The Mandarin classifier is changing: How and why

Mingzhe Zheng & Jie Liu[*]

Abstract. This study aims to investigate the current state of the Mandarin nominal classifier, uncover the change in classifiers across time, and explore the social meaning of classifier variation. A production experiment found a decline in diversity in specific classifiers over time. Perception results from the younger group demonstrate that classifier variation indexes a series of related personality characteristics. The age difference in participants' production and perception indicates that the classifier variation is a change led by young people and suggests such change might have been motivated by the variable's social meanings.

Keywords. Mandarin Chinese; nominal classifiers; language change; social meaning

1. Introduction.

1.1. CHINESE NOMINAL CLASSIFIERS. Numeral classifiers are morphemes "that classify and quantify nouns according to semantic criteria" (Senft 2000: 21). They are used before nouns, and after numerals, demonstratives or quantifiers.

It has been suggested that nouns are classified by a limited set of semantic information across languages, among which are animacy, shape, function, and size. Animacy, shape, and function are among the most prominent semantic categories in the Chinese classifier system (Loke & Harrison 1986). According to Craig (1986), the different types of semantic information that are used in classifiers form an implicational scale. In classifier languages, humanness and animacy are marked first, followed by shape, and then function.

In real life speech, the selection of classifier is flexible to some extent, in that some nouns can be used with multiple classifiers; for instance, for the noun *Zixingche* 'bicycle', the vehicle classifier *liang* is usually used, but some speakers also tend to use the machine classifier 台 *tai* with it. In (1a), there is no change of meaning between the two numeral phrases. However, sometimes the choice of classifier differentiates between senses of a noun. For instance, in (1b), for class, when the classifier *men* is used, it means one course; when another classifier *jie* is used, it means one class session (Zhang 2007).

(1)   a.   Without change of meaning:
　　　　　Yi　　liang　zixingche　　　　　Yi　　tai　　zixingche
　　　　　One　CL　　bike　　　　　　　　One　CL　　bike
　　　　　'One bike'　　　　　　　　　　　'One bike'
　　　b.   Change of meaning:
　　　　　Yi　　men　ke　　　　　　　　　Yi　　jie　　ke
　　　　　One　CL　　course　　　　　　　One　CL　　class
　　　　　'One course'　　　　　　　　　　'One class session'

In classifier languages, there is often a general classifier that can be used for a variety of nouns, which makes the picture even more complicated. *Ge* is the general classifier in Chinese. Other

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individual classifiers are called specific classifiers (Li & Thompson 1981). The general classifier *ge* can be used with human beings (e.g., child, thief), large three-dimensional objects (e.g., watermelon, sun), abstractions (e.g., hope), and other nouns that do not require a specific classifier. It is the default classifier in that speakers use it when they cannot find a specific classifier for a noun. Being the default form, the usage of the general classifier is complicated; even native speakers may replace almost every specific classifier with *ge* (Loke 1996; Zeng & Hong 2012). It is argued that speakers tend to replace a specific classifier with the general classifier for less prototypical members. For example, most speakers use *zhang,* the shape classifier for objects with a flat surface, for paper, but they tend to use both *zhang* and *ge* for sofa. Additionally, function-based classifiers are more likely to be replaced by the general classifier compared to shape and animacy classifiers (see Myers 2000).

1.2. PREVIOUS STUDIES. Previous studies of the Mandarin nominal classifier system have been focusing on its morphosyntactic features (e.g., Li & Thompson, 1981), its development in children's L1 (e.g., Tse, Li & Leung, 2007), or its effect on speakers' conceptual categorization (e.g., Saalbach & Imai 2012). However, classifier usage by naive speakers has not been fully investigated, and even less attention has been put on the change of classifier use over time.

Two decades ago, Erbaugh (1986) investigated classifier usage by native speakers of Chinese investigated in different settings: adult-adult conversation; adult-child conversation; child-child conversation, and adult narratives, in which adults watched a speechless short video, *a Pear Story* (Chafe 1980), and told a story accordingly. It was found that adult speakers seldom omit classifiers; they use limited specific classifiers; the general classifier is much more frequent in their speech, even in contexts where a specific classifier is required; specific classifiers are more frequent in formal conversation. The choice of classifiers varies across individuals and across discourse contexts, which is not surprising as many nouns can be associated with multiple classifiers with or without changing the meaning.

