Compression and Emergent Structure in the BA Construction in Mandarin Chinese

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(Report Outlines)

1. Introduction

1.1 Defining the BA construction

Syntactic structure: NP + BA +NP + VP (V + complement)+ (often with a situation marker of accomplishment)

e.g.

他	把	我的手	推	开。
NP	BA	NP	V	C
He	BA	My Hand	Push	Away

He pushed my hand away.

1.2 Previous Studies:

1) **structural grammar**:

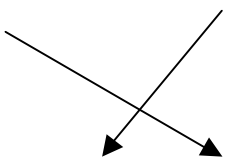
Focusing the study on defining the grammatical function of BA = preposition, and the formation of the structure.

2) **transformational grammar**:

Focusing the study on the transformation of the construction from another construction.

e.g.

我	读	了	这本书。
I	read	(Ed-ACCOM)	this book.



`````我　把　　这本书　　读　　了
　　I　　BA　　this book　　read　(Ed-ACCOM)
(Here Ed is grammatically marking a situation of being accomplished.)

3) **Case grammar:**

Focusing the study on defining each element’s semantic meaning, agent, theme, location, patient, etc. and the semantic constraints on the transformation of the construction.

4) **Grammar semantics:**

Focusing the study on the grammatical marker often going with a marker of accomplishment(le(了), = Ed-ACCOM) and other semantic constraints.

### 1.3 Problems remain unsolved in the previous study

1) Why can some sentences of BA construction not be transformed back to a single sentence?

e.g.
他　把　　画　　挂　　坏了。
He　BA　Painting　Hung　Damaged-ACCOM
*他　挂　坏　画。
*He　Hung the Painting Damaged.

He hung the painting and painting was damaged.

e.g.
他　把　球　　投　　进　　蓝里。
He　BA　the Ball　Threw　into　the basket.
* 他　投球　进蓝。
* He　Threw the Ball into the Basket.(In Chinese it is not accepted in this patter.)
He threw the ball and the ball are into the basket.

2) Why does in most cases BA construction have an aspect marker (le),resembling －ed in English, showing accomplishment?

e.g.
我　读　杂志。　　(I read magazines.)
我　把　杂志　读　了。　(I　BA Magazines　Read-ACCOM<ed>)

3) Why does the transformed BA construction have emergent structure in comparison to the original construction?

e.g.
他　把　Ipod　听　疯了。　(He　BA Ipod Listen Crazy.)
New emergent structure: not crazy about Ipod itself, but the music in Ipod

# 2. Research toward a Blending Theory
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2.1 **Global Insight:**

The BA construction is a Process of events integration.

2.2 Tentative answers to the above questions:

1) In most cases the BA construction has to be unpacked into two sequence events. So people will feel difficult to let them go back to a single sentence.
2) In order to express the effect caused by an action, the accomplishment marker is necessary explicitly or implicitly.
3) In the process, compression occurs via many mapping mechanical devices, such as metonymy, analogy, causing the compression of cause-effect, identity shift, etc. so the blended construction is richer in meaning than the equivalent original sentences.

2.3 **New Definition:**

We integrate or unpack the sequence events when we produce and interpret the BA construction. It constitutes two essential events. One is the Process(PRC), another looks like an effect(EFF). It can be formalized as:

PRC causes / EFF to occur

e.g.

我	把	书	读	坏-了.
I	BA	Book	Read	Damaged-ACCOM

PRC: I read the book.

EFF: The book was damaged.

2.4 Characteristics of the construction

1. It is highly formalized, not many structural variations of the construction arise in the blend. Only first NP can be omitted if inferable in the context.

Structure: NP BA NP V + complement.

2. It is an entrenched structure expressing CAUSE-EFFECTS, with the first NP as a causer, the second NP as a causee. It imposes a force of Cause-Effect upon the two sequence events, even if they have no direct links of the Cause and Effect.
3. It is a complex double-scope integration network, from both spaces elements are drawn to form the new structure.

3. Mental Space Cognition of the BA construction

3.1 **Generic space**: Cause and Effects (general understanding: causer, causee, effect via an action)

3.2 **Two input spaces**:

Input 1: formalized structure: NP BA NP V + comp + ACCOM (ed.le)

Input 2: sequence events, semantic and lexical input with the relation of

Cause and Effect.

