
The structure of Chinese personal names

Qi Wang, Wuhan University

Anders Holmberg, Newcastle University

1 Introduction

The syntactic structure of proper names has been an important ingredient in discussions of the structure of nominal arguments at least ever since Longobardi (1994). The challenge is to understand the syntactic properties characteristic of DPs based on proper names, including the restricted range of options for modification and specification, and, in some languages, specific word order properties, and to consider the consequences these properties have for the syntactic analysis of nominal expressions in general (Longobardi 2001, Alexiadou et al. 2007, 183-188, 206-216), Matushansky 2008). The morpho-syntactic structure of complex names themselves, including combinations of given names and a family name, is rarely if ever part of that discussion. The present paper is specifically about this, focusing on personal names in Chinese, in a theoretical model where morphology/word structure is subject to essentially the same rules and principles as phrase structure, the Distributed Morphology model (Harley and Noyer 1999, Embick and Noyer 2007, Embick 2015).¹ Chinese is represented in this paper by Mandarin and Xining Chinese (spoken in and around Xining, the capital of the Qinghai province in the northwest of China; see Dede 2003, Bell 2017, Wang 2018).²

¹ In the terminology of *The Cambridge grammar of English* (Payne & Huddleston 2002, 516) this paper is not about *proper names* (= DPs based on names) but about *proper nouns* (= the nominal heads of proper names). One reason why we do not adopt this nomenclature is that we assume that the nominal heads in question are not nouns, but form a distinct, although related category *given name* (gn) or *family name* (fn), in Chinese.

² The article is specifically about Han-Chinese names. There are many names in China used among various other ethnic groups that do not follow the same rules as the Han-Chinese names, or do so only partly.

A Chinese full personal name contains a family name and a single given name or a compound given name (Chen and Wang 1995). The linear order is family name followed by given name(s).³

- (1) Wang Ming xianzai hen kaixin. (Mandarin)
Wang Ming now very happy
'Wang (family name) Ming (given name) is very happy now.'

Chinese personal names are subject to certain conditions concerning morphological form and syntactic distribution. First, a simple given name cannot occur on its own:

- (2) *Ming san sui le. (Mandarin)
Ming three age PRT
Intended: 'Ming (given name) is three years old.'

Second, a compound given name can occur on its own:

- (3) Ming Xue san sui le. (Mandarin)
Ming Xue three age PRT
'Ming (given name) Xue (given name) is three years old.'

Third, a reduplicated given name can also occur on its own:

- (4) Ming Ming san sui le. (Mandarin)
Ming Ming three age PRT
'Ming Ming (given name) is three years old.'

Fourth, a given name combined with a family name can occur on its own, as shown in (1). We will argue that personal names containing a given name are subject to a condition that they must have at least two syllables. Combining the given name with a

³ The following non-standard abbreviations are used in the paper: R for root, NCC for non-compositional compound, PRT for particle, and from section 2 forward, gn for given name, fn for family name, pn for pet name.

family name satisfies the condition, so does combining the given name with another given name, and reduplication is yet another way to satisfy this condition.

Family names, on the other hand, can occur on their own:

- (5) Wang xianzai hen kaixin. (Mandarin)
 Wang now very happy
 ‘Wang (family name) is very happy now.’

That is to say, family names are not subject to the two-syllable condition. Notably they also do not reduplicate:

- (6) * Wang Wang xianzai hen kaixin. (Mandarin)
 Wang Wang now very happy
 Intended reading: ‘Wang (family name) is very happy now.’

As discussed by Duanmu (1999, 2007: ch.7) and Feng (2018: ch.3), there is a strong preference in Chinese for disyllabic words over monosyllabic ones. Given the close correspondence in Chinese between syllable and morpheme (Norman 1988: 154, Basciano and Ceccagno 2009) most of the disyllabic words, by far, are compounds, which abound in Chinese (Duanmu 1999, Feng 2018, Wang 2018). The two-syllable condition on given names is another reflection of this general preference. In this light, the observation that family names are not subject to the condition is unexpected. It also indicates that the two-syllable condition is, at least in part, a morphosyntactic one, not purely a prosodic condition.

The generalizations above regarding the distribution of names in (2)-(6) are not uncontroversial. In order to substantiate them, we have conducted a corpus search as well as a judgment experiment (see section 3 below). The results confirm that the generalizations are essentially correct.⁴

⁴ The reason why we deem it necessary to confirm our own judgments by these means is that an earlier version of this paper was criticized for being based on the allegedly false empirical claim that free-standing monosyllabic family names are significantly more acceptable than free-standing monosyllabic given names.

We will show how the conditions summarized and exemplified above in (2)-(6) can be understood if (a) a name is minimally made up of an acategorial root and a categorizer, (b) given names and family names have distinct categorizers, both of which are distinct from (common) nouns, (c) a compound given name is a non-compositional compound word made up of two given names, but a full name (family name plus given name(s)) is an endocentric compound where the given name is the head and the family name is a modifier, and (d) there is a condition ruling out a monosyllabic free-standing given name.

A crucial component of the theory is understanding how the reduplication seen in personal names works, that is reduplication as a purely formal operation without any semantic effect. The reason why Xining Chinese is an interesting object of study in this connection is that in Xining Chinese not just names, but common nouns as well have to have at least two syllables to occur as free words, and semantically vacuous reduplication is a mechanism employed to meet this condition, as argued by Wang and Holmberg (2020); (7) is an example.

- (7) Liou Chueng zi bo bo sa jia ji ha zhei. (Xining Chinese)
Liou Chueng ZI bag bag OBJ she borrow PRF PRT
'She has borrowed Liou Chueng's bag.'

We will argue that the reduplication seen in given names in Xining Chinese and Mandarin is the same operation as seen with nouns in Xining Chinese.

This paper is strictly about the morpho-syntax of personal names. We do not discuss names as constituents of NP or DP (see Huang, Li and Li 2009, 299-303), as this would take us too far afield.

The paper is organized as follows: Section 2 provides a description of Chinese personal names. Section 3 is a report of two investigations carried out in order to test the distribution of simple given names, compound given names, and family names, one a corpus investigation, the other a judgment experiment. Section 4 concerns the origins of Chinese names. Section 5 is a summary of some important theoretical assumptions. Section 6 reviews reduplication of Xining Chinese nouns. In section 7 we look into Chinese given names in detail. Section 8 is about other categories than names in Mandarin and Xining Chinese. Section 9 discusses the hypothesis that Chinese given

names are bound roots/words. Sections 10 and 11 look into Chinese family names and full names respectively. Section 12 deals with Chinese generation names. Section 13 is about Chinese pet names. Section 14 concludes the paper, and also contains a brief discussion of the morpho-syntax of names in universal grammar.

2. Chinese personal names: observations

In this section, we introduce personal names in Mandarin and Xining Chinese in more detail. We will use the abbreviation (gn) for given name, (fn) for family name and (pn) for pet names in the translations of examples and as labels in trees.

A simple, monosyllabic given name cannot occur on its own as a syntactic constituent (simple, non-compounded Chinese given names are essentially always monosyllabic):⁵

(8) a. *Ming san sui le. (Mandarin)

Ming three age PRT

Intended: ‘Ming (gn) is three years old.’

b. *Wo kan le Tian de zuo ye.

I see PRF Tian DE work course. of. study

Intended: ‘I have already seen Tian’s (gn) homework.’

c. *Jia ba Chueng hanxi zhao. (Xining Chinese)

He BA Chueng like PRT

Intended: ‘He likes Chueng (gn).’

d. *Huan zi a-ma bieng ha liou.

Huan ZI A-mother ill PRT PRT

Intended: ‘Huan’s (gn) mother is ill.’

A given name can occur as a syntactic constituent together with a family name:

(9) a. Fan Ming san sui le. (Mandarin)

Fan Ming three age PRT

‘Fan (fn) Ming (gn) is three years old.’

⁵ On the syntax of Xining Chinese, see Bell (2017, 2019).

- b. Wo kan le Xiao Tian de zuo ye.
 I see PRF Xiao Tian DE work course.of.study
 ‘I have already seen Xiao (fn) Tian’s (gn) homework’
- c. Jia ba Wong Chueng hanxi zhao (Xining Chinese)
 He BA Wong Chueng like PRT
 ‘He likes Wong (fn) Chueng (gn)’
- d. Ma Huan zi a-ma bieng ha liou.
 Ma Huan ZI A-ma ill HA PRT
 ‘Ma (fn) Huan’s (gn) mother is ill.’

A given name can also occur as a free-standing constituent together with another given name:

- (10) a. Ming Xue san sui le. (Mandarin)
 Ming Xue three age PRT
 ‘Ming (gn) Xue (gn) is three years old.’
- b. Wo kan le Tian Mei de zuo ye.
 I see PRF Tian Mei DE work course. of. study
 ‘I have already seen Tian (gn) Mei’s (gn) homework’
- c. Jia ba Chueng Hua hanxi zhao (Xining Chinese)
 he BA Chueng Hua like PRT
 ‘He likes Chueng (gn) Hua (gn).’
- d. Huan Mo zi a-ma bieng ha liou.
 Huan Mo ZI A-ma ill HA PRT
 ‘Huan (gn) Mo’s (gn) mother is ill.’

Given names can be reduplicated in Chinese, in which case they can occur on their own as a syntactic unit:

- (11) a. Ming Ming san sui le. (Mandarin)
 Ming Ming three age PRT
 ‘Ming Ming (gn) is three years old.’

- b. Wo kan le Tian Tian de zuo ye.
 I see PRF Tian Tian DE work course.of.study
 ‘I have already seen Tian Tian’s (gn) homework’
- c. Jia ba Chueng Chueng hanxi zhao. (Xining Chinese)
 He BA Chueng Chueng like PRT
 ‘He likes Chueng Chueng (gn).’
- d. Huan Huan zi a-ma bieng ha liou.
 Huan Huan ZI A-ma ill HA PRT
 ‘Huan Huan’s (gn) mother is ill.’

In contrast, family names can occur on their own in Chinese:

- (12) a. Fan hen shan liang. (Mandarin)
 Fan very nice kind-hearted
 ‘Fan (fn) is very kind.’
- b. Wo zhi chi Wang de guan dian.
 I support support Wang DE view point
 ‘I support Wang’s (fn) point of views.’
- c. Da niezhong zhao (Xining Chinese)
 Da poor PRT
 ‘Poor Da (fn)!’
- d. Liou zi bo bo a jia ji ha zhei.
 Liou ZI bag bag OBJ she borrow PRF PRT
 ‘She has borrowed Liou’s (fn) bag.’

Family names cannot be reduplicated in Chinese:

- (13) a. * Fan Fan hen shan liang (Mandarin)
 Fan Fan very nice kind-hearted
 Intended: ‘Fan (fn) is very kind.’
- b. * Wo zhi chi Wang Wang de guan dian.
 I support support Wang Wang DE view point
 Intended: ‘I support Wang’s (fn) point of views.’

- c. * Da Da niezhong zhao. (Xining Chinese)
 Da Da poor PRT
 Intended: ‘Poor Da (fn)!’
- d. * Liou Liou zi bo bo sa jia ji ha zhei.
 Liou Liou ZI bag bag OBJ she borrow PRF PRT
 Intended reading: ‘She has borrowed Liou’s (fn) bag.’

There are also pet names in Chinese which are commonly reduplicated:⁶

- (14) a. Xiang Xiang hen shan liang. (Mandarin)
 Xiang Xiang very nice kind-hearted
 ‘Xiang Xiang (pn) is very kind.’
- b. Jia ba Xiou Xiou hanxi zhao. (Xining Chinese)
 he BA Xiou Xiou like PRT
 ‘He likes Xiou Xiou (pn).’

Alternatively pet names can merge with the suffix *-er* in Mandarin and *-e* in XC:

- (15) a. Xiang-er hen shan liang (Mandarin)
 Xiang-ER very nice kind-hearted
 ‘Xiang (pn) -er is very kind.’
- b. Jia ba Xiou-e hanxi zhao. (Xining Chinese)
 he BA Xiou-E like PRT
 ‘He likes Xiou (pn) -e.’

