

The Grammar of Dish Names in Mandarin Chinese

Juan Zhong and Jean-Pierre Koenig

University at Buffalo

juanzhon@buffalo.edu and jpkoenig@buffalo.edu

HPSG 2026, August 4, 2026, Bergen, Norway.

The phenomenon

Mandarin Chinese dish names (MDNs)

The phenomenon

Mandarin Chinese dish names (MDNs)



Generated by ChatGPT by prompting it
with a real photo of 黑椒牛柳粒 *hēijiāo*
niúliǔ lì 'diced beef tenderloin with
black pepper' from [https://
i.ytimg.com/vi/77OvERF1RIQ/
sddefault.jpg](https://i.ytimg.com/vi/77OvERF1RIQ/sddefault.jpg)

The phenomenon

Mandarin Chinese dish names (MDNs)

(1) 黑椒香蒜牛柳粒炒饭

hēi-jiāo

black-pepper

[A-N]_{N1}

xiāng-suàn

fragrant-gallic

[A-N]_{N2}

niúliǔ-lì

beef.tenderloin-grain

[N-CL]_{N3}

chǎo

stir.fry

V

fàn

cooked.rice

N₄

‘stir-fried cooked rice with diced beef tenderloin, black pepper and garlic’



Generated by ChatGPT by prompting it
with a real photo of 黑椒牛柳粒 *hēijiāo*
niúliǔ lì 'diced beef tenderloin with
black pepper' from [https://
i.ytimg.com/vi/77QvERF1RIQ/
sddefault.jpg](https://i.ytimg.com/vi/77QvERF1RIQ/sddefault.jpg)

The phenomenon

Mandarin Chinese dish names (MDNs)

(1) 黑椒香蒜牛柳粒炒饭

hēi-jiāo

black-pepper

[A-N]_{N1}

xiāng-suàn

fragrant-gallic

[A-N]_{N2}

niúliǔ-lì

beef.tenderloin-grain

[N-CL]_{N3}

chǎo

stir.fry

V

fàn

cooked.rice

N₄

‘stir-fried cooked rice with diced beef tenderloin, black pepper and garlic’



Generated by ChatGPT by prompting it
with a real photo of 黑椒牛柳粒 *hēijiāo*
niúliǔ lì 'diced beef tenderloin with
black pepper' from [https://
i.ytimg.com/vi/77QvERF1RIQ/
sddefault.jpg](https://i.ytimg.com/vi/77QvERF1RIQ/sddefault.jpg)

Observations:

- Very long sequences of words
- No overt morphosyntactic marking for structure

Takeaways of the talk

Takeaways of the talk

1. Templatic morphosyntax (Good 2016)

- MDNs consist of a flat sequence of “slots” with a fixed order, and there may be more than one word per slot.

Takeaways of the talk

1. Templatic morphosyntax (Good 2016)

- MDNs consist of a flat sequence of “slots” with a fixed order, and there may be more than one word per slot.

2. Semantic transparency and semi-compositionality (Carlson 1977; McNally & Boleda 2004)

- MDNs denote a *kind* with semantically transparent parts, while the meaning of the whole MDN is more than the sum of its parts.

Takeaways of the talk

1. Templatic morphosyntax (Good 2016)

- MDNs consist of a flat sequence of “slots” with a fixed order, and there may be more than one word per slot.

2. Semantic transparency and semi-compositionality (Carlson 1977; McNally & Boleda 2004)

- MDNs denote a *kind* with semantically transparent parts, while the meaning of the whole MDN is more than the sum of its parts.

3. Specialized-domain grammar (Gross 1995; Smith 1999; Koenig & Michelson 2021)

- Dish names, as a particular semantic domain, have a *unique* morphosyntax and morphosyntax-semantics interface.

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
3. Our dataset
4. Our HPSG analysis
5. Special cases
6. General Discussion

Compound nouns in Mandarin Chinese

(2) Types of compound nouns in Mandarin (Chao 1968; Huang 1997; Packard 2000)

- | | | | | |
|----|--|--------------------|--|----------------|
| a. | [N ₁ -N ₂] _N | 灯火 <i>dēnghuǒ</i> | <i>deng</i> ‘lamp’ + <i>huo</i> ‘fire’ | ‘illumination’ |
| b. | [A-N] _N | 小时 <i>xiǎoshí</i> | <i>xiao</i> ‘small’ + <i>shi</i> ‘hour’ | ‘hour’ |
| c. | [V-N] _N | 飞机 <i>fēijī</i> | <i>fei</i> ‘fly’ + <i>ji</i> ‘machine’ | ‘airplane’ |
| d. | [N-A] _N | 月亮 <i>yuèliàng</i> | <i>yue</i> ‘moon’ + <i>liang</i> ‘bright’ | ‘moon’ |
| e. | [N-V] _N | 地震 <i>dìzhèn</i> | <i>di</i> ‘earth’ + <i>zhen</i> ‘quake’ | ‘earthquake’ |
| f. | [N-CL] _N | 车辆 <i>chēliàng</i> | <i>che</i> ‘car’ + <i>liang</i> ‘classifier for vehicle’ | ‘vehicle’ |
| g. | [A-V] _N | 小说 <i>xiǎoshuō</i> | <i>xiao</i> ‘small’ + <i>shuo</i> ‘say’ | ‘novel’ |
| h. | [A ₁ -A ₂] _N | 空白 <i>kòngbái</i> | <i>kong</i> ‘empty’ + <i>bai</i> ‘white’ | ‘blank’ |
| i. | [V ₁ -V ₂] _N | 开关 <i>kāiguān</i> | <i>kai</i> ‘open’ + <i>guan</i> ‘close’ | ‘switch’ |
| j. | [CL ₁ -CL ₂] _N | 条件 <i>tiáojiàn</i> | <i>tiao</i> ‘classifier for listable things’
+ <i>jian</i> ‘classifier for objects’ | ‘condition’ |

MDNs differ from regular compound nouns

MDNs differ from regular compound nouns



Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSp0PAPx1ozX_rd3ZdpMNPRAAgDJN8h87XB3_puTCa6vQ&s=10

MDNs differ from regular compound nouns

(3) 蛋炒饭

dàn

egg

N₁

chǎo

stir.fry

V

fàn

cooked.rice

N₂

‘stir-fried cooked rice and/with eggs’ (Chao 1968: 505)



Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSp0PAPx1ozX_rd3ZdpMNPRAAgDJN8h87XB3_puTCa6vQ&s=10

MDNs differ from regular compound nouns

(3) 蛋炒饭

<i>dàn</i>	<i>chǎo</i>	<i>fàn</i>
egg	stir.fry	cooked.rice
N ₁	V	N ₂

‘stir-fried cooked rice and/with eggs’ (Chao 1968: 505)



Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSp0PAPx1ozX_rd3ZdpMNPRAAgDJN8h87XB3_puTCa6vQ&s=10

- Three possible analyses of the structure of N₁ V N₂
 - A. [N₁ [V N₂]_N]_N
 - B. [[N₁ V]_N N₂]_N
 - C. [N₁ V N₂]_N

MDNs differ from regular compound nouns

(3) 蛋炒饭

<i>dàn</i>	<i>chǎo</i>	<i>fàn</i>
egg	stir.fry	cooked.rice
N ₁	V	N ₂

‘stir-fried cooked rice and/with eggs’ (Chao 1968: 505)



Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSp0PAPx1ozX_rd3ZdpMNPRAAgDJN8h87XB3_puTCa6vQ&s=10

- Three possible analyses of the structure of N₁ V N₂
 - A. [N₁ [V N₂]_N]_N
 - B. [[N₁ V]_N N₂]_N
 - C. [N₁ V N₂]_N
- Analysis A sees N₁ V N₂ as a complex subordinative compound noun (= recursive structure) (Chao 1968).

MDNs differ from regular compound nouns

(3) 蛋炒饭

<i>dàn</i>	<i>chǎo</i>	<i>fàn</i>
egg	stir.fry	cooked.rice
N ₁	V	N ₂

‘stir-fried cooked rice and/with eggs’ (Chao 1968: 505)



Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSp0PAPx1ozX_rd3ZdpMNPRAAgDJN8h87XB3_puTCa6vQ&s=10

- Three possible analyses of the structure of N₁ V N₂
 - A. [N₁ [V N₂]_N]_N
 - B. [[N₁ V]_N N₂]_N
 - C. [N₁ V N₂]_N
- Analysis A sees N₁ V N₂ as a complex subordinative compound noun (= recursive structure) (Chao 1968).
- Semantically, however, both N₁ (*egg*) and N₂ (*cooked rice*) are the proto-patient of the verb V (*stir-fry*).

More examples of complex MDNs

(4) A few complex Mandarin dish names

- a. VN₁N₂ 清炖甲鱼汤 *qīngdùn jiǎyú tāng*
'clear-stewed turtle soup'
- b. N₁VN₂N₃ 萝卜煲排骨汤 *luóbo bāo pái-gǔ tāng*
'pork rib and daikon soup'
- c. N₁N₂VN₃ 汽锅虫草炖老鸭 *qìguō chóngcǎo dùn lǎoyā*
'stewed duck with aweto in steam pot'
- d. V₁N₁V₂N₂ 红烧牛头扣辽参 *hóngshāo niútóu kòu liáoshēn*
'braised ox head covered with sea cucumber'
- e. N₁N₂N₃N₄ 冰糖莲子银耳羹 *bīngtáng liánzi yíněr gēng*
'rock sugar, lotus seeds, and white fungus soup'
- f. N₁N₂N₃VN₄ 黑椒香蒜牛柳粒炒饭 *hēijiāo xiāng suàn niúliǔ lì chǎo fàn*
'stir-fried cooked rice and diced beef tenderloin, with black pepper and garlic'

...

More examples of complex MDNs

(4) A few complex Mandarin dish names

- a. VN_1N_2 清炖甲鱼汤 *qīngdùn jiǎyú tāng*
'clear-stewed turtle soup'
- b. $N_1VN_2N_3$ 萝卜煲排骨汤 *luóbo bāo pái-gǔ tāng*
'pork rib and daikon soup'
- c. $N_1N_2VN_3$ 汽锅虫草炖老鸭 *qìguō chóngcǎo dùn lǎoyā*
'stewed duck with aweto in steam pot'
- d. $V_1N_1V_2N_2$ 红烧牛头扣辽参 *hóngshāo niútóu kòu liáoshēn*
'braised ox head covered with sea cucumber'
- e. $N_1N_2N_3N_4$ 冰糖莲子银耳羹 *bīngtáng liánzi yíněr gēng*
'rock sugar, lotus seeds, and white fungus soup'
- f. $N_1N_2N_3VN_4$ 黑椒香蒜牛柳粒炒饭 *hēijiāo xiāng suàn niúliǔ lì chǎo fàn*
'stir-fried cooked rice and diced beef tenderloin, with black pepper and garlic'

...