3.3 **Blend space:** Through different mappings, the focus of causer and causee is represented in the blending

3.4 **Figure:** It can be illustrated in Figure 1

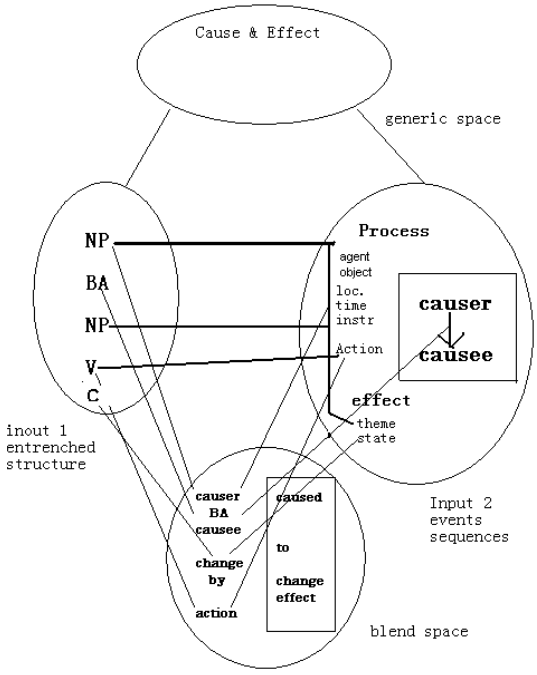

Figure 1: General Model

4. Categories of Mappings

4.1 Rational for Mapping Categorization

In the blending network the syntactic structure imposes the force of CAUSER and CAUSEE. While producing or comprehending the structure, we automatically map the causer and causee with the lexical or semantic elements in Input Space 2 in order to make the Causer and Causee verbally expressed. Through this mapping process, people can choose different possible elements to foreground their causer and causee to form their new focus. Generally speaking, mapping provides a way for people to feel and observe the emergent structure in the blend. So the first task for the research is to categorize the mappings in order to have a clear picture of where the emergent structure comes from.

4.2 The data collection: (illustration omitted)

4.3 The mapping illustration:

Mapping Causer(NP1) and Causee(NP2) in Input Space 1 with the grammatical functions of the lexical elements in Input Space 2. Based on the mapping, the blended conceptual models are expressed in a semantic scheme.

4.4 Tentative Result

Through the data analysis, 12 mapping categories are summarized in Table 1.

Table 1: Mapping Categories of in the BA Construction

Cases	Structure	Semantic Scheme
1	NP1 Causer (PRC agent) + NP2 Causee(PRC obj)	X do Y, as a result Y changes
2	NP1 Causer (PRC agent) + NP2 Causee (PRC material, location, instrument, indirect object, etc.)	X do Y with Z, for Z, as a result, Z changes
3	NP1 Causer (PRC agent) + NP2 Causee (EFF theme)	X do Y, as a result, Z changes
4	NP1 Causer (PRC distance) + NP2 Causee (EFF theme)	X do sth. for Z (distance), as a result, Z causes changes to Y
5	NP1 Causer (PRC instrument) + NP2 Causee (PRC object)	X do Y with Z (instrument), as a result, Z causes changes to Y
6	NP1 Causer (PRC normative case) + NP2 Causee (PRC object)	X doing sth. to Y, as a result, Y changes
7	NP1 Causer (PRC normative case) + NP2 Causee (PRC agent)	X doing Y, as a result, X changes
8	8. NP1 Causer (PRC normative case) + NP2 Causee (EFF theme)	X do Y, as a result, Z changes
9	NP1 Causer (PRC obj) + NP2 Causee (PRC instrument) NP1 Causer (PRC instrument) + NP2 Causee (PRC obj)	X do Y with Z, as a result, Y changes Z
10	NP1 Causer (PRC obj) + NP2 Causee (PRC agent)	X do Y, as a result, X changes
11	NP1 Causer (PRC obj) + NP2 Causee (EFF obj)	X do Y, as a result, X use Z to do Y
12	NP1 Causer (PRC theme) + NP2 Causee (EFF agent)	X is Y, as a result, Z do

5. Cases of Mappings

STR = Structure
BCM = The blended conceptual Model
PRC= Process
EFF = Effect
ACCOM = Accomplishment
Case 1
STR: NP1 Causer (PRC agent) + NP2 (PRC obj)
BCM: X do Y, as a result Y changes.
e.g.

她	把	画	挂	坏	了。
She	BA	Painting	Hang	Damaged-ACCOM.	

PRC: She hang the painting.
EFF: The painting was damaged.