But they are unable to stand alone:

- (16) a. * Xiang hen shan liang
 Xiang (pn) very nice kind-hearted
- b. * Jia ba Xiou hanxi zhao.
 he BA Xiou (pn) like PRT

⁶ By ‘pet name’ we mean a personal name expressing fondness and familiarity, not the name of a pet.

Summarising, given names and pet names in Chinese cannot stand alone as free words in sentences. Chinese family names, on the other hand, can do so. Furthermore, Chinese given names and pet names can be reduplicated, but not Chinese family names.

3. Investigating the distribution of given names and family names

3.1 Corpus investigation

In order to empirically test the generalization that simple, monosyllabic given names do not occur standing on their own as arguments in sentences, while family names do, we have carried out two investigations, one a corpus investigation, the other a judgment experiment (see note 4 on the rationale for these investigations).

We analysed a dataset of text samples containing personal names from two online corpora: State Language Commission Modern Chinese Balanced Corpus (<http://corpus.zhonghuayuwen.org/index.aspx>) and Peking University CCL Corpus (http://ccl.pku.edu.cn:8080/ccl_corpus/index.jsp). The corpora include Modern as well as Old Chinese, but the data are only from Modern Chinese. They contain a wide variety of sources: newspapers, novels, journals etc. Four monosyllabic family names, *Li* (李), *Liu* (刘), *Wu* (吴) and *Zhao* (赵) were chosen as they are among the most commonly used family names listed in Chen and Wang (1995) and are rarely used as other than names in modern Chinese (many Chinese family names are not infrequently also used as common nouns; for example the family name *Wang* means ‘king’, and is therefore ill suited as search term for the name *Wang*).

As for given names, the four monosyllabic names *Bin* (斌), *Juan* (娟), *Shu* (淑) and *Xiang* (祥) were picked from a list of commonly used given names in Lei (1995). They are also checked against family names in Chen and Wang (1995) to ensure that they are rarely used as family names in modern Chinese. The number of free-standing occurrences of these names was compared with the total number of occurrences of these names. Specifically, for free-standing family names, the number of their occurrences was compared with the number of full names that contain these family names. As for free-standing given names, the number of their occurrences was compared with that of names that properly contain these given names, which includes full names, compound given names and reduplicated given names. For some names the total number of occurrences was large, so that only the first 5000 were included.

To start the search, each one of the following characters was typed into the search box in both corpora: *Liu* (刘), *Li* (李), *Wu* (吴), *Zhao* (赵), *Bin* (斌), *Juan* (娟), *Shu* (淑) and *Xiang* (祥) and then the results containing those characters were carefully examined to ensure that only names were counted and compared. For instance, to compare the number of the free-standing family name *Liu* with the number of full names that contain this family name in the State Language Commission Modern Chinese Balanced Corpus, the character 刘 was typed into the search box in the corpus, and then a list of examples of this character being used in context was shown. Below are the first ten examples and their translations:

1. 名列第二、三的是辽宁张晓东和上海刘正宏。(Zhang Xiaodong from Liaoning Province and **Liu** Zhenghong from Shanghai were second and third.)
2. 前卫队的刘卫、山东队的白秀存，分别获得第二名和第三名。(**Liu** Wei of Qianwei team and Bai Xiucun of the Shandong Team won the second and third place respectively.)
3. 另外两盘，津队的刘欣、赖晓青得心应手，分别战胜晋队的韩红和杨炜，以两胜一和告捷。(In the other two sets, **Liu** Xin and Lai Xiaoqing of Jin team were in a good position and they won it by beating Han Hong and Yang Wei of Jin team, respectively, with two wins and a draw.)
4. 在男子比赛中，刘树华先出战北京名将谢昭，以 2: 1 (6: 1、3: 6、6: 2) 获胜。(In the men's competition, **Liu** Shuhua played against famous Xie Zhao of Beijing first and he beat him by 2-1 (6-1、3-6、6-2)
5. 双打决赛盘，刘、倪以 6: 2 的比分先胜头局，随后又以 5: 7、4: 6 痛失两局，悔之莫及。(In the doubles final, **Liu** and Ni won the first set 6-2 before losing 5-7 and 4-6, they regretted it, but it was too late.)
6. 津门另四名选手滕新宇、马槟、刘书志、刘振刚也将于明日角逐各路强手。(The other four players Teng Xinyu, Ma Bin, **Liu** Shuzhi and **Liu** Zhengang from Jinmen will also compete tomorrow.)
7. 防守的组织也未能很好的安排，只要求后卫队员有机会就助攻，如两个边后卫山春季和张俊强从两侧不断压上，前场罚角球派中卫尹怡到对方门前争顶，另一个中卫刘毅也屡屡冲到前场。(The defence was not well organized and backs were only required to help the attack when they can, for instance, the two full-backs

Wei Shan Chun Ji and Zhang Junqiang, who were constantly pressing from both sides, during the first half for the penalty corner, the midfielder Yinyi was sent to the front of the goal for the header. Another midfielder **Liu** Yi also rushed repeatedly to the front.)

8. 市领导**刘**晋峰、张再旺、**刘**曾坤、石坚，中国钓鱼协会副主席江一真出席发奖仪式，并颁奖。(City leaders **Liu** Jinfeng, Zhang Zaiwang, **Liu** Zengkun, Shi Jian, Vice chairman of China Fishing Association Jiang Yizhen attended the award ceremony and presented awards.)

9. 前天，市领导**刘**晋峰、吴振等同志看望了来自北京的老同志和日本朋友。(The day before yesterday, city leaders **Liu** Jinfeng, Wu Zhen visited old comrades from Beijing and friends from Japan.)

10. 公司原办公室副主任**刘**启明下去担任了这个店的一把手后，积极带领一班人分别深入到各个门市部，从抓思想工作入手，一个一个地给予具体帮助指导，发扬了正气，调动了群众的积极性，服务面貌开始发生明显变化。(Since **Liu** Qiming, the former deputy director of the office of the company, took the position of head of the shop, he actively led the people to go into each shop, starting with the ideological work and has provided specific help and guidance for each one of them, which has developed righteousness, aroused the enthusiasm of the people and features of the service have begun to change distinctly.)

As can be seen here, the character 刘 is in bold in these examples, which are carefully examined so that only the free-standing family name *Liu* and the full names that contain this family name were counted and compared. Specifically, the free-standing family name *Liu* is found in number 5 on this list, while the rest of the list includes full names that contain the family name *Liu*.

The following is a summary of the findings for both corpora:

- Monosyllabic free-standing family name (*Li, Liu, Wu, Zhao*): 877 out of 25012 occurrences.
- Monosyllabic free-standing given name (*Bin, Juan, Shu, Xiang*): 11 out of 19593 occurrences.

Thus, 1 out of 29 occurrences of a monosyllabic family name is free-standing, while 1 out of 1781 occurrences of a monosyllabic given name is free-standing. One can see the asymmetry here: monosyllabic free-standing family names are more than 62 times

more common than monosyllabic free-standing given names. All these names can be used as subject, object, or possessor in NP.

To control for the possibility that the low figure of free-standing monosyllabic given names is because use of given names without family name is in general unpreferred, we have also compared occurrences of the single names *Bin*, *Juan*, *Shu*, *Xiang* with occurrences of compound and reduplicated names containing these names, without an accompanying family name in both the State Language Commission Modern Chinese Balanced Corpus and Peking University CCL Corpus⁷. The results were as follows:

- Compound and reduplicated free-standing given name: 735
- Monosyllabic free-standing given name: 11 (as above)

Thus, the polysyllabic occurrences were almost 67 times more common than the monosyllabic occurrences, confirming the results from the comparison of occurrences of free-standing monosyllabic given names with occurrences of the name in general.

3.2 *A judgment experiment*

In addition to the corpus investigation, a judgment experiment was also carried out by conducting a questionnaire study. The questionnaire was designed in Chinese, which is the respondents' first language. This is to facilitate the comprehension of the questions and to ensure a maximum response rate. It starts with a presentation of the questionnaire and the research it represents, which is then followed by the first part of the questionnaire, in which personal information including gender, age and whether the respondents were speakers of a dialect other than Mandarin were asked. The second part contains 18 paragraphs in which six full names (i.e. *Hu Shi*, *Song Mei-ling*, *Sun Ke*, *Zuo Zong-Tang*, *Cai-E* and *Zeng Guo-fan*), three monosyllabic given names (*Shi*, *E*, *Ke*), three compound given names (*Mei-Ling*, *Zong-Tang* and *Guo-Fan*), six monosyllabic family names (*Hu*, *Song*, *Sun*, *Zuo*, *Cai* and *Zeng*) are used. All these paragraphs containing personal names are drawn from published sources. Some modifications are made to the paragraphs, for instance, pronouns and full names are replaced by monosyllabic given names in some paragraphs, to test the use of these names.

⁷ We are grateful to a reviewer for pointing out the need for this control.

The questionnaire was distributed online via the mini programme Wenjuanxing to 60 students who major in English at Wuhan University, but the return rate was low. To maximize response rate and ensure that students with majors other than English can participate in the questionnaire, it was distributed offline to students of other departments, such as engineering. 89 questionnaires were sent out and all were returned, among which 85 were completed questionnaires. All these students were under 22. Since age may be a factor influencing the use of personal names, another 80 questionnaires were distributed offline among adults who were 30 or over, and 79 of them have returned their completed questionnaires.

In the questionnaire, respondents were asked to consider the use of personal names in each paragraph and make a choice among three options. Option 3: the use of the name is natural and acceptable⁸; option 2: the use of the name is not very natural, but still acceptable⁹; option 1: the use of the name is unnatural and unacceptable¹⁰. The results for all 199 respondents are shown below:

⁸ This is the translation of the original option in the questionnaire: 3 名字使用的很自然, 可以接受

⁹ In Chinese 2 名字使用的不太自然, 但仍然可以接受。

¹⁰ In Chinese 1 名字使用的不自然, 不可接受

Table 1 Results for all participants

Names	The percentage of respondents who opted for option 3 (the use of the name is natural and acceptable)	The percentage of respondents who opted for option 2 (the use of the name is not very natural, but still acceptable)	The percentage of respondents who opted for option 1 (the use of the name is unnatural and unacceptable)
six full names	81.83%	15.91%	2.26%
six family names	76.30%	15.66%	8.04%
three monosyllabic given names	22.78%	36.18%	41.04%
three compound given names	40.20%	40.54%	19.26%

Overall, the results show that free-standing single family names are overwhelmingly accepted. Specifically, 76.3% of the population have assigned 3 (fully accepted) to free-standing single family names, while 8.04% assigned them 1 (rejected them). By contrast, free-standing monosyllabic given names had much lower rate of acceptance. Specifically, only 22.78% of the population gave them 3, while 41.04% of the population gave them 1.

Further, as seen below, the bare family names have a mean of 2.68 and the bare single name has a mean of 1.81. Thus, there is a clear difference between bare given names and bare family names, consistent with the results from the corpus investigation.

