

## Exploring Cantonese tense\*

Rint Sybesma, Universiteit Leiden

### 1. Background: Chinese tense

Sinitic languages are often claimed to be tenseless. Claims to this effect generally consist of two subclaims, which can be formulated as follows:

- (1) a. Sinitic languages have no morphological/semi-lexical or grammatical-(ized) means of marking events as past events;<sup>1</sup>
- b. in these languages, the plotting of events on the time axis is administered by means of temporal adverbs or is determined by the context.

The Cantonese sentences in (2) illustrate these claims. They denote past events and there are no markers attached to the verb (subclaim (1a)). Subclaim (1b) is illustrated by the minimal pair in (2b) and (2c): the latter describes a current situation and the former, with the temporal adverb *ji<sup>5</sup>-cin<sup>4</sup>* ‘formerly’, describes a past event. (The superscripts in the Cantonese renderings are tone markers.)

- (2) a. ngo<sup>5</sup> (kam<sup>4</sup>-jat<sup>6</sup>) maai<sup>5</sup> jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup> ge<sup>3</sup>-si<sup>4</sup>-hau<sup>6</sup>, ...  
I<sub>s</sub> yesterday buy one-CL book while  
‘when I was buying a book (yesterday), ...’
- b. keoi<sup>5</sup> ji<sup>5</sup>-cin<sup>4</sup> hai<sup>2</sup> Rotterdam zyu<sup>6</sup>  
3<sub>s</sub> before at Rotterdam live  
‘s/he used to live in Rotterdam’
- c. keoi<sup>5</sup> hai<sup>2</sup> Rotterdam zyu<sup>6</sup>  
3<sub>s</sub> at Rotterdam live  
‘s/he lives in Rotterdam’

Reformulation of the claims may still be necessary in view of data such as those in (3) (quite apart from the question where the “present tense” interpretation in (2c) comes from, in the absence of any temporal adverb; see section 4). The sentences in (3) denote past events, despite the absence of temporal adverbs. What is more, comparing (3a) with (3b) and (3c) with (2c), we must conclude

that the elements  $zo^2$  and  $lei^4$ , morphological or semi-lexical markers by any definition, are responsible for the marking of these events as past events. Indeed, as the obligatoriness of  $zo^2$  in (3d) shows, the presence of a temporal adverb may not always be sufficient.

- (3) a. ngo<sup>5</sup>      maai<sup>5</sup>-zo<sup>2</sup> jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup>  
 1s      buy-ZO<sup>2</sup> one-CL book  
 'I bought a book'
- b. ngo<sup>5</sup>      maai<sup>5</sup>      jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup>  
 1s      buy      one-CL book  
 'I buy/want to buy a book'
- c. keoi<sup>5</sup>      hai<sup>2</sup> Rotterdam      zyu<sup>6</sup> lei<sup>4</sup>  
 3s      at Rotterdam      live LEI<sup>4</sup>  
 's/he used to live in Rotterdam'
- d. ngo<sup>5</sup>      kam<sup>4</sup>-jat<sup>6</sup>      maai<sup>5</sup>-(zo<sup>2</sup>)      jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup>  
 1s      yesterday      buy-ZO<sup>2</sup>      one-CL book  
 'I bought a book yesterday'

Taking  $zo^2$  and  $lei^4$  as the main focus, this paper aims at exploring Cantonese tense, from a general, theoretical point of view and in view of the claims in (1).

## 2. Background: Tense and finiteness

I explore Cantonese tense against the background of widely accepted theories of tense and finiteness. As to tense, I adopt the Reichenbachian idea that there are three time spans as well as two T(ense) nodes, which express the relative order of the time spans (Reichenbach 1947; Klein 1994; Stowell 1996; Hoekstra 1992; a.o.). The time spans are TU, the utterance time; TT ("Topic Time"), the time span the utterance is meant to make a claim about; and TSit, the time of the event denoted by the predicate of the sentence.<sup>2</sup> It is generally assumed that the two T-nodes, T1 and T2, each have two possible settings, [+PST] and [-PST], which enables them to express the relative order of TU, TT and TSit. T1 arranges TU and TT (traditionally a matter of "tense"), and T2 does the same for TT and TSit ("aspect"). How this pens out for English is shown in (4) (cf. Hoekstra 1992 (36)).