Polio (1994) replicated the story telling experiment of Erbaugh (1986), and extended to L2 learned of Chinese. 21 English and 21 Japanese-speaking learners of Chinese watched the same video from Erbaugh (1986), then told the story in Chinese to a native speaker. The participants were divided into three proficiency levels based on class placement, native speakers' rating of their proficiency, and a proficiency test. Polio found that in oral production, adult L2 learners of Chinese tended to rely more on the general classifier *ge*; their use of specific classifiers was limited, and a few unacceptable or questionable uses were observed. For instance, one participant used *tiao* for 'tree'; although trees are long, they require another classifier *ke*, for plants. Learners did not omit classifiers in obligatory environments, even at low proficiency levels. Ungrammatical uses of multiple classifiers were observed. The author argued that the overuse of the general classifier relates to the fact that learners regard classifiers as bound to determiners or numerals, not to nouns.

1.3. THE CURRENT STUDY. Our research on Chinese classifiers started from learners' acquisition of the classifier system, how they use classifiers in online comprehension and production. In our previous research, we recruited native speakers of Chinese to participate in an elicited production task as the control group. Most of them were undergraduate students around 20 years old. Some surprising results emerged from the group. For example, several native speakers used the general classifier *ge* for 'paper', while 'paper' is a typical member of the shape classifier *zhang* (for flat objects). To our knowledge, previous studies of the Mandarin classifier in daily use were conducted in the 1980s-1990s, now that more than a quarter of a century has passed, it is worth investigating whether and how the classifier system has changed in speaker's daily speech.

In addition, as discussed earlier, the selection of classifier is to some extent flexible, as some nouns can be used with multiple classifiers, either specific or general. Scholars have found that the choice of different classifiers has various stylistic effects or shows the speaker's intentions. In the field of sociolinguistics, numerous studies have fruitfully used perceptual methods to uncover the social meaning of linguistic features, such as the (ING) variation (Campbell-Kibler, 2008, 2009), the raised BOUGHT (Becker 2014), and the released /t/ (Podesva et al. 2015), among many more. These studies have enriched our understanding of the impact of social meaning on linguistic change.

In this study, our research questions include:

1. What is the current state of Chinese classifier system used by native speakers (including laymen and Chinese language instructors) and L2 learners of Chinese in spoken Mandarin?

2. How does the use of classifiers by native speakers & learners change over time, comparing with Erbaugh (1986) and Polio (1994)?

3. Whether or how does speakers' preference of classifier affect listeners' perception; and what are the social meanings of using different classifiers?

In order to answer the above questions, we conducted two experiments, a production experiment and a perception experiment.

2. Production experiment. The first of two tasks in this study was a production task.

2.1. METHODS. Our data came from three groups of participants, including 20 college-age native speakers of Chinese (NS) from a university in China; 12 learners of Chinese (L2ers) who were native speakers of English; all the learners enrolled in a 3rd-year Chinese course in a university in the United States; and eight instructors of Chinese (IC) who work in the U.S.

In Erbaugh (1986), participants were 19 native speakers of Chinese from Taiwan. In Polio (1994), data included 42 learners of Chinese in Taiwan that did not differentiate their native language. To make a comparison with our study, we only focused on Polio's data from 21 English speakers to exclude the potential influence of learner's native language, as Japanese is also a classifier Language.

Table 1 includes participant information of our current study and two previous studies we compare with.

Studies	Data elicitation	Participants
Erbaugh (1986)	Narration:	19 Chinese native speakers (NS) in Taiwan
Polio (1994)	The Pear Story	42 learners of Chinese (L2ers) in Taiwan • 21 English-speaking learners • 21 Japanese-speaking learners (excluded from comparison)
The current study		28 Chinese native speakers • 20 college students in China (aged 18-22) • Eight Chinese language instructors (IC) in U.S. (aged 35-50) 12 English-speaking learners of Chinese in U.S. (aged 18-28)

Table 1. Summary of participant information

Following Erbaugh (1986) and Polio (1994), we used the *Pear Story* (Chafe 1980), a six-minute silent film, for data elicitation. The *Pear Story* was designed by Wallace Chafe. It is a

loosely plotted color film with background sound but no dialogue. The film is about a boy who stole some pears and rode away on a bike. Participants watched the film and then described the events in the film with as much detail as they could remember in Chinese. To describe the film, participants were expected to use several concrete nouns such as boy, man, goat, tree, pear, basket, rock, hat, etc. Most participants finished the description in 2-3 minutes.