Table 2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
familyname	199	1.00	3.00	2.6824	.44761
SingleGN	199	1.00	3.00	1.8172	.59451
Valid N (listwise)	199				

This trend is also reflected in the results for each group, as shown below. The results for the questionnaire that was completed online, by respondents who were all under 22, are shown in the following table:

Table 3 Under 22, completed online

Names	The percentage of respondents who opted for option 3	The percentage of respondents who opted for option 2	The percentage of respondents who opted for option 1
six full names	90.48%	9.52%	0.00%
six family names	84.29%	11.90%	3.81%
three monosyllabic given names	20.95%	50.48%	28.57%
three compound given names	38.10%	44.76%	17.14%

The table below shows the results for the questionnaire that was completed offline by the respondents who were under 22:

Table 4 Under 22, completed offline

names	The percentage of respondents who opted for option 3	The percentage of respondents who opted for option 2	The percentage of respondents who opted for option 1
six full names	79.02%	19.22%	1.76%
six family names	73.14%	17.06%	9.80%
three monosyllabic given names	32.55%	36.86%	30.59%
three compound given names	49.41%	34.12%	16.47%

The results for the questionnaire that was completed offline by the respondents who were over the age of 30 are demonstrated below:

Table 5 30 or over, completed offline

names	The percentage of respondents who opted for option	The percentage of respondents who opted for option 2	The percentage of respondents who opted for option 1
six full names	81.01%	15.19%	3.80%
six family names	76.16%	15.82%	8.02%
three monosyllabic given names	13.08%	29.11%	57.81%
three compound given names	31.22%	45.57%	23.21%

The above results for each group also show that free-standing family names are overwhelmingly accepted. Specifically, 96.19% of the population who completed the questionnaire online have picked options 3 or 2 for these occurrences. The same trend is evident in the results obtained for the questionnaire completed offline where 90.2% of the population who were under 22 and 91.98% of the population who were 30 or over have picked options 3 or 2 for these occurrences. In the under-22 online answers 84.29% of the occurrences of free-standing family names got 3, and only 3.81% got 1. In the two off-line groups there was a slightly less marked contrast between acceptance (3) and rejection (1): In the under-22 group 73.14% of free-standing family names got 3, and 9.8% got 1. In the over-30 group 76.16% got 3, while 8.02% got 1.

By contrast, free-standing monosyllabic given names had a considerably lower rate of acceptance, and correspondingly higher rate of rejection. In the 30-and-over group only 13.08% assigned 3 (fully accepted) to free-standing single given names, while 57.81% gave them 1 (rejected them). In the two under-22 groups, as many as 32.55% of the population in the offline group have given 3 for free-standing single given names, while 20.95% in the online group gave 3 for these occurrences. These figures indicate an interesting difference between the young (under 22) and the 'old' (30 or over), and the results are significant at $p=.000 < 0.001$, as shown below.

Table 6

		Independent Samples Test								
		Levene's Test for Equality of Variances					t-test for Equality of Means		95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SingleGN	Equal variances assumed	.033	.857	5.458	197	.000	.43930	.08048	.28059	.59802
	Equal variances not assumed			5.506	171.866	.000	.43930	.07979	.28180	.59880

This may well indicate that a change is underway whereby free-standing single names are becoming more acceptable. It does not seem implausible that the much greater exposure to English among young people may have such an effect on the use of free-standing given names. This is speculation, though; we leave this for future research. For the two other social variables that we tested, gender and dialect, no such differences were detected.

Since as many as almost 23% overall of the population investigated found free-standing monosyllabic given names acceptable, we cannot conclude from this judgment experiment that they are unacceptable in general, in Mandarin Chinese. What we can conclude is that a clear majority of Mandarin speakers find free-standing (monosyllabic) family names acceptable but free-standing monosyllabic given names unacceptable. This is strongly confirmed by the results from the corpus investigation. Throughout the paper we will, on this basis, assign an asterisk * to examples with free-standing monosyllabic given names.

4. Origin of Chinese names

The following is a brief look at Chinese naming conventions, to consider whether they can help to explain the morpho-syntactic properties of Chinese personal names. Common words are the basis of many Chinese given names. For example, the given name *Yu* in the full name *Ma Yu* is based on the lexical item *yu* which bears the lexical meaning 'jade'. There are reasons for parents to pick given names for children in China (Xu 2015). Firstly, parents may wish their children to have good qualities such as happiness, good health, high intelligence, beauty, etc. For this reason, corresponding common words are chosen. For instance, the given name *Ying* is picked by parents for its connection with the corresponding lexical item *ying* which means 'intelligent'. Another reason has to do with important events. If a child is born around the time of an

important event, the child may be named in relation to the event. For example, the complex given name *Jian Guo* whose corresponding compound *jian guo* means ‘build country’ is quite popular for people who were born around the time of the founding of the Republic of China. A different reason why parents may want to give this name to a child is that they hope that one day the child will make a great contribution to the country. A complex given name like *Guo Ying*, literally ‘country-intelligent’ in Mandarin, may reflect the parents’ wish that their child will honour its country and have high intelligence. In addition, other factors may be considered for naming children; for instance, the sound of the name or the history of the name may be considered pleasing (Xu 2015)¹¹.

Once a personal name is given to a child, the reasons for choosing that particular proper name and the use of that proper name will become independent of each other. This means that the descriptive meaning of the corresponding content word of a proper name will not dictate the use of that proper name (Strawson 1950:340). Recall, parents may have chosen the corresponding content word *ying* ‘intelligent’ as their child’s given name because they would like their child to be associated with high intelligence. But that child will keep the given name even if he or she is proven to have low IQ later on. And a person may have the given name *Jian Guo*, literally ‘build country’, even though they were not born at the time of the founding of the Republic of China and have not made any particular contribution to the country. This shows that the reference of given personal names in Chinese is not restricted or determined by the descriptive meanings of corresponding words of the names. Thus one cannot, for example, introduce a person based on the descriptive meaning that the person’s Chinese proper name may have. Indeed, here we would follow Strawson (1950), Margolis (1968), Allerton (1987) and Donellan (1970) and assume that Chinese given names do not have descriptive meaning any more than for example an English given name has, and their range or reference is established by past use (Margolis 1968, Cumming 2019). A set of prior applications of a proper name determine or restrict its range of application or reference. Thus the fact that a person is referred to as *Mary* or *Jian Guo* is not determined or constrained by a meaning, but is because that person has been identified in the past as such by other members of community. As given names are, in this sense,

¹¹ There is a sound-gender connection in personal names found in Mandarin and Cantonese, which conforms with findings in other languages (Chen and Kenstowicz 2021, Wong and Kang 2019).

without meaning, a unit which is composed of given names will be non-compositional, which is consistent with Hu and Perry's (2017) treatment of compounds formed of Chinese given names, that is, they are analysed as non-compositional compounds.

Family names are not meaningless in this sense, though, as the family name identifies a person as belonging to a family. The family name does name a person, in conjunction with a given name or, depending on cultural conventions, on its own, but also names a social construct, the family that the person is part of. This semantic distinction between given names and family names will be shown to be important below, for the morpho-syntactic analysis of Chinese names.

A particular type of Chinese given name, also found in some other East Asian languages, is the generation name (Li and Lawson 2002, Kałuzińska 2015). In a family all the children of a particular generation may share a given name. Their children may again share a name, but a different one, and so on. This naming convention is now virtually obsolete, at least in part as a result of PRC's one-child policy. This type of name will be shown to share properties with given names as well as family names, in ways that can be understood within the theory that we will articulate.

5. Theoretical assumptions

We assume the architecture of grammar adopted by Distributed Morphology (Marantz 1997, 2007, Harley and Noyer 1999, Embick and Noyer 2007, 2008, Embick 2015). Words as well as sentences are composed in the syntax by binary Merge, drawing items from the list of syntactic terminals, including roots and functional morphemes. Syntax operates with abstract categories, largely or wholly, depending on which version of the theory is countenanced. The issue concerns whether roots have phonological features inherently (Borer 2014, Embick and Noyer 2007, Embick 2015) or are provided with such features after the point of Transfer where the derivation of PF splits off from the syntactic derivation (Harley 2014). At that point Vocabulary Insertion applies, providing phonological form for the syntactic terminal nodes, either all syntactic terminal nodes including roots or just those with functional morphemes. The facts presented until now and in the following can be accounted for under either version of the theory, for concreteness we will assume here that roots bear phonological features in the syntax already.

Vocabulary Insertion marks the entrance to the Morphology module, where operations on phonologically overt morphemes ensues.

Roots are acategorial, devoid of any syntactic features. A content word is minimally made up of a root and a syntactic categorizer, a morpheme whose function (typically the only function) is to provide a word with a category. As already mentioned, we assume that a personal name is made up of a root and a categorizer. We will argue that names are categorially distinct from common nouns, and furthermore, that given names and family names are distinct categories. It is conceivable and likely that names and common nouns are best seen as members of a nominal supercategory, distinct from verbs, adpositions, etc., but we do not elaborate on this assumption. The following are a set of formal definitions that will be employed in the following:

(17)

- (i) M(aximal)-word: Potentially complex head not dominated by a further head-projection (Embick 2015, 67).
- (ii) Minimal M-word: M-word made up of a root and a categorizer only.
- (iii) Complex M-word: Any M-word bigger than a minimal M-word.
- (iv) Compound word (= Compound M-word): An M-word containing more than one root.

When we say that a word, specifically a name, can ‘be free’ or ‘stand alone’, this is more formally ‘can be a minimal M-word’.

Categorizers and their projections are standardly represented by lower case letters (n, v, etc.). We will apply a convention where M-word labels are capital letters, to make a visible distinction between M-words and subwords headed by the same categorizer.

With these preliminaries, we now inspect reduplication, as seen in given names in Mandarin and Xining Chinese, and more generally with nouns.

6. Reduplicated Xining Chinese nouns

We claim that reduplication of names provides crucial evidence of their morpho-syntactic structure. This becomes evident in the light of noun reduplication in Xining Chinese, as described and formally analysed in Wang (2018) and Wang and Holmberg

(2020). Demonstration that this is the case requires a fairly detailed review of the findings in Wang and Holmberg (2020), which we now undertake.

In Xining Chinese, free monosyllabic nouns are generally reduplicated, as seen below in bold:¹²

- (18) a. Jia ba zhi go **bo bo** xi-gei liao ji (Xining Chinese)
 she BA this CLF bag bag wash-GEI PRF several
 bian na.
 times PRT
 ‘She has washed this bag several times.’
- b. Nao zi **wa wa** jia zi a da zhei.
 I ZI child child she ZI PRT senior PRT
 ‘My child is older than hers.’

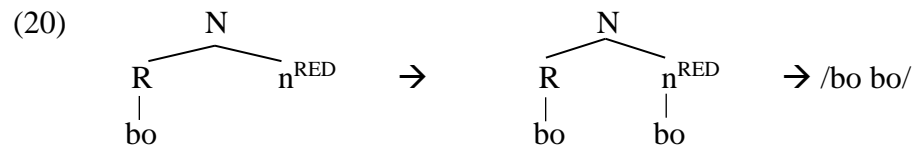
This reduplication is an entirely formal operation, without any semantic effect. The reason why such reduplication occurs in Xining Chinese is that, first, in this variety of Chinese there is a condition on (common) nouns, formally a filter applying after Vocabulary Insertion:

- (19) *N if N is a free word (= a minimal M-word) and has less than two syllables.

We will refer to this as the Two-Syllable Condition, applying to nouns in Xining Chinese. The condition/filter will rule out the counterparts of (18a,b) with non-reduplicated nouns. Second, Xining Chinese has a nominal categorizer, represented in Wang and Holmberg (2020) as n^{RED} , that allows reduplication, and requires it whenever the Two-Syllable Condition is not otherwise met. The way the reduplication works, in

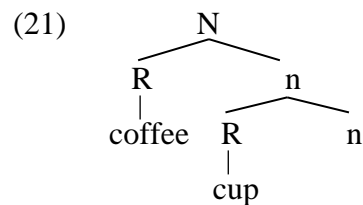
¹² According to Wang and Holmberg (2020) the reduplication is virtually obligatory in what they call Traditional Xining Chinese, spoken by old speakers of the dialect. Among younger speakers there is some variation.

for example (18a), is that the categorizer copies the phonological matrix of the sister root:¹³



See Wang and Holmberg (2020) for arguments that the root and the categorizer have to be sisters, for this reduplication to happen. The reduplication takes place at Vocabulary Insertion. See section 8 for some further remarks on the formal status of RED.

A crucial assumption in Wang and Holmberg (2020), in line with Josefsson (1999), de Belder (2017), and broadly in line with Chomsky's (2013) theory of labelling, is that the structure of an endocentric, two-member compound such as *coffee cup*, *wallpaper*, etc. is (21): a nominal M-word N, made up of a root merged with a noun, itself made up of a root and a nominalizer n (as a non-maximal word, the noun [*cup*, n] is labelled n).



