<table>
<thead>
<tr>
<th>Dialect Token</th>
<th>Mandarin</th>
<th>Wu</th>
<th>Xiang</th>
<th>Gan</th>
<th>Kejia</th>
<th>Cantonese</th>
<th>Min</th>
<th>Eunjong</th>
<th>Steve</th>
<th>Fangfang</th>
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</thead>
<tbody>
<tr>
<td>鸡</td>
<td>tɕi</td>
<td>tɕi</td>
<td>tɕi</td>
<td>tɕi</td>
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<td>kɿi</td>
<td>koi</td>
<td>k</td>
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<td>tɕi2</td>
<td>tɕi</td>
<td>tɕi</td>
<td>tɕi</td>
<td>tɕk</td>
<td>tse2</td>
<td>ts</td>
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<tr>
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<td>ɕi</td>
<td>ɕi2</td>
<td>ɕi (lit.)</td>
<td>ɕi (coll.)</td>
<td>kʰp</td>
<td>kʰp</td>
<td>kʰp</td>
<td>kʰ</td>
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<td>ɕi</td>
<td>sɪt</td>
<td>ʃɪk</td>
<td>sɪk</td>
<td>s</td>
<td>s</td>
<td>s</td>
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<td>tɕʰi</td>
<td>tʃʰi</td>
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<td>tsʰ</td>
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<td>tɕʰi</td>
<td>tɕʰi</td>
<td>kʰi</td>
<td>heɪ</td>
<td>kʰi</td>
<td>kʰ</td>
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<td>sɿ</td>
<td>sɿ</td>
<td>sɿ</td>
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<td>sɿ (coll.)</td>
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<td>tsʰɿ</td>
<td>tsʰɿ</td>
<td>tʃʰɿ</td>
<td>sɿ</td>
<td>similar to “pond”</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>此</td>
<td>tsʰɿ</td>
<td>tsʰɿ</td>
<td>tsʰɿ</td>
<td>tsʰɿ</td>
<td>tsʰɿ</td>
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<td>tsɿ</td>
<td>tsɿ</td>
<td>tsɿ(lit.)</td>
<td>ti (coll.)</td>
<td>tʃɿi</td>
<td>ti (lit.)</td>
<td>tsai (coll.)</td>
<td>ts</td>
</tr>
<tr>
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<tr>
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<td>tʂʰɿ</td>
<td>tʂʰɿ</td>
<td>tʃʰɿi</td>
<td>ti</td>
<td>Similar to “word”</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>池</td>
<td>tʂʰ ɿ</td>
<td>zɿ</td>
<td>tsɿ</td>
<td>tsʰɿ</td>
<td>tsʰɿ</td>
<td>tʃʰɿi</td>
<td>ti</td>
<td>Similar to “word”</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

1. Lit. represents literal form, whereas coll. is short for colloquial form.
2. ɿ and ɿ are the [i] variant, with ɿ occurring only after s/ts/tsʰ, and ɿ only after s/ʂ/ɿ in modern mandarin. Some scholars argue that they are the natural voiced continuation of s and ʂ.
Here are my notes about the palatal reconstruction. My reconstructions are very preliminary. I was a bit confused by the vowels on the chart but I am assuming that each symbol represents a different segment. I didn't know which ones were high, front vowels though... I guess that all the symbols that look like i are high and front? Also, I didn't spend any time thinking about the literal versus colloquial forms and simply focused on the one that followed the patterns of the other provided forms. I also assumed what Mary said about the similarities between the Cantonese and Min dialects.

The sets above are reconstructed assuming that the palatals were not part of Middle Chinese. There is no reason for us to assume any other reconstruction then since these sounds are the other alternation in each pair and the sound change can be conditioned by the following vowel sound.

If 'deceive' takes */kh/, we would expect a pattern like that in 'sip'. That leaves the alternant /h/ which though possible seems less plausible only because it would involve
fortition of the aspirate to an aspirated affricate in many of the dialects.

'silk'  */s/
'beauty'  */ts/

'word'  ??

I have no good guess yet about this one.

'here'  */tsh/
'know'  */ts/
'silly'  */tsh/

The different forms in the Beijing dialect seem to be triggered by the following vowel so on the basis of the other forms, these seem more straightforward (excluding literal vs. colloquial concerns).

'eat'  ??
'pond'  ??
'spoon'  ??

No idea right now.

'ruler'  */tsh/
'poem'  */s/

cf. 'here', 'know', 'silly'

'market'  ??
'persimmon'  ??

The voiced forms of Wu dialect confused me.

'low'  */t/
'kick'  */th/
'brother'  */k/
'quantifier'  */kh/

These forms are fairly straightforward, especially since they are followed (for the most part) by different vowels than the forms above.

'drink'  ??

I don't think there is enough data to decide for sure since the other forms with /h/ had mid front vowels and these do not.
Reconstructing Middle Mandarin ?Sources of Modern Mandarin Palatals

My assumptions:
1. There were no palatals in Middle Chinese.
2. There are three palatals in Modern Mandarin.
3. All of the dialects given are derived from Middle Chinese.
4. The only conditioning environments for these changes is the following vowel.

Given the complementary distribution of the vowels, the most obvious thing to do is to say that [s], [C], and [S] come from Middle Chinese [s] based on the environment / evolution of the vowels; a similar story can be told for [ts], [tC], and [tS] coming from [ts] and [tsh], [tCh], and [tSh] coming from [tsh].

However, that doesn't explain the differences in the correspondence sets we see. For example, why would the Mandarin [tC] in "chicken" correspond to [k] in Kejia, Cantonese, and Min while the [tC] in "collect" corresponds to [ts]? I'm guessing that the Middle Chinese form of "chicken" had a [k] before a high, front vowel, and that it became a palatal in Mandarin (note that the only other [k]s we have in Mandarin are before back vowels, as in "brother").

