What-as-why sentences in Cantonese
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Citation

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1 Introduction

Cantonese, like Mandarin, is a *wh*-in-situ language. Furthermore, it also has both preverbal *why* and sentence-initial *why* questions as shown in (1) and (2).[1,2]

(1) a. keoi⁵ *dim²gaai²* mou⁵   lei⁴?   (Cantonese)
         3SG   why   not.have   come
     b. *dim²gaai²* keoi⁵   mou⁵   lei⁴?
         Why   3SG   not.have   come
         'Why didn't s/he come?'

(2) a. tā   *wèishénme* méiyǒu   lái?   (Mandarin)
         3SG   why   not.have   come
     b. *wèishénme* tā   méiyǒu   lái?
         why   3SG   not.have   come
         'Why didn't s/he come?'

In both languages, there are alternative ways to ask causal/reason questions. First, both Cantonese and Mandarin can use their counterparts of *what* and *how* in expressing causal/reason questions (see (3a,b) and (4a,b)). It should be noted that the counterparts of *what* appear postverbally while the counterparts of *how* appear preceding a modal (see Tsai (2008), and Cheng (2019)).[3,4]

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1 See Ko (2005) for an analysis of the merge position of *why* questions in Mandarin.
2 The following abbreviations are used in the glosses: CL = classifier, DE=de, DET =determiner, EXP = experiential, INF = infinitive, M = masculine, NEG = negative, PFV = perfective, PROG = progressive, PRT = particle, PTCP =participle, SFP =sentence final particle, SG = singular. The tones are marked by numbers in Cantonese and by diacritics in Mandarin.
3 Note that the interpretation of these sentences is not exactly the same as the English translation. We'll discuss this further in section 3.
4 The postverbal cases of causal/reason *mat*[1] appear with unergative verbs, which in Chinese languages have optional dummy objects (see Cheng and Sybesma (1998)). In the case of *laugh*

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(3) a. lei⁵ haam³ *mat¹* aa³? (Cantonese)
      2SG cry what SFP
  b. nǐ kū *shénme*? (Mandarin)
      2SG cry what
      'Why are you crying?'

(4) a. Akiu¹ *dim²* ho²ji³ heoi³ toi⁴bak¹ aa³? (Cantonese)
      Akiu how can go Taipei SFP
  b. Akīu *zěnme* kěyǐ qù táiběi? (Mandarin)
      Akiu how can go Taipei
      'How come Akiu could go to Taipei?'

In addition, both Cantonese and Mandarin can use a sentence-initial *wh*-phrase for questions similar to causal/reason questions. In Cantonese, *mat¹* 'what' is used while in Mandarin, *zěnme* 'how' is used, as we see in (5a,b).

(5) a. *mat¹/*dim²* lei⁵ hai²dou⁶ haam³ ge²? (Cantonese)
      what/how 2SG PROG cry SFP
      Roughly: 'Why are you crying?'
  b. *zěnme/*shénme* nǐ zài kū? (Mandarin)
      how/what 2SG PROG cry?
      Roughly: 'Why are you crying?'

In this paper, we focus on the sentence-initial *mat¹* 'what' in Cantonese, in comparison with other ways of expressing causal/reason questions in Cantonese and Mandarin. I address the question of whether the sentence-initial *zěnme* as in (5b) is similar to the sentence-initial *mat¹* in section 5.

    Cross-linguistically, it is not uncommon to find examples where the counterparts of *what* is used to express something similar to what we see in sentence-initial *mat¹* in Cantonese (in particular sentences such as (5a)), as we can see from the examples in German and Dutch in (6).

(6) a. Was lachst du (denn)?! (German)
      what laugh you PRF
      'Why are you laughing?' (you should not laugh!)
      NOT: 'What are you laughing at?'

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and *cry*, it is sometimes possible to also interpret the questions as 'What are you laughing at/ crying about?' See also Cheng and Sybesma (2015).

    b.   Wat   lach   je   nou?   (Dutch)
        what   laugh you PRT
        'Why are you laughing?
        NOT: 'What are you laughing at?'

Aside from causal/reason questions, the counterparts of *what* in Dutch and German can also be used in non-questions, in particular, exclamatives (7).

(7) a.   Was   (der)   Otto   seine   Frau   liebt!
         what   the   Otto   his   wife   loves
         'How Otto loves his wife!'   (German; D'Avis (2000): (2a))
    b.   Wat   heeft   hij   gewerkt!
         what   has   he   worked
         'Boy, has he worked!'   (Dutch; Bennis (1998): (2a))

In the following sections, I first examine the properties of Cantonese sentence-initial *mat*[1] 'what'. I argue that the sentence-initial *mat*[1] differs from both canonical *dim*[2]*gaai*[2] 'why' questions (section 2.1) and the postverbal causal *mat*[1] sentences (section 2.2). I show that *mat*[1]-initial sentences are more aligned with exclamatives (section 3.2) than rhetorical questions (section 3.1). In section 4, I discuss further Dutch and German *what*-exclamatives and their similarities with *mat*[1]-initial sentences. I argue that *mat*[1]-initial sentences in Cantonese can be interpreted as both individual-level exclamatives and event-level exclamatives (based on Nouwen and Chernilovskaya (2015), see also section 3.2). In the concluding section 5, the question of whether sentence-initial *zěnme* 'how' in Mandarin is similar to sentence-initial *mat*[1] is addressed.

2 Properties of sentence-initial *mat*[1]

In order to understand sentence-initial *mat*[1], I first consider the distribution of sentence-initial *mat*[1], in comparison with canonical questions with *dim*[2]*gaai*[2] 'why'. In section 2.2, I show that *mat*[1]-initial sentences differ from postverbal causal *mat*[1]-questions. Section 2.3 reviews the co-occurrence restrictions between sentence-initial *mat*[1] and sentence-final particles.

2.1 Comparison with canonical *dim²gaai²* questions

Before we make a comparison between canonical *dim²gaai²* questions and *mat¹*-initial questions, we need to first clarify the morphology of the counterpart of *what* in Cantonese. As shown in (8), a typical argumental *what*-questions in Cantonese can use either *mat¹* or *mat¹(ye⁵)*, literally 'what thing'.

(8) keoi⁵ maai⁵-zo² *mat¹(ye⁵)* aa³?
    3SG   buy-PFV   what   SFP
    'What did he buy?'

However, when sentence-initial *mat¹* is used, *ye⁵* cannot be used:

(9) *mat¹(*ye⁵)* lei⁵ hai²dou⁶ haam³ ge²?
    what   2SG PROG   cry   SFP
    'Why are you crying?'

Consider now canonical *dim²gaai²* 'why' questions. Both the postverbal and the sentence-initial *mat¹* differ from the canonical *dim²gaai²* 'why'. First, as (10a) shows, *dim²gaai²* 'why' in an embedded (non-interrogative) clause takes matrix scope (i.e., "long" construal). This is what we expect from *wh*-elements in Chinese languages: *wh*-phrases stay in-situ in narrow syntax, but they can undergo covert movement to take (matrix) scope. When *dim²gaai²* is merged in the matrix, as in (10b), there is no long construal. That is, it cannot be interpreted as construing with the embedded predicate.

