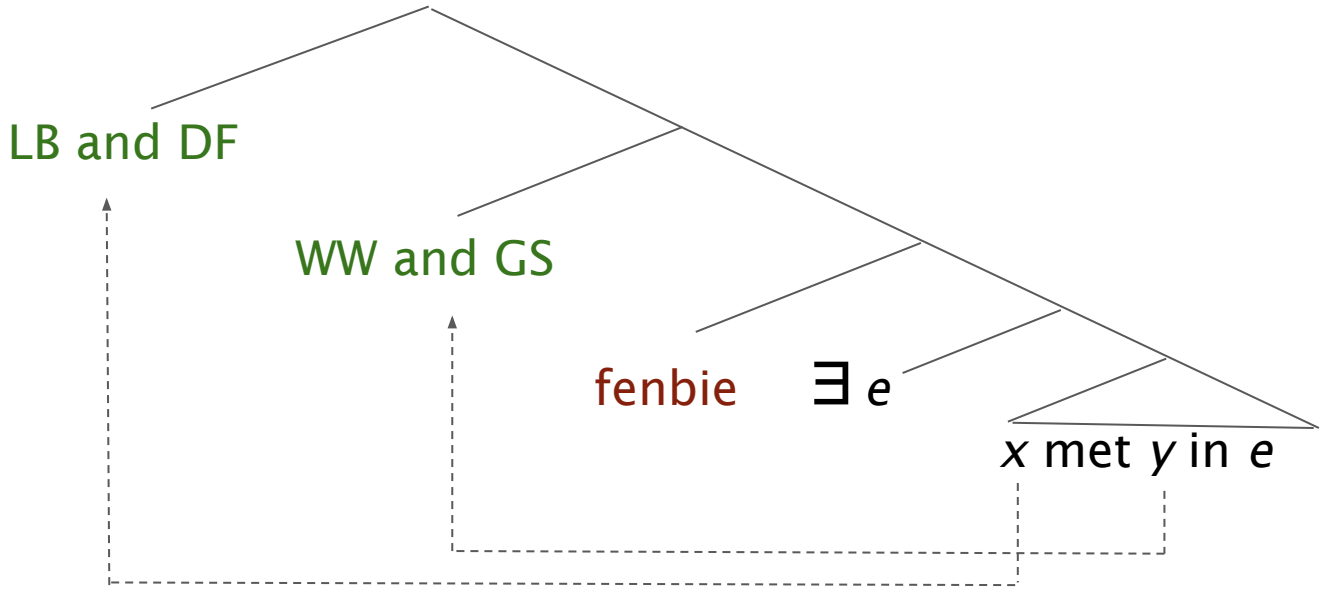
x	*y*
a	c
b	d

The formal analysis is couched in Dynamic Plural Logic (von den Berg 1996; Brasoveanu 2013; Law 2019; a.o.)