Since roots are, by hypothesis, acategorial, a root cannot label a dominating node. This ensures that the compound word *coffee cup* is headed by the noun [*cup*, n], and ultimately [n].¹⁴

Within this theory of syntax and morphology virtually all the properties of reduplicated nouns in Xining Chinese can be explained. For instance, as discussed by

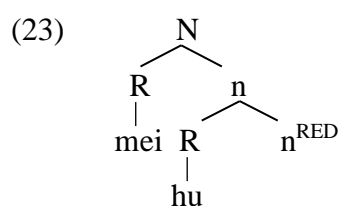
¹³ 'R' in (20) is not a category label. Following Wang and Holmberg (2020) we represent roots in trees in this way.

¹⁴ This presupposes that roots have access to their interpretation without need for a categorizer, being linked to an entry in the Encyclopedia by an index (see Harley 2014, Wang and Holmberg 2020), to account for the interpretation of compositional compounds.

Wang and Holmberg (2020), the head of a compound can be reduplicated, a modifier cannot.

- (22) a. mei hu (Xining Chinese)
 ink box
 b. mei hu hu
 c. *mei mei hu

This follows under the analysis (20), applied to the compound *mei hu*.



The root *hu* ‘box’ merges with the nominalizer, projecting a noun, which then merges with the root *mei* ‘ink’ in the syntax. The root *hu* ‘box’ is the sister of the nominalizer, which therefore can copy its phonological matrix. The modifier *mei* ‘ink’ has no sister nominalizer, and therefore cannot reduplicate. The *ha* is optional here as the Two-Syllable Condition (19) is met without it. If the free noun is an affixed word, reduplication can also be optional, which is what we turn to now.

Some affixes in Xining Chinese allow reduplication of the root, others do not. The ones that do are affixes without any semantic or syntactic (categorical) features. As argued by Wang & Holmberg, they are purely phonological items, employed in Xining Chinese to satisfy the condition that nouns must have minimally two syllables. As such they cannot be morphosyntactic heads. An example is the affix in (24).

- (24) mo -e
 cat -E
 ‘cat’

While it might appear that the suffix *-e* is an alternative realization of the nominalizer, Wang & Holmberg point out that the suffix can occur with adjectives as well (*jieng -e*

‘clever’, *zhan -e* ‘flat’), hence the suffix is not a nominalizer. Instead, it is a device devoid of any syntactic features which is employed with nouns just to satisfy the condition that a noun must have two syllables. It follows that the suffix *-e* cannot be the head of the word. This means that *mo* ‘cat’ must be the head in (24). This in turn means that it must have the structure [mo, n^{RED}] where the nominalizer is the sister of *mo*. As such it is predicted to be able to reduplicate, a correct prediction in this and any other case of a noun merged with *-e*.

- (25) mo mo –e (Xining Chinese)
 ‘cat’

By comparing (24) and (25), it can be seen that the reduplication is optional in cases where it is not needed to meet the Two-Syllable Condition.

An example of a suffix not able to co-occur with a reduplicated noun is the derivational suffix in (26):

- (26) a. xiong –bong (Xining Chinese)
 countryside -person
 ‘country bumpkin’
 b. *xiong xiong-bong
 c. *xiong bong-bong

The meaning of the suffix *–bong* is ‘person associated with X’, where X is the denotation of the item the suffix is merged with, similar to *-er* in English *teenager* or *-y* in *fatty* (Wang and Holmberg 2020). The noun *xiong-bong* refers to a kind of person, so the head of the word is the suffix. This entails, given the theory assumed, that *xiong* ‘countryside’ in (26a) is a bare root (like *mei* ‘ink’ in *mei hu* ‘ink box’ or *coffee* in *coffee cup*). As such it is predicted not to reduplicate; a correct prediction. The item *–bong* itself is a functional head, as such not composed of a root and a categorizer, and therefore correctly predicted not to reduplicate, either.

See Wang and Holmberg (2020) for more arguments that noun reduplication in Xining Chinese works as described.

It is not the case that the relevant difference between Xining Chinese and Mandarin is that the nominal categorizer cannot be null in Xining Chinese, triggering reduplication (as suggested by a reviewer). Comparison of (24) and (25) shows that the nominalizer can be null in Xining Chinese when the two-syllable condition is met by other means. Instead, what makes Xining Chinese different from Mandarin as regards nominal morphology is that the filter (19) applies in this variety of Chinese but not in Mandarin. It is also not the case that only Xining Chinese has the kind of reduplication formally described above as a categorizer copying the phonological matrix of a sister root. As we will argue in section 7, Mandarin applies the same operation but only with given names, and furthermore, Mandarin has a filter like (19) but applying only to given names, not to common nouns.

As mentioned in the introduction, there is a strong preference in modern Chinese for disyllabic words over monosyllabic ones (Duanmu 1999, 2007: ch. 7). The most striking effect of this is the prevalence of various types of compounds, which abound in Chinese (Duanmu 2007, 122-125, Wang 2018).¹⁵ The reduplication of monosyllabic nouns in Xining Chinese is another way to avoid monosyllabic free words. The constraint ruling out monosyllabic given names as free words, to which we now turn, is yet another consequence of the general dispreference for monosyllabic free words.

7. Given names in Chinese

Earlier we saw that given names can be reduplicated in Chinese and thereby can occur alone as free words (minimal M-words) in sentences. The examples are repeated here in this section for convenience:

- (27) a. Ming Ming san sui le. (Mandarin)
 Ming Ming three age PRT
 ‘Ming Ming (gn) is three years old.’
 b. Wo kan le Tian Tian de zuo ye.
 I see PRF Tian Tian DE work course.of. study

¹⁵ This includes words which are syntactically but not semantically compounds, as they combine two synonymous or semantically associated words, as seen in some of our examples: (12a), (46b).

‘I have already seen Tian Tian’s (gn) homework’

c. Jia ba Chueng Chueng hanxi zhao (Xining Chinese)

He BA Chueng Chueng like PRT

‘He likes Chueng Chueng (gn).’

d. Huan Huan zi a-ma bieng ha liao.

Huan Huan ZI A-mother ill PRT PRT

‘Huan Huan’s (gn) mother is ill.’

The reduplication in given names does not have any semantic effects. The sentences above become ungrammatical when the non-reduplicated form is used instead:

(28) a. *Ming san sui le. (Mandarin)

Ming (gn) three age PRT

b. *Jia ba Chueng hanxi zhao. (Xining Chinese)

He BA Chueng (gn) like PRT

The reason for ungrammaticality here is that *Ming* and *Chueng* are monosyllabic given names, and as such cannot stand alone in sentences. But once they are combined with another given name, the sentences in question are well formed:

(29) a. Ming Xue san sui le. (Mandarin)

Ming Xue three age PRT

‘Ming (gn) Xue (gn) is three years old.’

b. Jia ba Chueng Hua hanxi zhao. (Xining Chinese)

he BA Chueng Hua like PRT

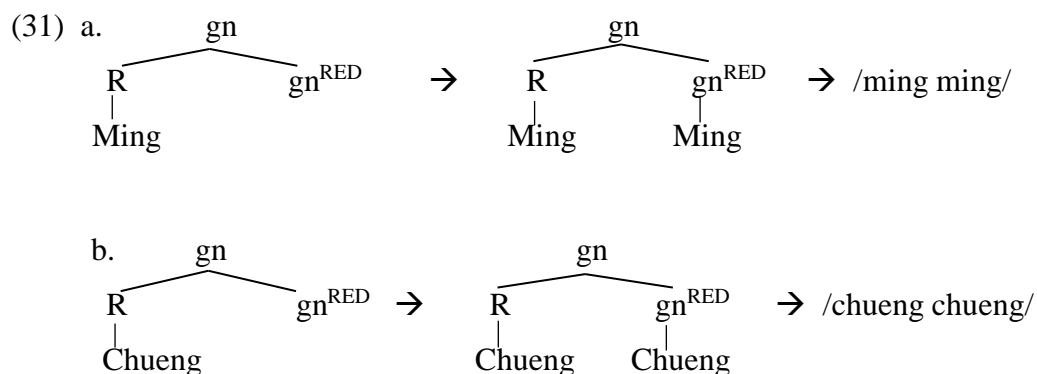
‘He likes Chueng (gn) Hua (gn).’

We claim that this is because given names are subject to a morphological condition that requires free given names to have at least two syllables. As in section 6 on nouns in Xining Chinese, we formalize it as a filter, applying in the Morphology module, following Vocabulary Insertion.

(30) *gn if it has less than two syllables.¹⁶

This is the same condition that applies to common nouns in Xining Chinese, and, we now establish, to given names in Mandarin and Xining Chinese. It follows that a monosyllabic Chinese given name cannot stand alone in a phrase or a sentence, accounting for why (28a,b) are ungrammatical but (29a,b) are grammatical.

One way to meet condition (30) is by reduplication, as seen in (27) in both Mandarin and Xining Chinese. Based on the discussion concerning reduplicated nouns in Xining Chinese in section 6, we propose that all reduplicated given names, in Xining Chinese and Mandarin, are composed of a root and a given name categorizer gn. The reduplication can only occur if firstly the syntactic condition is met that the categorizer and the root are sisters, and secondly the categorizer bears the reduplication feature. The derivation of reduplicated given names would be that first gn will merge with the root of the name in the syntax and then the copying operation would take place at Vocabulary Insertion, where gn copies the phonological features of the root. The previously illustrated given names *Ming Ming* in Mandarin and *Chueng Chueng* in Xining Chinese would have the following derivation:

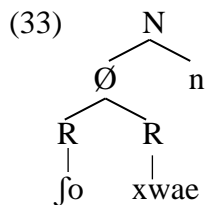


Another way to satisfy the Two-syllable Condition and form free given names is compounding:

¹⁶ Compound given names rarely contain more than two names, but exceptions exist, such as in the full name *Yin Le Xiao Zi*, where the given names are *Le Xiao Zi* (Chen and Wang 1995).

- (32) a. Ming Xue san sui le. (Mandarin)
 Ming Xue three age PRT
 ‘Ming (gn) Xue (gn) is three years old.’
- b. Jia ba Chueng Hua hanxi zhao (Xining Chinese)
 he BA Chueng Hua like PRT
 ‘He likes Chueng (gn) Hua (gn).’

What is the structure of a compound given name? Hu and Perry (2017) have argued, on the basis of a study of Yixing Chinese (a variety of Wu Chinese), that they are two merged roots, forming an unlabelled unit, which is merged with a nominalizer. The structure of the Yixing given name *ʃo xwae* (employing Hu and Perry’s transcription) would be (33):



This is in line with their analysis of non-compositional compounds generally in Yixing Chinese. See also Zhang (2007), who argues that a certain type of non-compositional compounds in Mandarin have the structure (33). Compound given names would be a form of non-compositional compounds, which makes sense semantically.¹⁷

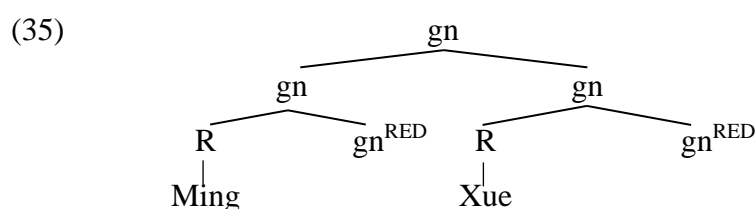
If the structure of compound given names in Mandarin and Xining Chinese is as in (33), but with gn as categorizer, the prediction is that the component roots cannot be reduplicated, as the categorizer is not the sister of either root. As a matter of fact, names like (34), exemplifying reduplication of the components of a compound given name, may be highly uncommon, but are not ungrammatical; compare (34) and (32).

- (34) a. ?Ming Ming Xue san sui le. (Mandarin)
 ‘Ming Ming Xue is three years old.’

¹⁷ They do not discuss full names made up of a family name and one or more given names. As discussed below in section 10 and 11, they are not non-compositional in the same sense as compound given names.