(10) a. lei⁵ ji⁵wai⁴ keoi⁵ *dim²gaai²* wui⁵ lei⁴?   (Long construal)
        2SG think   3SG   Why   will   come
        'What is the reason x that you think that s/he will come for x?'
    b. lei⁵ *dim²gaai²* ji⁵wai⁴ keoi⁵ wui⁵ lei⁴   (Short construal)
        2SG why   think   3SG will   come
        'What is the reason for your thinking that s/he will come?'
        NOT: 'what is the reason x that you think that s/he will come for x?'

That is, the matrix *dim²gaai²* 'why' in (10b) cannot have moved from the embedded clause. This is not surprising, as Chinese languages typically do not have *wh*-movement (Huang (1982)). Thus, *dim²gaai²* 'why' in Cantonese differs from English 'why', which needs to appear in the matrix to express both short and long construal as in (11) (with both (11a) and (11b) readings).

(11) Why do you think that he is coming?
    a. What is the reason x that you think he is   (Long construal)
       coming for x?
    b. What is the reason that you think that he   (Short construal)
       is coming?

Consider now questions with non-argumental *mat*^{1} 'what'. Neither the postverbal *mat*^{1} (12a) nor the sentence-initial *mat*^{1} (12b) can appear in an embedded (non-interrogative) clause.

(12) a. *lei^5 ji^{5}wai^4 keoi^5 haam^3 *mat*^{1}(*ye*^{5}) aa^3?
      2SG think 3SG cry what SFP
    b. *lei^5 ji^{5}wai^4 *mat*^{1} keoi^5 haam^3 ge^2?
      2SG think what 3SG cry SFP
      Intended: 'What is the reason x that you think that s/he is crying for x?'

In other words, non-argumental *mat*^{1} 'what' do not form long construals. Furthermore, the non-argumental *mat*^{1} 'what' must appear either postverbally (3a) or sentence-initially (5a). It differs from the canonical *dim*^{2}*gaai*^{2} 'why' in that it cannot appear after the subject (cf. (1a) repeated in (13b)).

(13) a. *lei^5 *mat*^{1} hai^{2}dou^6 haam^3 ge^2?
      2SG what PROG cry SFP
      Intended: 'Why/how come you are crying?'
    b. keoi^5 *dim*^{2}*gaai*^{2} mou^5 lei^4?
      3SG why not.have come
      'Why didn't s/he come?'

We have seen in (12b) that sentence-initial *mat*^{1} cannot appear in a non-interrogative embedded clause (to take matrix scope). It should be noted that sentence-initial *mat*^{1} also cannot appear in an embedded question (taking embedded scope) (14b). This contrasts with *dim*^{2}*gaai*^{2}, which can be in an embedded question (as in (14a)). It should be noted that non-argument, postverbal *what*-as-*why* in Mandarin (i.e., the *whining-what*) also cannot appear in embedded sentences (see Tsai (this volume)).[5]

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5 Note that as Tsai (this volume) points out, if *shénme* 'what' is not the *whining what*, it can appear in embedded questions. This is however not a possibility for sentence-initial *mat*^{1} in Cantonese, as there is no other interpretation possible of sentence-initial *mat*^{1} in Cantonese. As shown in (3a), typical argumental *mat*^{1} appears postverbally, just like typical objects; and like typical

(14) a. ngo⁶ seong² ji¹dou³ *dim²gaai²* lei⁵ mou⁵ heoi³
     1SG   want   know   why   2SG   not.have go
     'I wonder why you didn't go.'

   b. *ngo⁵ seong² ji¹dou³ *mat¹* lei⁵ mou⁵ heoi³ (ge²)
     1SG   want   know   what   2SG   not.have go   SFP
     Intended: 'I wonder why you didn't go.'

Tang (2008) points out that *mat¹* differs from *dim²gaai²* in that the former cannot be in a sluice (compare (15a) and (15b)). This is not surprising, as *mat¹* cannot head an embedded question anyway (as seen in (14b)).

(15) a. keoi⁵ waa⁶ keoi⁵ heoi³ guo³ dan⁶hai⁶ mou⁵ waa⁶ *dim²gaai²*
     3SG   say   3SG   go   EXP   but   not   say   why
     'He said that he has been, but he didn't say why.'

   b. *keoi⁵ waa⁶ keoi⁵ heoi³ guo³ dan⁶hai⁶ mou⁵ waa⁶ *mat¹*
     3SG   say   3SG   go   EXP   But   not   say   what
     Intended: 'S/he said that s/he has been, but s/he didn't say why.'

We will see in section 3 that *mat¹*-initial questions are also interpreted differently from canonical *dim²gaai²* questions.

2.2 Comparison with postverbal causal *mat¹*-questions

We again start with the form of postverbal causal *mat¹*. We have seen in (8) that when *mat¹* is used as an argument, it can use the form *mat¹(ye⁵)*. This contrasts with sentence-initial *mat¹*, which cannot have *ye⁵* (9). Postverbal causal *mat¹* aligns more with argumental *mat¹*, in that *ye⁵* can be used, as shown in (16).[6]

(16) a. lei⁵ haam³ *mat¹(ye⁵)* aa³?
     2SG   cry   what   SFP
     'Why are you crying?'

   b. lei⁵ hai²dou⁶ fan³ *mat¹(ye⁵)* aa³?
     2SG   PROG   sleep what   SFP
     'Why are you sleeping?

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in-situ languages, typical argumental *mat¹* can appear in embedded sentences (regardless of whether the embedded clause is a question or not).
6 The colloquial way of pronouncing *mat¹(ye⁵)* is *me¹(ye⁵)*.

The questions in (16a,b) are similar to the Dutch and German examples in (6) in that they also convey a meaning of "you shouldn't have". See Tsai's (this volume) discussion of the Mandarin counterpart, which he calls *whining what*. That is, (16a,b) are not genuine questions of asking for the cause or reason of your crying/sleeping. Instead, it conveys some sort of dissatisfaction of your crying or sleeping. Since Dutch and German place their counterpart of *what* in sentence-initial position (since Dutch and German have *wh*-fronting), one might consider the Cantonese *mat*^{1}-initial as a fronted version of the postverbal causal *mat*^{1}.

Aside from the fact that *wh*-elements normally do not undergo fronting in Cantonese (or in other Chinese languages), and that the sentence-initial form is restricted to *mat*^{1} only, there are a number of other reasons why it is unlikely that *mat*^{1}-initial sentences are derived from postverbal causal *mat*^{1} sentences.