- (4)
- |    | T1        |   | T2         |                                  |
|----|-----------|---|------------|----------------------------------|
| a. | is[-PST]  | V | -ing[-PST] | TU,TT overlap; TT, Tsit overlap  |
| b. | has[-PST] | V | -ed[+PST]  | TU,TT overlap; T-Sit precedes TT |
| c. | was[+PST] | V | -ing[-PST] | TT precedes TU; TT,T-Sit overlap |
| d. | had[+PST] | V | -ed[+PST]  | TT precedes TU; TSit precedes TT |

Presumably, though the claim would be that all sentences contain a T1, not all of them have a T2-node. Whether they do or not depends on several factors,

one of them being the type of predicate they contain. Sentences with predicates denoting telic events, for instance, may have both T-nodes, whereas sentences with predicates referring to non-telic events will not have a T2. If there is no T2, TSit and TT overlap.

As to finiteness, I adopt the definition of a finite sentence as a sentence with its own temporal reference, a sentence which is able to temporally anchor onto the context (Enç 1987; Guéron & Hoekstra 1995; Bianchi 2002; a.o.) To this end, a finite sentence is equipped with an operator in the C-domain of the sentence, and this operator binds a pronominal variable in T1 – a *pronominal* variable because it has features of itself: [+PST] or [–PST], as we just saw. The operator is the foothold of the context in the sentence, it represents the contextual “here-and-now”. The relation between the operator and the [+/–PST] T1 determines the temporal reference of the sentence in the context.

Note that for a sentence to be finite as just defined does not entail that there must be a finite form. Whether a language has finite forms depends on independent properties of the language, which we will not discuss here (Campbell 1995).

One more note before we look at Cantonese  $zo^2$  and  $lei^4$ : in this paper I use the phrase “past event” loosely, referring to any situation in which TSit is located before TU, regardless of what happens to TT.

### 3. Cantonese $zo^2$ and $lei^4$ : differences and similarities

The sentences given above show that Cantonese has three different markers for presenting events as past events,  $zo^2$ ,  $lei^4$  and a zero-marker.  $zo^2$  occurred in a sentence with a telic event (see (3a), (3d)),  $lei^4$  in one with a state (see (3c)); (2a) and (2b) show that the zero-marker is compatible with both types of events. In the following section we consider the question what determines the distribution of these three elements. In this section, we look at additional facts regarding  $zo^2$  and  $lei^4$ , so as to get a more complete descriptive picture.

First,  $lei^4$  is not compatible with telic events, with or without  $zo^2$ . Similarly,  $zo^2$  is incompatible with states, with or without  $lei^4$ .<sup>3</sup> In contrast,  $zo^2$  and  $lei^4$  can both occur with non-telic activities, where they can even cooccur; thus, (5) is well formed as is, but either  $zo^2$  or  $lei^4$  can be dropped without affecting the well-formedness (though the interpretation is affected, which we do not go into here). This use of  $zo^2$  and  $lei^4$  is not included in the discussions in the remainder of this section; we return to it later on (footnote 6).

- (5)      keoi<sup>5</sup>      kam<sup>4</sup>-jat<sup>6</sup> sik<sup>6</sup>-zo<sup>2</sup>      di<sup>1</sup>      heung<sup>1</sup>-jiu<sup>1</sup>      lei<sup>4</sup>  
             3s      yesterday eat-ZO<sup>2</sup>      CL<sup>PL</sup>      banana      LEI<sup>4</sup>  
             ‘s/he ate some bananas (yesterday)’

The sentence in (5) reveals a further difference between  $zo^2$  and  $lei^4$ : whereas the former directly follows  $V^0$ , the latter follows the VP as a whole.

To zoom in on their meaning, let's investigate the following sentence pairs.