- b. ?Ming Xue Xue san sui le
 ‘Ming Xue Xue is three years old.’
- c. ?Jia ba Chueng Chueng Hua hanxi zhao. (Xining Chinese)
 ‘He likes Chueng Chueng Hua.’
- d. ?Jia ba Chueng Hua Hua hanxi zhao.
 ‘He likes Chueng Hua Hua.’

On this basis, we analyse compound given names such as *Ming Xue* (Mandarin) and *Chueng Hua* (Xining Chinese) as in (35):



Since the compound name is disyllabic, reduplication will always be optional. This would be a form of coordinative compound. It has a status comparable to an ‘appositional compound’ such as *singer-songwriter*, composed of two nouns (each a root merged with a spelled-out nominalizer *-er*) where each noun provides an independent description of the same object, and compounds like *blue-green*, which denotes a combination of the denotations of the two constituent words. Crucially, the syntactic relation between the two words is coordination: a person is a singer and a songwriter, the colour is blue and green. Likewise the name of the subject in (32a) and object in (32b) is a coordination of two simple given names, forming one compound given name.¹⁸

In sections 10 and 11 it will be demonstrated that not all names can be reduplicated, hence not all name-compounds have the structure in (35). Notably, family names cannot be reduplicated. Thus full names made up of a family name and one or more given names do not have the structure (35).

¹⁸ As predicted in a coordination either order is grammatical: *Ming Xue* and *Xue Ming* are both possible names. As names of a particular person the order is fixed, though.

The theory predicts that a name like *Ming Ming Xue Xue* (Mandarin) and *Chueng Chueng Hua Hua* will be possible names. They are no doubt unlikely to be ever used (any four-member compound given name would be exceedingly rare), yet they are not ungrammatical.

By hypothesis the categorizer gn has the reduplication feature allowing reduplication that does not add extra semantic content to the resultant construction. In Xining Chinese, this would hold for the noun categorizer as well, not just gn. But in Mandarin, the situation is different, which we will now demonstrate.

8. Mandarin nouns, adjectives and verbs

Given names in Mandarin behave very differently from common nouns in Mandarin in that monosyllabic nouns are often found in Mandarin standing on their own in sentences:

- (36) a. Ta hen xihuan zhe ben shu. (Mandarin)
 she very like this CLF book
 ‘She likes this book very much.’
 b. Shui shi hen zhongyao de.
 water be very important DE
 ‘Water is very important.’

Shu ‘book’ and *shui* ‘water’ can both stand alone as free words, which indicates that the Two-Syllable Condition that holds for Xining Chinese nouns is not applicable here.

A limited number of Mandarin nouns can undergo reduplication, which is, however, different from that of Xining Chinese nouns in that a repetitive meaning is added. *Ri* ‘day’ and *nian* ‘year’ are two such nouns:¹⁹

- (37) a. ri ri (Mandarin)
 day day
 ‘every day’

¹⁹ Kinship terms in Mandarin can also undergo reduplication, e.g. *ma ma* ‘mother’ where no extra meaning is added as the result of reduplication (Lin 2001,71).

- b. nian nian
 year year
 ‘every year’
 (Lin 2001,69)

But nouns in Mandarin cannot undergo the semantically vacuous reduplication that occurs with Xining Chinese nouns:

- (38) * Shui shui shi hen zhongyao de. (Mandarin)
 water water is very important DE
 Intended reading: ‘Water is very important.’

We assume, as stated in section 5, that content-words consist minimally of a root merged with a categorizer: [N R, n]. Here the root is the sister of the nominalizer, which means the syntactic condition for reduplication to occur is met and potentially nouns in Mandarin could be reduplicated, which however contradicts the fact. Whatever mechanism allows semantically vacuous reduplication in Xining Chinese nouns, is apparently not functioning in Mandarin. We postulate that the absence of reduplication in Mandarin is due to the absence of the reduplication feature in the nominal categorizer in Mandarin, with the effect that nouns in Mandarin do not undergo the sort of reduplication that occurs in Xining Chinese nouns. Xining Chinese and Mandarin nouns would have the following structure:

- (39) a.
$$\begin{array}{c} \text{N} \\ \diagup \quad \diagdown \\ \text{R} \quad \text{n}^{\text{RED}} \end{array}$$
 (Xining Chinese)
- b.
$$\begin{array}{c} \text{N} \\ \diagup \quad \diagdown \\ \text{R} \quad \text{n} \end{array}$$
 (Mandarin)

Apart from nouns, adjectives and verbs in Mandarin can also stand alone as free words in sentences:

- (40) a. Ta hen chou. (Mandarin)
 she very ugly
 ‘She is very ugly.’
 b. Ta ai ni.
 she love you
 ‘She loves you’

The situation is the same in Xining Chinese where adjectives and verbs can appear alone as free words in sentences:

- (41) a. Jia mi zhaozi²⁰ hen na. (Xining Chinese)
 she beautiful ZHAOZI very PRT
 ‘She is very beautiful.’
 b. Jia ba nao xiong zhei.
 she BA I miss PRT
 ‘She misses me.’

So adjectives and verbs in Mandarin and Xining Chinese are not subject to the condition holding for nouns of Xining Chinese. Furthermore, although they can be reduplicated, it is a different reduplication from what is seen with nouns in Xining Chinese and with given names in Xining Chinese and Mandarin. Reduplicated adjectives have an intensified meaning compared to their non-reduplicated version (Li and Thompson 1981, Lin 2001), as seen in (42):

- (42) a. suan suan (Mandarin)
 sour sour
 ‘very sour’
 b. ying ying
 hard hard
 ‘very hard’

²⁰ *Zhaozi* here is a morpheme that links an adjective and a degree modifier.

The same holds true of reduplicated adjectives in Xining Chinese (cf. Ren 2006). The examples below show the reduplicated versions of the adjectives *mian* ‘soft’ and *chou* ‘thick’:

- (43) a. *mian mian* (Xining Chinese)
 soft soft
 ‘very soft’
 b. *chou chou*
 thick thick
 ‘very thick’

As for verbs, an attenuative meaning is added to the meaning of the verb as a result of reduplication in Mandarin (Lin 2001).²¹ The reduplicated version of *xie* ‘write’ and *tan* ‘talk’ are demonstrated below:

- (44) a. *xie xie* (Mandarin)
 write write
 ‘write a bit’
 b. *tan tan*
 talk talk
 ‘have a chat’

In Xining Chinese, the reduplication adds a sense of repetition and/or continuation to a verb (cf. Wang 2009). The reduplicated forms of *han* ‘call’ and *fo* ‘talk’ are illustrated below:

- (45) a. *han han* (Xining Chinese)
 call call

²¹ Arcodia et al. (2012) have consulted works on reduplication of monosyllabic verbs in other varieties of Chinese. For instance, progressive/iterative verbal reduplication is found in Min, Wu and Yue dialects (Fu and Hu 2012), repetition/continuation over a short period of time verbal reduplication is found in Wenzhou (Chi and Wang 2004).

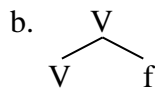
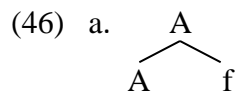
‘call again or keep calling for a period of time’

b. fo fo

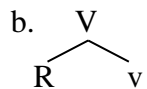
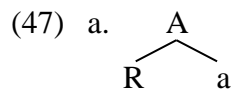
say say

‘say again or keep saying for a period of time’

It is proposed here that reduplication of adjectives and verbs in Mandarin and Xining Chinese are derived by merging a functional head (f), not with the root, but with the adjective or verb, encoding the additional syntactic feature of intensification, repetition or continuation:²²



This is to say that the counterpart of the nominalizer, that is, adjectival and verbal categorizers, do not have the reduplication feature, and as a result, adjectives and verbs cannot be reduplicated in the same way that Xining Chinese nouns can. Adjectives and verbs in Chinese thus have the following analysis where *a* and *v* stand for adjectival categorizer and verbal categorizer, respectively, without the reduplication feature:



²² These are features of inner aspect/aktionsart (Travis 2010, 2019), and may as such be syntactic heads in the vP-domain and AP-domain. If so, the structures (46a, b) may be derived by head movement. See Arcodia et al. (2012) for a study of the meaning of verb reduplication in a range of Chinese varieties. We suggest that the reduplicated nouns in (37) are derived in a similar fashion: a functional head denoting universal quantification (‘every’) is merged not with the roots but with the nouns *ri* ‘day’ and *nian* ‘year’, triggering reduplication.

We suggest that reduplication of verbs and adjectives in Mandarin and Xining Chinese is also an effect of the feature [RED] on a functional head, which triggers copying of the phonological matrix of the sister verb or adjective (a sister possibly as a result of head movement; see note 22). For instance, the attenuative feature in Mandarin would come with a feature matrix [ATT, _v, RED], where [_v] selects v, and RED triggers copying of the phonological matrix of the sister verb. More research is required, though, to determine whether this is the best analysis also for this type of reduplication, and how widely it applies (see section 13 on reduplication in pet names).

In this section, we have looked into nouns in Mandarin, and adjectives, and verbs in both Mandarin and Xining Chinese. It is argued that they are not subject to the Two-Syllable Condition which holds for nouns in Xining Chinese, and given names in Xining Chinese and Mandarin, which accounts for why they can stand alone as free words in sentences. They cannot undergo reduplication that has no semantic effect, which can be understood if they are the result of merge of a root and a categorizer lacking the reduplication feature, meaning that any reduplication they do undergo will involve a head external to the verb or adjective. In section 10, we will turn to Chinese family names, which behave similarly to Mandarin nouns, adjectives and verbs.

9. Are Chinese given names bound words?

A large part of the vocabulary of Chinese consists of items that cannot occur alone as free words, i.e. cannot be M-words.

- (48) a. * xi zhaozi bo (Xining Chinese)
 skinny ZHAOZI arm
 Intended reading: ‘skinny arms’
 b. xi zhaozi gei bo
 skinny ZHAOZI armpit arm
 ‘skinny arms’
- (49) a. * zhe ge wa zhen gui. (Mandarin)
 this CLF sock really expensive
 Intended reading: ‘These socks are really expensive.’

- b. zhe ge wa-zi zhen gui.
 this CLF sock-ZI really expensive
 ‘These socks are really expensive.’

(48a) and (49a) are ungrammatical as the items *bo* ‘arm’ and *wa* ‘sock’ are used as free words in these sentences. Once they are combined with other items, as seen in (48b) and (49b), the sentences become grammatical. In (48b), *bo* ‘arm’ has been compounded with an associated word *gei* ‘armpit’, forming a so called parallel compound (Wang 2018), which satisfies the condition that *bo* must be morphologically bound. In (49b) *wa* ‘sock’ is combined with the semantically empty suffix *-zi* (Wang 2018), again satisfying the condition that it must be bound. Interestingly, bound items cannot be reduplicated in Xining Chinese. Below *bo* ‘arm’ is reduplicated, and the expression is ill-formed:

- (50) * xi zhaози bo bo²³ (Xining Chinese)
 skinny ZHAOZI arm arm
 Intended reading: ‘skinny arms’

In the literature these bound items have been called bound stems or bound roots (Dai 1992, Packard 2000, Pirani 2008, Sproat and Shih 1996). Wang (2018) argues that these terms are misleading. First, as argued by Embick & Halle (2005), the category ‘stem’ is redundant in Distributed Morphology (and is arguably inappropriate for Chinese in any framework, as inflections are virtually absent). Second, if roots are devoid of syntactic features, following much work in minimalist syntax and Distributed Morphology, then roots are always bound when occurring as words, so the classification misses whatever is special about the bound items. Wang (2018) and Wang and Holmberg (2020) call them bound words.