The mapping diagram

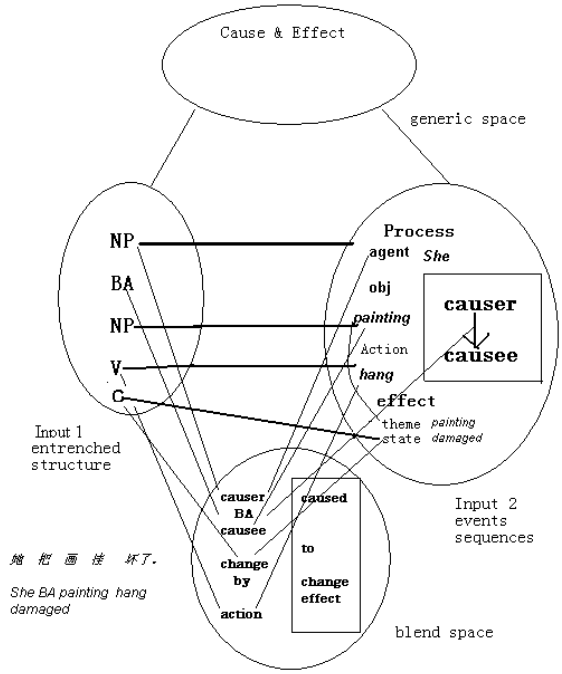

Figure 2: Case 1

Case 2

STR: NP1 Causer (PRC agent) + NP2 Cuasee (PRC material, location, instrument, indirect object, etc.)

BCM: X do Y with Z, for Z, as a result, Z changes

e.g.

张先生 把 椅子 坐 塌 了.

Mr Zhang BA Chair Sat Break-ACCOM.

PRC: Mr sat on the chair.

EFF: The chair was broken

Mapping Diagram

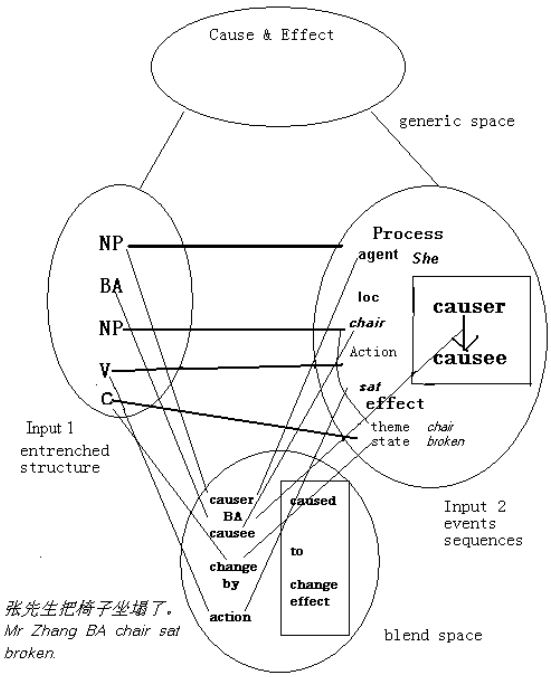

Figure 3: Case 2

Case 3

STR: NP1 Causer (PRC agent) + NP2 Causee (EFF theme)

BCM: X do Y, as a result, Z changes

e.g.

他　把　头发　愁　白　了。

He　BA　Hair　Worried White-ACCOM.

PRC: He worried.

EFF: His hair turned white

Mapping Diagram

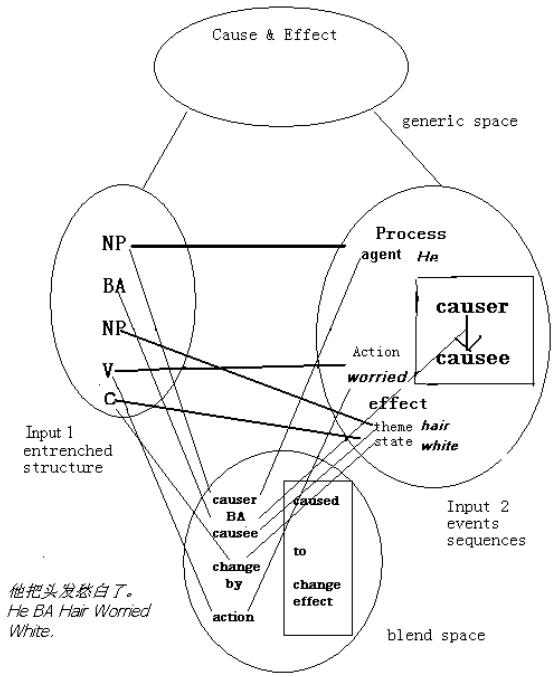

Figure 4: Case 3

Case 4

STR: NP1 Causer (PRC distance) + NP2 Causee (EFF theme)

BCM: X do sth for Z (distance), as a result, Z causes changes to Y

e.g.

三里路　　把　脚（都）走　　肿　　了。

Three miles (distance) BA　Feet　Walked Swollen-ACCOM.

PRC: We(inferable) walked for three miles.

EFF: Our feet turned swollen.