- (6) a. keoi<sup>5</sup> hai<sup>2</sup> Rotterdam zyu<sup>6</sup> lei<sup>4</sup> (=3c)  
 3s at Rotterdam live LEI<sup>4</sup>  
 's/he used to live in Rotterdam'
- b. ngo<sup>5</sup> maai<sup>5</sup>-zo<sup>2</sup> jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup> (=3a)  
 1s buy-ZO<sup>2</sup> one-CL book  
 'I bought a book'
- (7) a. keoi<sup>5</sup> 1989 nin<sup>4</sup> hai<sup>2</sup> Rotterdam zyu<sup>6</sup> lei<sup>4</sup>  
 3s 1989 year at Rotterdam live LEI<sup>4</sup>  
 'in 1989 s/he lived in Rotterdam (for a while)'
- b. ngo<sup>5</sup> kam<sup>4</sup>-jat<sup>6</sup> maai<sup>5</sup>-zo<sup>2</sup> jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup> (cf. (3d))  
 1s yesterday buy-ZO<sup>2</sup> one-CL book  
 'I bought a book yesterday'
- (8) a. keoi<sup>5</sup> 1989 nin<sup>4</sup> hai<sup>2</sup> Rotterdam zyu<sup>6</sup>  
 3s 1989 year at Rotterdam live  
 'in 1989 s/he lived in Rotterdam'
- b. \*ngo<sup>5</sup> kam<sup>4</sup>-jat<sup>6</sup> maai<sup>5</sup> jat<sup>1</sup>-bun<sup>2</sup> syu<sup>1</sup> (cf. (3d))  
 1s yesterday buy one-CL book  
 INTENDED: 'I bought a book yesterday'

In (6), both  $zo^2$  and  $lei^4$  express that an event has been completed or concluded. It is irrelevant when they took place, all that is expressed is that we are dealing with events that have been rounded off at the speech time. In the terms introduced in section 2, we may say that TSit is located before TT and that TT and TU overlap.

The sentences in (7) are minimally different from those in (6), both in form and in meaning. Like their counterparts in (6), the sentences in (7) each denote an event that is explicitly marked as having been completed/concluded at the time of speaking, but now a time adverbial is added to specify when the event took place. In other words, the time adverbials modify TSit. As was the case with the sentences in (6), then, in the sentences in (7), TSit has been dissociated from TT, which overlaps with TU.

In both (6) and (7), it seems to be the case that the dissociation of TT and TSit is administered by  $zo^2$  and  $lei^4$ : by explicitly marking the event as having been concluded by a certain time, they locate the event in its entirety, and thus TSit, before that certain time.

The sentences in (8) differ from their counterparts in (7) in two respects. First, the events are not explicitly marked as having been completed or concluded, which means that TSit and TT overlap. Secondly, the time adverbials in (8) do not modify TSit but introduce TT: we want to make a claim about 1989

and yesterday respectively, namely that certain events took place then. The claim is limited to the said time intervals, we don't make claims about any other time spans; thus, whereas the meaning of (7a) implies that the subject no longer lived in Rotterdam in 1990, no such claim is implied in (8a). In any case, due to the use of the time adverbials, in (8a) and (8b) TT has been explicitly moved to prior-to-TU. (The ungrammaticality of (8b) will be addressed below.)

What we observe is that, in principle, time adverbials can do two things (as was discussed in Klein 1994): they can introduce TT and they can modify TSit. When we compare the sentences in (7) and (8), we see that they do the former in the absence of *zo*<sup>2</sup> and *lei*<sup>4</sup> and the latter in their presence. However, here we discover a difference between *zo*<sup>2</sup> and *lei*<sup>4</sup>: whereas in sentences with *lei*<sup>4</sup>, a time adverbial is never interpretable as if introducing TT, in sentences with *zo*<sup>2</sup> it is possible to get such a reading.

- (9) a. ngo<sup>5</sup> 1989 nin<sup>4</sup> bat<sup>1</sup>-zo<sup>2</sup>-yip<sup>6</sup> laa<sup>3</sup>  
 1s 1989 year finish-ZO<sup>2</sup>-tasks SFP  
 'I graduated in 1989'
- b. ngo<sup>5</sup> 1989 nin<sup>4</sup> ji<sup>5</sup>-ging<sup>1</sup> bat<sup>1</sup>-zo<sup>2</sup>-yip<sup>6</sup> laa<sup>3</sup>  
 1s 1989 year already finish-ZO<sup>2</sup>-tasks SFP  
 'by 1989, I had already graduated'

The sentence in (9a) reports on an event that has been concluded and happened to have taken place in 1989. In contrast, the sentence in (9b) is a claim about 1989: by then, the event had already taken place. The time adverbial in (9a) modifies TSit, in (9b) it introduces TT. As in (6) and (7), in (9a), TT and TU are not dissociated, but in (9b), they are, due to the time adverbial. In both sentences, TSit is dissociated from TT due to *zo*<sup>2</sup>.