Due to the pandemic, and the fact that the native speaker group of participants w   in China, we sent all our participants a link through which they could watch the film, record themselves, and complete a brief demographic survey.

2.2. RESULTS. Table 2. shows the percentage of the general CL (Blue) and specific CLs (orange) out of all CLs used, from left to right, in Erbaugh (1986) by native speakers of Chinese, and in the current study by three groups of participants, NS, IC and L2ers. Unfortunately, we do not have such data in Polio (1994).
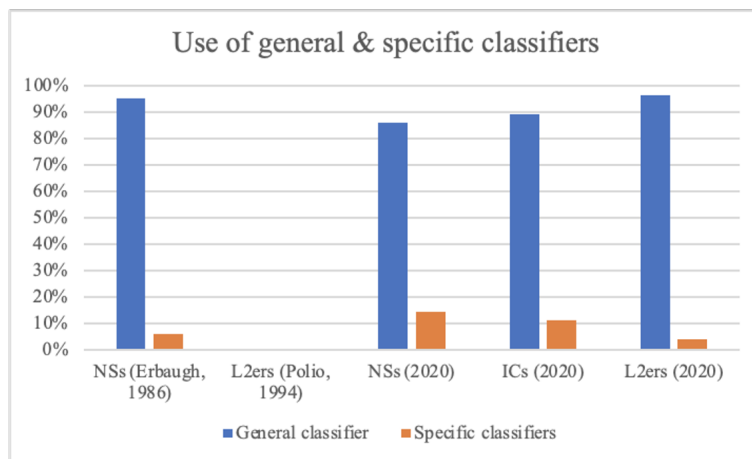

Table 2. Summary of use of classifiers

Consistent with previous studies, NSs and L2ers relied on the general classifier *ge* most of the time, for most nouns, while they used only limited specific classifiers. Among all the classifiers used by the native group, only 13% of them were specific classifiers, the rest were the general classifier *ge*. For Chinese instructors, the percentage of specific classifiers among all classifiers was 11%. While for learners, such percentage dropped to 4%. It seems that the percentage of specific classifiers used by our native group was higher than Erbaugh's native group, which was 6%. However, we need to take a closer look at the specific classifiers used by different groups.

Table 3. is a list of all the specific classifiers and their referents used by different speaker groups in two previous studies and our current study. The zeros with * means the corresponding nouns either did not appear with any classifier, or did not appear in the story telling as the referents were not mentioned. When we compare the average number of specific CLs used by each speaker in different groups, we can see a decline of specific CL use among native speakers, from 2.26 specific CLs per speaker in Erbaugh (1986) to 1.60 in the current study. However, Chinese instructors performed slightly different, the average number of specific CLs they used was similar to native speakers in 1980s. Similarly, learners also showed a trend of decline in the use of specific CLs.

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Specific CLs	Referents	NSs (Erbaugh, 1986)	L2ers (Polio 1994)	NSs (Current)	ICs	L2ers
liang vehicle, bike	bicycle	7	0	3	*0	*0
sheng sound, whistle	whistle	6		0	1	*0
tou large animal	sheep, cow, mule	5	0	4	3	0
zhi small animal	sheep	5	2	1	2	2
tiao extended object	road, braid, rope, video	4	0	0	0	0
kuai square, lump, rock	rock	4	0	8	7	0
ding peak, hat	hat	3	0	1	3	1
ke plant	tree	2	2	*0	1	1
duan section, interval	road, video, film	2	0	0	0	0
pian slice, section	farm, pasture, *movie	2	1	*0	0	*0
jian situation, clothing	event, situation	1	3	*0	*0	*0
zuo mountain	mountain		0	1	*0	*0
ke small round object	pear		2	1	0	0
wei people (honored)	gentleman, person, girl, boy, farmer	1	2	13	1	0
Numerb of Specific CLs / speaker		2.26	0.57	1.60	2.25	0.33
Number of Different specific CLs/speaker		2	0.52	1.40	2.25	0.33

Table 3. List of the use of all specific CLs in the three studies

To take a closer look at the diversity of specific classifiers usage by different speaker groups, we looked at the average number of different specific classifiers used by each speaker. It was found that the specific classifiers also declined in terms of diversity with time passing by, both in native speakers' and learners' production.