Mapping Diagram

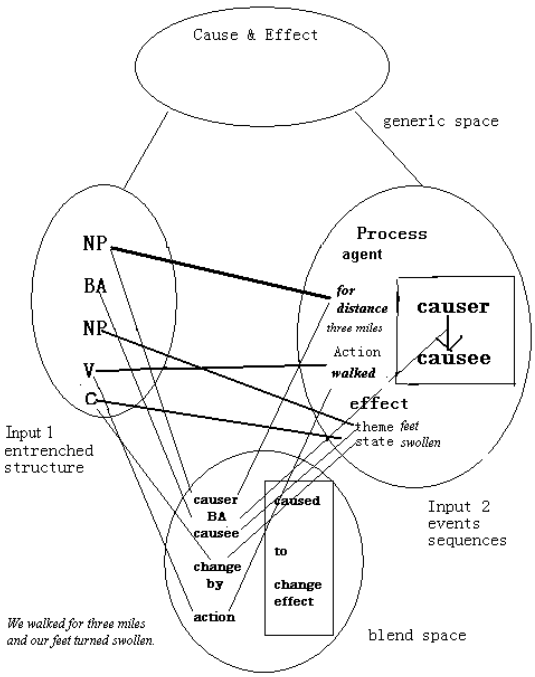

Figure 5: Case 4

Case 5

STR: NP1 Causer (PRC instrument) + NP2 Cuasee (PRC object)

BCM: X do Y with Z (instrument), as a result, Z causes changes to Y

e.g.

刀	把	箩卜	切	成	粗条。
Knife(instrument)	BA	Turnips	Cut-ACCOM		Big Pieces.

PRC: agent(inferable) cut turnips with a knife.

EFF: The turnips turned into big pieces.

Mapping Diagram

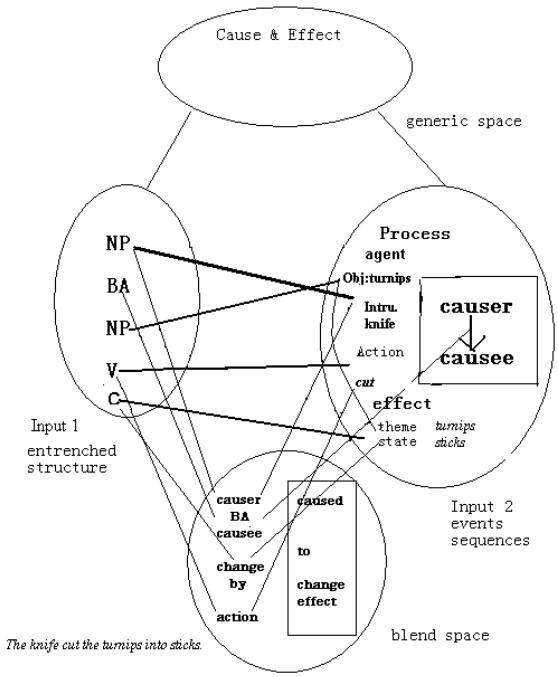

Figure 6: Case 5

Case 6

STR: NP1 Causer (PRC normative case) + NP2 Causee (PRC object)

BCM: X doing sth. to Y, as a result, Y changes

e.g.

妈妈的话	把	他	说 得	信心倍增。
Mother’s Words(normative case)	BA	Him	Speak-ACCOM	More Confident.

PRC: Mother spoke to him.

EFF: He became more confident

Mapping Diagram

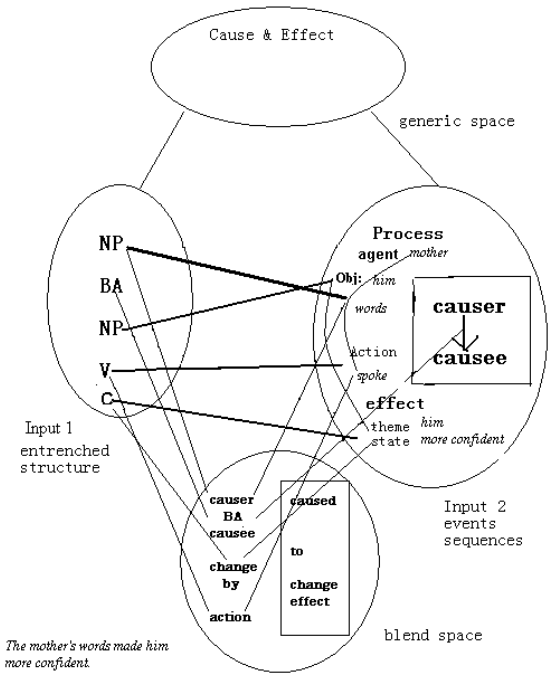

Figure 7: Case 6

Case 7

STR: NP1 Causer (PRC normative case) + NP2 Causee (PRC agent)

BCM: X doing Y, as a result, X changes

e.g.

爬山		把	我们	爬	累	了。
Climbing	(normative case)	BA	We	Climb	Tired-ACCOM.	