A different analysis of the structure of MDNs is needed

Previous linguistic analyses of MDNs

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
“egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
“egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)
 - And what is the relation between ingredients and category?

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
“egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)
 - And what is the relation between ingredients and category?
 - The structural analysis of $V+N$ is inconsistent:

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
“egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)
 - And what is the relation between ingredients and category?
 - The structural analysis of $V+N$ is inconsistent:
 $V+N$ as in $V+N$: “stir-fried eggs” (炒鸡蛋 *chǎo jīdàn*) is endocentric

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 - N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
 - “egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)
 - And what is the relation between ingredients and category?
 - The structural analysis of $V+N$ is inconsistent:
 - $V+N$ as in $V+N$: “stir-fried eggs” (炒鸡蛋 *chǎo jīdàn*) is endocentric
 - $V+N$ as in N_1+V+N_2 : “stir-fried eggs and/with tomatoes” (西红柿炒鸡蛋 *xīhóngshì chǎo jīdàn*) is exocentric

Previous linguistic analyses of MDNs

- Many focus on **metaphorical** or **metonymic** dish names: Huo et al. (2020), Amenador & Wang (2022), Zhang & Torres-Hostench (2024), Zhu et al. (2024), Herliana et al. (2025), ...
- For those that focus on semantically transparent dish names:
 - **Incomplete coverage**
 - dish names from specific regions of China (Cai 2007; Chen 2011; Lam et al. 2018; ...)
 - dish names of specific structural types:
 - N_1+N_2 (Li 2002); $V+N$ (Shen & Li 2024); $A+N$ and N_1+N_2 (Chu 2017); N_1+N_2 and N_1+V+N_2 (Lin 2012); N_1+N_2 , $N_1+N_2+N_3$, $V+N$, and N_1+V+N_2 (Song 2022), ...
 - **Inconsistent analysis** (Song 2022: 95)
 - The semantic categorization of the final position noun is inconsistent:
 - “egg” (鸡蛋 *jīdàn*) as an ingredient (食材 *shícái*) or a dish category (菜品 *càipǐn*)
 - And what is the relation between ingredients and category?
 - The structural analysis of $V+N$ is inconsistent:
 - $V+N$ as in $V+N$: “stir-fried eggs” (炒鸡蛋 *chǎo jīdàn*) is endocentric
 - $V+N$ as in N_1+V+N_2 : “stir-fried eggs and/with tomatoes” (西红柿炒鸡蛋 *xīhóngshì chǎo jīdàn*) is exocentric
- Methodologically, most analyses are **descriptive** and **informal**.

Our proposal

Our proposal

- MDNs are best modeled as:

Our proposal

- MDNs are best modeled as:
 1. **A list of sublists**

Our proposal

- MDNs are best modeled as:
 1. A **list of sublists**
 2. Each sublist denotes a **semantically-defined category**:

Our proposal

- MDNs are best modeled as:
 1. A **list of sublists**
 2. Each sublist denotes a **semantically-defined category**:
PREPARATION, INGREDIENTS, METHOD, PROPERTIES

Our proposal

- MDNs are best modeled as:
 1. A **list of sublists**
 2. Each sublist denotes a **semantically-defined category**:
PREPARATION, INGREDIENTS, METHOD, PROPERTIES
 3. And several **constraints on these sublists**.

Our proposal

- MDNs are best modeled as:
 1. A **list of sublists**
 2. Each sublist denotes a **semantically-defined category**:
PREPARATION, INGREDIENTS, METHOD, PROPERTIES
 3. And several **constraints on these sublists**.

Our proposal

- MDNs are best modeled as:
 1. A **list of sublists**
 2. Each sublist denotes a **semantically-defined category**:
PREPARATION, INGREDIENTS, METHOD, PROPERTIES
 3. And several **constraints on these sublists**.
- Take-home message: HPSG's extensive use of lists to encode constituency is particularly well-suited to model the grammar of MDNs.

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
3. Our dataset
4. Our HPSG analysis
5. Special cases
6. General Discussion

What's in a dish name?

What's in a dish name?

A dish name generally consists of two parts:

What's in a dish name?

A dish name generally consists of two parts:

(1) preparation of the dish

- ingredients: 蒜 *suàn* ‘garlic’; 蘑菇 *mógu* ‘mushroom’; 鸡 *jī* ‘chicken’
- method: 炒 *chǎo* ‘stir-fry’; 红烧 *hóng-shāo* ‘braise in soy sauce (Lit. red-braise)’
- a resulting product: 汤 *tāng* ‘soup’; 茄子煲 *bāo* ‘casserole’; 鸡 *jī* ‘chicken’

What's in a dish name?

A dish name generally consists of two parts:

(1) preparation of the dish

- ingredients: 蒜 *suàn* ‘garlic’; 蘑菇 *mógu* ‘mushroom’; 鸡 *jī* ‘chicken’
- method: 炒 *chǎo* ‘stir-fry’; 红烧 *hóng-shāo* ‘braise in soy sauce (Lit. red-braise)’
- a resulting product: 汤 *tāng* ‘soup’; 茄子煲 *bāo* ‘casserole’; 鸡 *jī* ‘chicken’

(2) overall properties of the dish

- some intrinsic: 辣 *là* ‘spicy’; 麻辣 *má-là* ‘numbing spicy (lit. numb-spicy)’
- some extrinsic: 四川 *Sìchuān* ‘Sichuan Province’; 家常 *jiācháng* ‘home-style’;
铁板 *tiěbǎn* ‘(sizzling) iron plate’

The TWO ways of categorizing dishes

The TWO ways of categorizing dishes

- by the product's main ingredient → **main ingredient dishes**
fried chicken

The TWO ways of categorizing dishes

- by the product's main ingredient → **main ingredient dishes**
*fried **chicken***
- by the kind of preparation of the product → **preparation dishes**
*chicken **soup***

The TWO ways of categorizing dishes

- by the product's main ingredient → **main ingredient dishes**
*fried **chicken***
- by the kind of preparation of the product → **preparation dishes**
*chicken **soup***

This division applies to dish names in different cultures:

The TWO ways of categorizing dishes

- by the product's main ingredient → **main ingredient dishes**
*fried **chicken***
- by the kind of preparation of the product → **preparation dishes**
*chicken **soup***

This division applies to dish names in different cultures:

(5) French 

a. **veau**

veal

INGREDIENT

‘Marengo-style veal’

Marengo

Marengo-style

PROPERTY

b. **blanquette**

white.meat.and.white.sauce.stew

PREPARATION

‘white veal stew’

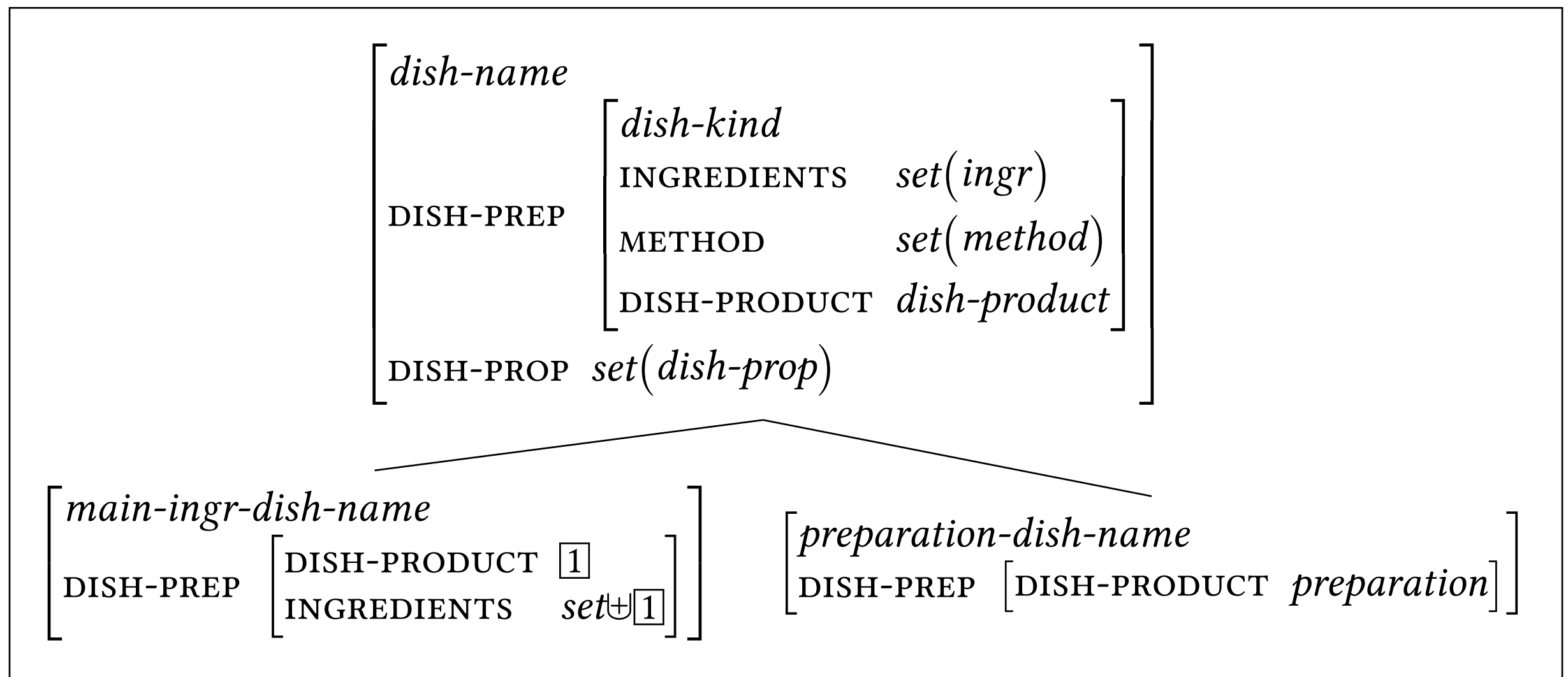
de

veau

veal

INGREDIENT

A frame-based representation of the meaning of dish names



The Ontology of Dish Names

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
- 3. Our dataset**
4. Our HPSG analysis
5. Special cases
6. General Discussion