The average number of different specific classifiers used by each participant also suggested a trend of classifier decline, both for natives and learners. In Erbaugh (1986), each NS used 2.00 different specific classifiers on average, while it was only 1.40 in our study. Such number for L2ers decreased from 0.52 in Polio (1994) to 0.33 in this study. Only ICs maintained the level of specific classifier use, with each used 2.25 different classifiers on average.

Another noticeable change is the expanded use of *wei*, by current NSs compared to speakers three decades ago. The general classifier *ge* is frequently used for people, *wei* is the polite and honorable counterpart of *ge* in this context. The most typical referents of *wei* include different professions such as teacher, doctor, or seniors. The classifier *wei* was used only once by the 19 participants in Erbaugh (1986), with the noun 'gentleman'; while it was used 13 times, by our NSs, with nouns including 'person, boy, girl, child, farmer', some of which might be prescriptively incorrect. Again, ICs showed more consistent use of the classifier with NSs in the previous study, *wei* only appeared once with the noun 'man'.

The expansion of *wei* is in line with Craig (1986), which showed the implicational scale of semantic information used in classifiers, meaning humanness and animacy are marked first, then shape, and then use or function.

It is possible that classifier decline also follows such order, with later marked ones impacted first, and early marked ones relatively intact and even expanded with fewer classifiers in use. The limited use of specific classifiers, together with the trend of classifier decline, call for researchers' attention to the natives' baseline data used in L2 studies (Polio 1994).

3. Perception experiment. In the production study, it was found that native speakers use fewer specific classifiers compared to their counterparts 30 years ago. Younger speakers, particularly, rely on the general classifier *ge,* for instance, using *ge* for goat instead of *zhi* or *tou*.

As the selection of classifier is to some extent flexible in real life speech, we also conducted a revised matched-guise perception survey (Lamber et al. 1960), to investigate whether and how speakers' preference of classifier affects listeners' perception; what are the social meanings of

using different classifiers, if there are any; by answering those questions, we aim to explore speakers' motivation for their classifier preference.

3.1. METHODS. To answer the above questions, we recruited 141 native speakers of Chinese from a social media platform, 32 of them were removed due to missing data and suspiciously short time completing the task (total time taken shorter than the recording), data from 109 participants (aged 18-55) were included in the data analysis.

The audios are readings of narration of the Pear Story (Chafe 1980). Two speakers, one female (F) and one male (M), each made two audio stimuli (57 seconds on average), one guise (Mix) used a mix of Gen-CLs (N=9) and Spe-CLs (N=14), and another guise (Gen) used Gen-CLs only (N=23). Here is a sample of the script, the first CL was the Spe-CL that was used in the Mix-guise, the second was the Gen-CL that was used in the other guise.

(2)　　Yi　wei/ge　guonong　zhengzai　yi　　ke/ge　shu　xia　　zhai　li
　　　　One　CL　　fruit grower　is　　　one　　CL　　tree　under　pick　pear
　　　　'A fruit grower is picking pears under a tree.'

Participants were directed to a *QuestionPro* survey; each listened to two of the four guises, either F-Mix & M-Gen, or F-Gen & M-Mix. Participants then rated each speaker's social attributes on eight semantic differential scales on a five-point scale listed in random order. Descriptors in the survey came from an open-ended pilot study with 12 participants who were asked to provide seven to nine words to describe the speakers. The most frequently mentioned attributes were selected.

To investigate participants' explicit attitude of the CLs, we also included a post-rate survey at the end asking participants to rate three pairs of sentences (see (3) below) that differed only in CLs, on a five-point Likert scale.

(3)　　Xiao zhao　kandao　yi　　wei/ge　　　　　　　　　　　nanhai　zou　guolai
　　　　Little Zhao　see　　one　　spc CL/general CL　　　　boy　　walk　over
　　　　'Little Zhao sees a boy come over.'
　　　　Nanhai　da-ile　yi　　ding/ge　　　　　　maozi
　　　　Boy　　wear　one　　spc CL/general CL　　hat
　　　　'The boy wears a hat.'
　　　　Nanhai　qi-le　yi　　liang/ge　　　　　　zixingche
　　　　Boy　　ride　one　　spc CL/general CL　　bike
　　　　'The boy rides a bike.'