In sentences with *lei*<sup>4</sup>, a time adverbial can only be interpreted as modifying TSit. The question is why that should be the case. What is probably relevant in this context is the fact that *lei*<sup>4</sup>, unlike *zo*<sup>2</sup>, cannot be used with *ji*<sup>5</sup>-*ging*<sup>1</sup> 'already', nor can it occur in 'after'-conjuncts, which *zo*<sup>2</sup> can. Despite some similarities, *lei*<sup>4</sup> and *zo*<sup>2</sup> may turn out to be two very different elements after all.

Finally, I need to mention the "actuality marker" function of *lei*<sup>4</sup>. Addition of *lei*<sup>4</sup> to a sentence makes the sentence as a whole especially relevant to the context; it says: "the event has happened in the past, but I am telling you about it for a special reason" – the reason most likely being quite obvious in the context.

Here is a summary of the properties of *zo*<sup>2</sup> and *lei*<sup>4</sup>, mentioned or discussed above. We investigate them further in the remainder of this paper.

*zo*<sup>2</sup>  
 –immediately follows the verb  
 –may alternate with zero form,  
 is sometimes obligatory

*lei*<sup>4</sup>  
 –follows the VP  
 –may alternate with zero form

–with telic events, with activities, not with states	–with states, with activities, not with telic events
–induces T2 effect	–induces T2 effect
–time adverbials can introduce TT	–time adverbials cannot introduce TT
–compatible with ‘already’ and ‘after’	–incompatible with ‘already’, ‘after’
–no other effects	–actuality marker

#### 4. Cantonese T1

In section 1, we found two overt morphological/semi-lexical elements which are used for presenting events as past events, *zo<sup>2</sup>* and *lei<sup>4</sup>*. From the sentences presented above, it is clear that neither of them instantiates T1, since neither is involved in locating TT relative to TU. This raises questions regarding the nature of T1 in Cantonese. Indeed, do Cantonese sentences have a T1-node at all?

Although Cantonese apparently does not have any overt markers for T1, there seems to be evidence that it does have a T1-node (the following argument is due to Matthewson 2002). To see what the evidence is, let’s look at (2c). As I reported above, this sentence has a “present” tense reading. The question is: Where does this reading come from? Significantly, the temporal reading of sentences like (2c) can only be changed with the use of linguistic material, such as adverbs (see (2b)) and *linguistic* context (and *lei<sup>4</sup>*). Non-linguistic information cannot do that job. For instance, if the subject of such a sentence is a deceased person, the sentence is simply infelicitous. The fact that the temporal interpretation in these sentences can only be manipulated with linguistic cues suggests that the present tense interpretation is also linguistically expressed. There is no overt tense marker, but T1 is set at [–PST], as is clear from the interpretation.

There is a theory-internal argument for a T1 node in Cantonese too. If it is right, as the theory summarized in section 2 says, that the three time spans can be dissociated from each other with the use of the two T-nodes, then the sentence in (9b), in which all three nodes are dissociated, constitutes a piece of evidence supporting the postulation of the T-nodes.

The way we may interpret the situation in Cantonese is that T1 has two settings, [+PST] and [–PST], both with zero-marking. The setting is determined by the linguistic context or an adverbial, that is, adverbials that we got to know as adverbials which introduce TT. If there is no adverbial and no specific context has been introduced, we get a default [–PST] (“here and now”). As in other languages, the relation between the tense operator and the variable in T1

determines the temporal anchoring onto the context. This is essentially what I would like to propose for Cantonese, except for an important amendment to be made in section 6. The amendment is prompted by the question posed earlier with respect to the use of time adverbials in sentences with *lei<sup>f</sup>*. The question was: Why can't these adverbials introduce TT in sentences with *lei<sup>f</sup>*? Now we can rephrase the question and ask: Why can't they set T1 to [+PST] in such sentences?