First, the postverbal *mat*^{1} typically appear with unergative verbs such as *haam*^{3} 'cry' and *fan*^{3} 'sleep' (see footnote 4). In cases where it appears with verbs with an object (including a dummy object), the object is usually bare (without a demonstrative or classifier) (contrast (16b) with (17b,c)),[7] and *mat*^{1} appears right before the bare noun:

(17) a. lei^5 sik^6 *mat*^{1}*(ye*^{5}*)*   min^6 aa^3?
       you   eat   what   noodle SFP
       'Why are you eating noodles?'/ 'Why are you sitting there eating (noodles)?'
   b. lei^5 hai^{2}dou^6 fan^3 *mat*^{1}*(ye*^{5}*)*   gaau^3 aa^3?
       you   PROG   sleep what   sleep SFP
       'Why are you sleeping?'
   c. *lei^5 sik^6 (*mat*^{1})   li^1-wun^2 (*mat*^{1})   min^6 gaa^3?
       you   eat   what   this-CL   what   noodle SFP
       Intended: 'Why are you eating this bowl of noodle?'

Sentential-initial *mat*^{1} doesn't have restrictions of this sort. It can appear with any verb and any object:

(18) a. *mat*^{1} lei^5 sik^6 (li^1-wun^2)   min^6 gaa^3?
       what   you   eat   this-CL   noodle SFP
       'Why are you eating (this bowl of) noodle?'
       ('Why are you eating (this bowl of) noodle (at all)?'

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7 The lexical item for 'sleep' is *fan*^{3}*-gaau*^{3}, with *gaau*^{3} as a dummy object. See Cheng and Sybesma (1998).

b. *mat¹* lei⁵ hai²dou⁶ fan³-gaau³ gaa³?
   what you PROG sleep-sleep SFP
   'Why are you sleeping?'/ 'How come you are sleeping?'

The contrast in interpretation between (17a) and (18a) is clear. Even though both can be interpreted as the addressee should not be eating, (18a) (with or without the demonstrative and classifier) can be interpreted as the addressee should not be eating noodles at all (but rather some other more eatable things).

Sentences in (17) and (18) also illustrate another crucial difference between the two types of *mat¹* sentences. Sentence-initial *mat¹* sentences have restrictions concerning the type of sentence-final particles. In (18a,b), it is not possible to use *aa³*, in contrast with postverbal causal *mat¹* in (17a,b) (see the discussion about the co-occurrence with sentence-final particles in the next section). Furthermore, even though both might have the interpretation that the sentence expresses some kind of dissatisfaction (and therefore the reading that the addresses should not be doing something (as in (17) and (18)), sentence-initial *mat¹* definitely has other interpretations, as we see in (19).

(19) *mat¹* keoi⁵ gam³ gou¹ gaa³
      what he so tall SFP
      'How come he is so tall?'

The sentence in (19) cannot be interpreted as 'he should not be so tall', but rather that his height is above the speaker's expectation. We come back to the interpretation of *mat¹*-initial sentences in section 3.

Lastly, it should be noted that though postverbal *mat¹* cannot appear in a clause with negation (see also the Mandarin counterpart in Tsai (this volume)), sentence-initial *mat¹* can appear with negation, as we see in the contrast between (20a) and (20b).

(20) a. *keoi⁵ m⁴ hai²dou⁶ fan³ *mat¹ye⁵* aa³?
          3SG NEG PROG sleep what SFP
          Intended: 'Why aren't you sleeping?'
      b. *mat¹* keoi⁵ m⁴ hai²dou⁶ fan³ ge²?
          what 3SG NEG PROG sleep SFP
          'How come s/he is not sleeping?'

2.3 Sentence-initial *mat¹* and sentence-final particles

Both Tang (2008) and Lam (2014) discuss the issue of *mat¹* co-occurring with sentence-final particles. Tang (2008) states that the sentence-initial *mat¹* tends to appear with the sentence final particle *ge²*, as in (21).[8]

(21) *mat¹*   lei⁵   mou⁵   heoi³   *(ge²)?
      what   you   not.have   go   SFP
      'Why didn't you go?'/ 'How come you didn't go?'

Further, he shows that certain sentences with the sentence-final particle *ge²* alone can still obtain the same meaning without the presence of *mat¹*, as in (22a,b).

(22) a. lei⁵   mou⁵   heoi³   ge²?
          you   not.have   go   SFP
          'Why didn't you go?'/ 'How come you didn't go?'
      b. lei⁵   gam³   hoi¹sam¹   ge²?
          you   so   happy   SFP
          'Why are you so happy?'/ 'How come you are so happy?'

This leads Tang (2008) to argue that *mat¹* is not an interrogative element. He argues that it forms a discontinuous construction with sentence-final particles to reinforce the interrogative mood of the sentence. Tang also argues that the co-occurrence of *mat¹* with other sentence-final particles are restricted (see foonote 9).

Lam (2014) examines a long list of sentence-final particles based on Leung (2005), considering all the ones that can appear with sentence-initial *mat¹* and those that cannot. She concludes that *mat¹* not only occurs with sentence-final particles that indicate questions (such as *ge²*, *me¹*, *aa⁴*), but also those that are not interrogative (such as *gaa³*, *wo⁴*). (23) is an example from Lam (2014) showing the co-occurrence with *mat¹* and *gaa³*.[9]

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8 The sentence-final particle *ge²* indicates assertion with reservation, uncertainty, and surprise (see Sybesma and Li (2007) among others).
9 *Gaa³* is a relevance marker (see Sybesma and Li 2007 among others). Tang (2008) claims that *gaa³* can only occur with *mat¹* if a scalar adverb such as *gam³* 'such' or *gam²* 'such a manner' is present. But the examples in (19) and (23b) show that this is not correct. One may consider that there is a degree expression *gik⁶* in (23b), but this can be replaced by a non-degree expression such as *gong²-lei⁴-gong²-heoi³* 'talking back and forth' without changing the essential interpretation of the sentence.

(23) a. Context: Terrance keeps explaining why Mary does not eat any kind
of meat because she is a vegetarian. Nonetheless, John still cannot
understand why Mary does not eat beef.

  b. (*mat*[1]) gong[2] gik[6] keoi[5] dou[1] m[4] ming[4]   gaa[3]?!
     what   say   peak he   still not understand SFP
     'Why did he still not understand?'

Lam (2014) provides a long list of particles that are not compatible with *mat*[1]. She
concludes that these particles violate the requirement of using *mat*[1], namely that
the prior expectation of the speaker must be *contrary* to the literal proposition.
That is, according to Lam (2014), for a sentence-final particle to co-occur with
mat[1], it has to indicate speaker bias.

   In sum, we have seen in this section that *mat*[1]-initial sentences differ from
canonical *dim*[2]*gaai*[2] 'why' questions, and postverbal causal *mat*[1] questions in the
morphological make-up of the *wh*-element *mat*[1] 'what', in distribution as well as
in interpretation. In the next section, we explore the interpretation of *mat*[1]-initial
sentences.

3 The interpretation of *mat*[1]-initial sentences

Despite of the fact that we group the sentence-initial *mat*[1]-questions with postver-
bal *mat*[1]-sentence as causal/reason questions, they are not interpreted the same
way as causal/reason *why* questions. Importantly, *mat*[1]-initial sentences not only
do not need to be answered, they are also used in a different context. They do
not share the same denotation as *why*-questions (which would amount to a set
of true propositions/answers). Consider again the sentence in (21) (repeated here
as (24a)). First, the sentence can only be uttered if the fact that the hearer didn't
go is against the expectation of the speaker. This is similar to the Dutch non-*wh*-
exclamative in (24b).