PRC: We climbed mountains.

EFF: We felt tired.

Mapping Diagram

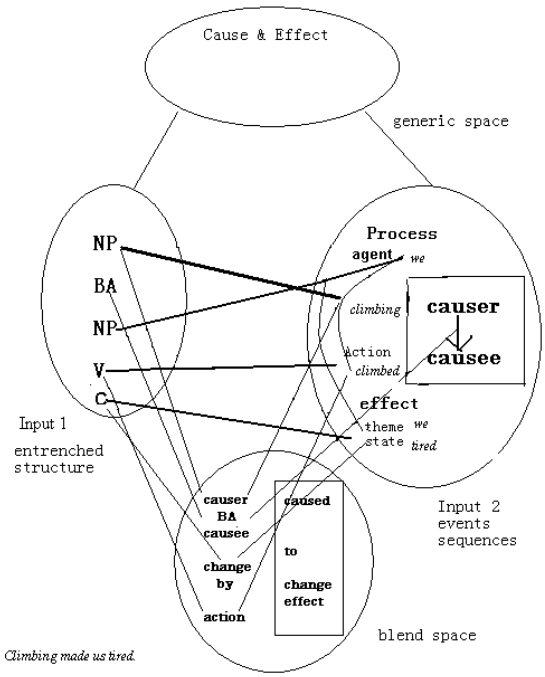

Figure 8: Case 7

Case 8

STR: NP1 Causer (PRC normative case) + NP2 Causee (EFF theme)

BCM: X do Y, as a result, Z changes

e.g.

他的话　　把　耳朵(都)听　　起　　茧　　了。

His words(normative case) BA　Ears　　Listen to forma　a Callus-ACCOM.

PRCess: He spoke to (inferable obj.)

Effect:　There formed callus in one’s ears.

Mapping Diagram

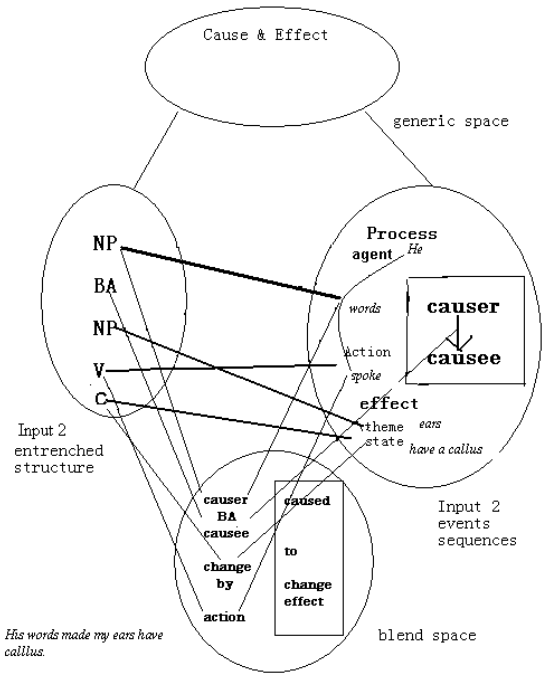

Figure 9: Case 8

Case 9

STR: NP1 Causer (PRC obj) + NP2 Causee (PRC instrument)
NP1 Causer (PRC instrument) + NP2 Causee (PRC obj)

BCM: X do Y with Z, as a result, Y changes Z

e.g.

萝卜　把　刀　切　钝　了。

Turnips　BA　Knife　Cut　Blunt-ACCOM.

PRC: He (inferable) cut turnips with a knife.

EFF: The knife turned blunt.

Mapping Diagram

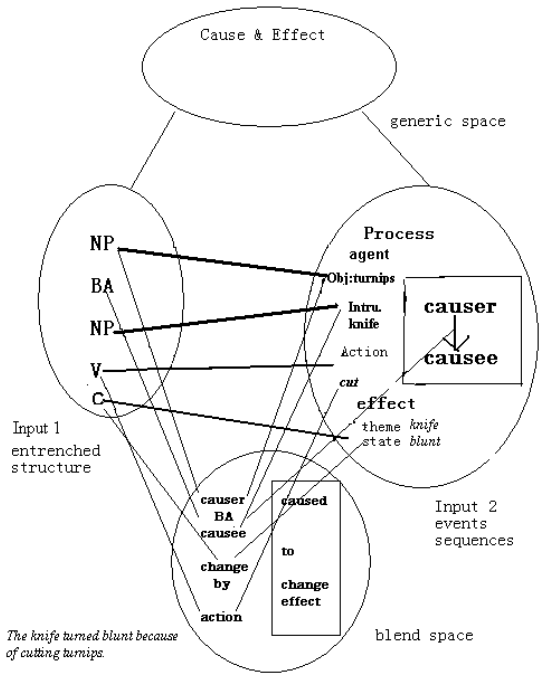

Figure 10: Case 9

Case 10

STR: NP1 Causer (PRC obj) + NP2 Causee (PRC agent)

BCM: X do Y, as a result, X changes

e.g.