### 5. The function and structural position of *zo<sup>2</sup>*

In the previous section we were established that there are good reasons to assume that Cantonese has a T1-node. We can now move on and ask: How about T2? All along, I have talked about *zo<sup>2</sup>* and *lei<sup>f</sup>* as “inducing T2-effects”, carefully avoiding saying that they *are* T2 elements, because I don't think they are. For *lei<sup>f</sup>* this is clear: it only occurs with states and non-telic activities and if sentences with non-telic event predicates have no T2 (section 2), *lei<sup>f</sup>* cannot be a T2 element. But how about *zo<sup>2</sup>*? In this section we discuss *zo<sup>2</sup>*, turning to *lei<sup>f</sup>* in section 6.

*Zo<sup>2</sup>* is the Cantonese counterpart of Mandarin verb-*le*, which is generally acknowledged to be a perfective marker. More specifically, in Sybesma and Vanden Wyngaerd (1997) and Sybesma (1997), it is analysed as a “realization marker”, with different interpretational effects for telic and non-telic events. With telics (for non-telics see footnote 6), it is a realization marker in the sense that it indicates that the inherent end point of the event is reached; once the end point has been reached the event as a whole can be seen to have realized. The analysis of Mandarin *le* can be extended to Cantonese *zo<sup>2</sup>* unproblematically.

If *zo<sup>2</sup>* is a realization marker as defined, most of the properties in the summary at the end of section 3 are explained. The fact that it does not cooccur with states, for instance, is clear: states have no inherent end point, the attainment of which *zo<sup>2</sup>* can mark. The distributional *zo<sup>2</sup>*-zero alternation pattern also falls out, when we realize that *zo<sup>2</sup>* is only used in contexts in which the completion of the event is at issue. In (2a) we have a sentence with a telic event, the completion of which is not at issue: as the translation indicates (‘when I was buying a book’), we had not reached the end point of the event (when presumably something else happened). That is why *zo<sup>2</sup>* is not used. On the other hand, *zo<sup>2</sup>* is obligatory in (3d)/(8b), a main clause sentence with a temporal adverbial referring to a pre-TU time interval. The explanation here is that if one wants to refer to a telic event as having taken place, in its entirety, in the past, one cannot avoid explicit marking of the realization of the end point, which is done with *zo<sup>2</sup>* (Verkuyl 1972).

As a realization marker, *zo<sup>2</sup>* occupies a position inside the VP; more specifically, Sybesma (1997) and Sybesma and Vanden Wyngaerd (1997) argue that it heads a projection inside the small clause which complements V. In the

latter paper it is also argued that Mandarin *le* (by extension, Cantonese  $zo^2$ ) has the same function as the element *ge-* in Dutch past participles. Dutch past participles consist of three parts: realization marker *ge-*, the lexical verbal stem and, as Hoekstra (1992) argues (see (4)), a marker of the past tense. This marker of the past tense is T2. We can conclude from this that if  $zo^2$  has the same status as *ge-*, it is not T2. We may draw a second conclusion, namely that if Dutch *ge-* is always accompanied by a past tense T2, this is possibly the case for Cantonese  $zo^2$  as well, even though it is not marked overtly (not suprisingly: T1 does not seem to ever have any overt marking either). Leaving the second conclusion undiscussed, let's conclude that  $zo^2$  occupies a position inside the VP and that it is not T2.

T1 is in no way influenced by the presence of  $zo^2$ . Just like in any other sentence, its value is determined by the linguistic environment or temporal adverbials; the sentence in (9b) illustrates how an adverbial sets the T1 to [+PST]. In other cases, like (6b) and (7b), the setting is [-PST]. These two sentences show that Cantonese is much closer to French and Dutch than to English in that their temporal make up is much more directly reflected in the French (*hier*) *j'ai acheté un livre* and the Dutch *ik heb (gister) een boek gekocht*, both using a present perfect (T1[-PST], T2[+PST]), than the English sentence provided as the translation, which uses the simple past.

## 6. The function and structural position of $lei^4$

Turning to  $lei^4$ , we have noted that it differs from  $zo^2$  in several respects, suggesting that it does not have the same status as  $zo^2$ , structurally and otherwise. For one thing,  $lei^4$  is not a marker which signals that the in-built end point of an event has been reached, because it is only compatible with events that do not involve such an inherent end point. Secondly, it occupies a different surface position: whereas  $zo^2$  is attached to the verb,  $lei^4$  is attached to the end of the phrase. Indeed,  $lei^4$  may even cooccur with  $zo^2$  (see (5)), and in the same way it may cooccur with elements like the so-called experiential marker  $gwo^3$  which itself is in complementary distribution with  $zo^2$ . Another reason for assuming that  $lei^4$  is different from  $zo^2$  structurally is related to the actualizing function (see section 3); in this capacity,  $lei^4$  is in complementary distribution with  $ge^3$ .