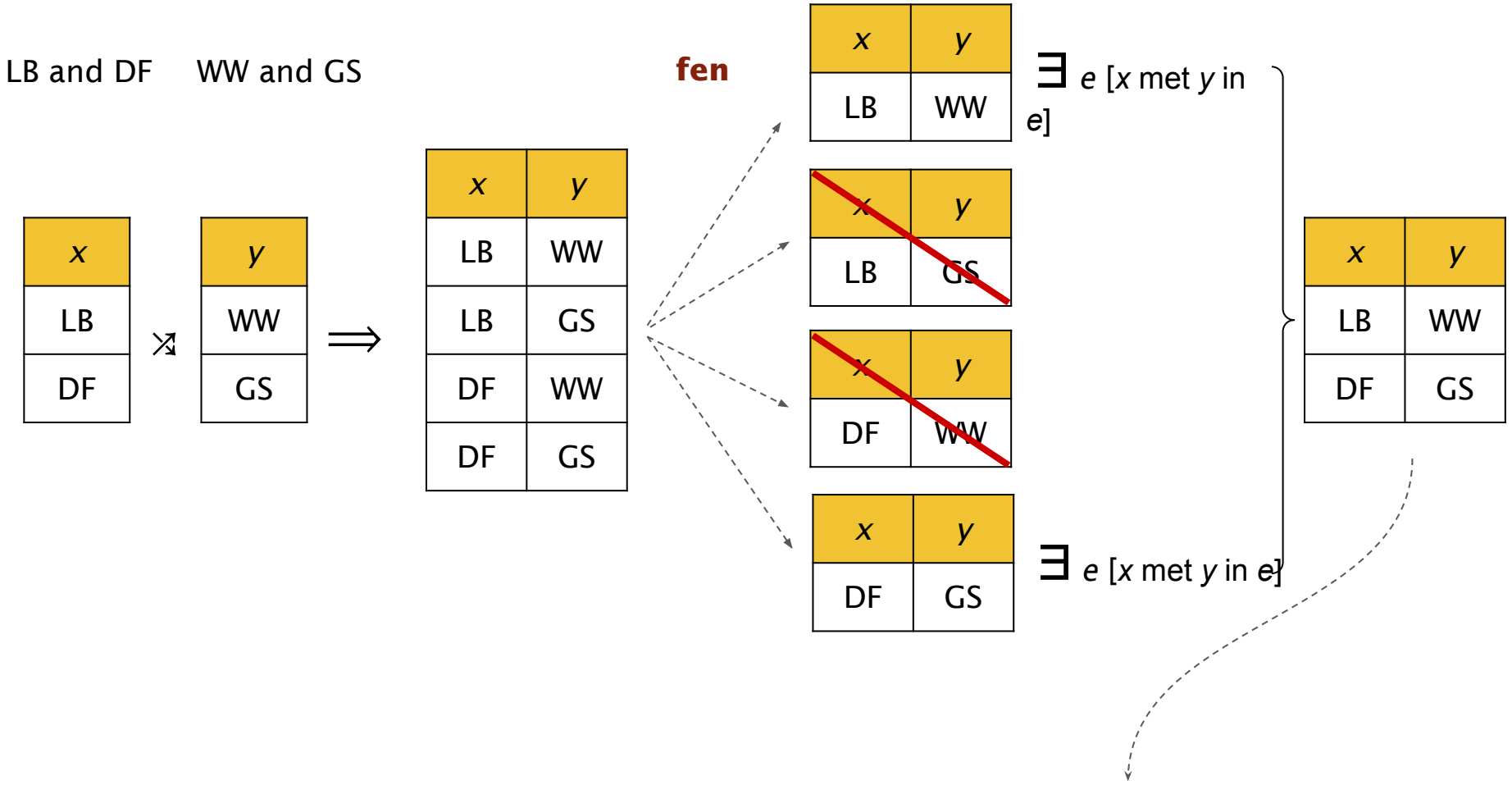
Deriving cumulative readings

22. Libai he Dufu fenbie jian-le Wangwei he Gaoshi.
    LB and DF meet-PER WW and GS

LF of 22

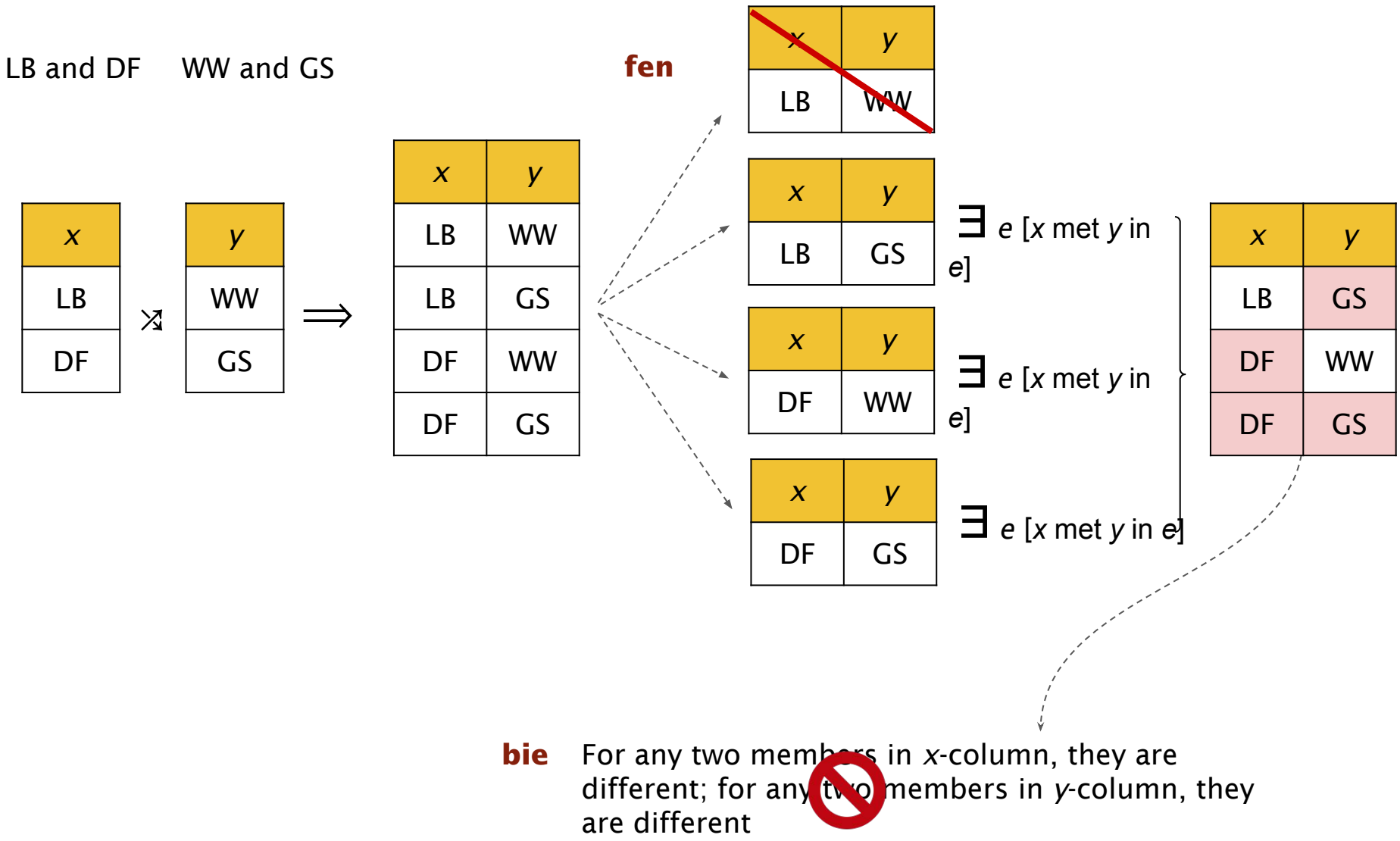