3.　RESULTS. For data analysis, we used Exploratory Factor analysis to combine the eight semantic differential scales into three evaluative categories, including Attractiveness & Optimism, Meticulousness & Steadiness, and Serenity. We then conducted a Mixed-effects linear regression analysis on each of the three evaluative categories, with classifier condition as a fixed effect, we also included by speaker random intercepts and by listener random intercepts.

The plots below show the whole native speaker group's rating of the general CL only condition and the Mix CLs condition; lower rating indicates higher degree of these attributes. Among these three evaluative categories, we only found a marginal difference for Meticulousness & Steadiness, listeners tended to connect speakers using specific classifiers with a higher level of these attributes *(p=.06)*. As for the other two categories, the use of different CLs was not a significant predictor.
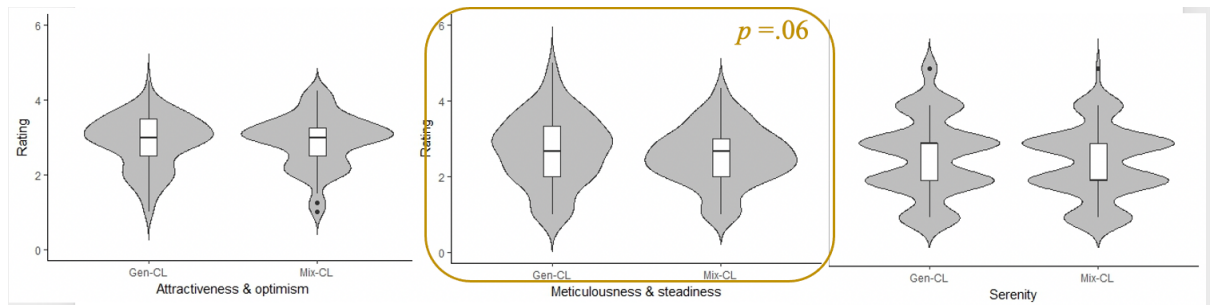
Figure 2. Perceptual rating results for all speakers

To investigate whether different age groups perceive CL use differently, we then divided the participants into two groups by age, a younger group (Age ⩽ 35, N=82) and an older group (Age>35, N=27), and repeated the analyses.

For younger listeners, they tended to regard speakers as more Attractive & Optimistic if only the general classifier was used (p=.08), but the effect was only marginal; on the other hand, using specific classifiers sounded more Meticulous & Steadier (p=.04). For the older group, classifier variation did not appear to affect any categories significantly.
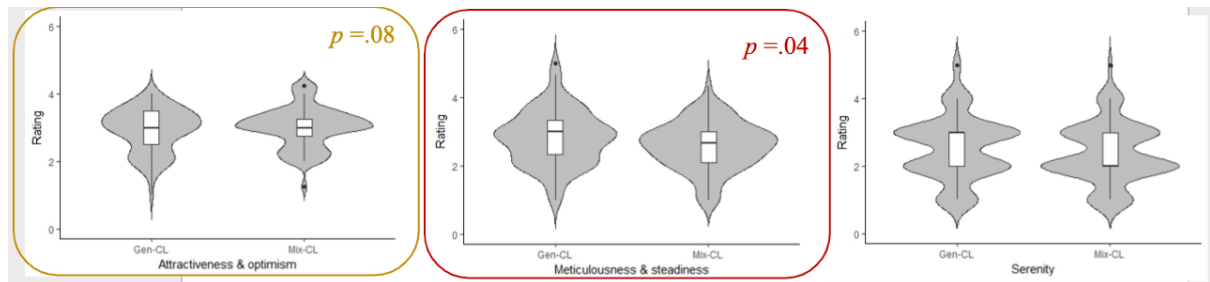