$Ge^3$  is known as an assertion marker (Cheung 1972). Taking a wide range of data into consideration, we may more generally call it an actuality marker: it makes the whole sentence it is attached to more relevant to the current context. Here are two examples ((a) based on Fung 2000, 158 (31)). The sentence in (10a) illustrates the use of  $ge^3$  as an assertion marker: the speaker wants to show the hearer that s/he is absolutely sure of what s/he is saying. It is also an actuality marker, because the addition of  $ge^3$  makes the sentence especially relevant to

some aspect of the conversational context: due to  $ge^3$ , the sentence directly addresses some concern the hearer may have expressed. Without  $ge^3$ , the sentence is no more than a neutral statement, without any necessary link to any aspect of the conversation. Similarly, (10b) without  $ge^3$  would simply be a neutral statement of fact, part of a list of someone's abilities, for instance. With  $ge^3$ , however, the sentence may be uttered as a reaction to someone's concern regarding the news that the subject of the sentence is going to Berlin. How is he going to find his way around?!

- (10) a.  $go^2-di^1-syu^1$ ,  $aa^3-ji^6-suk^1$   $wui^5 luk^6 zuk^6$   $gei^3-faan^1-lei^4$  ( $ge^3$ )  
 that-CL-book 2nd uncle will continue send-back-come  $GE^3$   
 WITHOUT  $GE^3$ : 'as to those books, Second Uncle will continue to send them to us'  
 WITH  $GE^3$ : 'as to those books, Second Uncle will continue to send them to us – for sure, don't worry about it'
- b.  $keoi^5 sik^1$   $Dak^1 man^2$  ( $ge^3$ )  
 3s know German GE  
 WITHOUT  $GE^3$ : 's/he knows German'  
 WITH  $GE^3$ : 'don't worry, s/he knows German'

$Lei^4$  has the same actualizing function; utterances with  $lei^4$  are never completely neutral in the sense that they are always uttered for a reason which is obvious from the conversational context. The sentence in (11) without  $lei^4$  would be a neutral statement, but with  $lei^4$  the sentence is uttered to explain something, like why she did not come to our party last Thursday.

- (11)  $soeng^6 go^3-laai^5 baai^5$ ,  $keoi^5$   $hou^2 mong^4$  ( $lei^4$ )  
 last-week 3s very busy  $LEI^4$   
 WITHOUT  $LEI^4$ : 'last week s/he was very busy'  
 WITH  $LEI^4$ : 'she was very busy, last week, you know (no longer is)'

The division of labor between  $ge^3$  and  $lei^4$  is that  $lei^4$  is compatible with past events, while  $ge^3$  takes care of the rest.  $Ge^3$  can cooccur with future modals (as we saw in (10a)), and  $lei^4$  cannot;  $lei^4$  is compatible with sentences that are independently marked as referring to a past event (as we saw in (11)), and  $ge^3$  is not. The question is where the past and non-past readings come from. Are  $lei^4$  and  $ge^3$  responsible for them or are they there independently?

I address this question shortly. Let me first return to the question regarding the structural position of  $lei^4$ . Considering (i) that  $lei^4$  and  $ge^3$  have scope over the entire sentence, which suggest that they occupy a peripheral position in the structure; (ii) that Cantonese has no finite forms but still has finite sentences as defined in section 2; and (iii) that  $ge^3$  and  $lei^4$  make the sentence they are part of especially relevant for the here and now,<sup>4</sup> I propose that  $lei^4$  and  $ge^3$  are possible instantiations of the tense operator in the C-domain of the Cantonese sentence.<sup>5</sup>

In section 2, I introduced the common idea that in Germanic and Romance

languages the head of TP is occupied by a pronominal variable, which is bound by an operator in the C-domain. The [+PST] or [-PST] value of the pronominal variable contributes to the anchoring of the sentence to the extra-sentential time line. In section 5, I proposed that Cantonese sentences also have this operator in the C-domain, binding a pronominal variable in T1, the value of which is determined by the linguistic context or set by temporal adverbials.