Deriving cumulative readings



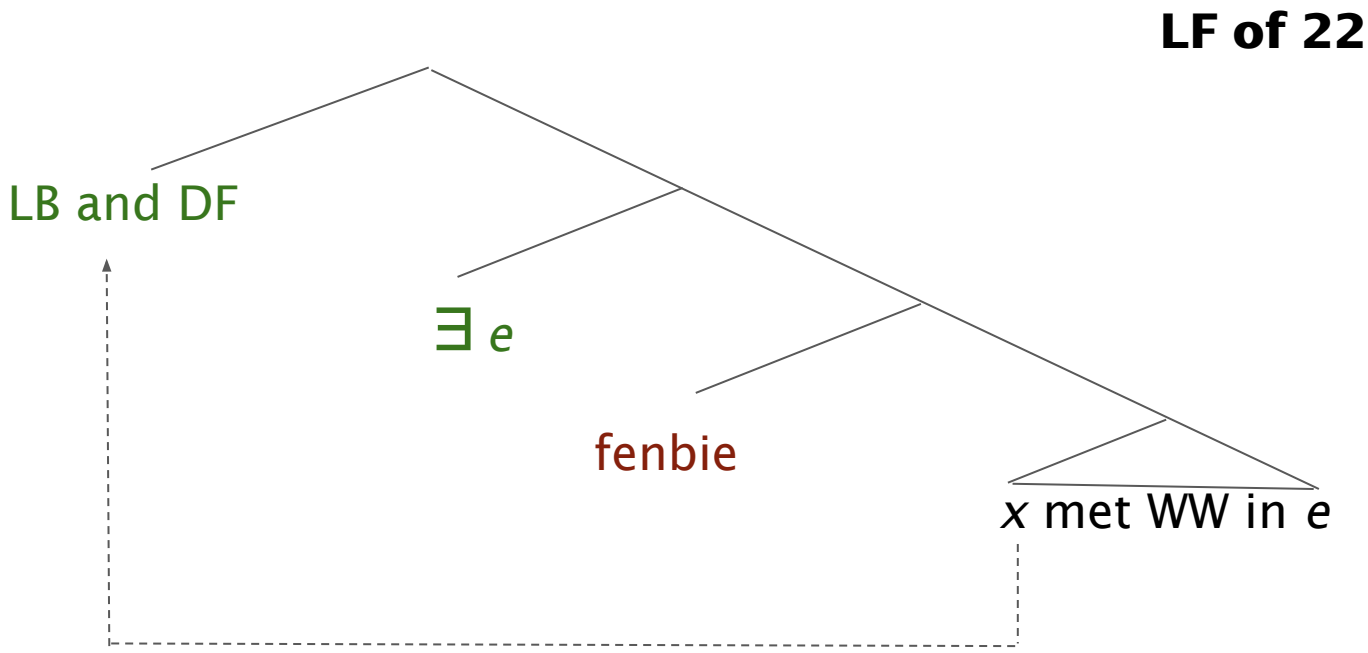
bie For any two members in *x*-column, they are different; for any two members in *y*-column, they are different