The Mandarin Dish Name Dataset

中文菜单英文译法

北京市人民政府外事办公室
北京市商务局
2
二〇〇七年十二月

翻译的原则	Principles of Translation	中餐	Chinese Food
中餐	Chinese Food	冷菜	(Cold Dishes)
冷菜类	Cold Dishes	1.	白菜心拌鱼头
热菜类	Hot Dishes	2.	白灵菇扣鸭掌
猪肉	Pork	3.	拌豆腐丝
牛肉	Beef	4.	白切鸡
羊肉	Lamb	5.	拌双耳
禽蛋类	Poultry and Eggs	6.	冰糖凉瓜
菌菌类	Mushrooms	7.	冰镇芥兰
鲍鱼类	Ablone	8.	朝鲜辣白菜/朝鲜泡菜
鱼翅类	Shark's Fins	9.	陈皮兔肉
海鲜类	Seafood	10.	川北凉粉
蔬菜类	Vegetables	11.	刺身凉瓜
豆腐类	Tofu	12.	豆豉多春鱼
燕窝类	Bird's Nest Soup	13.	夫妻肺片
羹汤羹类	Soups	14.	干拌牛舌
主食、小吃	Rice, Noodles and Local Snacks	15.	干拌顺风
西餐	Western Food	16.	怪味牛腱
头盘及沙拉	Appetizers and Salads	17.	红心鸭卷
汤类	Soups		
禽蛋类	Poultry and Eggs		
牛肉类	Beef		
猪肉类	Pork		
羊肉类	Lamb		

The Mandarin Dish Name Dataset

- **Data source:** 中文菜单英文译法 *Zhōngwén Càidān Yīngwén Yìfǎ* 'The Way of translating Chinese menus into English'
 - Compiled by the Foreign Affairs Office of People's Government of Beijing Municipality (2007)
 - Meant to standardize the English translation of Chinese menus
 - Includes Translation Principles, Chinese Food, Western Food
 - 1,996 entries of Mandarin Chinese dish names in simplified characters, accompanying with English translation.

中文菜单英文译法

北京市人民政府外事办公室
北京市商务局
2
二〇〇七年十二月

目 录	Table of Contents	中餐 Chinese Food
翻译的原则 Principles of Translation		冷菜 (Cold Dishes)
中餐 Chinese Food		1. 白菜心拌鱼头 Marinated Jellyfish and Chinese Cabbage
冷菜类 Cold Dishes		2. 白灵菇扣鸭掌 Mushrooms with Duck Webs
热菜类 Hot Dishes		3. 拌豆腐丝 Shredded Tofu with Sauce
猪肉 Pork		4. 白切鸡 Sliced Boiled Chicken (Served with Soy Sauce, Ginger Sauce or Ginger and Scallion Sauce)
牛肉 Beef		5. 拌双耳 Sliced Black and White Fungus
羊肉 Lamb		6. 冰糖凉瓜 Bitter Melon in Plum Sauce
禽蛋类 Poultry and Eggs		7. 冰糖芥兰 Sliced Chinese Broccoli with Wasabi
菌菌类 Mushrooms		8. 朝鲜辣白菜/朝鲜泡菜 Kimchi
鲍鱼类 Abalone		9. 陈皮兔肉 Tangerine-Flavored Rabbit Meat
鱼翅类 Shark's Fins		10. 川北凉粉 Sliced Clear Noodles in Chili Sauce
海鲜类 Seafood		11. 刺身凉瓜 Bitter Melon with Wasabi
蔬菜类 Vegetables		12. 豆豉多春鱼 Sesame in Black Bean Sauce
豆腐类 Tofu		13. 夫妻肺片 Couple's Sliced Beef in Chili Sauce
燕窝类 Bird's Nest Soup		14. 干拌牛舌 Ox Tongue in Chili Sauce
羹汤羹类 Soups		15. 干拌顺风 Big Ear in Chili Sauce
主食、小吃 Rice, Noodles and Local Snacks		16. 怪味牛腱 Special Flavored Beef Shank
西餐 Western Food		17. 红心鸭卷 Duck Meat Rolls with Duck Yolk
头盘及沙拉 Appetizers and Salads		
汤类 Soups		
禽蛋类 Poultry and Eggs		
牛肉类 Beef		
猪肉类 Pork		
羊肉类 Lamb		

The Mandarin Dish Name Dataset

- **Data source:** 中文菜单英文译法 *Zhōngwén Càidān Yīngwén Yìfǎ* 'The Way of translating Chinese menus into English'
 - Compiled by the Foreign Affairs Office of People's Government of Beijing Municipality (2007)
 - Meant to standardize the English translation of Chinese menus
 - Includes Translation Principles, Chinese Food, Western Food
 - 1,996 entries of Mandarin Chinese dish names in simplified characters, accompanying with English translation.
- **Our analyzed data: 1,976 entries**
 - We excluded a duplicate entry and 19 semantically-opaque entries

中文菜单英文译法

北京市人民政府外事办公室
北京市商务局
2
二〇〇七年十二月

翻译的原则 Principles of Translation	Table of Contents	中餐 Chinese Food
中餐 Chinese Food		
冷菜类 Cold Dishes		1. 白菜心拌鱼头 Marinated Jellyfish and Chinese Cabbage
热菜类 Hot Dishes		2. 白灵菇扣鸭掌 Mushrooms with Duck Webs
猪肉 Pork		3. 拌豆腐丝 Shredded Tofu with Sauce
牛肉 Beef		4. 白切鸡 Sliced Boiled Chicken (Served with Soy Sauce, Ginger Sauce or Ginger and Scallion Sauce)
羊肉 Lamb		5. 拌双耳 Sliced Black and White Fungus
禽蛋类 Poultry and Eggs		6. 冰糖凉瓜 Bitter Melon in Plum Sauce
菌菌类 Mushrooms		7. 冰糖芥兰 Sliced Chinese Broccoli with Wasabi
鲍鱼类 Abalone		8. 朝鲜辣白菜/朝鲜泡菜 Kimchi
鱼翅类 Shark's Fins		9. 陈皮兔肉 Citrus-Flavored Rabbit Meat
海鲜类 Seafood		10. 川北凉粉 Sliced Clear Noodles in Chili Sauce
蔬菜类 Vegetables		11. 刺身凉瓜 Bitter Melon with Wasabi
豆腐类 Tofu		12. 豆豉多香鱼 Sesame in Black Bean Sauce
燕窝类 Bird's Nest Soup		13. 夫妻肺片 Couple's Sliced Beef in Chili Sauce
羹汤羹类 Soups		14. 干拌牛舌 Ox Tongue in Chili Sauce
主食、小吃 Rice, Noodles and Local Snacks		15. 干拌明凤 Big Ear in Chili Sauce
西餐 Western Food		16. 怪味牛腩 Special Flavored Beef Shank
头盘及沙拉 Appetizers and Salads		17. 红心鸭卷 Duck Meat Rolls with Duck Yolk
汤类 Soups		
禽蛋类 Poultry and Eggs		
牛肉类 Beef		
猪肉类 Pork		
羊肉类 Lamb		

Annotation

Annotation

- **Lexical categories:**
 - Noun, Verb, Adjective, Numeral, and Classifier

Annotation

- **Lexical categories:**
 - Noun, Verb, Adjective, Numeral, and Classifier
- **Semantic categories:**
 - Ingredient, Method, Property, and Preparation

Annotation

- **Lexical categories:**
 - Noun, Verb, Adjective, Numeral, and Classifier
- **Semantic categories:**
 - Ingredient, Method, Property, and Preparation

(6) 木瓜炖翅 (0325)

<i>mùguā</i>	<i>dùn</i>	<i>chì</i>
papaya	stew	shark's.fin
N	V	N
INGREDIENT	METHOD	INGREDIENT

‘shark’s fin soup with papaya’

Results

- MDNs consist of **a list of five sublists** of expressions

`list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)`

Results

- MDNs consist of **a list of five sublists** of expressions

`list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)`

- **16** possible sequences:

Results

- MDNs consist of **a list of five sublists** of expressions

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- 16** possible sequences:

- $\text{list(Prop)} \oplus \text{list(Ingr_B)}$
- $\text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$
- $\text{list(Method)} \oplus \text{list(Ingr_B)}$
- $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$
- $\text{list(Prop)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$
- $\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$
- $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$

Results

- MDNs consist of a **list of five sublists** of expressions

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- 16** possible sequences:

- | | |
|---|--|
| a. $\text{list(Prop)} \oplus \text{list(Ingr_B)}$ | h. $\text{list(Prop)} \oplus \text{list(Prep)}$ |
| b. $\text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$ | i. $\text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| c. $\text{list(Method)} \oplus \text{list(Ingr_B)}$ | j. $\text{list(Prop)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| d. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$ | k. $\text{list(Ingr_A)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| e. $\text{list(Prop)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$ | l. $\text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| f. $\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$ | m. $\text{list(Prop)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| g. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$ | n. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| | o. $\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |
| | p. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$ |

(7)	c. list(Method) ⊕ list(Ingr_B)	
	水煮牛肉	(0136)
	<i>shuǐ-zhǔ</i> <i>niúròu</i>	
	water-boil beef	
	A-V N	
	METHOD INGREDIENT	
	‘sliced beef in hot chili oil’	

(7) c. **list(Method) ⊕ list(Ingr_B)**
 水煮牛肉 (0136)
shuǐ-zhǔ niúròu
water-boil beef
A-V N
METHOD INGREDIENT
 ‘sliced beef in hot chili oil’

(8) k. **list(Ingr_A) ⊕ list(Ingr_B) ⊕ list(Prep)**
 冰糖莲子银耳羹 (1967)
bīngtáng liánzi yíněr gēng
rock.sugar lotus.seed white.fungus thick.soup
N N N N
INGREDIENT INGREDIENT INGREDIENT PREPARATION
 ‘lotus seeds and white fungus in rock sugar soup’

- (7) c. **list(Method) ⊕ list(Ingr_B)**
 水煮牛肉 (0136)
shuǐ-zhǔ niúròu
water-boil beef
A-V N
METHOD INGREDIENT
 ‘sliced beef in hot chili oil’
- (8) k. **list(Ingr_A) ⊕ list(Ingr_B) ⊕ list(Prep)**
 冰糖莲子银耳羹 (1967)
bīngtáng liánzi yíněr gēng
rock.sugar lotus.seed white.fungus thick.soup
N N N N
INGREDIENT INGREDIENT INGREDIENT PREPARATION
 ‘lotus seeds and white fungus in rock sugar soup’
- (9) g. **list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B)**
 汽锅虫草炖老鸭 (0241)
qì-guō chóngcǎo dùn lǎo-yā
steam-pot cordyceps stew old-duck
N-N N V A-N
Property INGREDIENT METHOD INGREDIENT
 ‘stewed duck with aweto in steam pot’

$\text{list}(\text{Prop}) \oplus \text{list}(\text{Ingr_A}) \oplus \text{list}(\text{Method}) \oplus \text{list}(\text{Ingr_B}) \oplus \text{list}(\text{Prep})$

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.