(24) a. mat[1] lei[5] mou[5]   heoi[3] *(ge[2])?
        what you   not.have go   SFP
        'Why didn't you go?'/ 'How come you didn't go?'

  b. dat   je   daar   niet was!
     that you there NEG was
     'You weren't there!'

Compare these with the canonical *dim*[2]*gaai*[2] 'why' question in (25). This can be a
neutral question, i.e., the speaker has no expectation of the hearer's going.

(25) *dim²gaai²* lei⁵ mou⁵ heoi³ (ge²)?
      why   you not.have go   SFP
      'Why did you not go?'

In this section, we consider two other types of sentences which use *wh*-phrases, but are not interpreted as (real) questions: rhetorical questions and *wh*-exclamatives, in order to understand further the nature and the interpretation of *mat¹*-initial sentences.

3.1 Comparing with rhetorical questions

We first consider rhetorical questions, since these are also questions that do not require an answer (though answers are possible). As the debate concerning the interpretation and illocutionary force of rhetorical questions is not yet settled (see e.g., Han (2002) and Caponigro and Sprouse (2007)), we first consider here the distinction between *why* and *how come* in English. As is known from previous literature, aside from syntactic differences (see Zwicky and Zwicky (1971) and Collins (1991)), these two types of questions differ also as to whether they can be used rhetorically. (26a-c) show that *how come*-questions do not have inversion, have no long-construal and cannot license NPIs:

(26) a. How come John is leaving?
      b. How come you think that Peter is laughing?
      c. *How come John ever said anything?

Moreover, as Fitzpatrick (2005) and Conroy (2006) show, *how come*-questions cannot be used rhetorically. (27a,b) illustrate a question-answer pair. The *why*-question in (27b) has a rhetorical reading, which is negatively biased (i.e., the speaker assumes that a negative answer is correct). It can thus serve as a response to the question in (27a), 'Did John leave?', as it essentially states that John would not leave, and it also goes with the answer particle *no*. This is not the case in (27b); the response with a *how come*-question is not felicitous.

(27) a. Q: Did John leave?
          A: No. Why would John leave?
      b. Q: Did John leave?
          A: #No. How come John would leave?

Fitzpatrick (2005) and Conroy (2006) argue that *how come* selects a factive clause; thus, in (28a), it is a fact that John left early, and in (28b), it is a fact that the addressee thinks that John is late.

(28) a. How come John left early?
      b. How come you think that John is late?

This can then explain why the response with the *how come*-questions in (27b) is infelicitous: with the *how come*-question, 'John would leave' is a fact. It is thus infelicitous with the negative answer particle *no*. In other words, *how come*-questions are not negatively biased and they do not have a rhetorical reading.

Let us now turn to Cantonese dim^2gaai^2 and mat^1. As (29a,b) show, dim^2gaai^2 'why' questions, just like *why*-questions in English, can be negatively biased. In other words, dim^2gaai^2 'why'-questions can be rhetorical questions. In contrast, given the same context, mat^1-questions are infelicitous, as shown in (30a,b).

(29) a. Q: $keoi^5$ zau^2-zo^2 mei^6 aa^3?
                3SG   leave-PFV   not.yet   SFP
                'Has s/he left yet?'
      b. A: mei^6-aa^3! $keoi^5$ dim^2gaai^2 wui^5 zau^2-zo^2 aa^3?
                not.yet-SFP   3SG   why   will   leave-PFV   SFP
                'Not yet! Why would s/he leave?'

(30) a. Q: $keoi^5$ zau^2-zo^2 mei^6 aa^3?
                3SG   leave-PFV   not.yet   SFP
                'Has s/he left yet?'
      b. A: # mei^6-aa^3! mat^1 $keoi^5$ zau^2-zo^2 ge^2?
                not.yet-SFP   what   3SG   leave-PFV   SFP

The response in (30b) yields an infelicitous response; the mat^1 sentence indicates that he has left, which is contradictory to the response mei^6-aa^3 'not yet'. Thus, mat^1-initial sentences are on a par with *how come*-questions in that they are not negatively biased and cannot have rhetorical interpretation. Tang (2008) also shows that mat^1-initial sentences take a realis, factive proposition. In other words, sentence-initial mat^1-sentences are similar to English *how come*-questions in that the *wh*-phrase selects a factive clause. This leads us to exclamatives, which are considered to carry a presupposition of factivity.

3.2 Comparing with exclamatives

Aside from rhetorical questions, there is another type of sentences which uses *wh*-expressions and their denotation is not comparable to a question, namely exclamatives, as in (31).

(31) a. What a nice guy he is!
      b. How very tall she is!   (Zanuttini and Portner (2003):(4))

In fact, *why* in English can also be used in exclamations, as in (32), though they are not considered to be part of the *wh*-exclamatives.

(32) a. Why, that's absurd!
      b. Why, it's easy – a child could do it!

Sung (2015) shows that in Budai Rukai, a Formosan language, the counterpart of *why* can be used in exclamatives, as in (33).[10]

(33) a. a-ni   ka-lragi   kai   kaswi-su!
          do.why-3 STAT.NFIN-long this pants-2SG.GEN
          'How long are your pants!'
          (Lit: 'How come your pants are (so) long!')   (Sung (2015): (16b))
      b. a-ni   ka-thariri   turamuru kai   Salrabu!
          do.why-3 STAT.NFIN-good very   this Salarabu
          'How nice (handsome) Salrabu is!   (Sung (2015): (18b))

There has been a large amount of work concerning the syntax and semantics of exclamatives. To evaluate whether or not *mat*[1]-initial questions are on a par with exclamatives, we start our discussion with Zanuttini and Portner (2003). They consider factivity, scalar implicature and surprise as the core ingredients of an exclamative. Consider the English exclamative sentences in (34).

(34) a. How tall she is!
      b. What a lot of books John bought!
      c. How fast John drives!

---

10 (33a) also has a question reading: 'Why are your pants (so) long?'

As Zanuttini and Portner (2003) show, exclamatives carry a presupposition of factivity. For (34b), for instance, it presupposes that John bought a lot of books. In addition, there is a contextually given scale, and the exclamative indicates an extreme degree. For (34a), there is a contextually given scale of tallness and the exclamative indicates that her tallness is at the extreme end of the scale. Lastly, they suggest that there is an operation of widening connected to high degree, leading to surprise. The widening operation widens the domain of quantification for the *wh*-operator.

Zanuttini and Portner (2003) have devised tests on the basis of these properties. For instance, in the case of factivity, the test is whether or not exclamatives can be embedded under factive verbs. Nonetheless, as d'Avis (2016) shows, exclamatives in various languages, e.g., German, may not concur with all the tests. He concludes that the recurring aspect of analyses of exclamatives is: " . . . that a certain state of affairs is considered unusual/not normal by the speaker." (D'Avis (2016): 172) (see also Rett (2011)).