Deriving cumulative readings

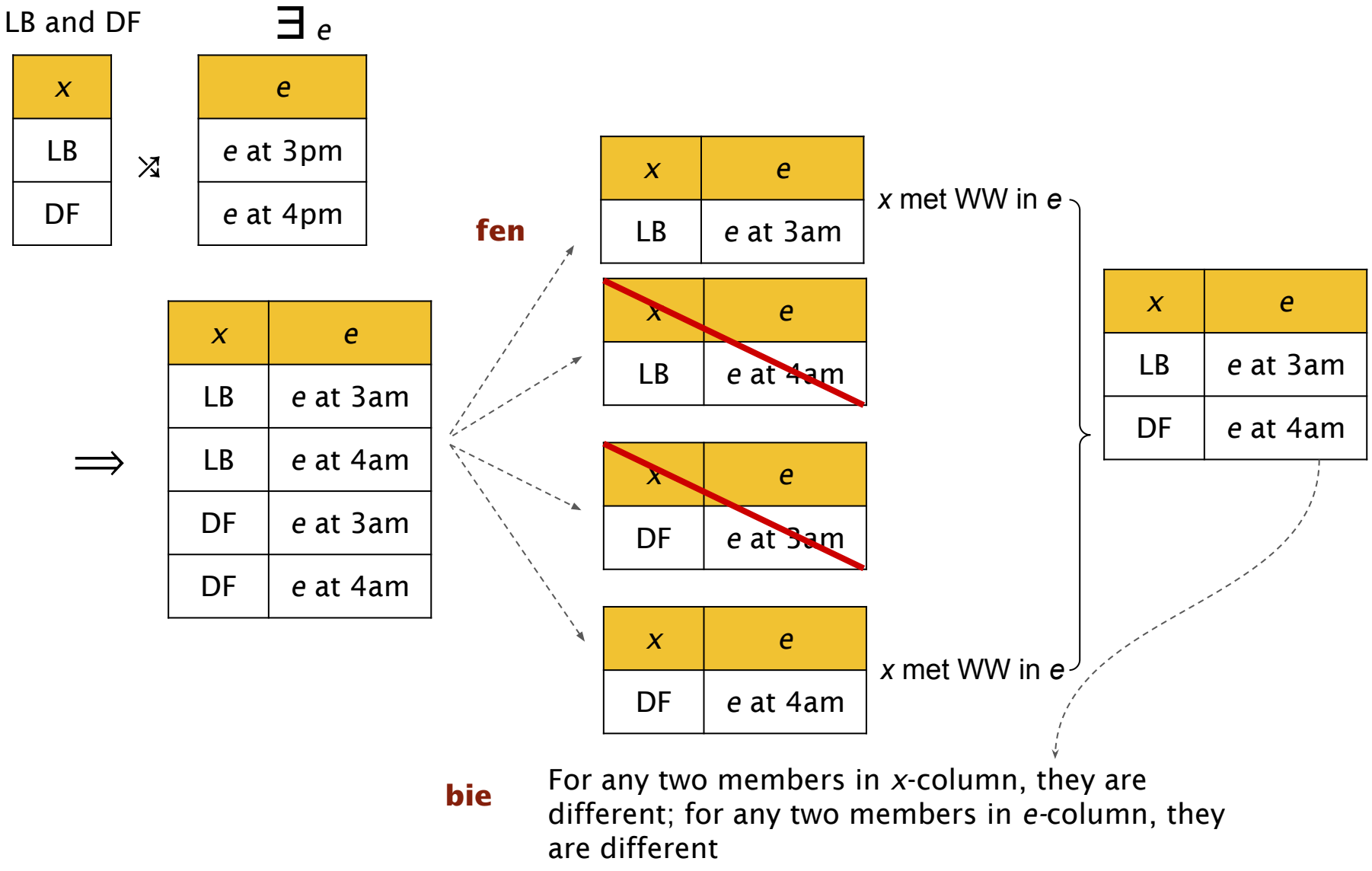


Deriving distributive readings

23. Libai he Dufu fenbie jian-le Wangwei.
    LB and DF meet-PER WW



Deriving distributive readings



LF movement and locality effects

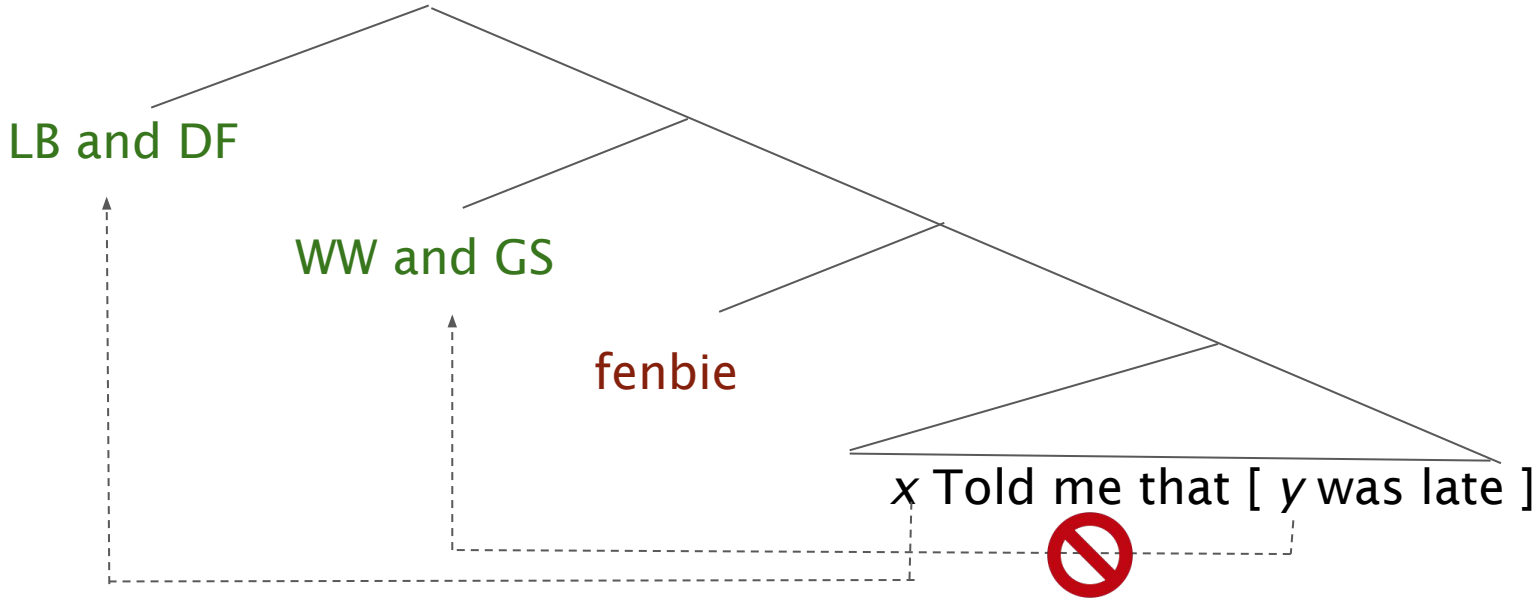
24. Libai he Dufu fenbie gen wo shuo **[**Wangwei he Gaoshi chidao-le**]**.

LB and DF with I say WW and GS late-PER

a. **??** 'LB told me that WW was late; DF told me that GS was late'

b. 'Both LB and DF told me WW and GS were late.'

LF of 24



State verbs are not compatible with *fenbie*

24. *Libai he Dufu fenbie hen congming.
    LB and DF very smart
    Intended 'Both LB and DF are smart.'

25. *Libai he Dufu fenbie dong yingyu.
    LB and DF know English
    Intended 'Both LB and DF know English.'

A state verb denote states that cannot be partitioned to sub-states along the lines of spatial-temporal intervals (Rothstein 1999).

Conclusion and outlook

[LB and DF]$_x$ [WW and GS]$_y$ fenbie [*x* jian-le *y*]

- "Fen" separates an information state into sub-states
- "Bie" imposes a postsupposed constraint

LB and DF ge read one book.

- "Ge" separates an information state into sub-states;
- Then, it imposes a postsupposed constraint

(Law 2019; see also Feng 2014)

What about *dou*? Can we design a uniform scheme to capture the meaning of distributive adverbs?

Thank you