`list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)`

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: list(Ingr_B) or list(Prep) .

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: list(Ingr_B) or list(Prep) .
4. The syntactic head is either a member of list(Prep) or list(Ingr_B) .

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: list(Ingr_B) or list(Prep) .
4. The syntactic head is either a member of list(Prep) or list(Ingr_B) .
5. In sequence f
 $(\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)})$
all ingredients must be within the scope of the same verb(s), i.e., the sum of indices of ingredients constitutes the verb's proto-patient argument.

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: list(Ingr_B) or list(Prep) .
4. The syntactic head is either a member of list(Prep) or list(Ingr_B) .
5. In sequence f
 $(\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)})$
all ingredients must be within the scope of the same verb(s), i.e., the sum of indices of ingredients constitutes the verb's proto-patient argument.

A hierarchical structure analysis

$$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: **list(Ingr_B)** or **list(Prep)**.
4. The syntactic head is either a member of **list(Prep)** or **list(Ingr_B)**.
5. In sequence f
 $(\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)})$
all ingredients must be within the scope of the same verb(s), i.e., the sum of indices of ingredients constitutes the verb's proto-patient argument.

A hierarchical structure analysis

- would require several empty categories or a multiplication of subsorts of the MDN construction to model:
 - the order of sublists (Observation 1)
 - and the fact that any sublist can be empty (Observation 2).

$$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: **list(Ingr_B)** or **list(Prep)**.
4. The syntactic head is either a member of **list(Prep)** or **list(Ingr_B)**.
5. In sequence f
 $(\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)})$
all ingredients must be within the scope of the same verb(s), i.e., the sum of indices of ingredients constitutes the verb's proto-patient argument.

A hierarchical structure analysis

- would require several empty categories or a multiplication of subsorts of the MDN construction to model:
 - the order of sublists (Observation 1)
 - and the fact that any sublist can be empty (Observation 2).
- would make it harder to model:
 - the fact that the last daughter must be a member of the last two lists (Observation 3)
 - despite the fact that neither list is required (Observation 2).

A hierarchical structure analysis is NOT optimal

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Observations

1. MDNs consist of 5 ordered sublists.
2. None of the sublists are required.
3. The last daughter must be a member of the last two lists: list(Ingr_B) or list(Prep) .
4. The syntactic head is either a member of list(Prep) or list(Ingr_B) .
5. In sequence $f(\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)})$ all ingredients must be within the scope of the same verb(s), i.e., the sum of indices of ingredients constitutes the verb's proto-patient argument.

A hierarchical structure analysis

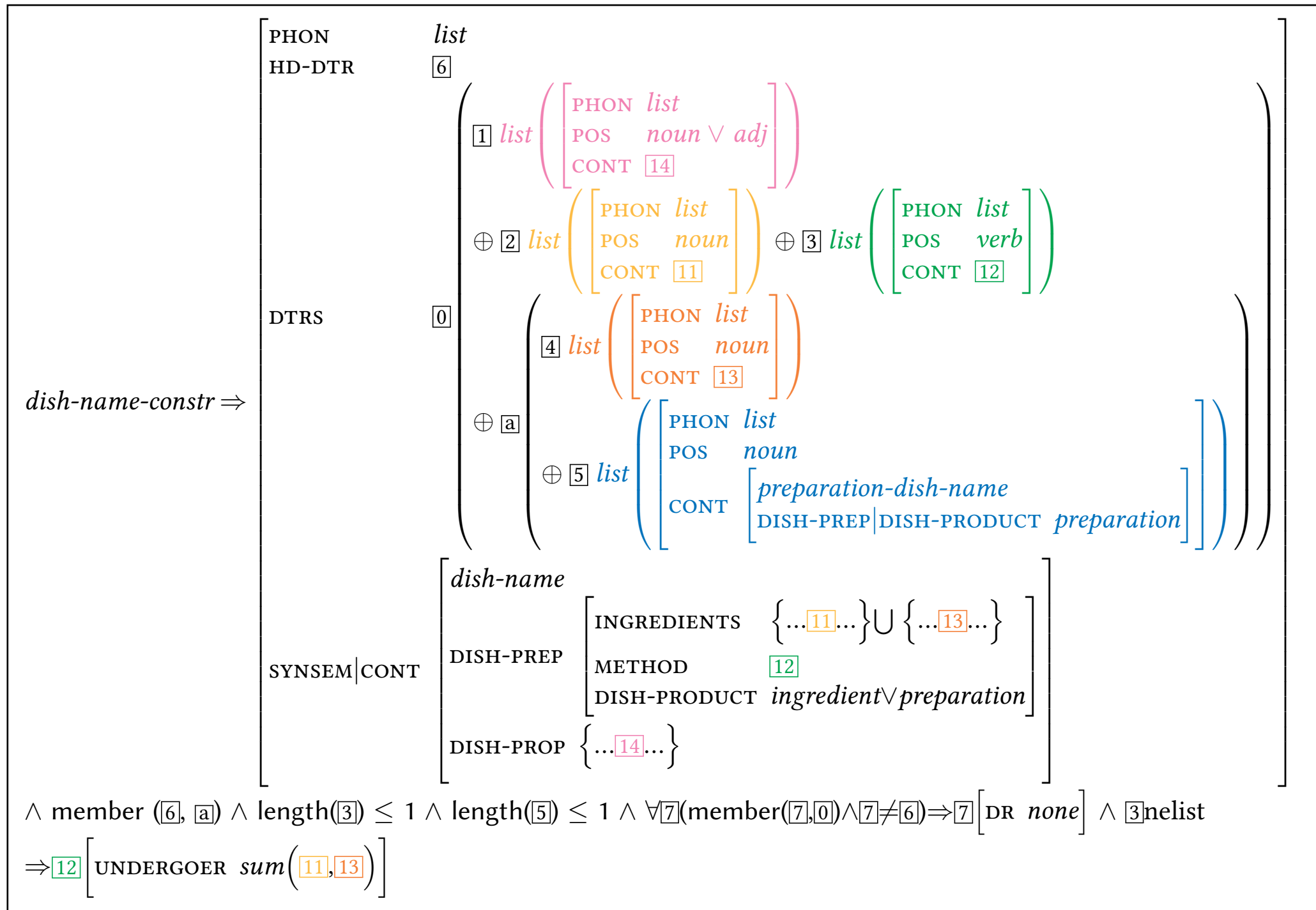
- would require several empty categories or a multiplication of subsorts of the MDN construction to model:
 - the order of sublists (Observation 1)
 - and the fact that any sublist can be empty (Observation 2).
- would make it harder to model:
 - the fact that the last daughter must be a member of the last two lists (Observation 3)
 - despite the fact that neither list is required (Observation 2).

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
3. Our dataset
- 4. Our HPSG analysis**
5. Special cases
6. General Discussion

An HPSG analysis in AVM/RSRL format

$list(Prop) \oplus list(Ingr_A) \oplus list(Method) \oplus list(Ingr_B) \oplus list(Prep)$



The Mandarin Dish Name Construction

The construction in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

The construction in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- (1) MDNs consist of the concatenation of five distinct ordered lists of signs: properties, (minor) ingredients, method, (major) ingredients, preparation.

The construction in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- (1) MDNs consist of the concatenation of five distinct ordered lists of signs:
properties, (minor) ingredients, method, (major) ingredients, preparation.
- (2) There is no internal constituency among the lists.

The construction in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- (1) MDNs consist of the concatenation of five distinct ordered lists of signs: **properties**, **(minor) ingredients**, **method**, **(major) ingredients**, **preparation**.
- (2) There is no internal constituency among the lists.
- (3) Semantic transparency:
 - **list(Prop)** provides the set of overall dish properties.
 - **list(Ingr_A)** and **list(Ingr_B)** provide the set of ingredients.
 - **list(Method)** provides the culinary method.
 - **list(Prep)** or a member of **list(Ingr_B)** provides the dish-product.

The construction in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- (1) MDNs consist of the concatenation of five distinct ordered lists of signs: *properties*, *(minor) ingredients*, *method*, *(major) ingredients*, *preparation*.
- (2) There is no internal constituency among the lists.
- (3) Semantic transparency:
 - *list(Prop)* provides the set of overall dish properties.
 - *list(Ingr_A)* and *list(Ingr_B)* provide the set of ingredients.
 - *list(Method)* provides the culinary method.
 - *list(Prep)* or a member of *list(Ingr_B)* provides the dish-product.
- (4) Semi-compositionality: A particular MDN denotes a unique *kind*. The particular *kind* cannot be predicted merely from the meaning of the parts and the meaning of the construction.

The constraints in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

The constraints in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(1) Head-daughter selection:

The head-daughter must belong to **the main ingredient** or **the preparation list**.

The constraints in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(1) **Head-daughter selection:**

The head-daughter must belong to the main ingredient or the preparation list.

(2) **Cardinality restriction:**

The method list and the preparation list contain at most one member.

The constraints in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(1) **Head-daughter selection:**

The head-daughter must belong to the main ingredient or the preparation list.

(2) **Cardinality restriction:**

The method list and the preparation list contain at most one member.

(3) **Semantic scope:**

If the method list is not empty, i.e., there is a method verb, then all members of the minor ingredient list and the main ingredient list, if not empty, must be within the scope of this verb.

The constraints in words

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(1) **Head-daughter selection:**

The head-daughter must belong to **the main ingredient** or **the preparation list**.

(2) **Cardinality restriction:**

The method list and **the preparation list** contain at most one member.

(3) **Semantic scope:**

If **the method list** is not empty, i.e., there is a method verb, then all members of **the minor ingredient list** and **the main ingredient list**, if not empty, must be within the scope of this verb.

(4) **Discourse referent:**

Non-head daughters do not contribute a discourse referent; they merely help specify the kind described by the dish name.

Identifying the Head Daughter & the Discourse Referent

Identifying the Head Daughter & the Discourse Referent

(10) a.

一盘青椒牛肉

yī
one

pán
plate

qīng-jiāo
green-pepper
INGREDIENT

niúròu
beef
INGREDIENT

‘a plate of beef with green pepper’

b.

一盘牛肉

yī
one

pán
plate

niúròu
beef
INGREDIENT

‘a plate of beef’

(11)a.

一碗牛肉汤

yī
one

wǎn
bowl

niúròu
beef
INGREDIENT

tāng
soup
PREPARATION

‘a bowl of beef soup’

b.

一碗汤

yī
one

wǎn
bowl

tāng
soup
PREPARATION

‘a bowl of soup’

Identifying the Head Daughter & the Discourse Referent

(10) a.