The amendment to this proposal that I promised there to present here is the following. I propose that Cantonese has three different tense operators, and that it is actually the operator which determines the value of the variable in T1. First, it has a tense operator which is phonologically empty; it is the neutral representative of the “here-and-now” and it leaves the value of the T1 as “underspecified”. Secondly, there is *ge*<sup>3</sup>. It is less neutral; it expresses something that may be paraphrased as “and this is how it is”. The value of the T1 it binds is set at [-PST]. Finally, there is *lei*<sup>4</sup>. Like *ge*<sup>3</sup> it is not neutral; it adds something like “and this is how it was”, with the strong implication that “it is no longer like that now”.<sup>6</sup> The value of the T1 *lei*<sup>4</sup> binds is set at [+PST].

Only in the case of the zero-operator can the value of the T1 node be determined by the linguistic context or an adverbial. In both other cases the value is determined by the operator, *ge*<sup>3</sup> or *lei*<sup>4</sup>. This explains why time adverbials in sentences with *lei*<sup>4</sup> can no longer introduce TT and can only modify TSit.

Schematically, this is what we have:

Operator	Value of T1
∅ neutral	underspecified
<i>ge</i> <sup>3</sup> ‘and this is how it is’	[-PST]
<i>lei</i> <sup>4</sup> ‘and this is how it was’	[+PST]

The major difference, then, between Cantonese and Germanic-Romance is that, in Cantonese, not the T1-variable is independently specified for [+PST] or [-PST], as it is in Germanic-Romance, but the operator is: the operator binds the variable and determines its value. This makes the relation between the operator and the variable very “Chinese”: Chinese languages offer other examples of such a situation, e.g., the variables which come out as *wh*-words or indefinites depending on the operator which binds them (Cheng 1991, Tsai 1994).

## 7. Tense in Cantonese

In the view presented above, Cantonese is not a tenseless language. Its verbs may not have finite forms, and in some sentences, it does seem to be the case that the adverbials determine the positioning of TT relative to TU, rather than some semi-lexical particle, but *ge*<sup>3</sup> and *lei*<sup>4</sup> would certainly count as tense elements. They may not be in T1, but they do determine its value directly.

In view of this analysis, the claims formulated in (1) regarding the alleged tenselessness of Chinese languages need to be reformulated, or it must be made explicit that they do not apply to all Chinese languages in the same way. For Cantonese, subclaim (1a) (Sinitic languages have no grammatical or grammaticalized means of marking events as past events), is correct only if we interpret it as saying that T1 is never marked in any overt way. If I am correct that *ge*<sup>3</sup> and *lei*<sup>4</sup> determine the value of T1 as [-PST] and [+PST] respectively, the subclaim in (1a) is not even correct if it is meant to mean that Sinitic has no grammatical ways of locating TT relative to TU. The second subclaim, which says that in Sinitic the explicit plotting of the events on the time axis is administered by means of temporal adverbs or context, is only true if we add something like “in the absence of either of the two specific tense operators *ge*<sup>3</sup> and *lei*<sup>4</sup>”.

## Notes

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<sup>1</sup> Or future events, for that matter. In this paper, I limit my attention to past events.

<sup>2</sup> The terminology is Klein’s (Klein 1994). For, the purposes of this paper, TU, TT and TSit are equivalent to Reichenbach’s original S,R,E.

<sup>3</sup> *zo*<sup>2</sup> is compatible with statives with a duration phrase, which are telic.

<sup>4</sup> Which makes the elements unlikely T1 elements themselves. Note that for Klein (1994), assertion is part the definition of finiteness.

<sup>5</sup> Or they are complementizers accompanied by an operator in their Spec, just as Q-particles and negative elements are accompanied by operators in their Spec.

<sup>6</sup> This explains why it is not compatible with telic sentences with *zo*<sup>2</sup>, which denotes the completion of an event, resulting in a new state. With non-telic activities, *zo*<sup>2</sup> marks realization in the sense that it indicates that the event “has come into existence” (Sybesma 1997). Nothing is said about completion. As a consequence, *lei*<sup>4</sup> and *zo*<sup>2</sup> are compatible in sentences with non-telic activities.

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