This concurs with what Chernilovskaya and Nouwen (2012) (C&N) and Nouwen and Chernilovskaya (2015) (N&C) argue concerning exclamatives. They state that the better characterisation of exclamatives is noteworthiness evaluation. They argue that there are in fact two types of exclamatives. Aside from the traditional type of exclamatives (as we see from the English examples above), which expresses noteworthiness of a referent of a *wh*-word (e.g., tallness, amount of books), there is another type of exclamatives, which expresses noteworthiness of the proposition referenced in the exclamative. This is illustrated by the contrast exhibited in the Dutch exclamatives in (35) (from N&C):

(35) a. Wat een man ik net op straat tegenkwam!
          what a   man I   just on street encountered
      b. Wie ik net op straat tegenkwam!
          who I   just on street encountered

N&C show that for (35a) to be felicitous, the man being encountered has to have some gradable property to a remarkably high degree (e.g., tallness). So this is an example of the typical type of exclamatives, where the noteworthiness concerns a referent of the *wh*-word, in this case, 'man'. They suggest that since (35a) concerns an individual property, it is an *i*(ndividual)-level exclamative. In contrast, this is not the case for (35b). They argue that there is no particular gradable property in (35b), but the noteworthiness here concerns the proposition that the speaker encountered a certain person (for example, because the person is expected to be away on holiday). (35b), thus, is not an *i*-level exclamative; rather, it has to do with the event, and thus an *e*(vent)-level exclamative. It should be noted that

there is no particular gradable property in (35b) (associated with either an individual or the proposition).[11]

Badan and Cheng (2015) examine exclamatives in Mandarin and argue that there is no *wh*-exclamative in Mandarin. That is, *wh*-phrases are not used for exclamatives. Furthermore, they show that surprise is not a necessary ingredient of exclamatives. (36a,b) show that the counterparts of *wh*-exclamatives in Mandarin have no *wh*-element.

(36) a. tā   zhème   gào   a!
        3SG   this.ME   tall   SFP
        'How tall s/he is!

    b. nǐ   de   wǎncān   duōme   hǎo   a!
        you   DE   dinner   much.ME   good   SFP
        'How delicious your dinner is!'

If having a set of alternatives is a crucial ingredient of exclamatives, it cannot come from a *wh*-operator in Mandarin. Instead, Badan and Cheng (2015) argue that Mandarin exclamatives have scalar focus, which derives a set of alternatives. In particular, the degree adverbs *zhème* 'this much', *nàme* 'that much', and *duōme* '(so) much' function as scalar (focus) operators. Aside from factivity and a set of alternatives, Badan and Cheng (2015) argue that a crucial ingredient of exclamatives is ego-evidentiality, namely a subjectivity/speaker-oriented property. They suggest that this property is spelled out as a low pitch sentence-final particle *a* in Mandarin.

Turning back again to *mat*[1]-initial sentences, the question that arises is whether they can be considered to be on a par with exclamatives. We have already seen that *mat*[1] selects for a factive complement. In (37a,b) and (38a,b), we see that *mat*[1]-initial sentences can contain degree-related expressions such as *gam*[2] 'such' or *gam*[3] 'so', the former appearing with verbal predicates while the latter with non-verbal predicates (adjectival and nominal). Furthermore, these sentences all express a bit of surprise or in Chernilovskaya and Nouwen's term, noteworthiness.

(37) a. (*mat*[1])   lei[5]   gam[2]   heoi[3]   ge[2]?
        what   you   such.way   go   SFP
        'Why/how come you went in such a way?'

---

11 They also indicate that in the case of Dutch *e*-level exclamatives, the verb has to be final (while *i*-level cases can be either verb-second or verb-final).

b. (*mat¹*) lei⁵ gam³ hoi¹sam¹ ge²?
   what you so happy SFP
   'Why/how come you are so happy?'

(38) a. (*mat¹*) keoi⁵ gam³ gou¹ ge²/gaa³?!
     what 3SG so tall SFP/SFP
     'Why is s/he so tall?!/ How tall s/he is!'
   b. (*mat¹*) keoi⁵ gam³ do¹ syu¹ ge²/gaa³?!
     what 3SG so many book SFP/SFP
     'What a lot of books s/he has!'

These examples point to similarities with *wh*-exclamatives that we have seen above: the proposition under *mat¹* is a realis, factive proposition (see (30b)); they can have a scale, and there appears to be an extension of the scale since what is expressed is that the degree is higher than expected ((37) and (38)). In other words, on the basis of these examples, we can hypothesize that *mat¹*-initial sentences are in fact exclamatives.

The question that arises is whether *mat¹*-initial sentences in Cantonese are true exclamatives, as degree adverbs are optional in these *mat¹*-sentences. Furthermore, Chinese languages do not have typical *wh*-exclamatives. If these *mat¹*-sentences in Cantonese are indeed exclamatives, is *mat¹* still a *wh*-element? And is there a corresponding ego-evidentiality marker in Cantonese? In the next section, we explore answers to these questions.

4 Understanding *mat¹*-initial sentences

4.1 WHAT-exclamatives

To understand the role of the sentence-initial *mat¹* 'what', let us first consider the counterpart of *what* cross-linguistically. In particular, it is well-known that *what* can be used in various types of sentences, and not necessarily typical *wh*-interrogatives. A good example is German, as illustrated in (39a-c) (from D'Avis (2000) (1a, 2a, 3a)).

(39) a. Was schlägst du schon wieder den Hund?
     what beat you PRT again the Dog
     'Why are you beating the dog again?'

    b. Was   (der) Otto seine Frau liebt?
        What the   Otto his   wife loves
        'How Otto loves his wife!'

    c. Was   hat Otto gesagt, wen   er liebt?
        what has Otto said   whom he loves
        'Whom did Otto say that he loves?'

D'Avis (2000) calls the *wh*-element *was* in (39a) a causal *was*, the one in (39b) an exclamative *was* and the one in (39c) a scope-marking *was*. He argues that these are examples of *was* as an expletive.[12] I identify this "expletive" use of *what* henceforth as WHAT. Here, we first concentrate on WHAT in exclamatives. The *was*-causal questions will not be discussed here. I would just like to mention that these causal-questions are similar to the postverbal *mat^1*-questions in Cantonese (e.g., (3a)); the positional difference between Dutch/German causal questions with WHAT and Cantonese postverbal causal *mat^1*-questions (i.e., sentence-initial vs. postverbal) is the result of the known difference between these two types of languages: the presence of *wh*-movement in Dutch/German and the lack of it in Cantonese.

    Consider the Dutch data in (40). First, we see in (40a) that the *wh*-phrase *wat een auto's* 'what cars' can be moved as a whole to the left periphery;[13] (40b) shows that the *wh*-phrase can be split up so that only *what* appears in the left periphery, illustrating the so-called 'split exclamatives'.