一盘青椒牛肉

yī
one

pán
plate

qīng-jiāo
green-pepper
INGREDIENT

niúròu
beef
INGREDIENT

‘a plate of beef with green pepper’

b.

一盘牛肉

yī
one

pán
plate

niúròu
beef
INGREDIENT

‘a plate of beef’

(11)a.

一碗牛肉汤

yī
one

wǎn
bowl

niúròu
beef
INGREDIENT

tāng
soup
PREPARATION

‘a bowl of beef soup’

b.

一碗汤

yī
one

wǎn
bowl

tāng
soup
PREPARATION

‘a bowl of soup’

- In discourse, use (10b) for (10a), and (11b) for (11a)
- The head is obligatory (Zwicky 1985).

Semantics of MDNs

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

Semantics of MDNs

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- **Only the last daughter introduces a discourse referent.**
Other daughters include (free) variables that can serve as arguments of predicates, but not discourse referents. (Koenig, 1999; Farkas & de Swart, 2003)

Semantics of MDNs

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- **Only the last daughter introduces a discourse referent.**
Other daughters include (free) variables that can serve as arguments of predicates, but not discourse referents. (Koenig, 1999; Farkas & de Swart, 2003)

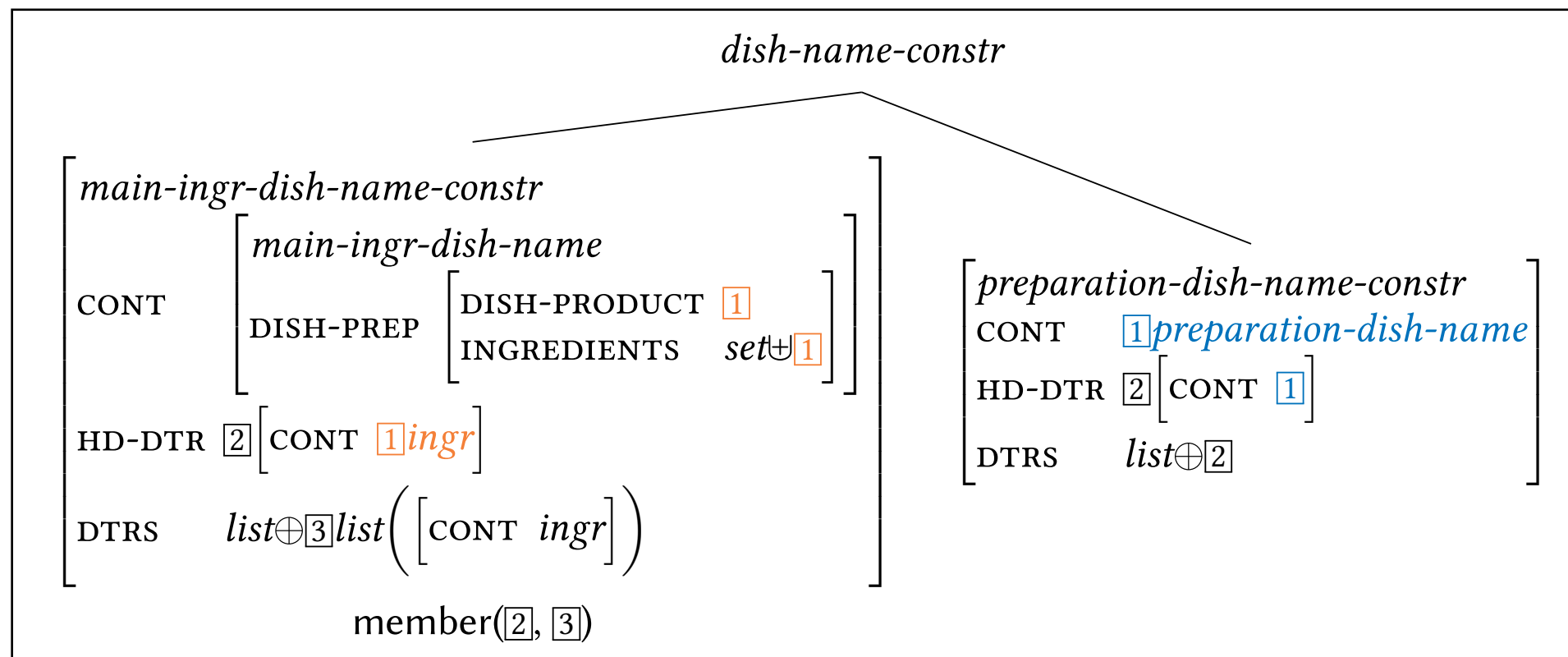
Semantics of MDNs

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- **Only the last daughter introduces a discourse referent.**
Other daughters include (free) variables that can serve as arguments of predicates, but not discourse referents. (Koenig, 1999; Farkas & de Swart, 2003)
- **An MDN describes a unique *kind*.**
The discourse referent of the last daughter realizes this *kind*, which is associated with morphosyntactically complex expressions (Carlson's 1977).

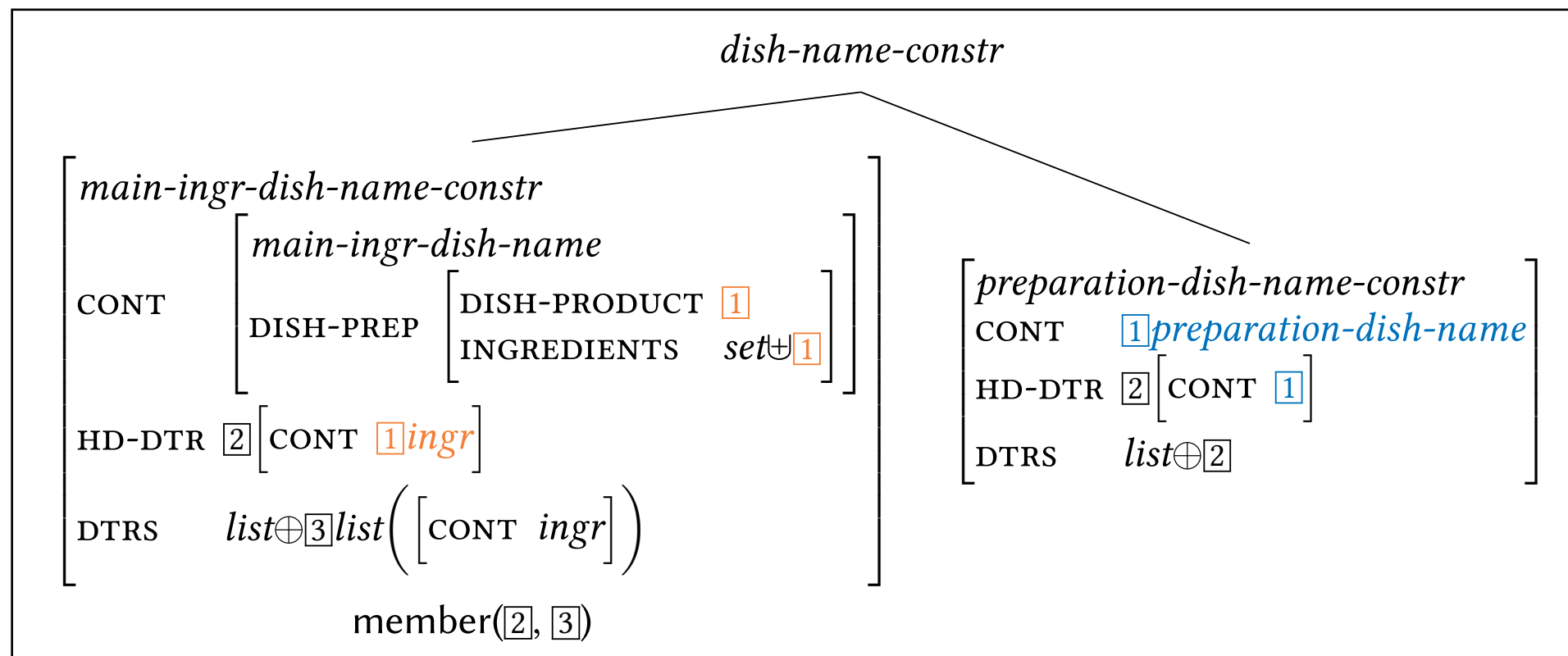
Two subsorts of the MDN construction

$\text{list}(\text{Prop}) \oplus \text{list}(\text{Ingr_A}) \oplus \text{list}(\text{Method}) \oplus \text{list}(\text{Ingr_B}) \oplus \text{list}(\text{Prep})$



Two subsorts of the MDN construction

$\text{list}(\text{Prop}) \oplus \text{list}(\text{Ingr_A}) \oplus \text{list}(\text{Method}) \oplus \text{list}(\text{Ingr_B}) \oplus \text{list}(\text{Prep})$