Similarly, I would guess that the [C] in Mandarin "sip" comes from Middle Chinese [kh], which is preserved in Kejia, Cantonese, and Min, while the [C] in Mandarin "acquaint" comes from Middle Chinese [s]. Again, note that [kh] in Mandarin only appears before non-high, front vowels (as in "quantifier").

If these two predictions are correct, however, then we have a problem with sets like "collect" vs. "beauty" and "wife" vs. "here." In "beauty" and "here," all of the dialects given show the same initial consonant ([ts] and [tsh], respectively, ignoring the fact that the Cantonese examples are here transcribed with esh, since there is no contrast in Cantonese and others have claimed that there are no palatals in Cantonese). But how do we get *ts --> [ts] in "beauty" while *ts --> [tC] in "collect"? And what about *kh --> [C] in "sip" but *kh --> [tCh] in "deceive"?

Hmm. Not sure what to do about that. If the vowels were different in Middle Chinese, as they are in Mandarin, then we could say something along the lines of *ts --> [tC] / __ i but *ts --> [ts] / __ elsewhere (or before [i] or whatever --> just not [i]). This depends on what exactly the vowels were.
Similarly, with the retroflex [S]: 'poem,' 'market,' and 'persimmon' are all the same in Mandarin, [Si]. But they correspond to different words in the other dialects. None of the other dialects has all three words distinct, but there is at least one dialect where each possibility of "2 vs. 1" occurs (e.g. in Wu, 'market' and 'persimmon' pattern together against 'poem,' but in Gan 'poem' and 'persimmon' pattern together against 'market,' while in Min 'poem' and 'market' pattern together against 'persimmon'). To me this says that in Middle Chinese all three words were distinct, and they merged to varying degrees and in different ways in all the dialects. "Poem" is most likely to have been *s given that it appears as [s] in all dialects except Mandarin. But then of course we have the problem of how *s shows up as [S] in "poem" but as [s] in "silk" in Mandarin. Presumably this has something to do with variation in the vocalic environment, as above. I'm not clear as to how to reconstruct the others -- could one of them be [z] as in Wu? Or was there not a voicing contrast in Middle Chinese?

Sources for palatals:
[C] comes from [kh] / __ i and s / __ i (?)
[tC] comes from [k] / __ i and ts / __ i (?)
[tCh] comes from [kh] / __ ?? and [tsh] / __ i

Rules for Middle Chinese to Mandarin:

*k --> [tC] / __ i
*k --> [k] / __ elsewhere

*kh --> [C] / __i
*kh --> [kh] / __ elsewhere

*tsh --> [tCh] / __ i
*tsh --> [tsh] / __ elsewhere

Notes from the in-class discussion:

Several questions are raised in class, which call for further clarifications before the reconstruction can be done. The first question is the specific time I want to trace back towards the origin of palatals in the history. And if the answer is, say, Late Middle Chinese, then what is the phoneme inventory at that time? Or more specifically, can we safely assume that there was no palatals at that particular time? The result after searching for the resources is, yes, in Late Middle Chinese, there was no palatals. However, in both Ancient Chinese and Early Middle Chinese (according to E.G. Pullelyblank from his “Middle Chinese: A Study in Historical Phonology”), we did have palatals in the phoneme
inventory, which then merged with retroflexes in Middle Chinese. (Looking through all
the references I have at hand, by comparing the initials over time, it seems to suggest that
there is a chain shift from palatals to retroflex in Early Middle Chinese, and then from
velars to palatals in Late Middle Chinese to Early Mandarin, and then a merge of dentals
with palatals in recent time. The history of palatals therefore looks hugely complicated to
me.)

The second question comes right after that would be then “Can we assume all the 7
dialects listed are from a homogeneous group at that time, which is, Late Middle
Chinese? ” The answer is probably not. Therefore, one thing I need to look up is what
dialects at the time I am examining is a homogeneous group, and what dialects have
already deviated from the main trend at that time, and then exclude my data from those
dialects.

The third question that came up is what was the vowel inventory in Late Middle Chinese.
The two vowels in the cognate sets that cause most of the problems are the vowel  şü and
vowel ę. Were they already in the vowel inventory at the time of Late Middle Chinese, or
rather they are newly introduced at a much later time? Where are they from and what
were the original vowels that follows “silk”? A quick answer would be  şü is a front high
front vowel, but not as front as [i], and different from [i], which is laminal, ę is apical,
whereas, ę is a back high vowel. But I need to further look it up to see whether they
already existed in Late Middle Chinese.

In the discussion, the word “pond” was discussed in depth because of the weird ş initial
in Min dialect. Most of us felt it difficult to account for if we reconstructed the initial of
“pond” as tsʰ. I further looked up more other subdialects of Min for this word “pond”,
and I found among those other subdialects, there are two having kʰ as initials and the
other one having both kʰ and ş as accepted initials. Therefore, it does looks as if the two,
kʰ and ş, somewhat related historically, although such a relationship is not tested in any
other dialects. This went back to the second question as whether Min dialect belongs to
the main trend of Late Middle Chinese, and it seems not. (but I need to look more into
that before I eliminated Min from my cognate sets.)

Among the 6 words involving palatal initials in the cognate sets, we sort of reached some
consensus for the first five words (“chicken”, “collect”, “sip”, “acquaint”, and “wife”),
but as to “deceive”, we were baffled by the [h] initial for Cantonese, and it looks like
Cantonese is special too in that this [h] also occurs somewhere else for a lot of other
words along the line. The vowel following [h] is not high front vowel either. If we were
to reconstruct it as *h, then it would be difficult to explain kʰ initial in Kejia and Min.
And we don’t seem to be able to come up with good solutions for this one.