(40) a. Wat   een   auto's heeft Jan gekocht!
          what a   cars   has   Jan bought
          'What cars John has bought!'

      b. Wat   heft Jan een auto's gekocht
          what has   Jan a   cars   bought
          'What cars John has bought!'   (Corver (1990): 97, (1a,b))

It should be noted that typical *wh*-questions do not allow splits except in the case of *wat … voor* 'what kind of' questions; compare (41a) with (41b). *Was* 'what' in Dutch differs from other *wh*-elements in its ability to appear in split-exclamatives. As we see in (41b) and (42), this is not possible for *hoe* 'how'.

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12 D'Avis (2000) suggests that there is a *wh*-chain formation only in the case of scope marking sentences. The causal question reading and the exclamative reading with *was* only arises when the sentences are used as such.

13 See Bennis et al. (1998) for the presence of the indefinite article *een* in exclamatives.

(41) a. Wat$_i$ heeft hij [t$_i$ voor een mooi   boeken] gekocht?
          what has he   for a beautiful books   bought
          'What kind of beautiful books did he buy?'   (Bennis (1998): [9b])
     b. *Hoe is hij stom?
          how is he foolish
          Intended: 'How foolish is he?'   (Bennis (1998): [16b])

(42) a. Hoe bijzonder is het dat hij komt!
          how special   is it that he comes
     b. *Hoe is het bijzonder dat hij komt!
          how is it special that he comes (Bennis (1998): [18a,b])

It should also be noted that *wat*-split exclamatives differ from regular *wh*-exclamatives in a number of ways. Corver (1990) discusses two differences between typical *wh*-exclamatives and split-exclamatives: (i) split-exclamatives allow an embedded word order (43) (from Rijpma and Schuringa (1978)), while *wh*-exclamatives do not; and (ii) *wat*-split exclamatives can avoid PP-islands (44b).

(43) Wat je   toch 'n last   hebt met die   peuters!
      what you yet a trouble have with those nippers
      'One has so much trouble with those nippers.'

(44) a. *[Wat een herten]$_i$ heeft de jager [op t$_i$] geschoten!
          what a deers has the hunter at   shot
     b. Wat heeft deze jager [op [... een herten]] geschoten!
          what has this hunter at   a deers   shot
     c. *Wat heeft deze jager [op [... voor een herten]] geschoten!
          what has this hunter at   for a deers   shot
          Intended: 'What kind of deers did the hunter shoot at?'

The sentence in (44a) shows that extracting a whole *wh*-phrase out of a PP yields an ungrammatical sentence (hence "PP"-island), while having only *wat* 'what' in the left periphery does not (44b). This can also be compared with the *wat* . . . *voor*-question in (44c), which also obeys PP-island condition. What these sentences suggest is that *wat* 'what' may not be "split" from a *wh*-constituent by movement. Corver (1990) suggests that *wat* 'what' in the case of "split-exclamatives" is an exclamative morpheme based-generated in SpecCP. This morpheme then binds one or more phrases in its c-command domain to exclaim a certain property. In other words, the so-called "split"-exclamatives are in fact WHAT-exclamatives, with an expletive like *what* in the left-periphery.

This analysis is supported by the fact that such WHAT-exclamatives do not necessarily have a non-split version, even when there is a scalar adjective in the sentences, as shown in (45).

(45) a. Wat   springt zij   ver!
        what jumps   she   far
        'Boy, she jumps far!'
     b. *Wat ver springt zij!
        what far jumps   she

In addition, aside from *wh*-exclamatives, it is possible to have *wh*-less exclamatives in Dutch, as in (46a,b). In these sentences, there is no *wh*-element in the left-periphery. Instead, *me toch* 'me yet' is obligatory.[14] As we see in (47), it is also possible to add a sentence-initial *wat* 'what' in the *me toch*-exclamatives. This is also the case in (46a,b).

(46) a. Jan   heeft me   toch een vrouwen ontmoet in   zijn leven!
        John has   me   yet a   women   met   in   his   life
        'John has met so many women during his life!'
     b. Hij heeft me   toch een hoop kinderen! Dat   wil   je   niet
        he   has   me   yet a   lot children   that want you   NEG
        weten!
        know.INF
        'You're not going to believe this, but Boy, does he have a lot of children!'
                                                        (adapted from Martens (2016))

(47) *Wat* heeft   hij   me   toch een lekkere vlaai gebakken!
     what   have.3SG 3SG.M   me   yet a   tasteful flan PTCP.bake
     'What a nice flan he baked!'

The above data further support the analysis of WHAT-exclamatives. The question arises in connection to Cantonese is whether *mat*[1] in Cantonese is similar to *wat* in Dutch WHAT-exclamatives? To answer this question, we need to first turn to WHAT in the scope-marking cases (i.e., the partial *wh*-movement cases).

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14 Martens (2016) suggests that the role that *me toch* plays is to spell out ego-evidentiality (see e.g., Badan and Cheng 2015).

4.2 WHAT in scope-marking sentences

As we have seen in (39c), in German partial *wh*-movement, the scope is marked with *was* 'what' (while the "real" *wh*-phrase remains in an embedded CP). (48a,b) illustrate the full and partial variants respectively.

(48) a. Mit   wem   glaubt Hans dass Jakob jetzet spricht?
         with   whom   think Hans that Jakob now   talking
         'With whom does Hans think that Jakob is now talking?'
     b. *Was*   glaubt Hans mit   wem Jakob jetzt spricht?
         WHAT   think Hans with   whom Jakob now   talking
         'With whom does Hans think that Jakob is now talking?'

Herburger (1994) argues that partial *wh*-movement questions are interpreted differently from their full-movement counterparts (see also Reis (2000)). In particular, the partial ones are interpreted *de re*, while the full movement yields either *de re* or *de dicto* readings. Consider the question formed with partial *wh*-movement in (49a) and its full movement counterpart in (49b).
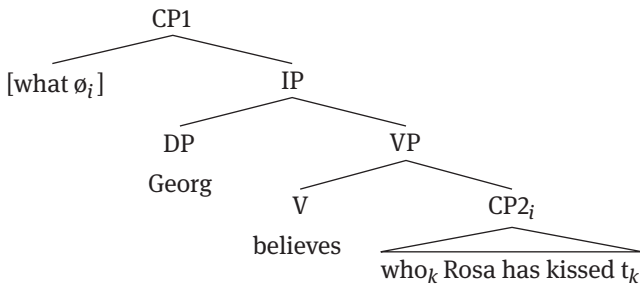
(49) a. *Was*   glaubt   der Georg wen die Rosa geküβt hat?
         WHAT   believes DET Georg who DET Rosa kissed has
     b. Wen   glaubt   der Georg daβ die Rosa geküβt hat?
         who   believes DET Georg that DET Rosa kissed has
         'Who does Georg believe that Rosa has kissed?'   (Herburger (1994):
         (1a,b))

In (49a), the proposition "Rosa kissed someone" must be interpreted as being part of the speaker's beliefs, rather than part of Georg's belief-state. That is, that Rosa kissed someone cannot just be part of Georg's belief-state. Thus, according to Herburger (1994), (49a) can be paraphrased as "Rosa kissed somebody, who does Georg think it was?". In contrast, though (49b) can also have to the same reading as (49a), it also has a *de dicto* reading. In other words, it is possible to interpret the proposition "Rosa kissed someone" in (49b) as simply a figment of Georg's imagination. Based on this interpretational difference (as well as a number of differences mentioned in the literature), Herburger supports a differential treatment of partial *wh*-movement from full *wh*-movement. In particular, she follows the Indirect Dependency approach (see Dayal (1994, 1996)), and argues that *was* 'what' in (49a) does not form a direct chain with the *wh*-phrase in the embedded clause. Instead, it is linked to the whole embedded question (the CP).