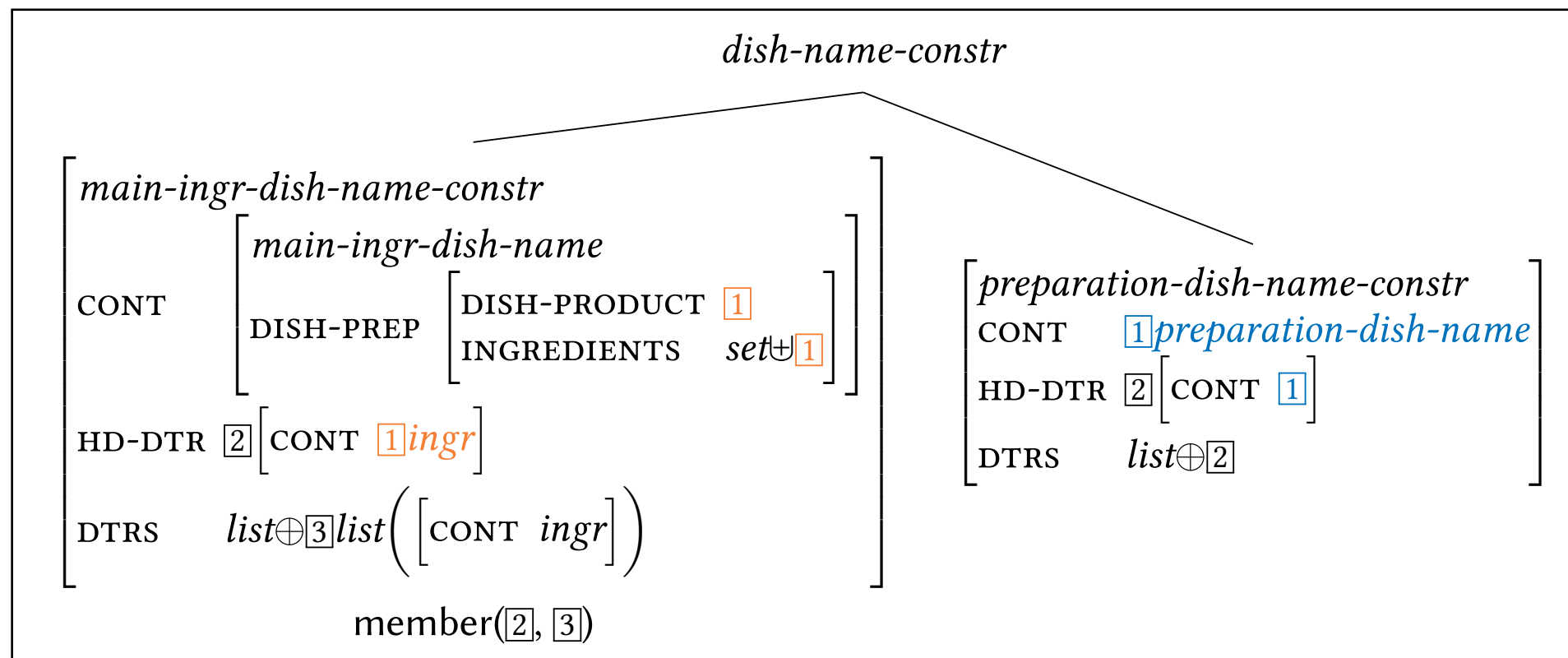


main-ingr-dish-constr

- MDN is a kind of **ingredient**
- **list(Ingr_B)** is the last sublist

Two subsorts of the MDN construction

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$



main-ingr-dish-constr

- MDN is a kind of **ingredient**
- **list(Ingr_B)** is the last sublist

preparation-dish-constr

- MDN is a kind of **preparation**
- **list(Prep)** is the last sublist

Making a dish name out of an ingredient

Making a dish name out of an ingredient

- Our analysis entails that there are **THREE** kinds of *chicken*:
animal meat dish (the *chicken* you never knew existed!)

Making a dish name out of an ingredient

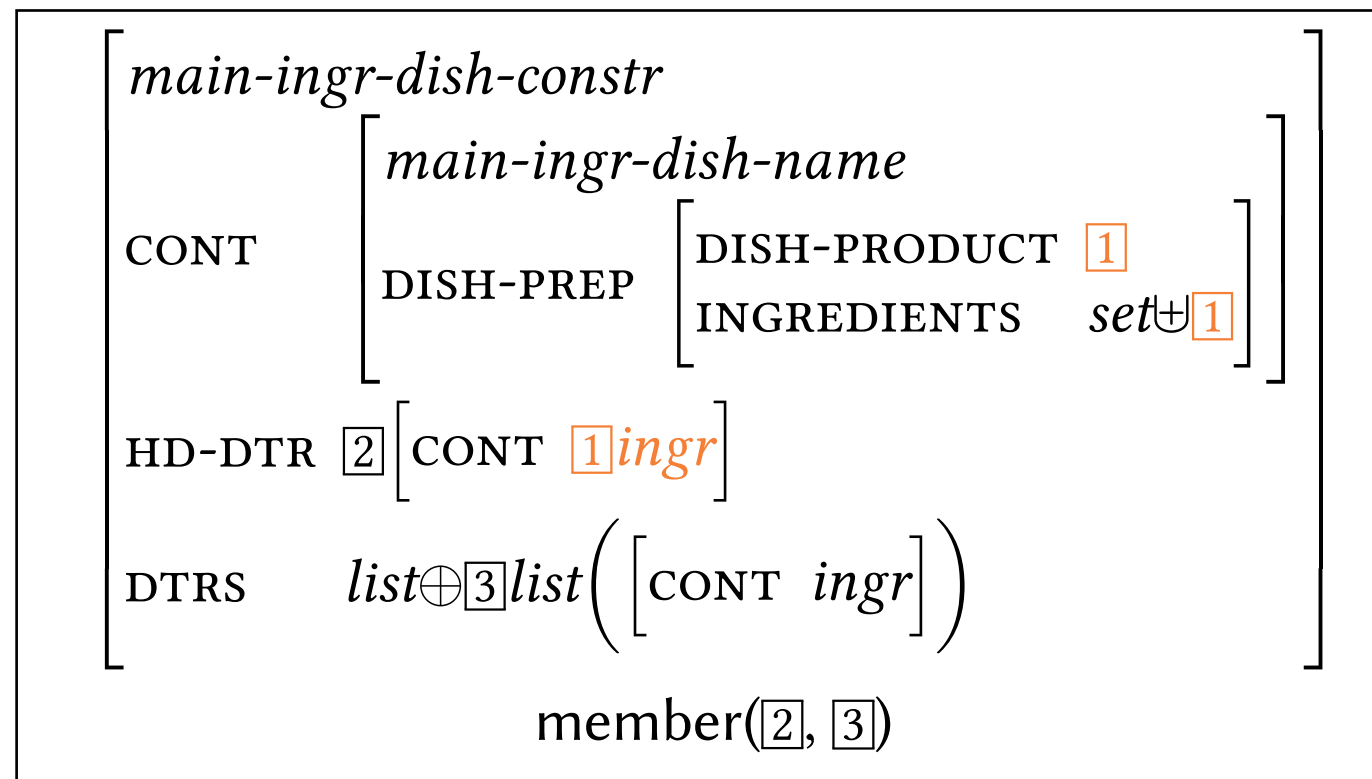
- Our analysis entails that there are **THREE** kinds of *chicken*:
animal meat dish (the chicken you never knew existed!)
- The *animal* to *meat* mapping is lexical (regular polysemy).

Making a dish name out of an ingredient

- Our analysis entails that there are **THREE** kinds of *chicken*:
animal meat dish (the chicken you never knew existed!)
- The *animal* to *meat* mapping is lexical (regular polysemy).
- But, the *meat (ingredient)* to *dish* mapping is **constructional**.

Making a dish name out of an ingredient

- Our analysis entails that there are **THREE** kinds of *chicken*:
animal meat dish (the chicken you never knew existed!)
- The *animal* to *meat* mapping is lexical (regular polysemy).
- But, the *meat (ingredient)* to *dish* mapping is **constructional**.



Sort-shifting an ingredient into a dish

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
3. Our dataset
4. Our HPSG analysis
- 5. Special cases**
6. General Discussion

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- Recall the Head-daughter Constraint:
 - The head-daughter must belong to list(Ingr_B) or list(Prep) .

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- Recall the Head-daughter Constraint:
 - The head-daughter must belong to list(Ingr_B) or list(Prep) .
- When the head daughter belongs to list(Ingr_B) :
 - It can be **any member of list(Ingr_B)**

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- Recall the Head-daughter Constraint:
 - The head-daughter must belong to list(Ingr_B) or list(Prep) .
- When the head daughter belongs to list(Ingr_B) :
 - It can be **any member of list(Ingr_B)**
- Cases where list(Ingr_B) has more than one ingredient ($n=29$):
 - Two members ($n=28$)
 - Three members ($n=1$)

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(12)

红烧鲍翅燕

hóng-shāo

bào

chì

yàn

red-braise

abalone

fin

swallow

METHOD

INGREDIENT

INGREDIENT

INGREDIENT

‘red-braised abalone, shark’s fin and bird’s nest’(0308)

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- (12) 红烧鲍翅燕
hóng-shāo *bào* *chì* *yàn*
red-braise abalone fin swallow
METHOD INGREDIENT INGREDIENT INGREDIENT
‘red-braised abalone, shark’s fin and bird’s nest’(0308)
- (13) 火爆川椒鸭舌
huǒ-bào *chuān-jiāo* *yā-shé*
fire-quick.fry Sichuan-pepper duck-tongue
METHOD INGREDIENT INGREDIENT
‘sautéed duck tongues with Sichuan chili’ (0225)

1. When several ingredients occur after the method...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

(12) 红烧鲍翅燕
hóng-shāo *bào* *chì* *yàn*
red-braise abalone fin swallow
METHOD INGREDIENT INGREDIENT INGREDIENT
‘red-braised abalone, shark’s fin and bird’s nest’(0308)

(13) 火爆川椒鸭舌
huǒ-bào *chuān-jiāo* *yā-shé*
fire-quick.fry Sichuan-pepper duck-tongue
METHOD INGREDIENT INGREDIENT
‘sautéed duck tongues with Sichuan chili’ (0225)

(14) 扒鱼肚白菜心
bā *yúdǔ* *báicài-xīn*
sauté fish.maw bok.choy-heart
METHOD INGREDIENT INGREDIENT
‘sautéed fish maw with Chinese cabbage’ (0531)

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

one preparation to different methods:

- 串 *chuàn* ‘skewer’ 烧 *shāo* ‘grill’, 炸 *zhá* ‘deep fry’, ...
- 卷 *juǎn* ‘roll’ 煎 *jiān* ‘pan fry’, 烤 *kǎo* ‘roast’, ...
- 饼 *bǐng* ‘pancake’ 煎 *jiān* ‘pan fry’, 炸 *zhá* ‘deep fry’, ...
- 煲 *bāo* ‘casserole’ 扣 *kòu* ‘cover’, 生焗 *shēngjú* ‘half steam and half boil in broth (fired ingredients)’
- 汤 *tāng* ‘soup’: 炖 *dùn* ‘stew’, 清炖 *qīng-dùn* ‘clear-stew’,
煲 *bāo* ‘slowly boil’, 烩 *huì* ‘medley stew’, ...

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

one preparation to different methods:

(15) 清炖甲鱼汤

qīng-dùn

jiǎyú

tāng

clear-stew

turtle

soup

METHOD

INGREDIENT

PREPARATION

‘stewed turtle soup’ (1968)

(16) 萝卜煲排骨汤

luóbo

bāo

páigǔ

tāng

daikon

slowly.boil

spare.rib

soup

INGREDIENT

METHOD

INGREDIENT

PREPARATION

‘pork rib and daikon soup’ (1969)

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

one **method** to different **preparations**:

- 炸 *zhá* ‘deep fry’ 串 *chuàn* ‘skewer’, 饼 *bǐng* ‘pancake’, ...
- 煎 *jiān* ‘pan fry’ 卷 *juǎn* ‘roll’, 饼 *bǐng* ‘pancake’, ...

2. When the method co-occurs with the preparation...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

one **method** to different **preparations**:

- 炸 *zhá* ‘deep fry’ 串 *chuàn* ‘skewer’, 饼 *bǐng* ‘pancake’, ...
- 煎 *jiān* ‘pan fry’ 卷 *juǎn* ‘roll’, 饼 *bǐng* ‘pancake’, ...