这本书　　把　我　看　　烦　　了。

This book　BA　I　　Read　Bored-ACCOM.

PRC: I read this book.

EFF: I felt tired.

Mapping Diagram

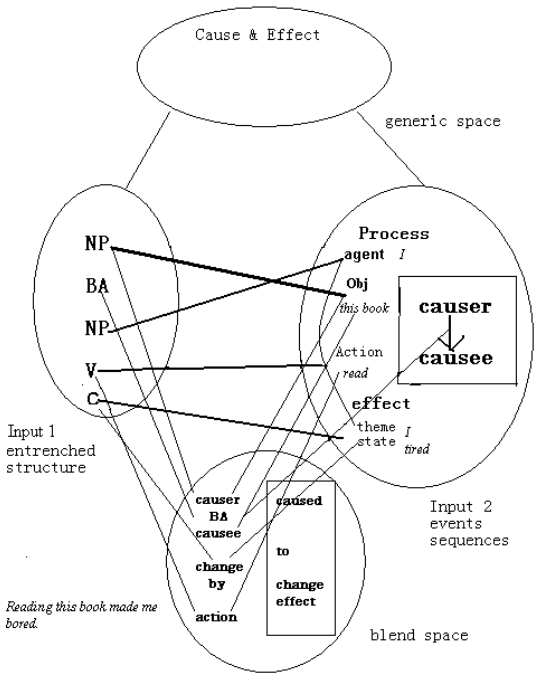

Figure 11: Case 10

Case 11

STR: NP1 Causer (PRC obj) + NP2 Causee (EFF obj)

BCM: X do Y, as a result, X use Z to do Y

e.g.

这本书	把	我三个星期全	用进去 了。
This book	BA	All My Thee Weeks	Used up-ACCOM.

PRC: I read this book.

EFF: I used all my three weeks.

Mapping Diagram

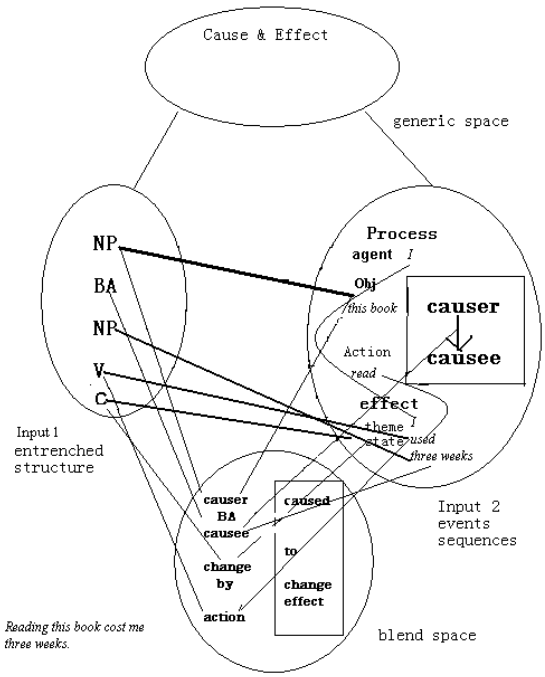

Figure 12: Case 11

Case 12

STR: NP1 Causer (PRC theme) + NP2 Causee (EFF agent)

BCM: X is Y, as a result, Z do

e.g.

天气　　把　知鸟　热　得　半夜叫。

The weather　BA　Cicadae Hot-ACCOMP Chirp in the Midnight.

PRC: The weather was hot.

EFF: Cicadae chirped at the midnight.

Mapping Diagram

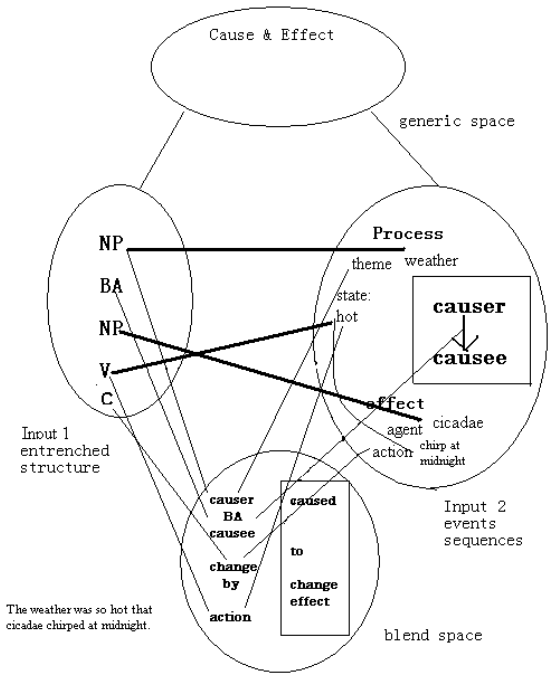

Figure 13: case 12

6. Discussions

6.1 Cases of Emergent Streucture

1) The blend automatically gets the force of Cause-Effect in the whole network.