Figure 3. Perceptual rating results by younger listeners

For the post-rate survey, in which participants explicitly judged sentences with the general CL and specific classifiers, both age groups prefer specific classifiers over the general classifier for hat and bike. The younger group, though they rated speakers differently based on using different CLs in their perception, had the same preference as the older group.
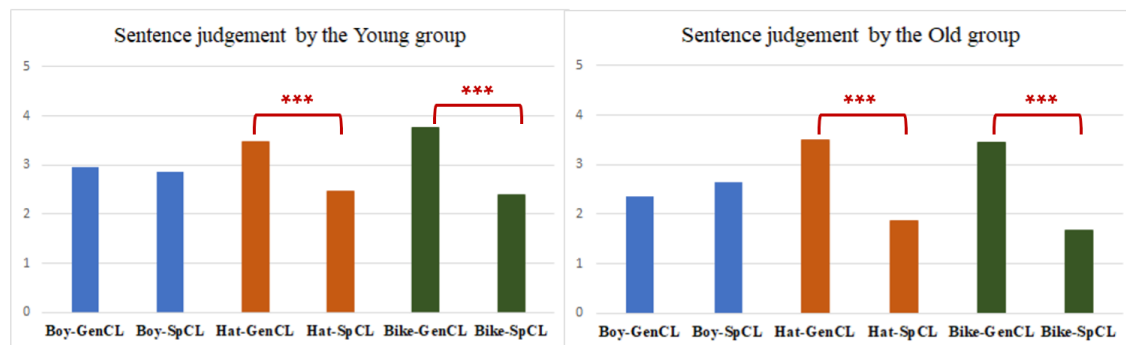

Figure 4. Post-rate survey results

Perception results from the younger group demonstrate that classifier variation indexes a series of related personality characteristics that can be attributed to classifier's indexical field (Eckert 2008). The observation that the two age groups had different perceptions of the classifier system is in line with the production study that the classifier variation is probably a change led

by young people. Findings in this study indicate that such change is motivated by the variable's social meanings.

4. Discussion and onclusion. The current study reveals the evolving path of the Chinese classifier system by comparing with previous studies. It shows several major trends in the change of Mandarin classifier system.

First, consistent with previous studies, speakers predominantly rely on the general classifier *ge*. Secondly, native speakers and learners used fewer specific classifiers compared to their counterparts 30 years ago. However, Chinese instructors managed to maintain the level of specific classifier usage.

Despite the general trend of declining in the use of specific classifiers, classifiers of specific semantic categories remained intact or even expanded to some extent. A noticeable change, which is contradictory to the general trend, is the expansion of *wei*, a classifier for people, by current native speakers compared to those three decades ago. In all the cases where a classifier was needed for animals, all native speakers used an animacy classifier *zhi* or *tou*, the referents in the production included sheep, cow, and mule.

We believe that such findings are in line with Craig's implicational scale of semantic information used in classifiers. It is possible that classifier decline also follows such order, but reversely. Classifiers in later marked categories are impacted first, while early marked ones remain relatively intact and even expanded with fewer classifiers in use.

The observation that people of different ages have different perceptions of the classifier system showed that using different classifiers does affect listeners' perception. Young people, particularly, regarded speakers using only Gen CL as more attractive and optimistic; and those using Mix CLs as meticulous and steadier. This results account for the finding in our previous production study that younger speakers lead the change to use more general classifier.

The perceptual result also shows us that classifier variation indexes a series of related personality characteristics that are part of the utterance's social meaning, which motivated the change.

5. Closing Remarks. The current study revealed the trend of classifier use by native speakers of Chinese over time, and the CL variable's social meanings that motivated such change.

In the production experiment, we tried to follow the research method to make the results comparable, however, due to the pandemic, we did not conduct fact-to-face interview in our production task as the two previous studies did, therefore, we had less control over the participants' production, which may lead to relatively less detailed narration. In addition, for the Chinese instructor group, the occupation factor may interact with the age factor, to better distinguish the influence of these two factors, we could recruit another native group who are not professionals and of similar age as the instructor group.

Our perception experiment was also impacted by the pandemic. Recruiting participants who were in China and asking them to complete an online survey was challenging. Consequently, we ended up with an unbalanced number of participants in the two age groups, such issue calls for need to address in our follow-up study. Also, we did not differentiate specific CLs from different semantic categories, such a animacy, shape, and function. However, our production results suggested that their use changed toward different directions. To this end, we believe that future studies targeting whether and how the variation of classifiers in different semantic categories affect listener perception in different ways can be insightful.

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