(17) 炸羊肉串

<i>zhá</i>	<i>yáng ròu</i>	<i>chuàn</i>
deep.fry	lamb	skewer
METHOD	INGREDIENT	PREPARATION

‘fried lamb skewer’ (1993)

(18) 炸南瓜饼

<i>zhá</i>	<i>nánguā</i>	<i>bǐng</i>
deep.fry	pumpkin	pancake
METHOD	INGREDIENT	PREPARATION

‘deep-fried pumpkin cake’ (1979)

3. One form may occur in different slots...

`list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)`

3. One form may occur in different slots...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- list(Prop) & list(Prep)

- 酥 *sū* ‘crispy’

PROPERTY (2/15) & PREPARATION (13/15)

- 砂锅 *shāguō* ‘clay pot’

PROPERTY (22/25) & PREPARATION (3/25)

3. One form may occur in different slots...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- **list(Prop)** & **list(Prep)**

- 酥 *sū* ‘crispy’
- 砂锅 *shāguō* ‘clay pot’

PROPERTY (2/15) & **PREPARATION** (13/15)

PROPERTY (22/25) & **PREPARATION** (3/25)

- **list(Method)** & **list(Prep)**

- 小炒 *xiǎochǎo* ‘small stir-fry’
- 烩 *huì* ‘medley stew’
- 卷 *juǎn* ‘roll’
- 煲 *bāo* ‘casserole’

METHOD (5/8) & **PREPARATION** (3/8)

METHOD (29/30) & **PREPARATION** (1/30)

METHOD (1/29) & **PREPARATION** (28/29)

METHOD (10/41) & **PREPARATION** (31/41)

3. One form may occur in different slots...

`list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)`

3. One form may occur in different slots...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- 煲 *bāo* (n=41): **PREPARATION** (n=31) and **METHOD** (n=10)

3. One form may occur in different slots...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- 煲 *bāo* (n=41): **PREPARATION** (n=31) and **METHOD** (n=10)

(19)

牛腩煲

niú-nǎn *bāo*

beef-brisket **casserole**

INGREDIENT **PREPARATION**

‘stewed beef brisket in casserole’(1660)

(20)

萝卜煲排骨汤 = (14)

luóbo *bāo* *páigǔ* *tāng*

daikon **slowly.boil** spare.rib soup

INGREDIENT **METHOD** INGREDIENT PREPARATION

‘slowly boiled pork rib and daikon soup’ (1969)

3. One form may occur in different slots...

$\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$

- 煲 *bāo* (n=41): **PREPARATION** (n=31) and **METHOD** (n=10)

(19)

牛腩煲

niú-nǎn *bāo*

beef-brisket **casserole**

INGREDIENT **PREPARATION**

‘stewed beef brisket in casserole’ (1660)

(20)

萝卜煲排骨汤 = (14)

luóbo *bāo* *páigǔ* *tāng*

daikon **slowly.boil** spare.rib soup

INGREDIENT **METHOD** INGREDIENT PREPARATION

‘slowly boiled pork rib and daikon soup’ (1969)

- C.f.  French *rôti* de boeuf ‘**roast** of beef’ (lit.) vs. boeuf *rôti* ‘beef **roasted**’ (lit.)

Individual members of the sublists can be complex

$\text{list}(\text{Prop}) \oplus \text{list}(\text{Ingr_A}) \oplus \text{list}(\text{Method}) \oplus \text{list}(\text{Ingr_B}) \oplus \text{list}(\text{Prep})$

Individual members of the sublists can be complex

list(Prop)

A-A 酸甜 *suān-tián* ‘sour-sweet’

N-N 蒜香 *suàn-xiāng* ‘garlic-flavor’

A-N 脆皮 *cùi-pí* ‘crispy skin’

list(Prop) ⊕ **list(Ingr_A)** ⊕ **list(Method)** ⊕ **list(Ingr_B)** ⊕ **list(Prep)**

Individual members of the sublists can be complex

list(Prop)

A-A 酸甜 *suān-tián* ‘sour-sweet’

N-N 蒜香 *suàn-xiāng* ‘garlic-flavor’

A-N 脆皮 *cùi-pí* ‘crispy skin’

list(Method)

N-V 碳烧 *tàn-shāo* ‘char-grill’

A-V 干煸 *gān-biān* ‘dry-stir.fry.in.hot.oil’

V-V 煎酿 *jiān-niàng* ‘pan.fry-stuff’

list(Prop) ⊕ **list(Ingr_A)** ⊕ **list(Method)** ⊕ **list(Ingr_B)** ⊕ **list(Prep)**

Individual members of the sublists can be complex

list(Prop)

A-A 酸甜 *suān-tián* ‘sour-sweet’

N-N 蒜香 *suàn-xiāng* ‘garlic-flavor’

A-N 脆皮 *cùi-pí* ‘crispy skin’

list(Method)

N-V 碳烧 *tàn-shāo* ‘char-grill’

A-V 干煸 *gān-biān* ‘dry-stir.fry.in.hot.oil’

V-V 煎酿 *jiān-niàng* ‘pan.fry-stuff’

list(Prop) ⊕ list(Ingr_A) ⊕ list(Method) ⊕ list(Ingr_B) ⊕ list(Prep)

list(Ingr A) list(Ingr B)

A-N 鲜茄子 *xiān-qiézi* ‘fresh eggplant’

N-N 白菜心 *báicài-xīn* ‘Chinese.cabbage heart’

N-CL 豆腐丝 *dòufu-sī* ‘tofu shred’

V-N 红烧肉 *hóngshāo-ròu* ‘red-braised pork’

Making an ingredient out of a dish name

Sort-shifting MDN to ingredients construction

Making an ingredient out of a dish name

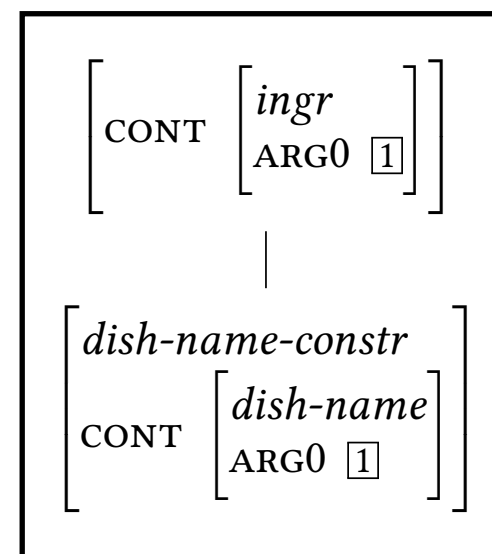
Sort-shifting MDN to ingredients construction

- Structurally complex ingredients can be the output of a sort-shifting MDN-to-ingredients unary-branching construction.

Making an ingredient out of a dish name

Sort-shifting MDN to ingredients construction

- Structurally complex ingredients can be the output of a sort-shifting MDN-to-ingredients unary-branching construction.



**Dish-name construction
to ingredient construction
in AVM**

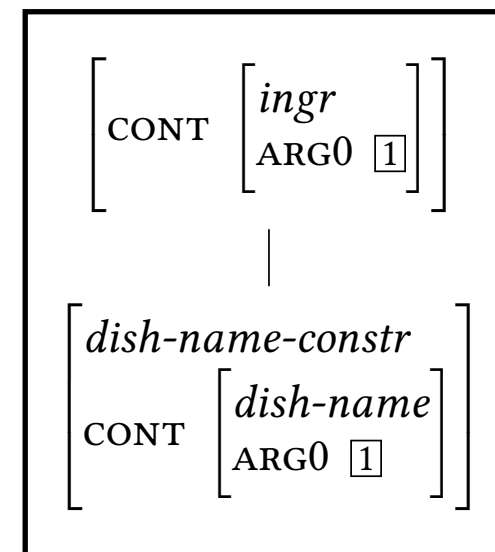
Making an ingredient out of a dish name

Sort-shifting MDN to ingredients construction

- Structurally complex ingredients can be the output of a sort-shifting MDN-to-ingredients unary-branching construction.

(21)a. 红烧肉
hóng-shāo ròu
 red-braise meat
 [A-V]_v N
 METHOD INGREDIENT
 ‘red-braised pork’

b. 什菌炒红烧肉
shí-jūn chǎo hóng-shāo ròu
 assorted-musshroom stir.fry red-braise meat
 A-N V [[A-V]_v N]_N
 INGREDIENT METHOD INGREDIENT
 ‘stir-fried braised pork and assorted mushroom’ (0067)



Dish-name construction
to ingredient construction
in AVM

The Grammar of Dish Names in Mandarin Chinese

1. Background
2. What's in a dish name?
3. Our dataset
4. Our HPSG analysis
5. Special cases
6. General Discussion

Summarizing the MDN Construction

Summarizing the MDN Construction

- **FIVE Sublists:**
 - properties, (minor) ingredients, method, (main) ingredients, & preparation

Summarizing the MDN Construction

- **FIVE Sublists:**
 - properties, (minor) ingredients, method, (main) ingredients, & preparation
- **FOUR Constraints:**
 - Head-daughter selection
 - Cardinality restriction
 - Semantic scope
 - Discourse referent

Summarizing the MDN Construction

- **FIVE Sublists:**
 - properties, (minor) ingredients, method, (main) ingredients, & preparation
- **FOUR Constraints:**
 - Head-daughter selection
 - Cardinality restriction
 - Semantic scope
 - Discourse referent
- **TWO Subsorts:**
 - Main-ingredient-dish-construction & Preparation-dish-construction

Summarizing the MDN Construction

- **FIVE Sublists:**
 - properties, (minor) ingredients, method, (main) ingredients, & preparation
- **FOUR Constraints:**
 - Head-daughter selection
 - Cardinality restriction
 - Semantic scope
 - Discourse referent
- **TWO Subsorts:**
 - Main-ingredient-dish-construction & Preparation-dish-construction
- **Special cases**
 - More than one member in the ingredient list that follows the method list
 - Co-occurring method and preparation
 - Same form, different sublists

Summarizing the MDN Construction

- **FIVE Sublists:**
 - properties, (minor) ingredients, method, (main) ingredients, & preparation
- **FOUR Constraints:**
 - Head-daughter selection
 - Cardinality restriction
 - Semantic scope
 - Discourse referent
- **TWO Subsorts:**
 - Main-ingredient-dish-construction & Preparation-dish-construction
- **Special cases**
 - More than one member in the ingredient list that follows the method list
 - Co-occurring method and preparation
 - Same form, different sublists
- **Bi-directional sort-shifting between ingredient and dish**

1. Templatic morphosyntax

1. Templatic morphosyntax

- MDNs are an example of *linguistic template* (Good 2016):

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - *A flat* sequence of “possible slots”

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax
 - We can easily encode order between *sublists*.