The main argument in Wang (2018) and Wang & Holmberg (2020) that they are not roots is that they do not reduplicate in Xining Chinese. Recall that the reduplication of nouns in Xining Chinese is analyzed as copying of the phonological matrix of a root by a nominal sister categorizer. The absence of this option in, for example, (50) is

²³ For the same reason, **xi bo bo* is also ill-formed.

explained if the item is not an acategorial root (at any level), but is a monomorphic lexical item with an inherent category specification (a property shared with function words), which as such cannot merge with a categorizer. On the other hand it is not ‘big enough’ to be an M-word (see section 5), and must therefore be merged with an affix, as in (49b), or a word, as in (48b), to take part in syntactic derivation, due to a condition, put forward in Wang (2018) and Wang and Holmberg (2020), that a free content word must contain at least two morphemes.²⁴

As discussed in section 7, given names in Chinese can be reduplicated, which shows that they are not bound words.

Interestingly, there are cases of bound words which as such cannot reduplicate, that occur as given names, and as such can reduplicate. For instance, *jueng* ‘ruler’ is a bound word in Xining Chinese, which cannot be reduplicated, but when it is used as a given name, it can be reduplicated, *Jueng Jueng*. That is to say, there is a root *jueng* which can be merged with a categorizer *gn*, and as such can be reduplicated. *Jueng* ‘ruler’, by contrast, is not a root; it is a bound word.

10. Chinese family names

As we concluded from our investigation reported in section 3, Chinese family names can occur as syntactic constituents on their own:

- (51) a. Ren hen ai ni (Mandarin)
 Ren very love you
 ‘Ren (fn) loves you very much.’
- b. Sueng sa nao rendi zhei. (Xining Chinese)
 Sueng OBJ I know PRT
 ‘I know Sueng (fn).’

²⁴ This presupposes a modification of the definition of minimal M-word in (17): A minimal M-word is made up of two morphemes, at least one of which is a root or a bound word.

Furthermore, sentences containing reduplicated family names are ungrammatical:²⁵

- (52) a. * Ren Ren hen ai ni. (Mandarin)
 Ren Ren very love you
 Intended reading: ‘Ren (fn) loves you very much.’
- b. * Sueng Sueng sa nao rendi zhei. (Xining Chinese)
 Sueng Sueng OBJ I know PRT
 Intended reading: ‘I know Sueng (fn).’

The ungrammaticality observed here is not due to the number of syllables that a Chinese family name can have. Chinese family names can contain more than one syllable. The following are examples of family names with two syllables:

- (53) a. Ou Yang hen ai ni. (Mandarin)
 Ou Yang very love you
 ‘Ou Yang (fn) loves you very much.’
- b. Zhu Gei sa nao rendi zhei. (Xining Chinese)
 Zhu Gei OBJ I know PRT
 ‘I know Zhu Gei (fn).’

That monosyllabic family names can stand alone indicates that, similar to Mandarin nouns, adjectives and verbs, they are not subject to the prosodic condition holding for nouns of Xining Chinese. The formal reason why family names in Chinese cannot be reduplicated in Mandarin or Xining Chinese is that they are formed of a root and a categorizer that does not bear the reduplication feature, the categorizer fn. Family names in Chinese, such as, *Ren* in Mandarin, will be analysed as follows:

- (54)
- $$\begin{array}{c}
 \text{fn} \\
 \diagup \quad \diagdown \\
 \text{R} \quad \text{fn} \\
 | \\
 \text{Ren}
 \end{array}$$

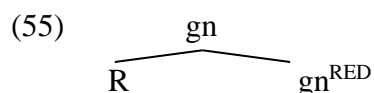
²⁵ If *Ren Ren* in (52a) is a combination of a family name plus a given name, then it is grammatical. The same applies to *Sueng Sueng* in (52b).

Even though the syntactically defined sisterhood condition for reduplication is met here, reduplication is still not possible, in present terms because *fn* does not have the feature required to allow reduplication.

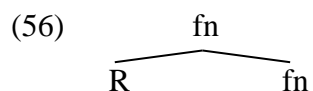
As for why family names are not subject to the Two-Syllable Condition while given names are, rather than, for example, the other way around, the fact that the great majority of Chinese family names come from a relatively short list of names dating back to long before Chinese developed the dispreference for monosyllabic words (Dai 1994, Hu 1987) is probably at least part of the explanation.²⁶ That is to say, there is no structural, grammatical explanation for the lack of a prosodic condition. There is, we submit, a historical explanation, but grammatically encoded as lack of a reduplication feature on the categorizer.

11. Chinese full names

Previously we argued that given names in Chinese have the following structure, where the root is merged with the categorizer *gn* which has the reduplication feature:



As for Chinese family names, the analysis is the following, in which *fn* is assumed without the reduplication feature:

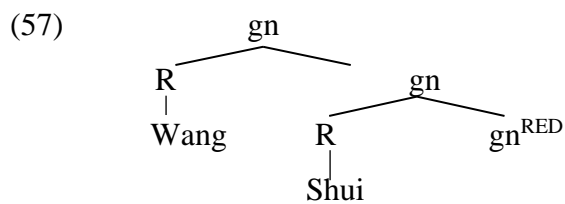


A full name is a combination of a family name and one or more given names (rarely more than two). As noted at the end of section 4, a full name is semantically asymmetric;

²⁶ The hundred most common family names account for 87% of the population, and the total number of family names is roughly close to 4000 (Dai 1994).

one is a family name and the other is the name of a person of that family. Thereby the family name functions as a modifying (restricting) attribute to the given name; for instance, the Mandarin full name *Wang Shui* refers to a person named *Shui* of the *Wang* family. This is different from compound given names which, as discussed in section 7, are symmetric; for instance, in the Mandarin given name *Ping Shui* there is no relation between the two given names beyond coordination. This is the basis for the analysis assigned to compound given names in (35).

It is proposed here that full names in Chinese are a subtype of attributive compounds. This is reflected in the structure we are proposing here for the Chinese full name *Wang Shui*:²⁷



In an endocentric compound word one of the constituents is the head, labelling the compound. As discussed in section 6, broadly following Chomsky's (2013) theory of labelling in syntactic derivation, and the extension of the theory to compounding in Wang and Holmberg (2020), the endocentric compound must be asymmetric in a way that ensures labelling of the compound, which it is if one member of the compound is a bare root, and as such devoid of any syntactic features. As long as the other member is a word, that is minimally a root merged with a categorizer, that member will be the head of the resulting compound. In the case of the compound making up a full name, if the family name is a bare root, while the given name is a word, this ensures that the given name labels the compound.

²⁷ A reviewer for JEAL asks how an individual with the name *Wang Shui* can be interpreted as 'person with the name *Shui* of the family *Wang*' given that the information that *Wang* is a family name is not included in the structure (57), as the syntactic representation of the root has no such feature. Instead, as we point out in note 14, we assume that roots are linked to an entry in the Encyclopaedia defining their meaning. In the present case the entry is roughly 'of the family *Wang*'. The effect of the categorizer *fn*, required when *Wang* occurs as a minimal M-word, is to make the root a syntactically active object which can be merged with other syntactic objects, such as a null D (Huang, Li & Li 2009, 287-295).

This analysis predicts that there should be full names that contain a reduplicated given name, which is borne out. Note that these are in no way marginal, the way compound given names containing a reduplicated name are; compare (58) and (34). This, we contend, is because full names are structurally simpler, consisting of a root plus a gn, where a compound gn consists of two coordinated gn's.

- (58) a. Ren Liang Liang hen ai ni. (Mandarin)
 Ren Liang Liang very love you
 'Ren (fn) Liang Liang (gn) loves you very much.'
- b. Sueng Mieng Mieng sa nao rendi zhei. (Xining Chinese)
 Sueng Mieng Mieng PRT I know PRT
 'I know Sueng (fn) Mieng Mieng (gn).'

Based on condition (30) which says that there must be two syllables in a free given name and the above analysis of Chinese full names, it is predicted that a Chinese full name consisting of a family name and a given name can stand alone in a sentence, a true prediction:

- (59) a. Wo kan le Zhang Tian de zuo ye. (Mandarin)
 I see PRF Zhang Tian DE work course.of.study
 'I have already seen Zhang (fn) Tian's (gn) homework'
- b. Sueng Huan zi a-ma bieng ha liao. (Xining Chinese)
 Sueng Huan ZI A-mother ill HA PRT
 'Sueng (fn) Huan's (gn) mother is ill.'

This means that on the one hand reduplication is not compulsory for given names in full names since minimally there are two syllables already, but on the other hand there is nothing preventing reduplication either. This echoes what has been observed for Xining Chinese nouns, where the reduplication is not restricted to occurring in monosyllabic nouns, but occurs in compounds and certain affixed words as well, but is then always optional, as was discussed above in section 6.

12. Generation names

A generation name indicates the person's generation position within the family hierarchy. It has a long history in Chinese, and may be dated back to the Han Dynasty (206BC-220AD) (Li and Lawson 2002). A predetermined generation name list or a poem encoding a name list may be the source of generation names, or they may be determined by parents (Li and Lawson 2002). In a full name, the generation name usually appears after a family name and before a typical given name, as demonstrated below in bold in Mandarin and Xining Chinese:

(60) a. Li **Shuang** Wan ai ta. (Mandarin)

Li Shuang Wan love him

'Li (fn) Shuang (gen) Wan(gn) loves him.'

b. Li **Shuang** He bu ai ta.

Li Shuang He no love him

'Li (fn) Shuang (gen) He (gn) does not love him.'

c. Li **Shuang** Qing ye bu ai ta.

Li Shuang Qing either NEG love him

'Li (fn) Shuang (gen) Qing (gn) does not love him either.'

(61) a. Jia ba Gu **Chong** Chueng hanxi zhao. (Xining Chinese)

she BA Gu Chong Chueng like PRT

'She likes Gu (fn) Chong (gen) Chueng (gn).'

b. Jia ba Gu **Chong** Biou mo hanxi zhao.

she BA Gu Chong Biou NEG likes PRT

'She does not like Gu (fn) Chong (gen) Biou (gn).'

c. Jia ba Gu **Chong** Jieng mo hanxi zhao yi.

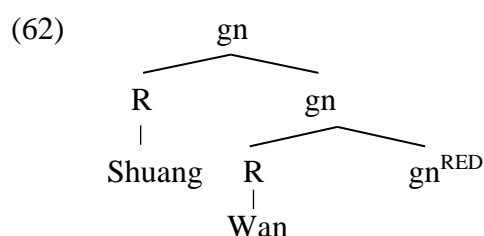
She BA Gu Chong Jieng NEG like PRT either

'She does not like Gu (fn) Chong(gen) Jieng (gn) either.'

In (60), the generation name *Shuang* is shared among three people (Wan, He, Qing), who all belong to the same generation within the extended family, as siblings or cousins.

Similarly, in (61), the shared generation name is *Chong*.

Apart from the way generation names are determined, they are also different from typical given names semantically in that they are not completely meaningless but denote the person's place in a generation hierarchy. We take this to mean that, similar to the family name, the generation name can merge as a modifier of a typical given name, ascribing a property to the referent, specifically, denoting which generation the person who has the given name belongs to, and together they form a compositional endocentric compound. For instance, *Shuang Wan* of (60) denotes a person whose typical given name is *Wan* who belongs to the generation that is indicated by the generation name *Shuang*. Thus *Shuang Wan* would have the following structure where the generation name root is merged with the typical given name, which itself is a combination of a root and a given name categorizer (gn):

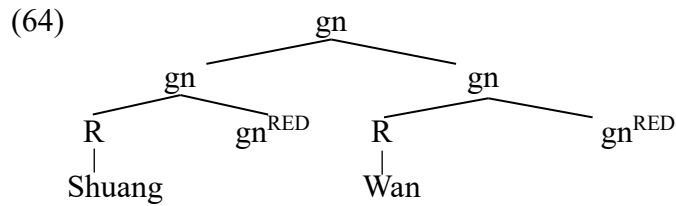


Merging the family name root *Li* with this structure derives the full name (60a). Similar to reduplication of the components of a compound given name, reduplication of a generation name is highly uncommon, but is not ungrammatical; compare (63a,b), (60a) and (61a) :

- (63) a. ? Li **Shuang Shuang** Wan ai ta. (Mandarin)
 ‘Li (fn) Shuang Shuang (gen) Wan(gen) loves him.’
- b. ? Jia ba Gu **Chong Chong** Chueng hanxi zhao. (Xining Chinese)
 ‘He likes Gu (fn) Chong Chong (gen) Chueng (gn).’