Abstracting away from Herberger's syntactic analysis of the scope-marking sentences, her explanation for why the scope marking sentence in (49a) only has a *de re* reading is as follows (see also Dayal (2000)): *was*, being a *wh*-element is treated as a quantifier (i.e., a *wh*- quantifier). The embedded CP serves as the restriction of the *wh*-quantifier. Quantifier restrictions do not contribute to the assertion part of the sentence, but rather to the presupposition. In other words, in (49a), the proposition "Rosa kissed someone" is the restriction of *was*, and therefore the presupposition.

Dayal (2000) proposes that languages can differ as to how the indirect dependency is realized syntactically. In particular, she suggests that in one variant, the structure involves typical subordination of the embedded CP, as in (50). Crucially, the restrictor of the *wh* (∃)-quantifier is phonologically null, but coindexed with the embedded CP2.

(50)

```
                       CP1
          ┌─────────────┴──────────┐
     [what øᵢ]                      IP
                         ┌──────────┴──────────┐
                        DP                     VP
                       Georg          ┌────────┴────────┐
                                      V               CP2ᵢ
                                   believes      ┌──────┴──────┐
                                             whoₖ Rosa has kissed tₖ
```

This structure is compatible with Herburger's explanation of the *de re* reading, i.e., that the embedded clause serves as the restriction and thus the presupposition of the whole sentence.

4.3 Relating WHAT-exclamatives and *mat¹*

In the last two sections (sections 4.1 and 4.2), we have seen the workings of the so called "expletive *what*", indicated here as WHAT. We have seen that WHAT can be base-generated in the left-periphery to head an exclamative sentence, and it can also be used to mark the scope of a *wh*-phrase. Let us now turn to *mat¹*-initial sentences in Cantonese. We have already mentioned that the lack of *wh*-movement makes it quite unlikely that *mat¹*-initial sentences in Cantonese are derived from postverbal causal *mat¹*-questions, let alone the fact that there are other differences between the two types of sentences as discussed in section 2.2. In other

words, *mat*[1] is most likely positioned sentence-initially not because of movement; instead, it is base-generated there. Taking into consideration the similarities between *mat*[1]-initial sentences and exclamatives discussed in section 3.2, as well as a base-generated *mat*[1] at the left periphery, *mat*[1]-initial sentences resemble WHAT-exclamatives in Dutch. In this section, I explore this further.

The potential hurdle to analyse sentence-initial *mat*[1]-sentences as exclamatives is the fact that the degree elements are optional. That is, even though there are sentences such as the ones in (37) and (38), where degree-related expressions such as *gam*[2] 'such' or *gam*[3] 'so' are present, there are also cases where these expressions are absent, as in (18b), repeated here as (51).

(51)   *mat*[1]   lei[5]   hai[2]dou[6]   fan-[3]gaau[3]   gaa[3]?
       what   you   PROG   sleep-sleep   SFP
       'Why are you sleeping?'/ 'How come you are sleeping?'

The question then is whether this type of sentences can also be considered to be exclamatives. We have seen in section 3.2 that according to C&N and N&C, there are two types of exclamatives, and one of which has an e-level noteworthiness, and it also does not have clear-cut scalar expression. Consider now the interpretation of *mat*[1]-initial sentences in (52).

(52)   a.   *mat*[1]   ngo[5]   gam[3]   so[4]   gaa[3]!
            what   I   so   foolish   SFP
            'What am I foolish!'
       b.   *mat*[1]   lei[5]   gam[1]jat[6]   jiu[3]   faan[1]hok[6]   aa[3]?!
            what   you   today   need   go.to.school   SFP
            'How come you have to go to school today?!'   (from Lam (2014): [11])

The sentence in (52a) has the interpretation that my foolishness is at a remarkably high degree (thus *i*-level), while (52b) is exclaiming the noteworthy fact that you have to go to school even today. Lam (2014) offers the following context for (52b): 'Today is a public holiday, so Tom's mother expects that Tom does not need to go to school. Nonetheless, Tom still needs to go to school.' Lam states that '*mat*[1] must combine with a proposition with a sentence-final particle that reveals a speaker's former expectation which is contradictory from the [current] proposition.' (Lam 2014, p. 56).

If *mat*[1]-initial sentences can be interpreted as indicated above, i.e., it can either express noteworthiness of a particular element or noteworthiness of an event. In other words, *mat*[1]-initial sentences in Cantonese in fact instantiate both types of exclamatives argued for by C&N and N&C. The initial hurdle that we

encountered when treating *mat*[1]-initial sentences as exclamatives has just disappeared.

The next issue we need to address is the role of *mat*[1]. Is it similar to WHAT in Dutch and German? Consider the Dutch exclamatives in (53) ((45a) repeated here as (53a); (53b)= N&C:[58]).

(53) a. Wat   springt zij   ver!
          What   jumps   she   far
          'Boy, she jumps far!'
      b. Wat   hij   toen   weer   trok!
          what he   then   again   picked

As mentioned above, C&N and N&C propose that in the case of *i*-level exclamatives, the noteworthiness is linked to the referent of the *wh*-word, while the noteworthiness is linked to the proposition referenced in *e*-level exclamatives. In the case of (53a), *ver* 'far' can be the referent of *wat* 'what', and that is why the noteworthiness is linked to the distance of jumping. In the case of (53b), *wat* is not linked to a particular referent; rather, it is the whole proposition (i.e., that he then again picked). In N&C, the scenario where (53b) is used concerns the card-trick test. In particular, (53b) can be used when someone picked again and again the same cards out of the playing cards. Importantly, it is not the cards themselves that are remarkable. It is the fact that the person manages to pick the same cards every time. In other words, (53b) is an example of *e*-level exclamative. Bennis (1998) notes that *dat* 'that'-exclamatives in Dutch only has the interpretation where what is exclaimed is the proposition. In other words, *dat* 'that'-exclamatives are *e*-level exclamatives as well, as in (54).

(54) Dat hij die   boeken kan lezen!
      that he   those books   can Read
      'Wow, he can read those books!'   (Bennis (1998): [28])

Bennis considers (54) to be an embedded exclamative, treating *dat* 'that' as a complementizer. Both (53b) and (54) thus have a base-generated element in the left-periphery: *wat* 'what' in (53b) and *dat* 'that' in (54). They both yield *e*-level exclamatives. That is, if the base-generated elements take the proposition below them as the proposition to exclaim, then in both cases we get *e*-level exclamatives. (55) is the Cantonese counterpart of (54).