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax
 - We can easily encode order between *sublists*.
 - We can represent properties of lists whether the list is empty or not.

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax
 - We can easily encode order between *sublists*.
 - We can represent properties of lists whether the list is empty or not.
- **MDNs have some properties typical of syntax and some properties typical of morphology**

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax
 - We can easily encode order between *sublists*.
 - We can represent properties of lists whether the list is empty or not.
- **MDNs have some properties typical of syntax and some properties typical of morphology**
 - Exhibit complexity of syntax (including modified noun for complex members from ingredient lists)

1. Templatic morphosyntax

- **MDNs are an example of *linguistic template*** (Good 2016):
 - A *flat* sequence of “possible slots”
 - Slots can be filled with more than one word
 - Treating daughters as (possibly empty) lists of expressions is a very useful tool when modeling templatic morphosyntax
 - We can easily encode order between *sublists*.
 - We can represent properties of lists whether the list is empty or not.
- **MDNs have some properties typical of syntax and some properties typical of morphology**
 - Exhibit complexity of syntax (including modified noun for complex members from ingredient lists)
 - Describe a *kind* like a single noun (similar to compounding)

2. Semantic transparency and semi-compositionality

2. Semantic transparency and semi-compositionality

- **MDNs are semantically transparent but semi-compositional:**
 - each daughter contributes to the meaning of the entire MDN
 - the meaning of the whole MDN does not reduce to a set of ingredients, properties, method, and preparation
 - It also includes the *kind* of dish the MDN describes

2. Semantic transparency and semi-compositionality

- **MDNs are semantically transparent but semi-compositional:**
 - each daughter contributes to the meaning of the entire MDN
 - the meaning of the whole MDN does not reduce to a set of ingredients, properties, method, and preparation
 - It also includes the *kind* of dish the MDN describes
- **Each MDN includes an implicit *kind* argument, a kind of dish just as simple nouns can.**
 - *Kinds* in the sense of Carlson (1977) can be associated with not just lexical categories (nouns in particular), but also morphosyntactically complex expressions such as MDNs.

3. Specialized-domain grammar

3. Specialized-domain grammar

- Languages can include *specialized grammars* (read constructions or constraints) to cover particular semantic domains:
 - Emotions in French Gross (1995)
 - Number names in English Smith (1999)
 - Possession in Oneida Koenig and Michelson (2021)

3. Specialized-domain grammar

- Languages can include *specialized grammars* (read constructions or constraints) to cover particular semantic domains:
 - Emotions in French Gross (1995)
 - Number names in English Smith (1999)
 - Possession in Oneida Koenig and Michelson (2021)
- MDNs (and dish names in French too!) are an other example of specialized grammar
 - Morphosyntactically, it builds but differs from other types of compound nouns in Mandarin
 - Semantically, it *constructionally* builds a *kind* description

References

- Amenador, Kate Benedicta, and Zhiwei Wang. 2022. The translation of culture-specific items (CSIs) in Chinese-English food menu corpus: A study of strategies and factors. *Sage Open* 12 (2): 21582440221096649. <https://doi.org/10.1177/21582440221096649>.
- Cai, Yuhua. 2007. *Research on Hunan cuisine name*. Hunan Shifan Daxue MA thesis.
- Carlson, Greg. 1977. A unified analysis of English bare plurals. *Linguistics and Philosophy* 1. 413–457.
- Chao, Yuen Ren. 1968. *A grammar of spoken Chinese*. University of California Press.
- Chen, Yanping. 2011. *The analysis of language and culture of Kaifeng's dish names*. Henan Daxue MA thesis.
- Chu, Yanfang. 2007. *Hanyu yinshi cihui yanjiu* (汉语饮食词汇研究) [*Mandarin dietary lexicon studies*]. Zhongguo Shehui Kexue Chubanshe (中国社会科学出版社) [China Social Sciences Press].
- Farkas, Donka & Henriëtte de Swart. 2003. *The semantics of incorporation*. Stanford Monographs in Linguistics. Stanford, CA: CSLI Publications.
- Good, Jeff. 2015. *The Linguistic Typology of Templates*. Cambridge University Press 1st edn. doi:10.1017/CBO9781139057479.
- Gross, Maurice. 1995. Une grammaire locale de l'expression des sentiments. *Langue française* 105. 70–87.
- Herliana, Monika, Saifus Somad, and Rizki Utami. 2025. Naming Chinese dishes in a cognitive semantic perspective. *International Journal of Chinese Interdisciplinary Studies* 2 (2): 17–27. <https://doi.org/10.26740/ijcis.v2i2.38667>.
- Huang, Shuanfan. 1997. Chinese as a headless language in compounding morphology. *Trends in Linguistics Studies and Monographs*, 105, 261–284.
- Huo, Caiqiao, Xiaomei Du, and Weichen Gu. 2020. The metaphor and translation of the dish names in Chinese food culture. *Open Journal of Modern Linguistics* 10 (05): 423–28. <https://doi.org/10.4236/ojml.2020.105025>.
- Kamp, Hans & Uwe Reyle. 1993. *From discourse to logic* (Studies in Linguistics and Philosophy 42). Dordrecht: Kluwer.
- Koenig, Jean-Pierre. 1999. French body-parts and the semantics of binding. *Natural Language and Linguistic Theory* 17(2). 219–265.
- Koenig, Jean-Pierre & Karin Michelson. 2021. Specialized-domain grammars and the architecture of grammars: Possession in Oneida. *Journal of Linguistics* 57(3). 635–674.
- Lam, Kai-Chee, Man-Ling Ng, Lay-Hoon Ang, and Radina Mohamad Deli. 2018. Between concrete and abstract: The Malaysian Chinese way of naming dishes. *International Communication of Chinese Culture* 5 (3): 247–59. <https://doi.org/10.1007/s40636-018-0119-4>.
- Li, Hanlei. 2002. ‘Ming + Ming’ Shi Caiming de Mingming Moshi (‘名 + 名’式菜名的命名模式) [The ‘N+N’ Dish Names]. *Renwen Shehui Kexue Ban* (人文社会科学版) [Humanities and Social Sciences Section]. *Jiangnan Daxue Xuebao* (江南大学学报) [*Jiangnan University Press*] 2.
- Lin, Meiyu. 2012. ‘N1+N2’ he ‘N1+V+N2’ shi caiming duanyu cixu kaocha (‘N1 + N2’和‘N1 + V + N2’式菜名短语词序考察) [A survey on the word order of dish name phrases in ‘N1 + N2’ and ‘N1 + V + N2’ form].” *Shehui Kexue Ban* (社会科学版) [Social Sciences Section]. *Liaodong Xueyuan Xuebao Shehui Kexue Ban* (辽东学院学报 社会科学版) [*Liaodong College Press Social Sciences Section*] 14 (06): 88. <https://doi.org/10.3969/j.issn.1672-8572.2012.06.019>.
- McNally, Louise & Gemma Boleda. 2004. Relational adjectives as properties of kinds. In O. Bonami & P. Cabredo Hofherr (eds.), *Empirical issues in formal syntax and semantics* 5, 179–196. Paris: Centre National de la Recherche Scientifique.
- Packard, Jerome L. 2000. *The morphology of Chinese: A linguistic and cognitive approach*. Cambridge University Press.
- Shen, Yuqi & Jiapan Li. 2024. The formation features and structural mechanism of modern Chinese ‘Vcooking+N’ structure. In Minghui Dong, Jia-Fei Hong, Jingxia Lin & Peng Jin (eds.), *Chinese lexical semantics*, vol. 14514, 116–129. Springer Nature Singapore. doi:10.1007/978-981-97-0583-2_10.
- Smith, Jeffrey. 1999. English number names in HPSG. In Gert Webelhuth, Jean-Pierre Koenig & Andreas Kathol (eds.), *Lexical and constructional aspects of linguistic explanation Studies in Constraint-Based Lexicalism*, 145–160. Stanford: CSLI Publications.
- Song, Zuoyan. 2022. Goushi cifa de tedian jiqi dui Hanyu cifa yanjiu de qishi — yi caiming de mingming mocha wei li (构式词法的特点及其对汉语词法研究的启示——以菜名的命名模式为例) [The characteristics of Construction Morphology and its enlightenment on the study of Chinese word formation: The case of the naming patterns of Chinese dishes]. *Language Teaching and Linguistic Studies* (2). 88–102. doi:10.3969/j.issn.0257-9448.2022.02.014
- Xiao, F. (Ed.), 1992. *Zhongguo Pengren Cidian* (中国烹饪辞典) [*Chinese Culinary Dictionary*], 1st ed. Zhongguo Shangye Chubanshe (中国商业出版社) [China Commercial Press], Beijing.
- Zhang, Xinyu, and Olga Torres-Hostench. 2024. Chinese gastronomic nomenclature: Culture and translation. In Isabel Peñuelas Gil and María-Teresa Ortego Antón (eds.), *Interpreting and translation for agri-food professionals in the global marketplace*. De Gruyter. <https://doi.org/10.1515/9783111101729-002>.
- Zhu, Hongxiang, Lay Hoon Ang, and Nor Shahila Mansor. 2024. Are mouse noodles actually made from mice? Touring street food name translations. *Humanities and Social Sciences Communications* 11 (1): 531. <https://doi.org/10.1057/s41599-024-03041-1>.
- Zhu, Shang. 2013. *Research on dish names in Chinese*. Huazhong Shifan Daxue MA thesis.
- Zwicky, Arnold M. 1985. Heads. *Journal of Linguistics* 21 (1): 1–29. JSTOR. <http://www.jstor.org/stable/4175761>.

Thank you!

Examples in the talk for each sequence

- a. $\text{list(Prop)} \oplus \text{list(Ingr_B)}$
 - a. **9a**
- b. $\text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$
- c. $\text{list(Method)} \oplus \text{list(Ingr_B)}$
 - a. **10, 11, 12**
- d. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Ingr_B)}$
- e. $\text{list(Prop)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$
- f. $\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$
 - a. **1/4f, 3, 4d, 5, 19b**
- g. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)}$
 - a. **4c/8**
- h. $\text{list(Prop)} \oplus \text{list(Prep)}$
- i. $\text{list(Ingr_B)} \oplus \text{list(Prep)}$
 - a. **17**
- j. $\text{list(Prop)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
- k. $\text{list(Ingr_A)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
 - a. **4e/7**
- l. $\text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
 - a. **4a/13, 13, 15, 16,**
- m. $\text{list(Prop)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
- n. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
- o. $\text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
 - a. **4b/14/18,**
- p. $\text{list(Prop)} \oplus \text{list(Ingr_A)} \oplus \text{list(Method)} \oplus \text{list(Ingr_B)} \oplus \text{list(Prep)}$
 - a.