The reduplication of generation names can be accounted for if the generation name root can merge with the usual reduplicating given name categorizer (gn), which also means that generation names are treated here as a type of given name. This is consistent with Kaluzyńska (2015) where generation names are considered as a special type of given

name. Thus for *Shuang Shuang Wan* where a reduplicated generation name is joined by a typical given name, the structure would be as follows:



This means that the generation name can behave like a typical given name, albeit as a marginal option. It could be noted that, for someone not acquainted with the family, it can be hard to tell that a given name, for example *Shuang*, is a generation name rather than a typical given name.²⁸

13. Pet names

A pet name is a form of given name, common in Chinese, marked either by reduplication or a particular suffix, as exemplified in (65) and (66). The endearment suffix is *-er* in Mandarin and *-e* in Xining Chinese.

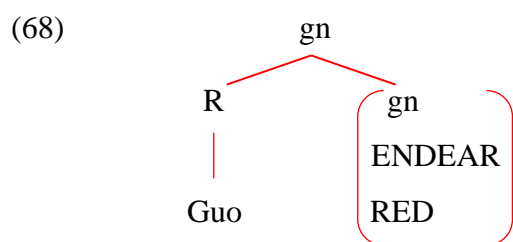
- (65) a. Ta hen xihuan Guo Guo de shu (Mandarin)
 she very like Guo Guo DE book
 ‘She likes Guo Guo’s (pn) book very much,’
- b. San San niezhong zhao. (Xining Chinese)
 San San poor PRT
 ‘Poor San San (pn)!’
- (66) a. Ta hen xihuan Guo-er de shu (Mandarin)
 she very like Guo-ER DE book
 ‘She likes Guo (pn) -er’s book very much,’
- b. San-e niezhong zhao (Xining Chinese)
 San-E poor PRT
 ‘Poor San (pn) -e.’

²⁸ Since reduplication is optional, provided the Two-Syllable Condition is met, the theory allows four possible realizations of (64), including *Shuang Shuang Wan Wan*, unlikely to be heard, but, we claim, for pragmatic, not grammatical reasons.

The sentences would be ungrammatical if the base of the reduplicated pet names is used as a free word.

- (67) a. * Ta hen xihuan Guo de shu (Mandarin)
 she very like Guo DE book
 Intended reading: 'She likes Guo Guo's (pn) book.'
- b. * San niezhong zhao. (Xining Chinese)
 San poor PRT
 Intended reading: 'Poor San San (pn)!'

The fact that the reduplication or the affix in this case has an effect on the meaning, adding a sense of endearment and familiarity, suggests an analysis like that of verbs and adjectives (see section 8). In the case of Mandarin verbs, for example, the reduplication adds a sense of attenuation. This was analyzed as the result of merging a morpheme [ATT, _v, RED] with the verb [R, v]. The corresponding analysis of pet names would mean merging a morpheme [ENDEAR, _gn, RED], alternatively [ENDEAR, gn, -er/-e], with the gn *Guo* (Mandarin) or *San* (Xining Chinese). But this analysis would not work, as the categorizer gn in Chinese, by hypothesis, has the reduplication feature RED, and as a result 'double reduplication' or reduplication plus the suffix *-er/-e* would be derived, contrary to fact. Instead we propose that there is a variety of the given name categorizer, that is an endearment given name categorizer, and that pet names have the structure (68), where the categorizer has two allomorphs: one with RED (represented in (68)), one with an affix *-e/-er*.



While a regular given name categorizer has a null allomorph if the Two-Syllable Condition is otherwise satisfied, the endearment-marked categorizer does not, as the endearment feature would not be recoverable.

14. Conclusions

In this paper, we have discussed some morphosyntactic differences between Chinese given names and family names. Given names are subject to a condition which prevents a monosyllabic given name from occurring as an M-word. This condition is met by either (a) merging the given name with another given name, forming a symmetric, non-compositional compound name, (b) by merging the given name with a family name, forming an asymmetric compound name headed by the given name, or (c) by reduplication, forming a disyllabic given name. As shown by Wang (2018) and Wang and Holmberg (2020), in Xining Chinese not just given names, but nouns in general are subject to the condition that bans monosyllabic free words, and where reduplication without a semantic effect is a way of meeting the condition. Following Wang's (2018) and Wang and Holmberg's (2020) account of noun reduplication in Xining Chinese, the reduplication of given names is effected by copying the phonological features of the root onto the categorizer, subject to the condition that root and categorizer are sisters. The understanding of how purely formal reduplication works in Xining Chinese gives a handle on the structure and derivation of complex names in both Xining Chinese and Mandarin.

Family names can occur as monosyllabic free words, as we have established by a corpus investigation as well as an experiment testing acceptability judgments by a set of 199 Chinese speakers of different ages and locations. Thus family names do not need to reduplicate, and in fact cannot reduplicate, neither in Mandarin nor in Xining Chinese. Formally this is because family names have a different categorizer, *fn*, which does not have the requisite feature allowing reduplication. A family name can be used alone, in Chinese, to name a person *P*, as an alternative to using the given name(s). However, when used in combination with the given name, the family name has an additional function, that of naming the family that *P* is a member of. Thereby the structural relation between a family name and a given name when forming a full name is different from that between two combined given names: While the two given names form an exocentric, non-compositional compound, the full name forms an endocentric

compound with the given name as head and the family name as an attributive modifier. The full name is thereby formally a modified given name, and as such will not be filtered out by condition (30), even if the given name head of the full name is a monosyllable.

Similarly, a generation name and a given name typically form a compositional endocentric compound where the generation name modifies the given name. The fact that a generation name can be reduplicated, as a marginal option, means that it can be merged with a categorizer before merging with the typical given name. With pet names, common in Mandarin as well as Xining Chinese, reduplication has semantic import: it serves to lexicalize an endearment feature which is alternatively lexicalized by a suffix. We propose that pet names have a variety of the gn categorizer endowed with an endearment feature.

The judgment experiment carried out showed possible signs of a change in the analysis of given names, as the young speakers (under 22) appeared to show a higher rate of acceptance of monosyllabic given names as free words than older speakers (over 30). Although more investigation is required to confirm whether this is a real trend, we speculate that this may be an effect of more extensive exposure to English by the younger speakers.

Our findings regarding Chinese names can be summarized in the following table:

Table 7

Given name	Categorizer has RED triggering reduplication
Multiple given names	Coordinative compound
Family name	Categorizer lacks RED
Full name: family name + given name(s)	Endocentric compound, family name modifies given name
Generation name + given name	Endocentric compound, generation name modifies given name
Pet name	Root + endearment given name categorizer

This paper is strictly about the morphosyntax of personal names. We have opted not to discuss the structure of NP/DP based on names, as this would take us much too far afield. The syntactic distribution of personal names in Chinese differs in interesting ways from that of common nouns (see Huang, Li, and Li 2009, 299-303). Not

implausibly some of these differences depend on the categorial difference between common nouns and names that we have postulated, but we leave this matter for future research.

There is massive variation as regards naming conventions and the form of personal names among the languages and peoples of the world; see Bruck & Bodenhorn (2009). There are languages/cultures where people have a given name only, there are those where the given name may have the form of a sentence (a ‘proper sentence’ instead of a proper name) as familiar from some indigenous North American peoples, there are those where a full name consists of a given name plus a patronym or matronym, and so on. It is likely that names in general, as distinct from descriptive NPs or DPs, is a universal phenomenon (Anderson 2007, 17, Hough 2016). We have found that Chinese personal names, including given names, family names, and combinations of them forming full names, have some features that set them off from other nominals, which we have identified as being due to names forming grammatical categories distinct from common nouns: gn (given name) and fn (family name). On the other hand, in certain respects they behave morpho-syntactically like other nominals, including compound formation and the mechanics of reduplication.

Considering full names of the general form found in Chinese, are these categorial distinctions universal? Probably not. Full names in English, for example, do not look much like endocentric nominal compounds. To begin with, the linear order is not that of endocentric compounds, as English compounds are right-headed, like Chinese compounds, but full names have the would-be head, the given name, on the left. This indicates that although, for example, the family name *Jones* in the full English name *Mary Jones* means ‘of the Jones family’, the syntactic structure of the full name is not that of a compound with the family name a modifier of the given name. Instead, we suggest, the full name is a coordinative compound observing a name-specific linear order, which, however, may be conventionally modified, as in a list of references in an academic or scientific article, a telephone directory, etc.

Icelandic makes an interesting comparison. Full names consist of one or two given names typically followed by a patronym, literally ‘x’s son’ or ‘x’s daughter’. More interestingly in the present context, the full name behaves morpho-syntactically like a phrase, rather than a compound, in that the constituents of the name agree in case.

- (69) a. Ég sá Höskuld Práinsson málfræðing (Icelandic)
 I saw Höskuldur.ACC Práinsson.ACC linguist.ACC
 ‘I saw the linguist Höskuldur Thrainsson.’
- b. Ég heilsaði Höskuldi Práinssyni málfræðingi
 I greeted Höskuldur.DAT Thrainsson.DAT linguist.DAT
 ‘I greeted the linguist Höskuldur Thrainsson.’

Internal agreement is characteristic of noun phrases in Icelandic; determiners, adjectives, and the noun all show the case assigned to an argument noun phrase. It is not characteristic of compound nouns, where only the head noun is inflected for case.²⁹

The general impression is that names may adopt morpho-syntactic properties from compositional expressions, either endocentric compound words (Chinese), coordinative compounds (English), or phrases (Icelandic), or, we speculate, may even be constructed according to name-specific rules.

References

- Alexiadou, Artemis, Liliane Haegeman and Melita Stavrou. 2008. *Noun phrase in the generative perspective*. Berlin: De Gruyter.
- Allerton, David J. 1987. “The linguistic and sociolinguistic status of proper names.” *Journal of Pragmatics* 11: 61-92.
- Anderson, John M. 2007. *The grammar of names*. New York: Oxford University Press.
- Arcodia, Giorgio Francesco, Bianca Basciano and Chiara Melloni. 2014. “Verbal reduplication in Sinitic.” In *Proceedings of the Décembrettes 8th International conference on morphology*, edited by Sandra Augendre, Graziella Couasnon-Torlois, Déborah Lebon, Clément Michard, Gilles Boyé and Fabio Montermini. 15-45.
- Basciano, Bianca and Antonella Ceccagno. 2009. “The Chinese language and some notions from Western linguistics.” *Lingue et Linguaggio*, VIII.I: 105-135.
- Bell, Daniel. 2017. “Syntactic change in Xining Mandarin.” PhD thesis, Newcastle University.
- Bell, Daniel. 2019. “Chinese possesses Japanese style scrambling: the case of Xining Mandarin.” *Journal of East Asian Linguistics* 28: 143-178.
- Borer, Hagit. 2013a. *Structuring sense, vol. 3: Taking form*. Oxford: Oxford University Press.

²⁹ Thanks to Halldór Sigurðsson for examples and discussion.