(55) *mat*[1] keoi[5] sik[1] tai[2] go[2]-di[1] syu[1] ge[2]/gaa[3]
      what   he   know   read   that-CL   book   SFP/SFP
   'Wow, he can read those books!'

The context for a felicitous (55) is that the speaker does not expect that he can read those books. In other words, this has the violation of expectation reading or noteworthiness reading, i.e., exclamative reading.

Mat[1] is thus similar to *wat/dat* in Dutch and *was* in German in heading an exclamative. Furthermore, as we have seen in (52), *mat*[1] can yield both *i*-level and *e*-level exclamatives, just like its Dutch counterparts. In the case of an *e*-level exclamative, it takes its complement as the referent to make an exclamative sentence. In the case of an *i*-level exclamative, also similar to its Dutch counterparts, it takes an individual property as a referent.

Recall that what follows *mat*[1] or *wat* is factive. The factive presupposition may have the same source as the *de re* interpretation in scope-marking sentences with *was* in German, as discussed in section 4.2. As *mat*[1] or WHAT is a quantification element, the proposition following it serves as its restriction, leading to the factive presupposition.

Assuming that sentence-final particles in Cantonese indicate that the IP has moved to the left (see Hsieh and Sybesma (2011) and Sybesma and Li (2007)), *mat*[1] is higher in the left-periphery than typical sentence-final particles. (56) and (57) are simplified representations of the sentences in (52). In these representations, the IP has moved to the left of the sentence-final particle in C^0. *Mat*[1] takes either the predicate *gam³ so⁴* 'so foolish', or the whole IP *lei⁵ gam¹jat⁶ jiu³ faan¹hok⁶* 'you need to go to school today' as the restriction (and makes these the presupposition).

(56)

(57)
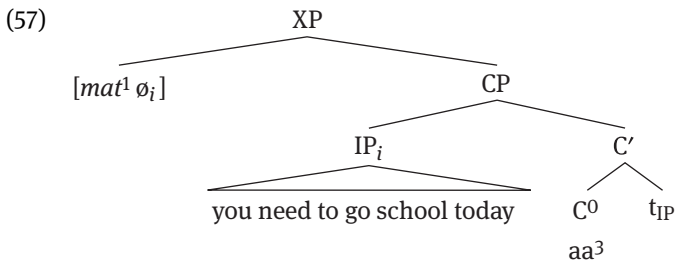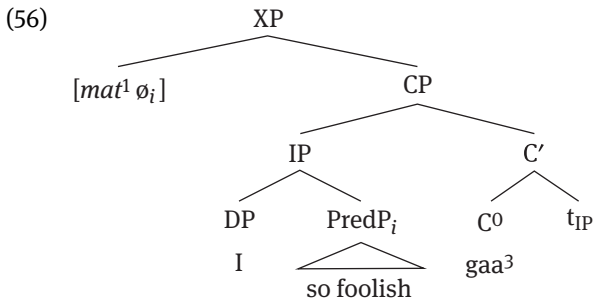
We hypothesise here that *mat*[1] may also contribute ego-evidentiality, as *mat*[1]-initial sentences have to do with speaker's counter-expectation.[15] In other words, *mat*[1]-initial sentences are comparable to exclamatives in Mandarin.

Conclusion

If the direction explored above is correct, *mat*[1]-initial sentences are not causal questions; instead they instantiate two types of exclamatives. *Mat*[1] appears to be the only *wh*-element which can be used in exclamatives in Cantonese. Considering the fact that in Dutch and German, there is an expletive WHAT that can be used in the left-periphery for exclamatives and scope marking, we can also treat *mat*[1] in Cantonese as an expletive WHAT. In other words, *mat*[1] is not a typical *wh*-phrase, but rather a *wh*-expletive, on a par with WHAT in Dutch and German. Therefore, Cantonese does not really have true *wh*-exclamatives.

In section 1, we have encountered an example from Mandarin with an initial *wh*-phrase, which looks at first sight quite similar to *mat*[1]-initial sentences. The only difference seems to be that instead of using the counterpart of *what*, Mandarin uses the counterpart of *how*. (5b) is repeated here as (58).

(58) *zěnme*/*shénme nǐ   zài   kū?   (Mandarin)
      how/what   you   PROG   cry
      'Why are you crying?'

Tsai (2008) argues that *zěnme* 'how' in Mandarin can be interpreted as 'why' if it precedes a modal (59a) (see also Cheng (2019)). Since *wèishénme* 'why' in Mandarin can be merged in exactly the same position as *zěnme* 'how' (see (2)), we may suggest that *zěnme* 'how' is just a variant of *wèishénme* 'why' in Mandarin. In other words, *zěnme* 'how' differs from *mat*[1] in Cantonese, as the latter cannot appear right below the subject (see (13a)).

(59) a.   tā   zěnme   huì   qù   Leiden?
           he   how   will go   Leiden
           'How come he will go to Leiden?

---

15 It should be noted that the anti-expectation is not necessarily negative. In (55) for instance, the speaker can be pleasantly surprised that he can read those books.

     b. zěnme tā huì qù Leiden?
        how   he will go Leiden
        'How come he will go to Leiden?

Nonetheless, it is not the case that *zěnme* 'how' can always appear sentence-initially, as we see in (60).

(60) a. tā zěnme kěnéng qù-le   Měiguó?
        he how   possible go-PFV U.S.
        'How is it possible that he went to the States?'
     b. *zěnme tā kěnéng qù-le   Měiguó?
        how   he possible go-PFV U.S.

The sentences in (61a,b) suggest that *zěnme* 'how' can be used on a par with sentence-initial *mat*[1]; Compare (61b) with (55). Both (61a) and (61b) express note-worthiness, with the former indicating an *i*-level noteworthiness while the latter *e*-level.

(61) a. zěnme tā   zhème piào-liàng!
        how   3SG this.ME pretty
        'How pretty s/he is!'
     b. zěnme tā   kàn-de-dǒng   nà-xiē   shū?!
        how   he read-DE-understand that-CL book
        'How come he understands those books?'

If this is correct, it means that Mandarin uses *zěnme* as a realization of WHAT (instead of the counterpart of *what*, in contrast with Cantonese, Dutch and German). It should be noted that not all languages use the counterpart of *what* as WHAT in scope-marking constructions. Slavic languages, for instance, use the counterpart of *how* in scope-marking sentences; for example, Russian (62) (Stepanov (2000)).

(62) Kak vy dumaete, kogo ljubit Ivan?
     how you think   whom loves John
     'Who do you think John loves?'   (Russian, Stepanov (2000): [2a])

If (61a,b) in Mandarin are indeed WHAT-exclamatives, Mandarin is an example of using the counterpart of *how* instead of *what* to mark WHAT-exclamatives, in contrast with Cantonese. The infelicitous (60b) can be due to a clash between the requirement of factivity under exclamative WHAT and the modal expressing

possibility. This is of course a tentative conclusion, as more research is needed to determine whether (61a,b) are indeed exclamatives.

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