Case 1

她 把 画 挂 坏 了。

She BA Painting Hang Damaged-ACCOM.

Unpacked Sequence Events:

PRC: She hung the painting.

EFF: The painting was damaged.

Discussion:

There is a possibility that her action caused the damage. But when blended in the construction, the relation Cause-Effect is strengthened.

Case 2

他 把 书 读 傻-了。

He BA Book Read Foolish-ACCOM.

Unpacked Sequence Events:

PRC: He read the book.

EFF: He turned a fool.

Discussion:

In common sense, reading can make people clever. But in this blend, we have to accept reading as a defaulted cause of his turning a fool.

2) With different the mappings, different elements represented by NPs are foregrounded, new focuses of the events are shaped.

Case 3

a. 箩卜把刀切钝了。 (Turnips BA Knife Cut Blunt-ACCOM.)
b. 刀把箩卜切钝了。 (Knife BA Turnip Cut Blunt-ACCOMP.)
c. 我切箩卜把刀切钝了。 (I Cutting Turnitp BA Knife Cut Blunt-ACCOMP.)

Unpacked Sequence Events:
PRC: I cut the turnip with a knife.
EFF: The knife turned blunt.

Discussions:
Sentence a. The focuses is the turnip which is hard to cut, it causes the knife to turn blunt when used to cut it.
Sentence b. The focus is the knife which turned blunt when used to cut the turnip.
Sentence c. The focus is I who cause the knife to turn blunt when cutting the turnip.

3) The mappings provide a potential means for some pragmatic interpretations.

Case 4
她 把 画 挂 坏 了。
She BA Painting Hang Damaged-ACCOM.

Unpacked Sequence Events:
PRC: She hung the painting.
EFF: The painting was damaged.

Pragmatic Interpretation:
She was responsible for the damamge. (implication: reproach)

Case 5
她 把 这首歌 唱 糟蹋了。
She BA Thing Song Sang Ruined-ACCOM.

Unpacked Sequence Events:
PRC: She sang this song.
EFF: This song was ruined.

Pragmatic Interpretation:
She was not the right person to sing this song. (implication: The song is well written,

but the singer made the song not so enjoyable as expected.)

Case 6

他　　把　　特务　　跑-了。
He　　BA　　the Spy　　Escape-ACCOM.

Unpacked Sequence Events:

PRC: He let the action happen.*
EFF: The Spy escaped.

Pragmatic Interpretation:

We can infer the person's role is concerned with the imprisoning of the spy. (implication: He did sth. to let the escaping occur.)

6.2 Cases of Compressions

6.2.1 Cause-Effect

Case 7

天　　把　　知鸟　　热-得　　半夜叫。
The Weather　　BA　　Cicadae　　Heat-ACCOM　　Chirp at the Midnight.

(As laymen, many people really don't know what is the proper time for a cicadae to chirp. They can not see any direct Cause-Effect relation between the weather and the cicadae's chirp. But with the outer-space Cause-Effect-projection, people can see the connection in the blend.)

6.2.2 Time

Case 8

他　　把　　头发　　愁　　白-了。
He　　BA　　Hair　　Worry　　White-ACCOM.
(The time is compressed by syncopation.)

6.2.3 Similarity

Case 9

他　　把　　洞口　　挖-得　　像井口。
He　　BA　　the Hole　　Dug-ACCOM　　Looking like a well
(Similarity between the hole and the well)

6.2.4 Identity

Case 10

他　　把　　钢笔　　写　　断-了。
He　　BA　　the Pen　　Write　　Broken-ACCOM.
(the change of identity: the are two pens, one was in a good condition, one is broken)

6.2.5 Part-whole

Case 11

她　把　Ipod　听　疯-了。

She　BA　Ipod　Listen　Crasy-ACCOM.

(Ipod stands for the music on Ipod.)

6.2.6 Disanalogy

Case 12

他　把　门　开-了　一条缝。

He　BA　the Door　open-ACCOM　a Crack.

(Two doors are different.)

6.2.7 Intentionality

Case 13

我　把　她　恨　死了。

I　BA　She　hate　to Death-ACCOM.

Two alternative interpretations:

a.

PRC: I hate her.