- Borer, Hagit. 2013b. “The syntactic domain of content.” In *Generative linguistics and acquisition: Studies in honor of Nina M. Hyams*, edited by Misha Becker, John Grinstead, and Jason Rothman, 205- 248. Amsterdam: Benjamins.
- Borer, Hagit. 2014. “Wherefore roots?” *Theoretical Linguistics* 40:343–359.
- Bruck, Gabriele vom and Barbara Bodenhorn, eds. 2009. *An anthropology of names and naming*. Cambridge: Cambridge University Press.
- Cumming, Sam. 2019. Names. *The Stanford Encyclopedia of Philosophy* (Fall 2019 Edition), Edward N. Zalta (ed.). <<https://plato.stanford.edu/archives/fall2019/entries/names/>>.
- Chen, Mingyuan, and Wang Zonghu. 1995. *Zhongguo xingshi cidian [A dictionary of Chinese surnames]*. Beijing: Beijing Press.
- Chi, Changhai, and Wang Chun. 2004. “Wenzhou hua dongci chongdie fenxi [An analysis of verbal reduplication in Wenzhou dialect].” *Zhejiang Daxue Xuebao* 34:149-157.
- Dai, Xiang-ling. 1992. “Chinese morphology and its interface with the syntax.” PhD thesis, Ohio State University.
- De Belder, Marijke. 2017. “The root and nothing but the root: Primary compounds in Dutch.” *Syntax* 20: 138-169.
- Dede, Keith. 2003. “The Chinese language in Qinghai.” *Studia Orientalia* 95: 321-346.
- Duanmu, San. 2007. *The phonology of standard Chinese*. United States: Oxford University Press.
- Donnellan, Keith. 1970. “Proper Names and Identifying Descriptions.” *Synthese*. 21: 335-358.
- Embick, David. 2015. *The morpheme: A theoretical introduction*. Boston: De Gruyter Mouton.
- Embick, D., and M. Halle (2005). “On the status of stems in morphological theory.” In *Proceedings of Going Romance 2003*, edited by Twan Geerts and Haike Jacobs, 59–88. Amsterdam: John Benjamins.
- Embick, David and Rolf Noyer. 2007. “Distributed morphology and the syntax/morphology interface.” In *The Oxford handbook of linguistic interfaces*, edited by Gillian Ramchand and Charles Reiss, 289–324. Oxford: Oxford University Press.
- Embick, David, and Rolf Noyer. 2008. “Architecture and blocking.” *Linguistic Inquiry* 39: 1–53.
- Feng, Shengli. 2018. *Prosodic morphology in Mandarin Chinese*. Routledge: London.
- Fu X., H.Hu. 2012. Hanyu fangyan danyinjie dongci chongdieshi bijiao yanjiu [A comparative study on the reduplication of monosyllabic verbs in Chinese Dialects]. *Nanchang Daxue Xuebao* 43:143-150.

- Chen Fulang and Michael Kenstowicz. 2021. "Phonotactics of gender in Mandarin given names: patterns and constraints." *Proceedings of Annual Meeting of Phonology*. 1-12.
- Harley, Heidi. 2014. "On the identity of roots." *Theoretical Linguistics* 40: 225–276.
- Harley, Heidi and Rolf Noyer. 1999. "Distributed morphology." *Glott International* 4:3-9.
- Hough, Carole. (2016). "Preface." In *The Oxford Handbook of Names and Naming*, edited by Carole Hough, 169-198. New York: Oxford University Press.
- Hu, Xuhui, and J. Joseph Perry. 2017. "The syntax and phonology of non-compositional compounds in Yixing Chinese." *Natural Language and Linguistic Theory* 36: 701–742.
- Hu, Yao. 1987. *Zhongguo xingshi xungen [In search of the roots of Chinese surnames]*. Shanghai: Shanghai Wenhua Press.
- Huang, C.-T. James, Y.-H. Audrey Li, and Yafei Li. 2009. *The syntax of Chinese*. Cambridge: Cambridge University Press.
- Josefsson, Gunlög. 1998. *Minimal words in a minimal syntax: Word formation in Swedish*. Amsterdam: John Benjamins.
- Kalużyńska, Irena. 2015. "Traditional Chinese generation names." *Onomastica* 59:107-121.
- Lei, Fengxing. 1995. *Xingming yu rensheng [personal names and life]*. Beijing: Guangming ribao chubanshe.
- Li, Charles.N. and Sandra. A. Thompson. 1981. *Mandarin Chinese: A functional reference grammar*. London: University of California Press.
- Lin, Hua. 2001. *A grammar of Mandarin Chinese*. München: Lincom Europa.
- Longobardi, Giuseppe. 1994. "Reference and proper names." *Linguistic Inquiry* 25: 609-666.
- Marantz, Alec. 1997. "No escape from syntax: Do not try morphological analysis in the privacy of your own lexicon." *University of Pennsylvania Working Papers in Linguistics* 4: 201–225.
- Marantz, Alec. 2007. "Phases and words." In *Phases in the theory of grammar*, edited by Sook-Hee Choe, 191–222. Seoul: Doing-In Publishing Co.
- Margolis, Joseph. 1968. "On Names: Sense and Reference." *American Philosophical Quarterly* 5: 206- 211.
- Matushansky, Ora. 2008. "On the linguistic complexity of proper names." *Linguistics and Philosophy* 31: 573-627.
- Norman, Jerry. 1988. *Chinese*. Cambridge: Cambridge University Press.
- Packard, Jerome L. 2000. *The morphology of Chinese: A linguistic and cognitive approach*. Cambridge: Cambridge University Press.

- Payne, John and Rodney Huddleston. 2002. "Nouns and Noun Phrases." In *The Cambridge Grammar of the English Language*, edited by Geoffrey Pullum and Rodney Huddleston, 323-534. Cambridge: Cambridge University Press.
- Pirani, Laura. 2008. "Bound roots in Mandarin Chinese and comparison with European semi-words." In *20th North American Conference on Chinese Linguistics (NACCL-20)*, 1:261-277.
- Ren, Bi.Sheng. 2006. *Qinghai fangyan yufa zhuanji yanjiu [The grammar of the Qinghai dialect]*. Xining: Qinghai renmin chubanshe.
- Sproat, Richard, and Chilin Shih. 1996. "A corpus-based analysis of Mandarin nominal root compound." *Journal of East Asian Linguistics* 5: 49-71.
- Strawson, Peter, Frederic. 1950. "On Referring." *Mind* 59: 320-344.
- Travis, Lisa. 2010. *Inner aspect: The articulation of VP*. London: Springer.
- Travis, Lisa. 2019. "Inner aspect crosslinguistically." In *The Oxford handbook of event structure*, ed. Robert Truswell. 490-522. Oxford: Oxford University Press.
- Wang, Qi. 2018. "The structure of nouns in Old Xining and Modern Standard Chinese." PhD thesis., Newcastle University.
- Wang, Qi, and Holmberg Anders. 2020. "Reduplication and the structure of nouns in Xining Chinese." *Natural Language Linguistic Theory*. DOI: <https://doi.org/10.1007/s11049-020-09489-5>
- Wang, ShuangCheng. 2009. Xining fangyan chongdieshi [Reduplication in Xining Chinese]. *Qinghai shifan daxue minzu shifan xueyuan xuebao* 5: 1-4.
- Wong, Kristen. Wing Yan and Kang, Yoonjung. 2019. "Sound symbolism of gender in Cantonese first names." *Proceedings of ICPHS*, 19: 2129–2133.
- Xu, Mei. 2015. Zhongguo renming yongzi guilvyanjiu [Study on patterns of Chinese names characters]. *Chongqing dier shifan xueyuan xuebao* 28:4.
- Zhang, Niina Ning, 2007. "Root merger in Chinese compounds." *Studia Linguistica* 2: 170–184.
- Zhonghua, Li and Edwin D. Lawson. 2002. "Generation Names in China: Past, Present, and Future." *Names*, 50:3 163-172.

Appendix A. Questionnaire

汉语名字使用问卷调查

尊敬的同学：您好！我是武汉大学的 Qi Wang 老师，我和纽卡斯尔大学的 Anders Holmberg 教授正在进行汉语名字使用的问卷调查。我们非常感谢您能够参与此次问卷调查。本次调查采用匿名形式，调查结果仅用于本次调查。感谢您的合作。

一、您的个人信息

请您选择以下合适的选项并在相应的“□”上打“√”，或在下划线上填写相关的内容。

1. 您的性别 [请选择] *

男

女

2. 您的年龄 [请填写] *

3. 您说方言吗？ [单选题] *

是：如果已选择“是”，请写出是哪里的方言 _____

否

二、问卷调查内容

请您阅读以下内容，该内容由六部分组成，每部分包含三段话，每段话中都有一个我们选定的名字。

我们仅想了解您对每段话中所选定名字(该名字已用“**黑体+下划线**”标出)使用的看法，请您在以下三个选项中选择一个合适的选项，并在相应的“□”上打“√”。

1.1 1915年，胡适进入哥伦比亚大学，成了著名哲学家杜威的学生。杜威在胡适世界中的出现，正如尼采在鲁迅那里的意义，这使他找到理性的支点。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

1.2 2月11日，大年初一，安徽枞阳人、北大教授朱光潜和夫人到医院给胡适拜年。适因昨夜听爆竹声，睡得很少。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受
- 1 名字使用的不自然，不可接受

1.3 当时会上很多人都认为蒋介石所提的人选就是胡适，还盛传蒋介石已派王世杰去征得胡的同意。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

2.1 从1908年到1917年，宋美龄在美国读完了从小学到大学的所有课程。可以毫不夸张地说，宋美龄所受的教育是全盘的美国教育。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

2.2 宋美龄裹紧风衣，脸色铁青，一言不发。记者们转而缠住宋霭龄。霭龄甩开了苦笑对记者，陪美龄登上了飞机舷梯。[单选题]*

- 3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。

2.3 1922年，蒋介石在孙中山家里遇见了宋美龄，二人一见倾心。由于宋家的反对，蒋对宋的追求，持续了五年。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受

1 名字使用的不自然，不可接受

3.1 蔡锷首先从制定正确的政策，提高都督府工作效率入手。蔡锷认为一切政务，必须通观全局，按轻重缓急的顺序来处理。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受

1 名字使用的不自然，不可接受

3.2 在艰难的战斗生活中，蔡锷处处与士兵同甘共苦。锷自背一个饭盒，用树枝做筷子，和部下一块吃着大锅饭。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受

1 名字使用的不自然，不可接受

3.3 云南将军唐继尧是蔡锷一手提拔起来的部属，与蔡关系较深。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受

1 名字使用的不自然，不可接受

4.1 左宗棠的父亲是一位好老师，他自己勤奋学习，左宗棠出生那年，他正好在岳麓书院进修，他教学生很严谨，对儿子们的学业要求更是相当严格。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

4.2 陶澍对左宗棠能不能考取进士并不在意。即使**宗棠**不中进士，依然是一位值得爱惜的人才。陶澍本来就是一位注重实学的人。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

4.3 左宗棠既没有长期掌握一定的军队，也没有什么固定的地盘，从一八七五年以后，他的精力全部投入了反侵略斗争，怎能把他与李鸿章等量齐观，当作大军阀呢？论及洋务派，也不应把李、**左**并称，一锅煮，具体情况须得具体分析。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

5.1 新上台的孙科及其班底，根本无力应付内忧外患的混乱局面。1932年1月24日，**孙科**被迫宣告辞职。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。
- 1 名字使用的不自然，不可接受。

5.2 3月26日，孙科由上海飞抵广州。刚刚到达广州的**科**只是进行了短暂的休息，就迫不及待地中午约见宋子文，与之进行了长时间的秘密会谈。[单选题]*

- 3 名字使用的很自然，可以接受。
- 2 名字使用的不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。

5.3 国民大会进行副总统的第三次投票，李宗仁得 1156 票，孙科得 1040 票，程潜得 515 票。这是李、**孙**的最后决战，依照选法举规定，以比较多数当选，即使一票之差，也可以决定双方的胜负。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。

6.1 由于家人的严格督导，曾国藩 5 岁就开始读书识字，6 岁开始就在他父亲执教的私塾中读书。在此期间，**曾国藩**仅用两年的时间就读完了《五经》，随后学习八股文，为将来参加科举考试作准备。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。

6.2 曾国藩中举之后，便在这年十一月中到北平去。**国藩**到了北平后，住在长沙郡馆，准备着考进士，第二年考试失败，便留在北平读书。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。

6.3 曾国藩、左宗棠等后来的湘军领袖与前辈经世派渊源很深，可以说，**曾**、左、胡等既是第一代经世派的继承人，又是在前辈师友的培养、熏陶和影响下成长起来的。[单选题]*

3 名字使用的很自然，可以接受。

2 名字使用的不太自然，但仍然可以接受。

1 名字使用的不自然，不可接受。