EEF: I want to die.

b.

PRC: I hate her.

EFF: I want her to die.

(The two interpretations are based on the interpretation of the intentionality.)

6.3 Cases of Mapping Principles

6.3.1 Topology

Though all the participants in the sequence events are likely to be projected to the blend as causer or causee, yet the projection must be in agreement with the basic event topology. "The relation is projected without change." If the relation is changed with detrimental information, the projection automatically stops.

e.g.

她丈夫打了她。　(Her Husband Beat-ACCOM Her.)　(topology: H Beat W)

她丈夫把她打了。　(Her Husband BA She Beat-ACCOM)　(topology: H Beat W)

＊她把她丈夫打了。　(She BA Her Husband Beat-ACCOM)　(topology: W Beat H)

If the major event topology is not changed, sometime people can have different unpacking process. That's why the ambiguities are possible in many situations.

e.g.

我　把　马　骑　累-了。

Wo　BA　the horse　Ride　Tired-ACCOM.

Topology: I Ride Horse

Two alternative interpretations:

a. I was tired just because of riding the horse. (I Ride Horse.)

b. The horse was tired just because of being ridden by me. (I Ride Horse.)

6.3.2 Patterns Completion

The basic patter of the construction is Cause-Effcet. The bending of the events often takes the pattern from this generic pattern to integrate the events which might look no direct link between of them as a cause-effect.

e.g.

他把我气的吐血。

He BA I Annoy-ACCOM have hematemesis.

Unpacked Sequence Events:

PRC: He annoyed me.

EFF: I had hematemesis.

Within the space, we find the two events have no direct relation, yet with the projection of the Cause-Effect pattern from the generic space, the two events can be explained in terms of Cause-Effect.

In other words, as a principle, the pattern completion also restricts blending if no elements in the spaces can help complete the pattern. So the sequence events in the above sentence can not be conversed as: I had hematemesis so he annoyed me.

6.3.3 Integration

Just integrate necessary elements.

e.g.

她	把	Ipod	听	疯-了。
She	BA	Ipod	Listen	Crasy-ACCOM.

(We just integrate Ipod as an metonymy of music via this intrument. Not necessay to integrate Apple made, American made, Cool shape and color and so on.)

6.3.4 Vital Relations

Although in some cases the instrument or other elements instead of the agent of the event is projected into the first NP as a causer, the vital relation Cause-Effect is still maintained.

e.g.

刀	把	箩卜	切成	粗条。
Knife	BA	Turnip	Cut into	big pieces.

Unpacked sequence events:

PRC: (inducible agent) cut the turnips.

EFF: The turnip turned into big pieces.

Here the Effect that the turnip turned into big pieces is caused by a knife, the instrument used by an agent.

6.3.5 Web

The Blend of BA Construction takes the grammatical structure NP BA NP V-ACCOM from Input Space 1, the sequence events from Input Space 2, and the Cause-Effect structure fro Generic Space. It forms a good web. Without the web, the integration is impossible. We can not change any space without changing the meaning and relations.

6.3.6 Unpacking

All the sentences of the BA construction can be unpacked into sequence events.

6.3.7 Relevance

We often try to maximize the relevance of the element for the network.

e.g.

他	把	字	写	贵-了。
He	BA	Characters	Write	Expensive-ACCOM.

Literary clash: the Characters can not be scaled with a price. In the theory of relevance, we have to change the literary meaning of characters into the meaning of an good which can be sold. In this way the calligraphy would be activated in the blend, so the sentence can be unpacked as he paid money for someone writing the characters as an artifact to him and the price was expensive. As a rule, we often unpack the element, or activate a certain element according to the relevance. If we can not detect the relevance of the elements in semantic field, we can never gain the global insight of the communication.

7. Conclusion

7.1 General insights:

1) The BA construction in Mandarin Chinese is a grammatically conceptualized tool for people's cognition of the integration of sequence events.
2) With different mappings of the elements in the space, emergent structures occure.
3) The Mappings are related with the compressions of the relations between the elements either in outer-space or within the space.
4) The compressions are also governed by a set of principles in order to produce good mappings.

7.2 For the further research:

1) To establish a data corpus to find more topologies of the construction in modern Mandarin Chinese.
2) To further study some exceptional constructions,(some verbs can have BA

construction without explicit marker-ACCOM, why some verbs with the repetition patterns, e.g. 学习学习-study study, 讨论讨论-discuss discuss, can occur in the construction without using markers of ACCOM.)

3) To further study the negation construction and the cancellation of the situation marker of accomplishment.
4) To further study the constraints for people to blend or unpack some illogical expressions.
5) To further study the pragmatic interpretations of the constructions.